

A tall, weathered wooden utility pole stands in a forest of evergreen trees under a clear blue sky. The pole has two horizontal cross-arms near the top. In the foreground, there is a rocky, brushy area with some white plastic or debris scattered on the ground.

**California Pacific  
Electricity Company  
625 and 650 Electrical Line  
Upgrade Project  
Final EIS/EIS/EIR  
SCH# 2012032066**

**September 2014**

**PREPARED FOR:  
US Forest Service  
Tahoe Regional Planning Agency  
California Public Utilities Commission**



**California Pacific Electric Company  
625 and 650 Electrical Line  
Upgrade Project**

**Final EIS/EIS/EIR  
SCH# 2012032066**

**PREPARED FOR:**

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# **FOREWORD**

## **TO THE FINAL EIS/EIS/EIR FOR THE CALPECO 625 AND 650 ELECTRICAL LINE UPGRADE PROJECT**

### **APPROACH AND CONTENT OF THIS FINAL EIS/EIS/EIR**

The US Forest Service (USFS), Lake Tahoe Basin Management Unit and Tahoe National Forest; the Tahoe Regional Planning Agency (TRPA); and the California Public Utilities Commission (CPUC) have prepared this joint environmental document for the California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade Project. The document is an environmental impact statement (EIS) for the Lake Tahoe Basin Management Unit and Tahoe National Forest prepared pursuant to the National Environmental Policy Act (NEPA) (42 U.S. Code 4321-4347), the Council on Environmental Quality Regulations Implementing NEPA (Title 40 of the Code of Federal Regulations Sections 1500-1508), Forest Service Manual 1950, and Forest Service Handbook 1909.15; an EIS for TRPA pursuant to the Tahoe Regional Planning Compact (Public Law 96-551), Code of Ordinances, and Rules of Procedure; and an environmental impact report (EIR) for California Public Utilities Commission pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000 et seq.) and the State CEQA Guidelines (Title 14 of the California Code of Regulations Sections 15000 et seq.). All three agencies (the lead agencies) have determined that an EIS/EIS/EIR is needed to effectively analyze the proposal and evaluate impacts. In addition, the US Army Corps of Engineers, as a federal cooperating agency, is responsible for the scope and content of the NEPA portion of the environmental document as it pertains to lands within its jurisdictional boundaries in Martis Valley. CalPeco is the project applicant. By Advice Letter 28-E submitted on July 15, 2013, California Pacific Electric Company, LLC notified the CPUC of its formal change in name as of that date to Liberty Utilities (CalPeco Electric) LLC. This EIS/EIS/EIR has maintained the use of “CalPeco” as the project applicant for uniformity.

This document is the Final EIS/EIS/EIR. A Draft EIS/EIS/EIR was distributed for public review on November 8, 2013 and the public review period ended on January 7, 2014. Comment letters received on the Draft EIS/EIS/EIR and responses to the comments are provided in Appendix P of this Final document titled “Comments and Responses to Comments on the Draft EIS/EIS/EIR.” Appendix P includes the 54 comment letters received during the public review period, as well as transcripts from the TRPA Advisory Planning Commission meeting held on December 4, 2013 and the TRPA Governing Board Meeting held on December 18, 2013 where both oral and written comments were received, and an additional comment letter prepared by Thomas A. Besich dated April 28, 2014 and received after the close of the public review period.

This Final EIS/EIS/EIR reprints and replaces the Draft EIS/EIS/EIR consistent with the requirements of NEPA (40 CFR 1503.4) and USFS NEPA implementation practices and Article 6.14 of the TRPA Code of Ordinances – Rules of Procedure. The Final EIS/EIS/EIR contains text edits to the draft document based on three primary sources:

1. Modifications to the EIS/EIS/EIR text in response to comments received on the draft document;
2. Minor text edits and corrections of typographical errors identified by the lead agencies; and
3. Updates and clarifications identified by the lead agencies

These are each discussed below.

### **TEXT MODIFICATIONS IN RESPONSE TO COMMENTS**

Text changes between the Draft and Final EIS/EIS/EIR were made primarily in response to comments received from the public and agencies on the draft document. Specific text edits are identified in underline strikeout in

the comment responses provided in Appendix P, and have been fully incorporated into the main body of the EIS/EIS/EIR as they are shown in Appendix P. The text modifications presented in Appendix P do not substantially affect the analysis presented in the Draft EIS/EIS/EIR and do not result in new significant environmental impacts or substantial increases in the severity of environmental impacts.

## MINOR TEXT EDITS BY LEAD AGENCIES

While preparing responses to comments and during ongoing internal review of the EIS/EIS/EIR by the lead agencies, the document preparation team identified the need for minor text edits; these edits included typographical errors, spelling and grammatical errors, and minor corrections to text or numeric data. None of these edits affect the analysis or conclusions in the EIS/EIS/EIR.

## UPDATES AND CLARIFICATIONS IDENTIFIED BY THE LEAD AGENCIES

While preparing responses to comments and the overall Final EIS/EIS/EIR, the lead agencies also found areas where clarifications, additional information, and updates to the text would enhance the value of the document to decision makers and the public. These text changes do not substantially affect the analysis presented in the EIS/EIS/EIR supplement or update information provided in the Draft EIS/EIS/EIR. Examples of the type and character of these changes include:

- ▲ adding information to regulatory setting discussions to further define applicable laws, regulations, and policies;
- ▲ providing further details on timber harvest practices, such as acceptable methods for treatment of slash remaining after harvest; and
- ▲ incorporating information not available when the Draft EIS/EIS/EIR was published, such as further details of the State Route (SR) 89 Fanny Bridge project in cumulative impact discussions.

Two other areas of text updates and clarification warrant further description, these are edits to the Applicant Proposed Measures (APMs) and the description of Alternative 4 (Proposed Alternative). These are discussed below.

## UPDATES AND CLARIFICATIONS TO APMs

Chapter 3 of the EIS/EIS/EIR, Project Alternatives, includes Table 3-8, which identifies CalPeco's APMs that would be followed during project planning, construction, and operations and maintenance activities. CalPeco has committed to implementing these measures in order to reduce the potential direct and indirect impacts that could result from the action alternatives. Therefore, the APMs are considered part of the project description and will be monitored for compliance during construction and other project phases as applicable.

Several edits to the text of the APMs have been made in the Final EIS/EIS/EIR in response to comments received on the draft document and these changes are identified in Appendix P. However, the lead agencies have identified additional opportunities to refine and clarify the APMs to remove conflicting information; provide additional detail to promote intended APM outcomes; and support effective understanding and implementation of the measures by the applicant, construction personnel, environmental monitors, and others with responsibility for implementing elements of the APMs.

For example, several APMs in the Draft EIS/EIS/EIR addressed construction activities when snow was present; however, the project description identifies that no winter construction would occur. Therefore, APM language related to over snow construction activities is not applicable and was removed. Information was added to further clarify and define acceptable logging practices in stream environment zones to provide additional guidance during planning and implementation of timber removal activities. An APM was added in the Recreation section of Table 3-8 that clarifies that existing APMs related to the protection and restoration of vegetation and other resources in

the project construction zone would also apply to the protection and restoration of recreation facilities potentially affected by construction activities. These and other lead agency-initiated refinements to the APMs do not alter the intent or final outcomes of the APMs, but clarify the process for APM implementation. Impact analysis and conclusions in the EIS/EIS/EIR that involve implementation of APMs are not altered by the text edits.

In addition to the APMs and mitigation measures identified in the EIS/EIS/EIR as part of the environmental review process, the USFS requires projects to implement Best Management Practices (BMPs) to protect soil and water resources consistent with the *National Best Management Practices for Water Quality Management on National Forest System Lands, Volume 1: National Core BMP Technical Guide* (USFS 2012) and USFS Region 5 (R5) *Soil and Water Conservation Handbook, Chapter 10 Water Quality Management Handbook* (USFS 2011). Implementation of these BMP's meets the USFS obligations for compliance with water quality standards and would fulfill USFS obligations as a designated Water Quality Management Agency. Much of the content and intended outcomes of these BMPs are reflected within the APMs and other elements of the project description and the mitigation measures provided in the EIS/EIS/EIR. Appendix G1, included in this Final EIS/EIS/EIR, provides a table cross referencing where the APMs and other elements of the EIS/EIS/EIR parallel the requirements of the USFS BMPs. Where necessary, text was edited in the APMs to increase consistency between the APMs and the USFS BMPs.

## **ALTERNATIVE 4 (PROPOSED ALTERNATIVE)**

Alternative 4 (Proposed Alternative), as evaluated in the Draft EIS/EIS/EIR, is the environmentally preferable alternative and is the project for which the Applicant will seek lead agency approval. Alternative 4 (Proposed Alternative), as evaluated in the EIS/EIS/EIR, includes two APMs that alter the proposed power line alignment to minimize scenic impacts. APM SCE-8 moves the 625 Line alignment along the Truckee River in Tahoe City slightly south, further away from the river. APM SCE-7 moves the 650 Line alignment along SR 267 between Kings Beach and Brockway summit further away from SR 267. Chapter 3, Project Alternatives, of the EIS/EIS/EIR generally presents the alignments of the action alternatives before implementation of these APMs. However, as discussed in this EIS/EIS/EIR, implementation of APMs is considered part of the project description that would be monitored by the lead agencies. Therefore, implementation of Alternative 4 (Proposed Alternative) would follow the alignment indicated by these APMs and additional information on the APM alignment modifications is provided in Chapter 3 of this Final EIS/EIS/EIR. Alternative 4 (Proposed Alternative) with the APM related setbacks implemented, is shown in Exhibit F-1.

The following discussion provides a summary of Alternative 4 (Proposed Alternative) and the effects of adopted APMs and mitigation measures on project implementation. As identified in Chapter 5, Other NEPA-, TRPA-, and CEQA-Mandated Sections, Alternative 4 (Proposed Alternative) is considered the environmentally preferable/environmentally superior alternative, based on relatively low values in the key issue areas identified in Table ES-1c. This conclusion incorporates the implementation of all applicable APMs and mitigation measures.

The two key areas where adopted APMs modify Alternative 4 (Proposed Alternative) are from the Tahoe City Substation west to the Truckee River crossing in Segment 625-1A, and from the Kings Beach Substation north to Brockway Summit in Segment 650-2/D-C OH-2 (Exhibit F-1). These measures have been adopted to improve the aesthetic attributes of the project, as viewed from major transportation corridors, and avoid violation of TRPA's Scenic Quality Threshold Ratings, which include manmade features as one of the factors in the composite score.

## **625 LINE IN TAHOE CITY**

With incorporation of APM SCE-8, Alternative 4 (Proposed Alternative) would not follow the existing alignment of the 625 Line along the shore of the Truckee River, but would be setback into the 64-Acre Recreation Site. Setting the line back from the Truckee River corridor would shield views of the power line from SR 89 and the Truckee River.

APM SCE-8 reads:

In cases where replacement poles for the 625 Line are adjacent to the Truckee River and will be visible in unobstructed foreground public views along the river or adjacent trails, poles will be carefully sited to minimize their visibility. The westernmost pole on the south bank of the Truckee River where the power line crosses the river will be placed far enough from the river so as to be substantially unseen from the pedestrian bridge. The remaining poles along the south bank of the river will be located southward, outside the river corridor and behind the trees that line the riverbank such that visibility of the power line is minimized as viewed from SR 89, the Truckee River, and the pedestrian bridge. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.

Implementation of APM SCE-8 would locate the new power line behind the existing line of trees on the south bank of the Truckee River, outside the river corridor such that visibility of the power line would be minimized as viewed from SR 89, the Truckee River, Truckee River Bike Trail, and the pedestrian bridge. As detailed in APM SCE-8, the westernmost pole on the south bank of the Truckee River where the power line crosses the river would be placed far enough from the river so as to be substantially unseen from the pedestrian bridge. Any potential adverse effects from this modified alignment are minimal, with the primary impacts being changes in scenic conditions and recreational experience in the 64-Acre Recreation Site. However, as identified in the EIS/EIS/EIR, these impacts are less than significant.

## 650 LINE SOUTH OF BROCKWAY SUMMIT

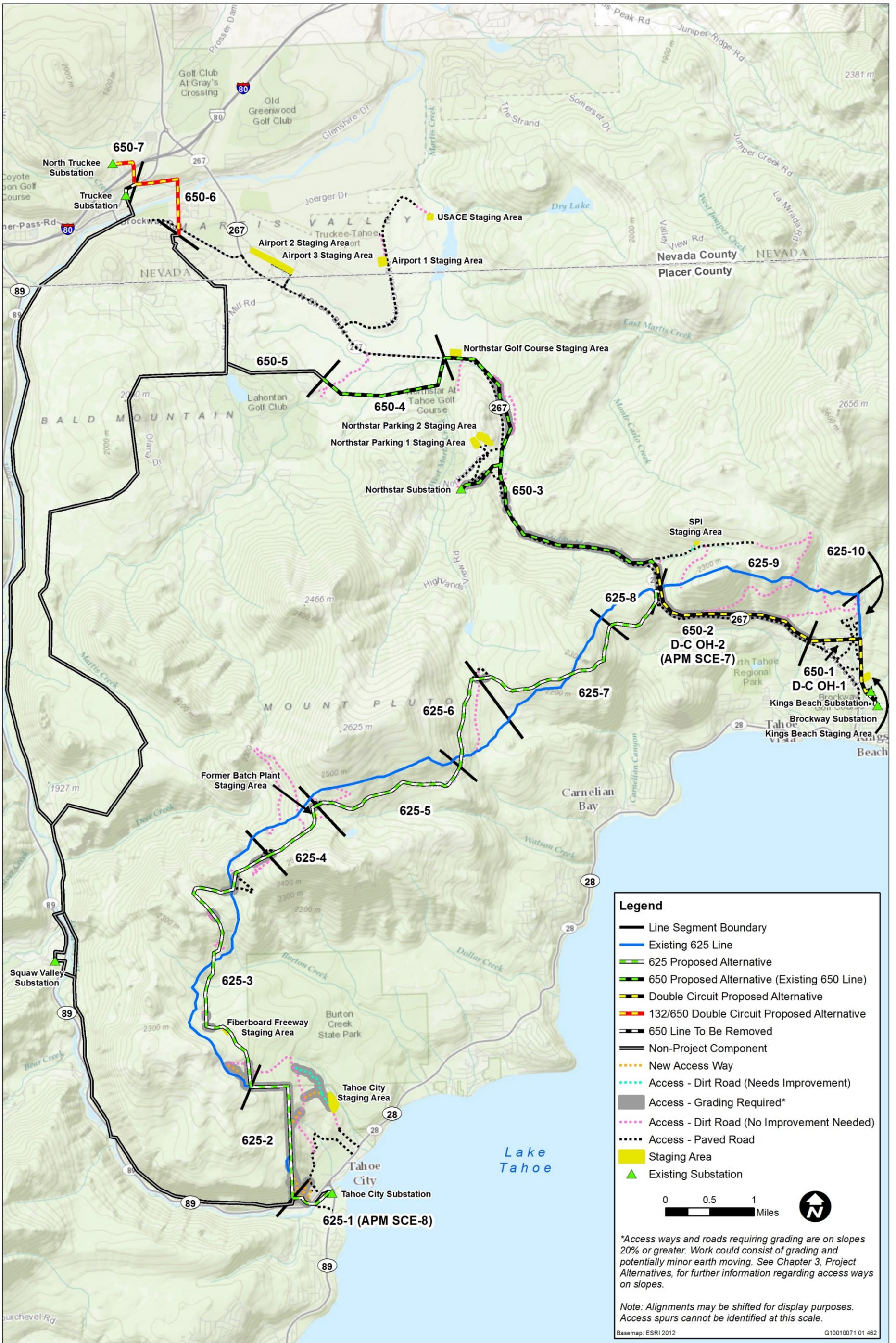
In the Kings Beach/Brockway Summit area, incorporation of APM SCE-7 into the project would result in installation of the power line in a new corridor, up to 200 feet further east of SR 267 than the corridor anticipated before APM implementation.

APM SCE-7 reads:

In cases where replacement poles for the 650 Line are adjacent to SR 267 and will be visible in unobstructed foreground public views from the roadway, poles will be carefully sited to eliminate or substantially reduce their visibility from the highway within the Tahoe Basin as compared to the existing 650 Line without causing new visual impacts from tree removal or construction of access ways that will be required to erect and maintain the line. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.

With APM SCE-7, replacement poles for the 650 Line would be sited to eliminate or substantially reduce their visibility from the highway within the Lake Tahoe Basin, as compared to the existing 650 Line, without causing new visual impacts from tree removal or construction of access ways that would be required to erect and maintain the line. This would result in beneficial scenic effects by further opening up views of the Lake Tahoe Basin for travelers on SR 267. The realigned portion of the 650 Line would be unseen or minimally visible from the highway.

On this portion of the 650 Line along SR 267 there is a telecommunications line attached to the existing poles below the electrical power lines (i.e., telecommunications underbuild). The lead agencies have coordinated with the owners of the telecommunications underbuild (e.g., AT&T) regarding relocation of the 650 Line poles. The preferred option for the underbuild would be to co-locate these lines on the setback power line poles. However, this EIS/EIS/EIR evaluates the scenario where the telecommunications underbuild might remain on the existing poles (the baseline condition), with the top portion of the existing poles that once supported the electrical power lines removed (i.e., poles are "topped") after the power lines are relocated to the new poles. The remaining existing wooden poles would be shorted by approximately 60 percent, with the concomitant loss of the majority of the scenic mass of the existing full size poles. As demonstrated in Exhibits 4.4-13A, 4.4-13B, and 4.4-14A provided



in Section 4.4, Scenic Resources, of this final EIS/EIS/EIR, even if the underbuild were to remain in place on the existing poles, the net result of APM SCE-7 would still be to improve scenic conditions. (Note, the simulations in Exhibits 4.4-13A, 4.4-13B, and 4.4-14A show the potential case where telecommunications stay in place and provide a fuller range to the simulation series originally included in Section 4.4 of the draft EIS/EIS/EIR.)

While targeted at improving scenic resources, implementation of SCE-7 results in impacts to other resources. The draft EIS/EIS/EIR discloses the general impacts associated with the implementation of APM SCE-7 in conjunction with the alternatives. (See pages 4.4-55 to 4.4-59, 4.4-77 to 4.4-78, and 4.4-87 to 4.4-88 of the draft EIS/EIS/EIR.) Because implementation of APM SCE-7 would set the reconstructed power line back from SR 267 and among the trees, it would result in additional impacts of the same types described for other wooded portions of the project area (e.g., along the Fiberboard Freeway), including tree removal, vegetation removal, clearing of rocks and boulders, and surface disturbance for creation of access ways, and in some areas would result in a wider corridor of vegetation disturbance because less of the construction corridor overlaps with the SR 267 right of way. Impacts typical of such construction activities include emissions from construction vehicles (which would be required in any case), generation of fugitive dust in the vicinity of grading and surface disturbance, release of otherwise stored carbon dioxide, temporary staging and stockpiling, noise from vehicles and heavy equipment in areas proximate to active construction, plant and wildlife habitat alteration, invasive plant risk, and soil erosion potential.

Tree removal would be the most pronounced effect of APM SCE-7 implementation. Using the methodology described in Section 4.4, Scenic Resources, the change in impacts to forestry resources was calculated for each alternative where APM SCE-7 applied. Impacts specifically for Alternative 4 (Proposed Alternative) are presented in Table 4.4-6, Forest Land Impact Comparison for APM SCE-7 for Alternative 4 (Proposed Alternative), and reproduced as Table F-1 below. Implementation of APM SCE-7 for Alternative 4 (Proposed Alternative) would result in approximately 7.4 additional acres of forest land impacts and removal of approximately 1,603 additional trees greater than 1-inch in diameter at breast height.

Impact Variable	Impact without Implementation of APM SCE-7	Impact with Implementation of APM SCE-7	Change in Forest Land Impact due to Implementation of SCE-7	
			Difference	Percentage
Permanent Forest Land Impacts (Acres)	92.8	100.2	+7.4	8.0%
Temporary Forest Land Impacts (Acres)	91.6	91.4	-0.2	-0.2%
Total Number of Trees ≥1" dbh to be Removed (Permanent and Temporary Impact Areas)	47,101	48,704	+1,603	3.4%
Total Cubic Foot Volume of Trees ≥1" dbh to be Removed	666,073	690,699	+24,626	3.7%
Total Merchantable Timber Volume in Cubic Feet (Conifers ≥9" dbh)	454,823	471,643	+16,820	3.7%
Total MT CO <sub>2</sub> e Released	6,682	6,929	+247	3.7%
Lost MT CO <sub>2</sub> e Sequestration Potential	6,966	7,557	+591	8.5%
MT CO <sub>2</sub> e Sequestered Over Time in Temporary Impact Areas	13,383	13,354	-29	-0.2%

\* Forest Land, as described in Section 4.3, Forestry Resources, is defined as land that can support 10 percent native tree cover of any species that allows for management of timber, aesthetics, fish and wildlife, recreation, and other public benefits.  
 dbh = diameter at breast height  
 MT CO<sub>2</sub>e = metric tons of carbon dioxide equivalent

In this Final EIS/EIS/EIR, numeric values in Executive Summary Tables ES-1a, ES-1b, and ES-1c have been updated to incorporate the effects of the APM generated alignment modifications. In addition, numeric values provided in Section 4.3, Forestry Resources, and Section 4.7, Biological Resource have also been updated as appropriate to assist in comparisons between the alternatives.

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# EXECUTIVE SUMMARY

## ES.1 INTRODUCTION

The US Forest Service (USFS), Lake Tahoe Basin Management Unit (LTBMU) and Tahoe National Forest; the Tahoe Regional Planning Agency (TRPA); and the California Public Utilities Commission (CPUC) are preparing a joint environmental document for the California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade Project. The document is an environmental impact statement (EIS) for the LTBMU and Tahoe National Forest prepared pursuant to the National Environmental Policy Act (NEPA) (42 U.S. Code 4321-4347), the Council on Environmental Quality (CEQ) Regulations Implementing NEPA (40 Code of Federal Regulations 1500-1508), Forest Service Manual 1950, and Forest Service Handbook 1909.15; an EIS for TRPA pursuant to the Tahoe Regional Planning Compact (Public Law 96-551), Code of Ordinances, and Rules of Procedure; and an environmental impact report (EIR) for CPUC pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). All three agencies have determined that an EIS/EIS/EIR is needed to effectively analyze the proposal and evaluate impacts. In addition, the US Army Corps of Engineers (USACE), as a federal cooperating agency, will be responsible for the scope and content of the NEPA portion of the environmental document as it pertains to lands within its jurisdictional boundaries in Martis Valley. CalPeco is the project applicant.

The proposed 625 and 650 Electrical Line Upgrade Project would consist primarily of an upgrade of CalPeco's existing 625 and 650 electrical power lines and associated substations from 60 kilovolt (kV) to 120 kV to allow the entire North Lake Tahoe Transmission System to operate at 120 kV. The project would include six primary components: 1) removal of the existing 625 Line and construction of a new, rerouted 625 Line; 2) rebuild of the existing 650 Line with potential for realignments based on the action alternatives considered; 3) realignment of two short segments of the 650 Line and removal of the replaced segments; 4) rebuild of the Northstar Tap into a fold (a "fold" allows for service to be maintained at a substation in the event of an interruption in service on either side of the power line feeding it); 5) rebuild of a 1.6-mile long section of the existing 132 Line in the Town of Truckee; and 6) upgrade, modification, and/or decommissioning of six substations. These improvements would increase the ability to maintain the current maximum system loads during an outage on any one of the four sections of the system (described in detail in Chapter 3, Project Alternatives), and decrease reliance on the Kings Beach Diesel Generation Station. In addition, rebuilding and realigning the power lines would reduce the likelihood of outages associated with high winds, downed trees, snow loading, and forest fires, and would improve access to the lines for maintenance, emergency outage response, and repair activities.

This EIS/EIS/EIR does not make a recommendation regarding the approval or denial of the project. The analysis included in this EIS/EIS/EIR is purely informational in content, and will be used by the USFS, TRPA, and CPUC to render decisions regarding approval of project elements within their jurisdiction and selection of an alternative.

### ES.1.1 PROJECT AREA

A majority of the project features and proposed activities are located on lands managed by the USFS; these lands are located in the LTBMU and Tahoe National Forest. (Of the approximately 24.1 miles of power line alignment under Alternative 4 [Proposed Alternative], 12.1 miles are in the LTBMU and 1.7 miles are in the Tahoe National Forest.) Portions of the project are also located in the Town of Truckee and the unincorporated Placer County communities of Kings Beach and Tahoe City, on lands within the USACE owned Martis Creek Lake and Burton Creek State Park, and on private lands.

## ES.1.2 PURPOSE, NEED, AND OBJECTIVES

National and state electric reliability standards require that CalPeco ensure that the North Lake Tahoe Transmission System perform safely under normal and contingency conditions. For example, the North American Electric Reliability Corporation Reliability Standard TPL-002-0b requires that CalPeco's transmission system have the capability to supply peak loads at adequate voltage levels without overloading the system components with any one component out of service. The CPUC regulations related to system reliability are contained in California Public Utilities Code Section 399, which implements the California Legislature's "Reliable Electric Service Investments Act," stating that it is the policy of the state, and the intent of the Legislature, that each electrical corporation operate its electric distribution grid in its service in a safe, reliable, efficient, and cost-effective manner [399.2(a)(1)] and that prudent investments continue to be made to protect the integrity of the electric distribution grid [399(c)(1)]. The system cannot currently provide single-contingency reliability during peak loads, even with use of the Kings Beach Diesel Generation Station, and is experiencing peak demands in excess of design capacity. The proposed project ensures that the North Lake Tahoe Transmission System complies with national and state electric reliability regulations as well as safety standards.

The 625 and 650 Electrical Line Upgrade Project is designed to fulfill five primary purposes.

1. Provide normal capacity for current and projected loads.
2. Provide reliable capacity to assure adequate service to all customers during single-contingency outages.
3. Reduce dependence on the Kings Beach Diesel Generation Station.
4. Reduce the risk of fire hazards and outage durations associated with wooden poles and encroaching vegetation.
5. Provide more reliable access to the 625 Line for operation and maintenance activities.

Addressing normal and projected loads, providing single-contingency reliability, and reducing dependence on the Kings Beach Diesel Generation Station would be achieved by upgrading the 625 and 650 Lines and associated facilities (e.g., substations) from 60 kV to 120 kV. Reducing the risk of wildfire hazard would be achieved by replacing existing wooden poles with the proposed steel poles, which are stronger and more resistant to wildfire. In addition, raising the elevation of the lines and widening the vegetation management corridor, both regulatory requirements when converting from the current 60 kV configuration to 120 kV, would reduce wildfire risk and risk of damage from encroaching vegetation. Increased access to the 625 Line for inspection, maintenance, and repairs would be achieved by re-routing the line to a less remote location with existing access roads, and creating new overland travel ways where needed. Improving truck access to the 625 Line for inspections and maintenance would also increase the lines' resilience to outages.

## ES.2 SUMMARY OF PUBLIC INVOLVEMENT

The environmental review process for the CalPeco 625 and 650 Electrical Line Upgrade Project began with a public scoping period. A Notice of Intent (NOI) and Notice of Preparation (NOP) was issued to inform agencies and the public that a Draft EIS/EIS/EIR would be prepared for the project, and to solicit views of agencies and the public as to the scope and content of the EIS/EIS/EIR. The NOP/NOI was distributed on March 26, 2012 and the scoping period concluded on April 25, 2012. Scoping notices were mailed to governmental agencies, landowners within 300 feet of the project boundaries, interested individuals, and community organizations. Additionally, public notices were placed in both the Tahoe Daily Tribune and the Nevada Appeal on March 28, 2012. Two scoping meetings were held to allow oral expression of opinion regarding the content of the EIS/EIS/EIR, as listed below.

- ▲ April 17, 2012. Public scoping meeting beginning at 6:00 p.m. at the North Tahoe Event Center, Kings Beach, California.
- ▲ April 19, 2012. Public scoping meeting beginning at 6:00 p.m. at the USFS Tahoe National Forest Offices, Truckee, California.

Scoping comments received are summarized in Appendix A, Notice of Preparation and Scoping Summary Report.

The draft EIS/EIS/EIR was distributed to interested agencies, stakeholder organizations, and individuals on November 8, 2013. Notices announcing the availability of the draft EIS/EIS/EIR were mailed to governmental agencies, landowners within 300 feet of the project boundaries, interested individuals, and community organizations. Additionally, public notices were placed in local newspapers and the Federal Register. Copies of these notices are available in the project record on file at the LTBMU's offices at 35 College Drive in South Lake Tahoe, California. This distribution ensured that interested parties had an opportunity to express their views regarding the environmental effects of the project and that information pertinent to permits and approvals is provided to decision makers. Public meetings on the draft EIS/EIS/EIR were conducted as listed below.

- ▲ November 20, 2013. TRPA Governing Board meeting beginning at 9:30 a.m. at the TRPA offices, 128 Market Street, Stateline, Nevada.
- ▲ December 4, 2013. TRPA Advisory Planning Commission beginning at 9:30 a.m. at the TRPA offices, 128 Market Street, Stateline, Nevada,

In addition, two informational meetings were conducted on December 10, 2013, where project information was provided and lead agency and applicant representatives were available to answer questions. The first meeting began at 2:00 p.m. at the Tahoe National Forest Truckee Ranger District Office in Truckee, CA and the second began at 6:00 p.m. at the North Tahoe Events Center in Kings Beach, CA.

Following the close of the public comment period on January 7, 2014, this final EIS/EIS/EIR has been prepared and circulated in accordance with NEPA, TRPA, and CEQA requirements and includes copies of all comments received and responses to all comments (see Appendix P) and selection of a preferred alternative. Following circulation of this final EIS/EIS/EIR, each of the lead agencies (USFS, TRPA, and CPUC) will follow their respective agency processes for final review and consideration of project approval.

## **ES.2.1 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED**

Areas of controversy include: purpose and need for the project; impacts to scenic quality; impacts to the recreation experience and access to USFS roads; impacts to forest resources, and maintenance and restoration of access ways and staging areas; effects on water quality; effects on air quality; impacts to public health safety; the effects of helicopter use; and the potential for increases in system capacity to support future development. Additional project details requested by commenters and an assessment of suggested alternatives to the project are included in Chapter 3, Project Alternatives. All comments received on the draft EIS/EIS/EIR and responses to those comments are provided in Appendix P of this final EIS/EIS/EIR.

### **PURPOSE AND NEED**

Commenters questioned the need to increase the voltage of the power lines (from 60 kV to 120 kV) and the methodology used to estimate future demand. Commenters also questioned the purpose of the Northstar Tap and the need for the proposed upgrade to the 625 Line. The planning and design processes are described in detail in Chapter 2, Purpose and Need, and Chapter 3, Project Alternatives.

## SCENIC RESOURCES

Commenters were concerned about the scenic consequences of the new, steel poles and larger right of way (ROW). Commenters also requested analysis of the potential aesthetic impacts relative to Truckee's historic district, Truckee's Interstate 80 (I-80) designated scenic corridor, the Truckee River and Legacy Trail, and views of the project area from the surface of Lake Tahoe. Section 4.4, Scenic Resources, includes analysis of potential visual impacts of the project, as well as a contour map of viewsheds and visual simulations. Section 4.9, Heritage, Cultural, and Paleontological Resources addresses possible effects on Truckee's historic district. Also see response to Comment 24-2 in Appendix P.

## RECREATION

Due to proximity to recreational resources, including the Tahoe Rim Trail, commenters requested analysis of impacts to hiking, camping, and day use. Commenters were also concerned with changes to the USFS roadway network, which is currently used for recreation. Recreational resources are addressed in Section 4.8, Recreation.

## FOREST RESOURCES AND RESTORATION OF TEMPORARY WORK AREAS

Commenters requested details regarding the number of trees that would be removed and the treatment of hazard trees. The restoration of current and temporary easements that would be abandoned, staging areas, stringing sites, and other temporary disturbance areas were also topics of comments received. Proposed restoration and maintenance activities are addressed in Chapter 3, Project Alternatives. Details specific to management of forest resources are included in Section 4.3, Forest Resources.

## WATER QUALITY

Commenters expressed concern about the potential for construction and maintenance of power poles near the Truckee River, Trout Creek, wetlands, and other stream environment zones (SEZs) to affect surface water quality. Commenters requested a discussion of effects to drainage patterns and identification of project components within the 50- and 100-year floodplains. Potential disturbance areas and environmental effects of construction and maintenance of the project alternatives are discussed in Section 4.6, Hydrology and Water Quality.

## AIR QUALITY

Commenters requested that analysis of potential adverse impacts to air quality from all phases of the project be evaluated. This analysis is contained in Section 4.13, Air Quality, Greenhouse Gas Emissions, and Climate Change.

## PUBLIC HEALTH AND SAFETY

Comments were received on the issue of electromagnetic fields, which are addressed in Chapter 3, Project Alternatives, and Section 4.10, Hazards and Hazardous Materials. Commenters also expressed concern that locating the power lines in remote areas would increase the risk of wildland fire. See Chapter 3, Project Alternatives, for a discussion of fire potential, which is anticipated to decrease with the use of new, stronger, fire-resistant poles.

## HELICOPTER USE

Helicopters are proposed for use during construction. Commenters requested a full analysis of this project element. Staging areas that may include helicopter landing pads are identified in Chapter 3, Project Alternatives.

Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, includes a full analysis of this project element, specifically in Section 4.13, Air Quality, Greenhouse Gas Emissions, and Climate Change and Section 4.14, Noise.

## **POTENTIAL FOR INCREASES IN SYSTEM CAPACITY TO SUPPORT FUTURE DEVELOPMENT**

General concern has been expressed that increasing the capacity of the North Lake Tahoe Transmission System for system reliability would promote, though infrastructure availability, expanded development of the Lake Tahoe region. The necessity of the proposed upgrades to serve existing demand is discussed in Chapter 2, Purpose and Need. See Chapter 5, Other NEPA, TRPA, and CEQA Mandated Sections, for evaluation of the potential for growth as a result of the increased availability of electrical power.

### **ES.3 SUMMARY DESCRIPTION OF ALTERNATIVES**

Through public scoping and agency coordination, four action alternatives were identified for detailed analysis in the EIS/EIS/EIR. As described in Chapter 2, Purpose and Need, the applicant has determined that improved system reliability and resilience to outages would be achieved through upgrade of the existing 625 and 650 Lines and associated substations from 60 kV to 120 kV, which would permit the entire system to operate at 120 kV. The four action alternatives considered in this EIS/EIS/EIR are variations on addressing the following six key project components:

- ▲ rebuild of the existing 650 Line (with potential for realignments based on alternative);
- ▲ removal and realignment of two short segments of the 650 Line to straighten the line and remove angle points (simplifying line construction and maintenance);
- ▲ rebuild of a 1.6-mile section of the existing 132 Line;
- ▲ rebuild of the Northstar Tap into the Northstar Fold (a “fold” allows for service to be maintained at a substation in the event of an interruption in service on the power lines feeding into either side of substation; for this project, this means that the Northstar Substation could be fed from the 650 Line to the north or south, whereas currently it is a single source feed);
- ▲ upgrade, modification, and/or decommission of six substations; and
- ▲ removal of the existing 625 Line and construction of a new, rerouted 625 Line.

These improvements would increase the ability to maintain the current maximum system loads during an outage on any one of the four legs of the system (i.e., 625 Line, 650 Line, 609 Line, and 629 Line), and decrease reliance on the Kings Beach Diesel Generation Station. In addition, rebuilding and realigning the power lines would reduce the likelihood of outages associated with high winds, felled trees, snow loading, and forest fires and improve access to the lines for maintenance and repair activities.

#### **ES.3.1 ALTERNATIVE 1: PEA ALTERNATIVE**

Alternative 1 was developed in the Proponent’s Environmental Assessment (PEA) prepared by the project applicant (Sierra Pacific Power Company at that time) as part of the original permit application submitted to the CPUC in 2010. Generally, Alternative 1 (PEA Alternative) would locate the 625 Line closer to the Fiberboard Freeway (a paved road between the Mount Watson area north of Tahoe City and the Brockway Summit area) to improve access.

## **ES.3.2 ALTERNATIVE 2: MODIFIED ALTERNATIVE**

Alternative 2 is a modified alternative, which is similar to Alternative 1 (PEA Alternative), but includes rerouting of some portions of the alignment based on public and agency input received during scoping, additional information gathered during detailed field reviews, and further progress on project engineering and design. The intent of the segment reroutes is to avoid or minimize effects on biological, visual, or cultural resources.

## **ES.3.3 ALTERNATIVE 3: ROAD FOCUSED ALTERNATIVE**

Alternative 3 is a road focused alternative, which re-routes the 625 Line to more closely follow the Fiberboard Freeway and other area roadways and places more of the 650 Line along State Route (SR) 267. Alternative 3 (Road Focused Alternative) includes a double-circuit option segment option that is referred to as Alternative 3A. Alternative 3 (Road Focused Alternative) is intended to maximize the proximity of project facilities to existing roadways in order to minimize the need for new access ways, ground disturbance, and associated environmental effects.

## **ES.3.4 ALTERNATIVE 4: PROPOSED ALTERNATIVE**

Alternative 4 (Proposed Alternative) is a combination of Alternative 3 (Road Focused Alternative) for the 625 Line improvements and elements of Alternative 1 (PEA Alternative) and Alternative 3 (Road Focused Alternative) for the 650 Line improvements. Alternative 4 (Proposed Alternative) allows facilities to be in proximity to existing roadways, while maximizing the use of the already upgraded portion of the 650 Line in Segment 650-5.

## **ES.3.5 ALTERNATIVE 5: NO ACTION/NO PROJECT ALTERNATIVE**

Under Alternative 5 (No Action/No Project Alternative), no upgrade of the existing power lines would occur. This alternative would be associated with increased maintenance activities, including some deferred items, such as ROW maintenance and replacement of existing wooden poles. Lines would be operated close to or above their ratings, which would put the line conductor at high risk of annealing (excessive heating and cooling of a conductor that results in decreased tensile strength). The Kings Beach diesel generators would be used when needed, but because the permit for the generators limits the annual operating hours, use would have to be judicious so that hours could be retained throughout the year.

## **ES.4 COMPARATIVE FEATURES OF THE ALTERNATIVES**

Chapter 3, Project Alternatives, provides a detailed description of each of the alternatives under consideration. Tables ES-1a through ES-1c provide a side-by-side comparison of major characteristics and potential effects of each alternative, including miles of new power line, miles of new access ways, acreage of disturbance, trees to be removed, and other features.

## **ES.5 ENVIRONMENTAL IMPACTS AND MITIGATION**

Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, of this Draft EIS/EIS/EIR describes in detail the environmental effects that would result from implementation of the project alternatives. Impacts are determined to be: 1) no impact; 2) less than significant (adverse or potentially adverse effects that are not substantial); 3) significant or potentially significant (substantial or potentially substantial adverse changes in the environment, for which mitigation measures are required); and 4) significant and unavoidable (substantial or potentially substantial adverse changes in the environment that cannot be feasibly reduced to a less-than-significant levels with mitigation measures).

The project includes applicant proposed measures (APMs) developed to avoid, minimize, or compensate for the impacts of the project. These APMs were originally proposed in the June 2010 PEA, and have been modified by the applicant during project development and in response to environmental review. These measures are listed in Chapter 3, Project Alternatives. CalPeco has committed to implementing these measures to reduce the potential direct and indirect impacts that could result from the action alternatives. Therefore, the APMs are considered part of the project description. Where impacts are identified that are not addressed by these APMs, or where the APMs are not adequate to reduce impacts to less than significant levels, the EIS/EIS/EIR recommends additional mitigation measures. APMs will be incorporated into the Mitigation Monitoring, Compliance, and Reporting Program developed for this proposed project, and implementation of the APMs will be monitored in the same fashion as the mitigation measures developed in this EIS/EIS/EIR.

From the standpoint of minimizing environmental effects, Alternative 5 (No Action/No Project Alternative) would be the environmentally preferable/environmentally superior alternative. Under Alternative 5 (No Action/No Project Alternative), no construction would take place and operations and maintenance would continue under existing programs, with the exception of a short-term increase in activity to address needed vegetation management and other ROW maintenance. Little change to the existing environment would occur under Alternative 5 (No Action/No Project Alternative). However, Alternative 5 (No Action/No Project Alternative) would not meet any of the basic project objectives related to system capacity, reliability, resilience, and access, and reduced dependence on the Kings Beach Diesel Generation Station. Ultimately, implementation of Alternative 5 (No Action/No Project Alternative) would lead to power demand regularly exceeding the system design capacity, leading to more frequent system failures and the need for rolling blackouts and other load shedding measures.

Table ES-2 (at the end of this chapter) summarizes the potential environmental effects that would result from implementation of the action alternatives; describes mitigation measures to address significant and potentially significant environmental effects; and identifies the significance of impacts both before and after mitigation.

Based solely on impact significance conclusions, there is not a clear distinction in the level of impact among the four action alternatives. As described in the various impact discussions in Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures, where there are differences in environmental effects among the action alternatives, it is often a matter of some degree of more or less effect among the alternatives rather than one or more of the alternatives generating an environmental effect that the others do not. For example, the reduced project footprint resulting from double-circuit segments in Alternative 2 (Modified Alternative), Alternative 3 (Road Focused Alternative), and Alternative 4 (Proposed Alternative) is anticipated to result in reduced ground disturbance relative to Alternative 1 (PEA Alternative), and therefore lesser potential for effects such as discovery of currently undocumented subsurface cultural resources, removal of habitat, and generation of erosion and siltation, but does not remove the potential for these effects all together. All significant and potentially significant impacts related to these issues would be reduced to less than significant levels with mitigation for all action alternatives; however, Alternative 2 (Modified Alternative), Alternative 3 (Road Focused Alternative), and Alternative 4 (Proposed Alternative) would initially result in less effect, or less potential for effect, relative to Alternative 1 (PEA Alternative). Similarly, whereas poles constructed under all four action alternatives could potentially generate conflicts with safe operation of the Truckee Tahoe Airport, Alternative 3 (Road Focused Alternative) would have the greatest potential for significant impacts because its alignment is closest to the airport runway; Alternative 2 (Modified Alternative) would be less likely to result in significant impacts because its alignment would be farther from the airport runway, and Alternative 1 (PEA Alternative) and Alternative 4 (Proposed Alternative) would be less likely still to generate significant impacts because the alignment would be farthest from the airport runway. However, for all action alternatives, if a significant impact related to airport safety were to occur, the impact could be reduced to a less than significant level with mitigation. The mitigation could consist of placing the line underground, which would generate its own environmental impacts (e.g., additional soil disturbance from excavation) as described in Section 4.10, Hazards and Hazardous Materials.

In many instances, each alternative would result in environmental trade-offs, reducing effects for one environmental issue area, but increasing environmental effects for another. For example, Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative) reduce the amount of vegetation removal relative to other alternatives by placing the power line closer to the Fiberboard Freeway in Segments 625-3 through 625-8 between Tahoe City and Brockway Summit. However, by placing the power line closer to the road, it becomes more visible to recreationists and others using the Fiberboard Freeway, increasing the scenic effects. Conversely, the double-circuit segments (Segments 625-9 and 625-10) under Alternative 2 (Modified Alternative) minimize the visibility of the power line by keeping it in a remote location, but result in increased vegetation removal, both due to the location of the power line alignment and the need to create more permanent access ways to the line.

The numeric information for each alternative provided in Tables ES-1A through ES-1C provides an indication of the scope of activity and relative potential for effects under each of the action alternatives. This information may guide the determination of the environmentally preferable or environmentally superior alternative. When considering the 625 and 650 Lines combined, Alternative 3A (Road Focused Alternative with Double-Circuit Option) would have the least impacts in more categories than any of the other action alternatives, including in areas related to access way requirements, disturbance of SEZ (i.e., areas determined by TRPA to generally owe their biological and physical characteristics to the presence of surface or groundwater) and Protected Activity Centers (PACs) for northern goshawk and California spotted owl, and potential for tree removal. Implementation of Alternative 3A (Road Focused Alternative with Double-Circuit Option), however, would result in unmitigable scenic effects along SR 267, and, as a result, is considered infeasible. The measure adopted to address the impact to scenic resources along SR 267 (APM SCE-7) for the other action alternatives is a setback of the power line. This would not be feasible in Segment D-C OH-1A/650-1 for Alternative 3A (Road Focused Alternative with Double-Circuit Option) because there are residences in the setback area. Second to Alternative 3A (Road Focused Alternative with Double-Circuit Option), Alternative 4 (Proposed Alternative) would have the lowest, or the second lowest, values in many categories, including total number of poles required and the acreage of permanent disturbance. Because Alternative 4 (Proposed Alternative) would have the second lowest potential for project effects, based on relatively low values in the key issue areas identified in Table ES-1C, and would not result in unmitigable scenic impacts, this alternative is considered the environmentally preferable/environmentally superior alternative.

**Table ES-1A Alternatives Comparison Summary for the 625 Line**

Project Characteristic, Resource, Impact	Line Segment																				625 Line Subtotals by Alternative				
	625-1		625-2	625-3		625-4			625-5		625-6			625-7		625-8			625-9*	625-10*	PEA	Mod	RF	RF 3A	PA
	625-1 (PEA, RF, RF3A & PA)	625-1A (Mod)	625-2 (PEA, Mod, RF, RF3A & PA)	625-3 (PEA & Mod)	625-3 (RF, RF 3A & PA)	625-4 (PEA)	625-4A (Mod)	625-4 (RF, RF 3A & PA)	625-5 (PEA & Mod)	625-5 (RF, RF 3A & PA)	625-6 (PEA)	625-6A (Mod)	625-6 (RF, RF 3A & PA)	625-7 (PEA & Mod)	625-7 (RF, RF 3A & PA)	625-8 (PEA)	625-8A (Mod)	625-8 (RF, RF 3A & PA)	625-9 (PEA)	625-10 (PEA)					
Total Poles	14	12	27	61	64	15	15	15	26	27	21	26	22	32	37	16	13	13	39	10	258	264	219	219	219
Total Stringing Sites	4	4	4	10	12	3	2	3	7	4	3	3	3	3	6	6	7	6	4	2	46	41	42	42	42
Miles of Transmission Line	0.5	0.5	1.7	3.6	3.8	0.8	0.8	0.9	1.8	1.9	1.1	1.1	1.1	1.9	2.0	0.8	0.8	0.8	2.3	1.2	15.7	12.1	12.6	12.6	12.6
Miles of New Access Way <sup>2</sup>	0.6	0.6	2.2	3.4	1.1	0.7	0.1	0.1	2.0	0.0	1.0	0.3	0.0	1.7	0.1	0.6	0.8	0	3.3	0.6	16.1	12.0	4.1	4.1	4.1
Miles of New Access Way on Slopes >20%	0.1	1.0	1.0	1.8	0.6	0.5	0.6	0.1	1.0	0	0.5	0.2	0	0.8	0	0.4	0.2	0	2.2	0.2	8.4	5.6	1.7	1.7	1.7
Miles of Existing Roads Requiring Improvement	0.0	0.0	0.7	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0.1	0	1.2	1.1	0.7	0.7	0.7
Miles of Existing Roads Requiring Improvement on Slopes >20%	0.0	0.0	0.1	0	0	0	0	0	0	0	0	0	0	0.0	0	0	0	0	0.1	0	0.2	0.2	0.1	0.1	0.1
Miles of Existing Roads Requiring No Improvement (paved and dirt)	0.7	0.7	3.4	5.4	6.5	3.7	3.7	3.8	2.4	2.4	1.9	1.9	1.9	2.2	2.3	0.9	0.9	0.9	5.2	1.6	27.3	20.6	21.9	21.9	21.9
Miles of Existing USFS System Roads to be Used (no improvement)	0.9	0.2	0.7	5.2	5.2	1.2	1.2	1.2	2.3	2.3	1.9	1.9	1.9	1.9	1.9	0.6	0.6	0.6	3.9	0.5	18.8	14.4	14.4	14.4	14.4
Miles of Existing USFS System Roads to be Used (improved)	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0.1	0	0.5	0.4	0	0	0
Miles of New Access Ways on USFS Land <sup>2</sup>	0	0	1.5	3.4	1.1	0.7	1.0	0.1	2.0	0.0	1.0	0.3	0.0	1.6	0.1	0.4	0.2	0	2.3	0.5	13.4	10.0	2.8	2.8	2.8
Acreage of Temporary Disturbance (including stringing sites)	4.1	4.0	7.4	15.4	20.5	3.0	2.0	5.0	7.6	8.3	3.7	4.3	5.8	5.7	9.8	4.3	4.8	4.4	6.8	4.3	62.1	51.2	65.2	65.2	65.2
Acreage of Permanent Disturbance (including access ways)	2.8	3.4	12.2	29.0	20.5	6.0	6.6	4.3	12.3	9.0	7.6	5.7	5.3	17.0	9.5	6.2	5.5	3.9	23.7	1.9	118.8	91.7	67.5	67.5	67.5
Acreage of Sensitive Habitat Types Within Permanent ROW <sup>3,4,7</sup>	0.1	0.2	0	0.3	0.1	0	0	0	0.2	0.1	0	0	0	0	0	0	0	0	0.2	0	0.6	0.7	0.3	0.3	0.3
Acreage of SEZ Within ROW <sup>5,7</sup>	0.5	0.2	0.2	0.8	0.8	0	0	0	0.5	0.2	0	0	0	0	0	0	0	0	0.1	0	2.1	1.7	1.7	1.8	1.7
Hazard Trees (total number of hazard trees/cubic foot volume) <sup>6</sup>	0/100	0/100	40/4,200	80/9,700	90/10,100	30/6,100	30/5,900	30/5,800	20/1,500 (PEA) 1,600 (Mod)	20/1,600	20/2,000	30/3,100	30/2,700	30/2,800 (PEA) 2,700 (Mod)	30/2,800	10/1,300	20/3,900	10/1,300	60/8,400	10/1,300	310/37,600	250/31,300	240/28,600	240/28,600	240/28,700

**Table ES-1A Alternatives Comparison Summary for the 625 Line**

Project Characteristic, Resource, Impact	Line Segment																				625 Line Subtotals by Alternative				
	625-1		625-2	625-3		625-4			625-5		625-6			625-7		625-8			625-9*	625-10*	PEA	Mod	RF	RF 3A	PA
	625-1 (PEA, RF, RF 3A & PA)	625-1A (Mod)	625-2 (PEA, Mod, RF, RF 3A & PA)	625-3 (PEA & Mod)	625-3 (RF, RF 3A & PA)	625-4 (PEA)	625-4A (Mod)	625-4 (RF, RF 3A & PA)	625-5 (PEA & Mod)	625-5 (RF, RF 3A & PA)	625-6 (PEA)	625-6A (Mod)	625-6 (RF, RF 3A & PA)	625-7 (PEA & Mod)	625-7 (RF, RF 3A & PA)	625-8 (PEA)	625-8A (Mod)	625-8 (RF, RF 3A & PA)	625-9 (PEA)	625-10 (PEA)					
Trees to be Removed (total number of trees >1" dbh/cubic foot volume) <sup>6</sup>	550/10,300	560/10,400	4,330 (PEA, Mod, PA)	8,040 (PEA)	7,240/114,100	2,160/43,200	2,110/41,600	1,970/41,600	4,760 (PEA)	3,490/62,600	2,700/39,000	2,460/29,300	2,220/32,800	3,930 (PEA)	3,450/57,100	2,560/30,500	2,840/49,900	1,650/23,600	6,270/106,200	1,550/19,000	<b>36,860/573,400</b>	<b>29,140/457,700</b>	<b>24,880/401,200</b>	<b>24,880/401,200</b>	<b>24,900/401,200</b>
Cubic Feet of Merchantable Timber to be Removed (conifers ≥ 9") <sup>6</sup>	7,400 (PEA, PA)	7,500 (RF, RF 3A)	40,000	85,000 (PEA)	76,600	28,000	26,800	26,800	61,900	47,700	27,700	19,100	22,300	42,200 (PEA)	40,000	21,300	35,500	16,700	74,900	12,900	<b>401,300</b>	<b>318,900</b>	<b>277,500</b>	<b>277,500</b>	<b>277,500</b>
Cubic Feet of Biomass to be Removed (non-merchantable timber, including hazard trees) <sup>6</sup>	2,900	2,900	19,000	40,100	37,500	15,200	14,800	14,800	19,100	14,900	11,300	10,200	10,500	17,900 (PEA)	17,100	9,200	14,400	6,900	31,300	6,100	<b>172,200</b>	<b>138,800</b>	<b>123,700</b>	<b>123,700</b>	<b>123,700</b>
Northern Goshawk Habitat in Permanent ROW within TRPA Disturbance Zones, Nonurban Areas (acres) <sup>4</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	1.4	<b>3.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Northern Goshawk Habitat in Permanent ROW within USFS PACs (acres) <sup>4</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
California Spotted Owl Habitat in Permanent ROW within USFS PACs (acres) <sup>4</sup>	0	0	0	0	0	0	0	0	1.2	0.8	5.0	3.7	1.8	0	0	0	0	0	0	0	<b>6.2</b>	<b>4.9</b>	<b>2.6</b>	<b>2.6</b>	<b>2.6</b>

Notes:  
 PEA = Alternative 1 (PEA Alternative)  
 Mod = Alternative 2 (Modified Alternative)  
 RF = Alternative 3 (Road Focused Alternative)  
 RF 3A = Alternative 3A (Road Focused Alternative with Double-Circuit Option)  
 PA = Alternative 4 (Proposed Alternative)  
 DC = Double-Circuit Segment

\* Mod, RR, RF 3A, and PA Alternatives would be double circuited. See Table ES-1B.

<sup>1</sup> Values of zero are provided because in these Segments the 625 Line is placed on the same poles as the 650 Line in a double-circuit configuration. Project features and impacts are attributed to the 650 Line for these Segments under RF and PA Alternative.

<sup>2</sup> Many of the new access ways would consist of short spur roads connecting existing roadways to nearby portions of the power line ROW, but are included in the mileage calculations.

<sup>3</sup> Sensitive habitat types include montane riparian, wet montane meadow, seasonal wetland, fresh emergent wetland, and open water.

<sup>4</sup> Where the new power line corridor would follow and expand the width of the existing 625 Line corridor, acreages include only areas within the newly-disturbed expansion area (i.e., the acreages do not include the existing disturbed/managed corridor).

<sup>5</sup> This value accounts for SEZ in the permanent ROW. Due to the limited footprint of the power poles and the ability to span most sensitive habitats, much of this acreage may not be impacted. SEZ refers to areas mapped specifically as SEZ by TRPA within the Tahoe Basin portion of the ROW. SEZ acreage in the ROW includes all of the sensitive habitat acreages that occur within the Tahoe Basin portion of the ROW (montane riparian, open water, wet montane meadow, and seasonal wetland), plus additional area not mapped and quantified as one of the habitats types.

<sup>6</sup> Data source: Calpeco 925 and 650 Electrical Line Upgrade Project: Supplemental Forestry and Vegetation Management Report, Forester's Co-Op, May 2013. Supplemental analysis of APM SCE-7 setback. These totals do not include the temporary impacts associated with removal of the existing 625 Line. Data have been rounded.

<sup>7</sup> Includes implementation of APM SCE-8.

**Table ES-1B Alternatives Comparison Summary for the 650 Line**

Project Characteristic, Resource, Impact	650-1				650-2			650-3	650-4			650-6	650-7	650 Line Subtotals by Alternative				
	650-1 (PEA)	DC OH-1 (RF & PA)	DC OH-1A (RF 3A)	DC OH-3 (Mod)	650-2 (PEA)	DC OH-2 (RF, RF 3A, & PA)	DC OH-4 (Mod)	650-3 (PEA, Mod, RF, RF 3A, & PA)	650-4 (PEA & PA)	650-4A (Mod)	650-4B (RF & RF 3A)	650-6 (PEA, Mod, RF, RF 3A, & PA)	650-7 (PEA, Mod, RF, RF 3A, & PA)	PEA	Mod	RF	RF 3A	PA
Total Poles	32	32	41	28	41	41	39	111	31	30	51	21	11	247	240	267	276	247
Total Stringing Sites	2	4	2	4	6	6	4	9	3	3	4	3	2	25	25	28	26	27
Miles of Transmission Line	1.3	1.3	1.4	1.2	2.0	2.0	2.34	5.0	1.7	1.6	2.9	1.1	0.5	11.5	11.7	12.7	12.7	11.5
Miles of New Access Way	1.8	1.2	0	1.2	1.8	1.8	3.3	4.6	0	0	0	0	0	8.3	9.1	7.6	6.4	7.6
Miles of New Access Way on Slopes >20%	0.3	0.2	0	0.3	1.0	1.0	2.2	2.0	0	0	0	0	0	3.2	4.5	3.1	3.0	3.1
Miles of Existing Roads Requiring Improvement	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1	0	0	0
Miles of Existing Roads Requiring Improvement on Slopes >20%	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1	0	0	0
Miles of Existing Roads Requiring No Improvement (paved and dirt)	2.3	5.1	3.8	3.8	2.2	9.3	7.4	8.3	4.2	4.2	6.3	0.7	0	17.7	24.3	29.6	28.4	29.6
Miles of Existing USFS System Roads to be Used (no improvement)	0	0.5	0.5	0.5	0.2	4.1	4.1	0	0	0	0	0	0	0.2 <sup>6</sup>	4.6	4.6	4.6	4.6
Miles of Existing USFS System Roads to be Used (improved)	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1	0	0	0
Miles of New Access Ways on USFS Land	0.9	0.5	0	1.0	1.3	1.3	2.3	0	0	0	0	0	0	2.2	3.3	1.8	1.3	1.8
Acreage of Temporary Disturbance (including stringing sites)	4.6	6.4	1.5	6.7	5.9	2.0	2.0	19.2	7.0	6.8	11.5	4.6	3.1	44.4	42.4	46.7	41.8	42.3
Acreage of Permanent Disturbance (including access ways)	5.2	8.6	10.7	7.1	13.9	17.8	28.6	25.6	8.2	7.7	15.6	5.4	2.2	69.1	76.6	75.2	77.3	67.8
Acreage of Sensitive Habitat Types Within Permanent ROW <sup>2,3,7</sup>	0.4	0.7	0.1	0.7	0	0	0.2	3.2	4.3	4.5	0	0.7	0	8.4	9.4	4.4	3.9	8.8
Acreage of SEZ Within ROW <sup>4,7</sup>	0.9	1.7	0.3	1.5	0.1	0.3	0.2	0	0	0	0	0	0	1.0	1.7	1.9	0.5	1.9
Hazard Trees (total number of hazard trees/cubic foot volume) <sup>5</sup>	10/ 800	10/ 800	0/ 200	20/ 2,200	30/ 3,300	30/ 3,300	90/ 11,900	50/ 6,800	0/ 0	0/ 0	0/ 0	0/ 0	0/ 0	90/ 10,900	160/ 20,900	90/ 10,900	80/ 10,400	80/ 11,000
Trees to be Removed (total number of trees >1" dbh/cubic foot volume) <sup>5</sup>	4,050/ 31,500	4,070/ 33,700	2,970/ 20,600	5,530/ 50,000	4,170/ 62,600	4,170/ 62,500	8,120/ 136,600	10,260/ 116,100 (PEA, Mod) 116,200 (RF, RF 3A, PA)	0/ 0	1/ 0	360/ 2,100	790/ 6,500	680/ 4,000	19,940/ 220,600	25,380/ 313,200	20,330/ 225,000	19,220/ 211,800	19,960/ 222,800
Cubic Feet of Merchantable Timber to be Removed (conifers ≥ 9") <sup>5</sup>	20,400	22,100	13,000	32,900	42,200	42,200	94,700	72,500 (PEA, Mod, PA) 72,400 (RF, RF 3A)	0	0	1,200	3,800	2,300	141,200	206,200	144,100	135,100	142,900
Cubic Feet of Biomass to be Removed (non-merchantable timber, including hazard trees) <sup>5</sup>	11,200	11,600	7,600	17,100	12,400	12,400	41,900	43,600 (PEA, Mod) 43,700 (RF, RF 3A, PA)	0	0	900	2,700	1,700 (PEA, Mod, PA) 1,600 (RF, RF 3A)	71,500	106,900	72,900	69,000	72,100
Northern Goshawk Habitat in Permanent ROW within TRPA Disturbance Zones, Nonurban Areas (acres) <sup>3</sup>	0.6	1.6	0	3.6	0	0	3.5	0	0	0	0	0	0	0.6	7.1	1.6	0	1.6
Northern Goshawk Habitat in Permanent ROW within USFS PACs (acres) <sup>3</sup>	0.1	0.2	0	0.2	0	0	0	0	0	0	0	0	0	0.1	0.2	0.2	0	0.2
California Spotted Owl Habitat in Permanent ROW within USFS PACs (acres) <sup>3</sup>	0.1	0.4	0	0.4	0	0	0	0	0	0	0	0	0	0.1	0.4	0.4	0	0.4

Notes:  
 PEA = Alternative 1 (PEA Alternative)  
 Mod = Alternative 2 (Modified Alternative)  
 RF = Alternative 3 (Road Focused Alternative)  
 RF 3A = Alternative 3A (Road Focused Alternative with Double-Circuit Option)  
 PA = Alternative 4 (Proposed Alternative)  
 DC = Double-Circuit Segment

<sup>1</sup> Many of the new access ways would consist of short spur roads connecting existing roadways to nearby portions of the power line ROW, but are included in the mileage calculations.  
<sup>2</sup> Sensitive habitat types include montane riparian, wet montane meadow, seasonal wetland, fresh emergent wetland, and open water.  
<sup>3</sup> Where the new power line corridor would follow and expand the width of the existing 625 Line corridor, acreages include only areas within the newly-disturbed expansion area (i.e., the acreages do not include the existing disturbed/managed corridor).  
<sup>4</sup> This value accounts for SEZ in the permanent ROW. Due to the limited footprint of the power poles and the ability to span most sensitive habitats, much of this acreage may not be impacted. SEZ refers to areas mapped specifically as SEZ by TRPA within the Tahoe Basin portion of the ROW. SEZ acreage in the ROW includes all of the sensitive habitat acreages that occur within the Tahoe Basin portion of the ROW (montane riparian, open water, wet montane meadow, and seasonal wetland), plus additional area not mapped and quantified as one of the habitats types.  
<sup>5</sup> Data source: CalPeco 925 and 650 Electrical Line Upgrade Project: Supplemental Forestry and Vegetation Management Report, Forester's Co-Op, May 2013. Supplemental analysis of APM SCE-7 setback. These totals do not include the temporary impacts associated with removal of the existing 625 Line. Data have been rounded.  
<sup>6</sup> This is a smaller total because some of the roads used for the 650 Line under the PEA Alternative have been attributed to Segment 625-9, which is not the case for alternatives with double circuits.  
<sup>7</sup> Includes implementation of APM SCE-7

Table ES-1C Alternatives Comparison Summary															
Project Characteristic, Resource, Impact	625 Line Subtotals					650 Line Subtotals					Totals by Alternative				
	PEA	Mod	RF	RF3A	PA	PEA	Mod	RF	RF3A	PA	PEA	Mod	RF	RF3A	PA
Total Poles	258	264	219	219	219	247	240	267	276	247	505	504	486	495	466
Total Stringing Sites	46	41	42	42	42	25	25	28	26	27	71	66	70	68	69
Miles of Power Line	15.7	12.1	12.6	12.6	12.6	11.5	11.7	12.7	12.7	11.5	27.2	23.8	25.3	25.3	24.1
Miles of New Access Way <sup>1</sup>	16.1	12.0	4.1	4.1	4.1	8.3	9.1	7.6	6.4	7.6	24.4	21.1	11.7	10.5	11.7
Miles of New Access Way on Slopes >20%	8.4	5.6	1.7	1.7	1.7	3.2	4.5	3.1	3.0	3.1	11.6	10.1	4.8	4.7	4.8
Miles of Existing Roads Requiring Improvement	1.2	1.1	0.7	0.7	0.7	0	0.1	0	0	0	1.2	1.2	0.7	0.7	0.7
Miles of Existing Roads Requiring Improvement on Slopes >20%	0.2	0.2	0.1	0.1	0.1	0	0.1	0	0	0	0.2	0.3	0.1	0.1	0.1
Miles of Existing Roads Requiring No Improvement (paved and dirt)	27.3	20.6	21.9	21.9	21.9	17.7	24.3	29.6	28.4	29.6	45.0	44.9	51.5	50.3	51.5
Miles of Existing USFS System Roads to be Used (no improvement)	18.8	14.4	14.4	14.4	14.4	0.2	4.6	4.6	4.6	4.6	19.0	19.0	19.0	19.0	19.0
Miles of Existing USFS System Roads to be Used (improved)	0.5	0.4	0	0	0	0	0.1	0	0	0	0.5	0.5	0	0	0
Miles of New Access Ways on USFS Land <sup>1</sup>	13.4	10.0	2.8	2.8	2.8	2.2	3.3	1.8	1.3	1.8	15.6	13.3	4.6	4.1	4.6
Acreage of Temporary Disturbance (including stringing sites)	62.1	51.2	65.2	65.2	65.3	44.4	42.4	46.7	41.8	42.3	106.5	93.6	111.9	107.0	107.6
Acreage of Permanent Disturbance (including access ways)	118.8	91.7	67.5	67.5	67.5	69.1	76.6	75.2	77.3	67.8	187.9	168.3	142.7	144.8	135.3
Acreage of Sensitive Habitat Types Within Permanent ROW <sup>2,3</sup>	0.6	0.7	0.3	0.3	0.3	8.4	9.4	4.4	3.9	8.8	9.0	10.1	4.7	4.2	9.1
Acreage of SEZ Within ROW <sup>4</sup>	2.1	1.7	1.7	1.8	1.7	1.0	1.7	1.9	0.5	1.9	3.1	3.4	3.6	2.3	3.6
Hazard Trees (total number of hazard trees/cubic foot volume) <sup>5</sup>	310/ 37,600	250/ 31,300	240/ 28,600	240/ 28,600	240/ 28,700	90/ 10,900	160/ 20,900	90/ 10,900	80/ 10,400	80/ 11,000	400/ 48,600	410/ 52,200	330/ 39,600	320/ 39,000	330/ 39,600
Trees to be Removed (total number of trees >1" dbh/cubic foot volume) <sup>5</sup>	36,860/ 573,400	29,140/ 457,700	24,880/ 401,200	24,880/ 401,200	24,900/ 401,200	19,940/ 220,600	25,380/ 313,200	20,330/ 225,000	19,220/ 211,800	19,960/ 220,800	56,800/ 794,000	54,520/ 770,800	45,200/ 226,200	44,100/ 613,000	44,860/ 622,000
Cubic Feet of Merchantable Timber to be Removed (conifers ≥ 9") <sup>5</sup>	401,300	318,900	277,500	277,500	277,500	141,200	206,200	144,100	135,100	142,900	542,500	525,100	421,600	412,600	420,400
Cubic Feet of Biomass to be Removed (non-merchantable timber, including hazard trees) <sup>5</sup>	172,200	138,800	123,700	123,700	123,700	71,500	106,900	72,900	69,000	72,100	243,700	245,700	196,600	192,600	195,800
Northern Goshawk Habitat in Permanent ROW within TRPA Disturbance Zones, Nonurban Areas (acres) <sup>3</sup>	3.3	0	0	0	0	0.6	7.1	1.6	0	1.6	3.9	7.1	1.6	0	1.6
Northern Goshawk Habitat in Permanent ROW within USFS PACs (acres) <sup>4</sup>	0	0	0	0	0	0.1	0.2	0.2	0	0.2	0.1	0.2	0.2	0	0.2
California Spotted Owl Habitat in Permanent ROW within USFS PACs (acres) <sup>4</sup>	6.2	4.9	2.6	2.6	2.6	0.1	0.4	0.4	0	0.4	6.3	5.3	3.0	2.6	3.0

Notes:  
 PEA = Alternative 1 (PEA Alternative)  
 Mod = Alternative 2 (Modified Alternative)  
 RF = Alternative 3 (Road Focused Alternative)  
 RF 3A = Alternative 3A (Road Focused Alternative with Double-Circuit Option)  
 PA = Alternative 4 (Proposed Alternative)

<sup>1</sup> Many of the new access ways would consist of short spur roads connecting existing roadways to nearby portions of the power line ROW, but are included in the mileage calculations.  
<sup>2</sup> Sensitive habitat types include montane riparian, wet montane meadow, seasonal wetland, fresh emergent wetland, and open water.  
<sup>3</sup> Where the new power line corridor would follow and expand the width of the existing 625 Line corridor, acreages include only areas within the newly-disturbed expansion area (i.e., the acreages do not include the existing disturbed/managed corridor).  
<sup>4</sup> This value accounts for SEZ in the permanent ROW. Due to the limited footprint of the power poles and the ability to span most sensitive habitats, much of this acreage may not be impacted. SEZ refers to areas mapped specifically as SEZ by TRPA within the Tahoe Basin portion of the ROW. SEZ acreage in the ROW includes all of the sensitive habitat acreages that occur within the Tahoe Basin portion of the ROW (montane riparian, open water, wet montane meadow, and seasonal wetland), plus additional area not mapped and quantified as one of the habitats types.  
<sup>5</sup> Data source: Calpeco 925 and 650 Electrical Line Upgrade Project: Supplemental Forestry and Vegetation Management Report, Forester's Co-Op, May 2013. Supplemental analysis of APM SCE-7 setback. These totals do not include the temporary impacts associated with removal of the existing 625 Line. Data have been rounded.  
<sup>6</sup> Includes implementation of APMs SCE-7 and SCE-8.

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<b>4.2 Land Use</b>			
<p><b>4.2-1. Introduce uses not listed as permissible in the Plan Area Statement (PAS) or Community Plan, or expand or intensify an existing non-conforming use such that substantial land use conflicts or incompatibility would occur.</b> All components of the action alternatives are listed as permissible in the applicable PASs and Community Plans, except the existing distribution underbuild on the 625 Line within the Lower Truckee (003) PAS and the proposed upgrade of the Kings Beach Substation in the Martis Peak (019) PAS. The existing distribution underbuild in the Lower Truckee (003) PAS is a non-conforming use, but the relocation of the underbuild to the upgraded power poles would neither expand nor intensify this use because the distribution underbuild would simply be moved to the new poles—the capacity, conductor, and related infrastructure would not be altered. The proposed amendment to the Martis Peak (019) PAS would add “Public Utility Center” to the list of permissible uses, would accommodate the expanded substation in the most appropriate location (in the location of the existing substation and more distant from the residential area than would otherwise be allowed), and would allow the decommissioning of the Brockway Substation. The proposed access ways would be accessory to the power lines. The action alternatives would include uses that are listed as both “allowable” and “special” by TRPA Code. The findings in Subsection 21.2.1 of the TRPA Code can be made for those project components defined as special uses in the applicable PAS/Community Plan. Therefore, because the action alternatives would be permissible with the adoption of the amendment to the Martis Peak (019) PAS and necessary special use findings could be made, they would not expand or intensify an existing non-conforming use.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<p><b>4.2-2. Consistency with land use plans, policies, and regulations.</b> Construction, operation, and maintenance of the project have the</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
potential to result in conflicts with some of the policies or regulations adopted by relevant federal, state, and regional (i.e., TRPA) agencies with jurisdiction over the project. However, APMs (see Chapter 3, Project Alternatives) are included as part of the project. Appendix G of this document contains an analysis of the consistency of the project with all applicable policies adopted for the purpose of avoiding or mitigating an environmental effect, and references specific APMs, impact analyses, and mitigation measures that would preclude any policy conflicts and reduce plan consistency impacts to less-than-significant levels.			
<b>4.3 Forestry Resources</b>			
<b>4.3-1. Conflict with or cause rezoning of forest land, timberland, or timberland production zone (TPZ).</b> Implementation of the action alternatives would not result in a conflict with existing Placer County forest land/timberland-related zoning or cause rezoning of forest land, timberland, or TPZ located in the project footprint (i.e., FOR, FOR-B-X-160 AC. MIN., RF-B-X 10 AC. MIN., and TPZ). Electric lines are allowed as proposed without land use permit approval under the Placer Zoning Ordinance.	NI (Alts. 1-4)	No mitigation is required for any of the alternatives.	NI (Alts. 1-4)
<b>4.3-2. Conversion of forest land to non-forest uses or loss of forest land.</b> Implementation of the action alternatives would result in the removal of between approximately 47,100 (Alt. 4) and 58,000 (Alt. 1) trees in up to 219.8 acres of forest land plus hazard tree border zones as part of project construction and long-term vegetation management in the power line ROW and in new access ways. Considering forest regeneration on land currently maintained in the existing 625 Line ROW, overall permanent forest land impact would be between 66.1 acres (Alt. 4) and 107.0 acres (Alt. 2). Tree removal would not result in substantial changes to adjacent stand structure or regional forest land composition or distribution. Forest land would not be lost or converted to a non-forest use as project-related activities are compatible uses with forest land zoning designations in the project area.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<p><b>4.3-3. Change in existing environment that could result in conversion of forest land to non-forest use.</b> Project activities are compatible with Placer County zoning and do not result in zoning changes that could promote growth. Although the proposed project responds to growth planned/authorized by others, it does not itself promote development that could result in forest land conversion. Implementation of the action alternatives would not involve additional changes in the existing environment which, due to their location or nature, could temporarily or permanently result in conversion of forest land to a non-forest use.</p>	NI (Alts. 1-4)	No mitigation is required for any of the alternatives.	NI (Alts. 1-4)
<b>4.4 Scenic Resources</b>			
<p><b>4.4-1. Cause inconsistency with adopted plans.</b> The Tahoe City Community Plan (1994) suggests relocation of the Tahoe City Substation to a specific site known as “the Chimneys” as a means of removing it from public view and thereby improving scenic quality. This action is also defined as Scenic Program Project #135 in the Scenic Quality Improvement Program. Although the Roadway Travel Unit was not in attainment of scenic thresholds at the time substation relocation was recommended, it is now in attainment and has been since 2006. The action alternatives propose to rebuild the Tahoe City Substation in its current location and screen the facility from public view.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<p><b>4.4-2. Create views of rebuilt power lines other project components from sensitive locations.</b> The existing 625 and 650 Lines would be rebuilt using larger poles that would be more conspicuous than the existing line in views from certain public recreation areas, bike trails, and scenic roadway corridors. Implementation of proposed APMs would minimize scenic effects during construction through specific screening and management practices; require use of specific materials, colors, and textures for project elements; and modify power pole and line placement such that views from sensitive locations and scenic resources would be</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
eliminated or minimized.			
<b>4.4-3. Compliance with USFS Visual Quality Objectives.</b> The 625 Line would be constructed within a new alignment on USFS lands within a ROW, and these areas would require new access. The visual effect of the newly cleared ROW, new access ways, and rebuilt power line would meet management goals for visual quality on USFS lands during construction and operation of the project.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.4-4. Result in adverse effects with respect to lighting or glare.</b> The upgraded substations and conductors could introduce additional sources of lighting and glare that are more conspicuous than existing structures. Because substations would be rebuilt in the locations of existing substations (i.e., no new substations) and APMs would provide for: 1) use of non-specular conductor that is mechanically or chemically treated to reduce reflectivity, 2) use of non-reflective finishes on substation structures, and 3) screening of the rebuilt Tahoe City Substation through landscaping and other means, no substantial increase in lighting or glare is anticipated.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.5 Geology, Soils, Land Capability and Coverage</b>			
<b>4.5-1. Exposure of people or structures to seismic hazards.</b> The study area is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. However, several faults are located in the project area that could subject project components to ground shaking and ground failure. Structures proposed as part of the action alternatives would be designed and constructed in accordance with the current minimum seismic safety and structural design requirements set forth in the California Building Code. Therefore, there would be no substantial increased risk of loss, injury, or death or property damage from strong ground shaking alone.	NI (Alts. 1-4)	No mitigation is required for any of the alternatives.	NI (Alts. 1-4)
<b>4.5-2. Potential for soil erosion or soil compaction.</b> Installing and removing power line structures, constructing and/or upgrading substations, upgrading and establishing access ways, removal of	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
existing structures, and installation of new structures associated with the action alternatives could increase the potential for soil erosion due to vegetation removal, soil disturbance, and soil compaction. However, implementation of design features, proposed APMs, and permit conditions would reduce the potential for impact.			
<b>4.5-3. Other soil hazards.</b> Construction of the action alternatives could occur in expansive or unstable soils. Also, because of the variable and steep topography across the study area, construction of the action alternatives could create slope instability. Expansive soils can change in volume, causing damage to structures or foundations. The Natural Resource Conservation Service soil surveys indicate that some moderately expansive soils may exist in the study area. Also, because portions of the study area are located on sloping ground and installation of poles and access ways would require excavations, there is a potential for these activities to create slope instability. Because a geotechnical study of the project area would be completed and recommendations from a resulting Geotechnical Engineering Report (APM SOILS-2) would be implemented prior to construction, potentially expansive or unstable soils and slope instability would be identified and avoided, or mitigated through specialized construction methods.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.5-4. Loss of availability of a known mineral resource or locally important mineral resource recovery site.</b> The existing 132/650 Line (Segment 650-6) crosses an important mineral resource area. The action alternatives would involve replacing the existing wood poles along this segment with steel poles. Construction would occur within the existing ROW and would not alter existing conditions regarding access to mineral resources in this area.	NI (Alts. 1-4)	No mitigation is required for any of the alternatives.	NI (Alts. 1-4)
<b>4.5-5. Land coverage.</b> Adequate allowable land coverage figures are available for all increases in coverage associated with the	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
action alternatives, in accordance with the TRPA land classification system and land coverage requirements. The applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit.			
<b>4.6 Hydrology and Water Quality</b>			
<p><b>4.6-1. Violate any federal, state, regional, or TRPA water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.</b>                      Construction of the action alternatives would result in temporary soil disturbance along the upgraded utility alignment, new access ways and improved road sections, and staging areas. Soil disturbance associated with these construction activities could cause accelerated soil erosion and sediment loss that could be transported to nearby water bodies. Use of hazardous materials during construction (e.g., fuels, lubricants) could result in the release of these materials into nearby water bodies. Construction dewatering could also provide a mechanism for contaminant discharges. These short-term construction impacts would be avoided or minimized through adherence to various federal, state, and local laws, regulations, and programs which require implementation and continual monitoring and maintenance of best management practices (BMPs) to protect water quality during construction. Various measures included as part of the proposed project would further reduce the risk of water quality degradation.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<p><b>4.6-2. Increase the rate or amount of stormwater runoff so that it would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities resulting in increased sources of pollutants reaching surface waters or causing detrimental flooding to property or infrastructure.</b> The action alternatives would include some increases in impervious surfaces associated with pole and</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<p>foundation installations and upgrading of two substations. Any increase in impervious surfaces associated with these activities would be relatively small and only a small portion would occur in areas currently served by existing or planned stormwater facilities. There is little potential to increase the amount or rate of stormwater runoff in locations served by drainage infrastructure in a manner that would exceed the capacity of those existing or planned stormwater facilities or cause detrimental flooding to property or infrastructure. In addition, all installations of the action alternatives would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe Total Maximum Daily Load Program, and existing National Pollutant Discharge Elimination System permits. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided.</p>			
<p><b>4.6-3. Substantially alter existing drainage patterns or alter the course or direction of any water body in a manner that may result in detrimental flooding to property or infrastructure or substantial erosion or siltation that may be carried to surface waters.</b> Although some temporary access ways required for implementation of the action alternatives may cross creeks and drainages, the crossings would only be temporary and would be required under the National Pollutant Discharge Elimination System permits and stormwater pollution prevention plan to install and remove temporary bridges or adequate diversions that would maintain conveyance of anticipated flows without causing aggravated erosion or siltation within the waterway. A portion of the proposed access ways would occur in mountainous terrain resulting in steep grades that could intercept and redirect natural drainages or instigate accelerated erosion and rilling. Without adequate erosion control and drainage</p>	S (Alts. 1-4)	<p><b>Mitigation Measure 4.6-3a (Alts. 1-4): Follow USFS Guidance on Locating and Designing Roads to Protect Water Quality and Incorporate Erosion Control BMPs for all New Access Ways or Improvements to Existing Roads. Avoid Constructing Access Ways Steeper than 15 Percent Gradient Where Feasible and When Required Implement Site-Specific Proven BMPs to Prevent Concentrated Runoff and Gullyng.</b></p> <p><i>During the project design process, the applicant shall follow USFS Guidance (USFS 2011) and coordinate directly with representatives of the LTMBU and Tahoe National Forest in their respective project areas to identify optimum siting, design and erosion control BMP type and placement for new access ways and modified access roads.</i></p> <p><i>USFS guidance on locating and designing roads to minimize problems and risks to water, aquatic, and riparian resources includes (USFS 2011) the following.</i></p>	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
designs these steeply inclined access ways (greater than 15 percent grade) could become a conduit for concentrated flow and substantial erosion.		<ul style="list-style-type: none"> <li>› <i>Fit the terrain, limit the need for excavation, and prevent damage to resources.</i></li> <li>› <i>Avoid riparian areas, wetlands, meadows, overly steep slopes and unstable landforms to the extent practicable.</i></li> <li>› <i>Use bridges or raised prisms with diffuse drainage to sustain flow patterns.</i></li> <li>› <i>Set crossing bottoms at natural channel bed and wet meadow surfaces.</i></li> <li>› <i>Balance cut and fills, consider full bench construction or mechanically stabilized fills on unstable slopes or slopes greater than 60 percent</i></li> <li>› <i>Design road surfaces to dissipate intercepted water via outsloping, insloping with drains or crowning with drains</i></li> <li>› <i>Reduce hydrologic connectivity of the road segment and limit connectivity to water crossings</i></li> <li>› <i>Incorporate stormwater and erosion controls and properly spaced cross drains to disperse flows</i></li> <li>› <i>Design stable ditch configurations and include energy dissipaters at culvert outlets</i></li> </ul> <p><i>Designs will also include minimizing road sections with 15 percent or steeper gradients and outsloping and designing an adequate number of cross-drains. BMPs could include rolling dips, waterbars, rock-dissipaters, or other measures sufficient to meet USFS standards.</i></p> <p><i>More specific design criteria to be followed include the following.</i></p> <ul style="list-style-type: none"> <li>› <i>A typical 150-foot spacing for grade reversals.</i></li> <li>› <i>Locate grade reversals to hydraulically disconnect the road from surface waters.</i></li> <li>› <i>Use drainage dips as an exception when reverse grades cannot be achieved.</i></li> <li>› <i>Contour road alignments to have an average grade of 7 percent.</i></li> <li>› <i>Maximum road grade will equal ½ slope grade when over 7 percent.</i></li> </ul>	

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<p>&gt; <i>Maximum road alignment length of 150-feet over 7 percent grade.</i></p> <p>&gt; <i>Avoid fall line locations.</i></p> <p><b>Mitigation Measure 4.6-3b (Alts. 1-4): Incorporate into Annual Power Line Inspection and Maintenance Routines a Permanent ROW and Access Way/Road Inspection and Maintenance Program.</b></p> <p><i>Include observations and recordings of any aggravated compaction or erosion along the ROW and access ways/roads into the annual power line inspections. Note any evidence of rilling, gullying, rutting, or drainage capture along the ROW and access ways. Also note any effects of unauthorized access. Make repairs and implement measures in line with the USFS Guidance on Locating and Designing Roads to Protect Water Quality to reduce or eliminate any erosion issues including limiting public access via gates, placement of rocks or logs, plantings, or signage; minimizing compaction; interrupting, distributing and attenuating peak flows through rolling dips; check dams, and preventing road capture of drainages via culverts, fords crossings and other mechanisms.</i></p>	
<p><b>4.6-4. Place structures within a 100-year flood hazard area that would impede or redirect flood flows.</b> There are two locations where the action alternatives would place facilities within a 100-year flood hazard area. Given the small footprint of the proposed facilities, placement of poles in the flood hazard area would not appreciably impede or redirect flood flows.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<p><b>4.6-5. Intercept or alter the direction or rate of flow of groundwater or degrade groundwater quality.</b> The action alternatives involve the subsurface installation of steel poles and self-supporting poles with concrete foundations that have the potential to intercept groundwater flows. Given the small diameter and large spacing of the single poles, it is unlikely that</p>	S (Alts. 1-4)	<p><b>Mitigation Measure 4.6-5 (Alts. 1-4): Prepare and Implement a Dewatering and Discharge Plan.</b></p> <p><i>A dewatering and discharge plan shall be developed, submitted to TRPA and the LRWQCB for approval and implemented prior to initiating any excavation activities to protect groundwater resources in addition to surface waters in the event that</i></p>	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
they would have an impact to groundwater direction or rate of flow; however the temporary interception of groundwater during pole excavation and dewatering activities could create the potential to introduce contaminants.		<i>groundwater is intercepted during project activities. The dewatering and discharge plan shall provide methods to protect groundwater during excavations from potential contaminant releases during equipment use and refueling, such as specific spill control and clean up and response measures in the vicinity of excavations. Additionally the dewatering and discharge plan shall include methods to collect and treat the sediment-laden water prior to releasing directly to a surface or groundwater source or demonstrate that it can be used to irrigate or applied as dust control without short-circuiting directly to surface waters.</i>	
<b>4.7 Biological Resources</b>			
<b>4.7-1. Disturbance or loss of common vegetation communities and wildlife habitats.</b> Implementing the action alternatives would result in the removal or disturbance of up to 157 acres of common vegetation communities and habitats, including Sierran mixed conifer forest, red fir forest, Jeffrey pine forest, and montane chaparral. Because these habitats are locally and regionally common and abundant, and implementation of APMs would minimize vegetation removal and require that habitat is restored to pre-project conditions in temporary construction areas, the action alternatives would not substantially reduce the size, continuity, or integrity of any common vegetation community or habitat type.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.7-2. Disturbance or loss of sensitive habitats (jurisdictional wetlands, riparian vegetation, and SEZ).</b> Implementing the action alternatives would result in direct removal and disturbance of sensitive habitats, including waters of the United States, waters of the state, riparian habitat, and SEZs.	S (Alts. 1-4)	<b>Mitigation Measure 4.7-2a (Alts. 1-4): Compensate for Unavoidable Loss of Stream and Riparian Habitat.</b> <i>The following measures would be implemented to avoid or compensate for the loss or degradation of stream or riparian habitat, ensure consistency with Fish and Game Code Section 1602, and further reduce potential adverse effects on riparian habitats:</i> <ul style="list-style-type: none"> <li>› CalPeco shall compensate for permanent riparian habitat impacts at a minimum of a 1:1 ratio through contributions to a CDFW approved wetland mitigation bank or through the development and implementation of a Compensatory Stream and Riparian</li> </ul>	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<p><i>Mitigation and Monitoring Plan aimed at creating or restoring in-kind habitat in the surrounding area. If mitigation credits are not available, stream and riparian habitat compensation shall include establishment of riparian vegetation on currently unvegetated bank portions of streams affected by the project and enhancement of existing riparian habitat through removal of nonnative species, where appropriate, and planting additional native riparian plants to increase cover, continuity, and width of the existing riparian corridor along streams in the project site and surrounding areas. Construction activities and compensatory mitigation shall be conducted in accordance with the terms of a streambed alteration agreement as required under Section 1602 of the Fish and Game Code.</i></p> <p>› <i>The Compensatory Stream and Riparian Mitigation and Monitoring Plan shall include the following:</i></p> <ul style="list-style-type: none"> <li>○ <i>identification of compensatory mitigation sites and criteria for selecting these mitigation sites;</i></li> <li>○ <i>in kind reference habitats for comparison with compensatory riparian habitats (using performance and success criteria) to document success;</i></li> <li>○ <i>monitoring protocol, including schedule and annual report requirements (Compensatory habitat shall be monitored for a minimum of five years from completion of mitigation, or human intervention (including recontouring and grading), or until the success criteria identified in the approved mitigation plan have been met, whichever is longer.);</i></li> <li>○ <i>ecological performance standards, based on the best available science and including specifications for native riparian plant densities, species composition, amount of dead woody vegetation gaps and bare ground, and survivorship; at a minimum, compensatory mitigation planting sites must achieve 80 percent survival of planted riparian trees and shrubs by the end of the five-year maintenance and monitoring period or dead and dying trees shall be replaced</i></li> </ul>	

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<p><i>and monitoring continued until 80 percent survivorship is achieved;</i></p> <ul style="list-style-type: none"> <li>○ <i>corrective measures if performance standards are not met;</i></li> <li>○ <i>responsible parties for monitoring and preparing reports; and</i></li> <li>○ <i>responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.</i></li> </ul> <p><b>Mitigation Measure 4.7-2b (Alts. 1-4): Compensate for Unavoidable Loss of SEZ.</b></p> <p><i>The following measures would be implemented to ensure consistency with TRPA Code Section 61.3 and Fish and Game Code Section 1602 and further reduce potential adverse effects on SEZs, streams, and riparian habitat:</i></p> <ul style="list-style-type: none"> <li>› <i>Within the Tahoe Basin, all reasonable alternatives, including bridge spans, pole spans, and facility relocation; shall be implemented to avoid or reduce the extent of encroachment into SEZs.</i></li> <li>› <i>In instances where there is no feasible alternative to avoid an SEZ, CalPeco shall mitigate all impacts within the boundaries of SEZs by restoring SEZ habitat (land capability district 1b) in the surrounding area, or other appropriate area as determined by TRPA, at a minimum ratio of 1.5:1, consistent with TRPA Code.</i></li> <li>› <i>CalPeco shall retain a qualified restoration ecologist to prepare a restoration plan (see APM BIO-36) that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. The restoration plan for SEZs shall include the following:</i> <ul style="list-style-type: none"> <li>○ <i>identification of compensatory mitigation sites and criteria for selecting these mitigation sites;</i></li> <li>○ <i>complete assessment of the existing biological resources in the restoration areas;</i></li> <li>○ <i>in kind reference habitats for comparison with compensatory SEZs (using performance and success criteria) to document</i></li> </ul> </li> </ul>	

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<p><i>success;</i></p> <ul style="list-style-type: none"> <li>○ <i>monitoring protocol, including schedule and annual report requirements (Compensatory habitat shall be monitored for a minimum of five years from completion of mitigation, or human intervention (including recontouring and grading), or until the success criteria identified in the approved mitigation plan have been met, whichever is longer.);</i></li> <li>○ <i>ecological performance standards, based on the best available science and including specifications for native plant densities, species composition, amount of dead woody vegetation gaps and bare ground, and survivorship; at a minimum, compensatory mitigation planting sites must achieve 80 percent survival of planted vegetation by the end of the five-year maintenance and monitoring period or dead and dying plants shall be replaced and monitoring continued until 80 percent survivorship is achieved;</i></li> <li>○ <i>corrective measures if performance standards are not met;</i></li> <li>○ <i>responsible parties for monitoring and preparing reports; and</i></li> <li>○ <i>responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.</i></li> </ul>	
<p><b>4.7-3. Disturbance or loss of special-status plants.</b> Implementing the action alternatives would result in direct removal and damage of Plumas ivesia plants and degradation or loss of suitable Plumas ivesia habitat. Special-status plants that are not directly removed or physically damaged could be adversely affected indirectly by habitat degradation or loss. APMs included in the project design would minimize, and in some instances, avoid potential adverse effects on special-status plants. Because, through implementation of the APMs, Alternative 1 (PEA Alternative) would not substantially affect the abundance or distribution of any special-status species (either directly or through habitat modifications).</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<p><b>4.7-4. Tree removal and loss of late seral/old growth forest.</b>                      Implementing the action alternatives would result in substantial tree removal, as defined by TRPA, and could result in the loss of late seral/old growth forest stands, which could interfere with attainment of late seral/old growth forest threshold standards.</p>	S (Alts. 1-4)	<p><b>Mitigation Measure 4.7-4 (Alts. 1-4): Conduct a Tree Survey; Avoid Late Seral/Old-Growth Forest; Compensate for Loss of Trees.</b>  <i>A Registered Professional Forester (RPF) shall conduct a focused tree survey to identify, map, and tabulate the number of trees in each relevant size class (6 inches or greater on non-Federal lands in Placer County, greater than 14 inches within the jurisdiction of TRPA, greater than 24 inches eastside, greater than 30 inches westside) that would be removed as a result of the project. Following completion of the focused tree survey, a timber harvest/tree removal plan shall be prepared by a RPF. The plan shall include applicable APMs and additional necessary prescriptions for tree removal, water quality protection, protection of preserved trees, slash disposal, fire protection, and tree replacement. The plan shall contain all information required to be in a tree information report under the Placer County tree ordinance, for obtaining a tree removal permit. The plan shall comply with the minimum standards for tree removal, as described under TRPA Code 61.1.6 and with CAL FIRE timber harvesting plan standards, as applicable, under the Forest Practice Act. Before implementing any project activities that involve tree removal, the timber harvest plan shall be submitted to CAL FIRE for review and approval. Once approved, the plan shall be incorporated into the project design and all conditions of approval shall be implemented. CalPeco shall obtain a tree removal permit from TRPA for tree removal within the Lake Tahoe Basin.</i></p> <p><i>For construction on non-Federal lands within Placer County, CalPeco will implement APM BIO-36 and APM BIO-37 to restore vegetation disturbed by the project and offset the loss of trees in the new 625 Line; however, this may not be sufficient to fully offset the loss of trees resulting from project implementation. If it is determined that the loss of trees protected under County ordinance cannot be fully offset through implementation of APM BIO-37, CalPeco shall either replace trees at an offsite location or contribute to the County's Tree Preservation Fund; as determined in coordination with the</i></p>	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<p><i>County and in accordance with the Placer County Tree Ordinance (12.16.080 Replacement program and penalties). Before Improvement Plans are approved, the applicant shall provide proof to the County that one, or a combination, of the mitigation options described above has been completed and/or funded. Proof of mitigation fulfillment will also be provided to CDFW.</i></p> <p><i>CalPeco shall avoid loss of old growth forest to the extent feasible. If loss of late seral/old growth forest is unavoidable, CalPeco shall compensate for the loss of late seral/old growth forest through the development and implementation of a forest management plan, prepared by a RPF, to facilitate establishment of late seral/old growth forest stands and enhance existing late seral/old growth forest stands. The forest management plan shall include management actions, such as fuels and vegetation treatments, to facilitate and enhance old-growth development within the existing 625 Line to be removed and/or other potential treatment areas. The forest management plan shall clearly describe how the project shall achieve TRPA threshold standards for late seral/old growth forest enhancement, identify priority locations where enhancement actions could be implemented to achieve the plan's objectives, and include a funding component for late seral/old growth forest enhancement projects. The forest management plan shall be approved by TRPA before removal of any forest stands identified as late seral/old growth forest.</i></p>	
<p><b>4.7-5. Introduction and spread of invasive weeds.</b> Project construction could result in the introduction or spread of invasive plant species through seed mixes, equipment, and other materials. Areas disturbed during construction can provide ideal conditions for weed establishment. APMs included in the project design would avoid and minimize potential adverse effects from the introduction and spread of invasive plants, but not necessarily to a less-than-significant level.</p>	<p><b>PS</b> (Alts. 1-4)</p>	<p><b>Mitigation Measure 4.7-5 (Alts. 1-4): Utilize Local Native Seed and Notify Noxious Weed Coordinator.</b></p> <p><i>CalPeco shall utilize locally collected native seed sources for revegetation when possible. Plant and seed material shall be collected from or near the project area, from within the same watershed, and at a similar elevation when possible and with approval of the USFS botanist. Persistent nonnatives such as cultivated timothy (Phleum pretense), orchard grass (Dactylis glomerata), or ryegrass (Lolium spp.) shall not be used.</i></p>	<p><b>LTS</b> (Alts. 1-4)</p>

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<i>After the project is completed, the USFS noxious weed coordinator shall be notified so that the project area can be monitored by the USFS if desired. Monitoring could be for up to three years (as funding allows) subsequent to project implementation to ensure additional nonnative invasive species do not become established in the areas affected by the project and to ensure that known nonnative invasive species do not spread.</i>	
<p><b>4.7-6. Disturbance or loss of special-status wildlife species and habitats.</b> Implementation of the action alternatives could disturb the foraging and movement patterns of individuals, affect breeding activities and reproductive success, cause direct mortality, and disturb or remove suitable habitat for special-status wildlife species. With implementation of APMs to avoid, minimize, and compensate for impacts to wildlife resources generally and several special-status species specifically, the action alternatives are not expected to substantially affect the distribution, breeding productivity, viability, or the regional population of any special-status species.</p> <p>However, vegetation removal under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) would result in permanent habitat loss within TRPA-designated disturbance zones around northern goshawk nests, which is prohibited by TRPA.</p>	<p><b>S</b> (Alts. 1,2) <b>LTS</b> (Alts. 3, 4)</p>	No feasible mitigation has been identified.	<p><b>SU</b> (Alts. 1,2) <b>LTS</b> (Alts. 3, 4)</p>
<p><b>4.7-7. Effects on aquatic habitat.</b> Construction activities such as vegetation clearing, pole installation, pole removal, creation of access ways, and staging near aquatic habitats could temporarily result in adverse impacts to aquatic habitat, including through removal of riparian vegetation; accidental spill and contamination from construction chemicals, fuels, or other hazardous materials; increased erosion, downstream sedimentation, and turbidity; small amounts of fill placed in aquatic habitats; and direct mortality or injury of fish and other aquatic species caused by equipment passing through aquatic habitats. The project's design,</p>	<b>PS</b> (Alts. 1-4)	<p><b>Mitigation Measure 4.7-2a (Alts. 1-4): Compensate for Unavoidable Loss of Stream and Riparian Habitat.</b> <i>The following measures would be implemented to avoid or compensate for the loss or degradation of stream or riparian habitat, ensure consistency with Fish and Game Code Section 1602, and further reduce potential adverse effects on riparian habitats:</i></p> <ul style="list-style-type: none"> <li>› CalPeco shall compensate for permanent riparian habitat impacts at a minimum of a 1:1 ratio through contributions to a CDFW approved wetland mitigation bank or through the development and implementation of a Compensatory Stream and Riparian</li> </ul>	<b>LTS</b> (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<p>construction methods, and incorporation of several APMs designed to protect aquatic resources would minimize, avoid, and partially compensate for these potential impacts to aquatic habitats. However, even with integration of the APMs into project design, project construction could result in loss or degradation of stream or riparian habitat protected under Section 1602 of the Fish and Game Code. Any unavoidable disturbance to the bed and bank of a waterway that provides habitat functions would require a Streambed Alteration Agreement from the California Department of Fish and Wildlife.</p>		<p><i>Mitigation and Monitoring Plan aimed at creating or restoring in-kind habitat in the surrounding area. If mitigation credits are not available, stream and riparian habitat compensation shall include establishment of riparian vegetation on currently unvegetated bank portions of streams affected by the project and enhancement of existing riparian habitat through removal of nonnative species, where appropriate, and planting additional native riparian plants to increase cover, continuity, and width of the existing riparian corridor along streams in the project site and surrounding areas. Construction activities and compensatory mitigation shall be conducted in accordance with the terms of a streambed alteration agreement as required under Section 1602 of the Fish and Game Code.</i></p> <p>› <i>The Compensatory Stream and Riparian Mitigation and Monitoring Plan shall include the following:</i></p> <ul style="list-style-type: none"> <li>○ <i>identification of compensatory mitigation sites and criteria for selecting these mitigation sites;</i></li> <li>○ <i>in kind reference habitats for comparison with compensatory riparian habitats (using performance and success criteria) to document success;</i></li> <li>○ <i>monitoring protocol, including schedule and annual report requirements (Compensatory habitat shall be monitored for a minimum of five years from completion of mitigation, or human intervention (including recontouring and grading), or until the success criteria identified in the approved mitigation plan have been met, whichever is longer.);</i></li> <li>○ <i>ecological performance standards, based on the best available science and including specifications for native riparian plant densities, species composition, amount of dead woody vegetation gaps and bare ground, and survivorship; at a minimum, compensatory mitigation planting sites must achieve 80 percent survival of planted riparian trees and shrubs by the end of the five-year maintenance and monitoring period or dead and dying trees shall be replaced</i></li> </ul>	

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<p><i>and monitoring continued until 80 percent survivorship is achieved;</i></p> <ul style="list-style-type: none"> <li>○ <i>corrective measures if performance standards are not met;</i></li> <li>○ <i>responsible parties for monitoring and preparing reports; and</i></li> <li>○ <i>responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.</i></li> </ul>	
<p><b>4.7-8. Effects on wildlife and fish movement corridors.</b> Known animal movement corridors in the study area include the migratory route of the Loyalton-Truckee mule deer herd and streams that function as migratory and movement routes for fish. Construction activities could cause temporary disturbances to mule deer, fish movements and habitat use. However, the project would not create local, watershed-, or landscape-level barriers that would impair movement, redirect migration, or prevent the use of traditional habitats throughout a species range.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<p><b>4.7-9. Loss of habitat for USFS management indicator species.</b> Implementation of the action alternatives could affect habitat for nine USFS Management Indicator Species (MIS). With integration of APMs into project design to minimize, avoid, and compensate for impacts to biological resources, the project would not result in a substantial loss of habitat for any MIS, alter existing trends in any MIS habitat, or lead to a change in distribution of an MIS across the Sierra Nevada bioregion.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.8 Recreation</b>			
<p><b>4.8-1. Result in a substantial decrease or loss of public access to any lake, waterway, or public lands.</b> Construction would require temporary trail closures and access restrictions in some portions of the project area during the spring and summer, including on public lands used for recreation, to ensure public safety. Construction activities would not occur in winter months and would not affect winter recreation activities in the project area.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
Temporary closures may also be necessary on an infrequent basis during project operation for facility maintenance. The applicant has committed to avoidance of construction during known, permitted recreation events in the project area; advance notification of all construction activities to the public, USFS, and other agencies with jurisdiction over project area lands; and provision of adequate signage and alternate routes for any longer term closures, estimated to be up to one day in any given location. Construction is projected to occur in such a manner that closures would be short-term and of limited duration while numerous other facilities and trails in the region would remain open for use.			
<b>4.8-2. Diminish quality of recreation experience.</b> Construction would require use of passenger and construction vehicles and equipment, including haul trucks, mowers, excavators, front-end loaders, chain saws, chippers, and helicopters. Such activity has the potential to create air emissions, dust, noise, objectionable odors, and visual impacts that could diminish the quality of the recreation experience for users in the vicinity. Permanent project elements (e.g., steel poles, conductor, new and expanded access ways, vegetation management areas) would also be visible in portions of the project area used for recreation and could contribute to diminished quality of recreation experience. As elements of the project, the applicant has committed to implement APMs relative to recreation, scenic, noise, and air quality to reduce or avoid potential adverse impacts in these areas. Construction activities would be temporary, limited to smaller areas of active construction at any given time, and would implement APMs in a variety of technical areas.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.8-3. Adverse effects associated with new or expanded recreation facilities.</b> The project does not propose new recreation facilities or require the construction or expansion of recreation facilities. The new access ways would not be designated or intended for use as recreational facilities and barriers to access by motorized	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

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Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
recreational vehicles would be placed at the entrance to the access ways. However, due to unrestricted public access on USFS land, it is possible that unsanctioned use of the access ways for hiking or skiing could occur. Such use would likely be opportunistic and therefore limited in numbers, and signage and barriers would be in place to discourage unauthorized use.			
<b>4.9 Heritage, Cultural, and Paleontological Resources</b>			
<b>4.9-1. Damage to or destruction of documented significant heritage and cultural resources.</b> The area of potential effect (APE) for the action alternatives contains between nine (Alternative 3) and 17 (Alternative 1) documented heritage and cultural resources recommended or considered eligible for listing in the National Register of Historic Places or California Register of Historical Resources. Construction of the action alternatives could result in a substantial adverse change in the significance of one or more of these resources.	PS (Alts. 1-4)	No feasible mitigation has been identified.	SU (Alts. 1-4)
<b>4.9-2. Damage to or destruction of undocumented significant heritage and cultural resources.</b> Most of the APE has been intensively surveyed for heritage and cultural resources. However, there are portions of the APE where surveys have not yet been completed. In areas that have been surveyed, there also remains a potential for unanticipated, previously unidentified subsurface resources to be discovered during construction. Newly discovered heritage and cultural resources could be eligible for listing in the National Register of Historic Places or California Register of Historical Resources and could be adversely affected during project construction.	PS (Alts. 1-4)	No feasible mitigation has been identified.	SU (Alts. 1-4)
<b>4.9-3. Unanticipated discovery of human remains during construction.</b> One historic cemetery is located within the APE for the existing and proposed 650 Line. Although there is a low potential for human remains to be discovered during ground disturbance for the project, construction activities would have the	PS (Alts. 1-4)	No feasible mitigation has been identified.	SU (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
potential to disturb human remains, including those interred outside of formal cemeteries.			
<b>4.9-4. Discovery of paleontological resources during construction.</b> Due to the known presence of paleontological resources in the region, construction activities in the Mehrten Formation geologic unit have the potential to disturb or destroy newly discovered paleontological resources. However, implementation APMs would prevent substantial damage to important paleontological resources.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.10 Hazards and Hazardous Materials</b>			
<b>4.10-1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.</b> Construction and ongoing operations would require the use of certain materials such as fuels, oils, solvents, and other chemical products that, in larger quantities, could pose a potential hazard to the public or the environment if improperly used or inadvertently released. During operations of the project, the potential would exist that a transformer could fail, resulting in a spill of mineral oil. However, use of hazardous materials at the site for construction, operation, and maintenance would be in compliance with multiple federal, state, and local regulations, including federal regulations as outlined in Title 40 Code of Federal Regulations Part 112, which require implementation of a Spill Prevention, Control, and Countermeasure Plan.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.10-2. Create a significant hazard to the public as a result of blasting activities.</b> Blasting could be conducted as part of project construction to remove or break up rock outcrops. If not conducted properly, blasting could create a hazard to construction personnel and the public.	PS (Alts. 1-4)	<b>Mitigation Measure 4.10-2 (Alts. 1-4): Implement Blasting Safety Measures.</b> <i>If blasting is required as part of project construction, CalPeco shall hire a blasting contractor licensed by the Federal Bureau of Alcohol, Tobacco, and Firearms and who possesses all other necessary licenses and certifications applicable to blasting in the project area. Prior to construction activities that require the use of explosives, the blasting contractor shall prepare and submit a Blasting Safety Plan</i>	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<p><i>(or similar document as required) to the Placer County Engineering and Surveying Division and the local fire protection district or department in which the blasting activity will take place. The plan shall, at a minimum, address the following.</i></p> <ul style="list-style-type: none"> <li><i>› Evidence of licensing as required by the US Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives, experience, and qualifications of all members of the blasting team.</i></li> <li><i>› Pre-blast notifications to the local fire department, residents, landowners, land management agencies, utilities, and others potentially affected by blasting operations.</i></li> <li><i>› The means for safe transportation and on-site storage and security of explosives in accordance with local, state and federal regulations.</i></li> <li><i>› The minimum acceptable weather conditions for blasting.</i></li> <li><i>› Minimum clearance distances between blasting and nearby land uses.</i></li> <li><i>› Traffic control standards and traffic safety measures (if applicable).</i></li> <li><i>› Requirement for provision and use of personal protective equipment.</i></li> <li><i>› Minimum standoff distances and description of blast impact zones and procedures for clearing and controlling access to the impact zones.</i></li> <li><i>› Procedures for handling, setting, wiring, and firing explosives. Also, procedures for handling misfires per federal code.</i></li> <li><i>› Type and quantity of explosives and description of detonation device. Sequence and schedule of blasting rounds, including general method of excavation, lift heights, etc.</i></li> <li><i>› Methods of matting or covering of blast area to prevent flyrock and excessive air blast pressure (where applicable).</i></li> <li><i>› Dust control measures in compliance with applicable air pollution control regulations (to interface with general construction dust control plan).</i></li> </ul>	

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<ul style="list-style-type: none"> <li>› <i>Emergency Action Plan to provide emergency telephone numbers and directions to medical facilities. Procedures for action in the event of injury.</i></li> <li>› <i>Storage of and access to Material Safety Data Sheets for each explosive or other hazardous materials to be used.</i></li> <li>› <i>Description of the insurance for the blasting work.</i></li> </ul>	
<p><b>4.10-3. Potential human health hazards from exposure to existing on-site hazardous materials.</b> Construction could expose workers and the public to hazardous materials currently in the construction zone, and hazardous materials currently onsite could create environmental health hazards if left in place.</p>	PS (Alts. 1-4)	<p><b>Mitigation Measure 4.10-3 (Alts. 1-4): Prepare and Implement a Hazardous Materials Contingency Plan.</b></p> <p><i>A hazardous materials contingency plan shall be prepared that describes the necessary actions that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The contingency plan shall identify evidence that could indicate potential hazardous materials contamination, including soil discoloration, petroleum or chemical odors, presence of USTs, or buried building material. The plan shall include measures to protect worker safety if signs of contamination are encountered (e.g., stopping work in the vicinity of the potential contamination), identify sampling and analysis protocols for various substances that might be encountered (e.g., volatile organic compounds, hydrocarbons, heavy metals), and list required regulatory agency contacts if contamination is found. The plan shall also identify legal and regulatory processes and thresholds for cleanup of contamination. The project applicant shall retain the services of a qualified environmental contractor to prepare the contingency plan. The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the project. The requirements of the plan shall be incorporated in the APM and work practices training that would be implemented as part of APM HAZ-1.</i></p>	LTS (Alts. 1-4)
<p><b>4.10-4. Produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.</b> Construction and ongoing operations would require the use of certain materials such as</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
fuels, oils, solvents, and other chemical products that, in larger quantities, could pose a potential hazard to the public or the environment if improperly used or inadvertently released. Six schools are located within 0.25 mile of the project. However, use of hazardous materials at the site would be in compliance with federal, state, and local regulations.			
<p><b>4.10-5. Conflict with an airport land use plan and potentially generate a safety hazard for people residing or working in the project area.</b> Helicopters would be used for construction, but must follow Federal Aviation Administration regulatory requirements that would prevent conflicts with the Truckee Tahoe Airport Land Use Compatibility Plan (ALUCP) and generation of safety hazards.</p> <p>Under Alternative 1 (PEA Alternative), Alternative 2 (Modified Alternative), and Alternative 4 (Proposed Alternative), portions of Segments 650-3 through 650-7 would be located in ALUCP Compatibility Zones C, D, and E, and in Height Review Overlay Zones. Most new, taller power poles would replace existing poles; no new poles would be placed within different or more sensitive Compatibility Zones. Portions of Segments 650-3 through 650-7 under Alternative 3 (Road Focused Alternative) occur in ALUCP Compatibility Zones B1, C, D, and E, and in Height Review Overlay Zones. New poles in Segment 650-4B would be placed within a more sensitive Compatibility Zone. Depending on site specific conditions, such as proximity to the runway and topography at the pole site, installing power poles that are taller than the existing poles could generate a safety hazard for aircraft entering or leaving the runways, which could also present a hazard to people residing or working in the project area.</p>	PS (Alts. 1-4)	<p><b>Mitigation Measure 4.10-5 (Alts. 1-4): Power Line Shall be Installed in Compliance with Height Requirements Approved by the Truckee Tahoe Airport Land Use Commission.</b></p> <p><i>If, as part of ALUC height review, any proposed power poles are classified as a hazard to flight by the ALUC, the pole heights shall be adjusted to conform with ALUC height requirements, as long as heights do not violate design and safety standards. Minor route adjustments within the existing 200-foot wide resource survey corridor may also be considered to assist in meeting height requirements. If a sufficient height reduction cannot be achieved, the power line in this area shall be installed underground.</i></p>	LTS (Alts. 1-4)
<p><b>4.10-6. Impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan.</b> Construction would create temporary construction-related traffic on local roadways and would require temporary</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
lane/shoulder closures in work zones, resulting in traffic delays that could impair implementation of an emergency response plan or emergency evacuation plan. However, implementation of APMs would reduce the potential for conflicts with implementation of emergency response plans and allow evacuation plans to be implemented if necessary.			
<b>4.10-7. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires.</b> The amount of human activity in the project area would increase during the construction period. The increase in human presence during fire season could result in an increased risk of fire. However, with integration of APMs as a part of project design that require the implementation of a Construction Fire Prevention and Suppression Plan and include other measures to minimize fire risk, project effects would be less than significant.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.11 Public Services and Utilities</b>			
<b>4.11-1. Create the need for new or physically altered government facilities to maintain adequate law enforcement response times.</b> During construction, potential theft and vandalism at construction sites may increase demand for law enforcement services. However, it is standard practice for contractors to provide nighttime lighting for security at staging and material storage areas, and to employ security staff if needed. Therefore, no substantial increase in demand for law enforcement would occur during construction that would alter government services or create the need for additional government facilities that could cause significant impacts. Operations and maintenance of the upgraded lines would not generate a demand for law enforcement services appreciably different from existing conditions.	NI (Alts. 1-4)	No mitigation is required for any of the alternatives.	NI (Alts. 1-4)
<b>4.11-2. Create the need for new or physically altered governmental facilities to maintain adequate fire protection response times.</b> During construction, there would be a temporary	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
increase in fire risk as a result of construction activities, which have the potential to ignite dry vegetation. A fire protection plan would be in place and a water truck would be available at all construction sites. Therefore, no substantial increase in demand for fire protection services would occur during construction that would alter government services or create the need for additional government facilities. Operations and maintenance of the upgraded lines would not result in increased demand for fire protection services, and because line access and monitoring ability would be improved in its new location, demand could be less.			
<b>4.11-3. Create a water supply demand in excess of existing entitlements and resources.</b> Water would be required during the construction period for dust abatement and fire suppression. Water would be obtained from existing hydrants in public ROW or trucked into areas not served by public water lines. During the operations and maintenance phase, demand for water would be the same as under existing conditions. Overall project water demand would be minor relative to existing available supplies.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.11-4. Exceed the capacity of a solid waste disposal facility.</b> The action alternatives would generate solid waste during the construction phase. Some waste would be reused or recycled, while other waste would be taken to a landfill, and treated wood poles and other hazardous wastes would be transported to an approved facility, such as the US Ecology Nevada, Inc. treatment and disposal facility in Beatty, Nevada. Lockwood Regional Landfill has adequate capacity to accept construction waste generated by the project. There are numerous facilities available that can accept hazardous waste.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.11-5. Increase the risk of structural failure of, or substantially interfere with service from, existing utilities.</b> Construction activities involving excavation and grading could potentially damage existing underground utilities, including pipelines for	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
natural gas, water, and wastewater. Electrical service disruptions may also occur as lines are moved and replaced. Transfer of co-located utilities to new poles may result in temporary disruption of cable and telecommunication services.			
<b>4.12 Traffic and Transportation</b>			
<b>4.12-1. Create an adverse effect on existing transportation systems including highway, transit, bicycle, or pedestrian facilities.</b> Temporary, construction-related traffic would be generated on the road network in the project area and temporary lane/shoulder closures in work zones would be required. Construction period impacts could result in a temporary disruption to various modes of surface travel (i.e., transit, automobile, truck, bicycle, and pedestrian); however, implementation of APMs would prevent and minimize adverse effects on the performance of these systems.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.12-2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures or generate 100 or more new daily vehicle trip ends (DVTE) in the Lake Tahoe Basin.</b> Construction would temporarily add traffic to the area roadway network. The amount of additional temporary traffic may exceed 100 new DVTE in the Lake Tahoe Basin during construction; however, these DVTE would be generated on a short term and temporary basis, and would be spread over different locations and times of day. The existing roadway network in the overall project area is expected to have adequate capacity to accept the temporary, localized increases in DVTE due to construction of the project components.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.12-3. Increased motor vehicle, bicyclist, and pedestrian traffic hazards.</b> Construction could create temporary increases in traffic hazards on the road network in the project area as a result of temporary lane/shoulder closures and construction-related traffic in work zones. The construction period traffic hazards could affect	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
all modes of surface travel (i.e., transit, automobile, truck, bicycle, and pedestrian); however, implementation of a traffic control plan and other measures included as part of the project would reduce potential hazards.			
<b>4.12-4. Result in changes to existing parking facilities, or demand for new parking.</b> Construction would necessitate parking vehicles and construction equipment throughout the project footprint, but would not require changes to existing parking facilities or create a demand for new permanent parking facilities.	NI (Alts. 1-4)	No mitigation is required for any of the alternatives.	NI (Alts. 1-4)
<b>4.12-5. Result in the alteration of air traffic patterns.</b> The proposed project could result in a temporary increase in air traffic at the Truckee Tahoe Airport if helicopter flights during construction utilize airport facilities. Helicopter use must comply with applicable Federal Aviation Administration regulations and airport operation requirements. Project construction would be unlikely to result in the alteration of air traffic patterns, and would not result in any alterations that would result in a substantial safety risk.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.12-6. Result in inadequate emergency access.</b> Construction would create temporary construction-related traffic on the road network in the project area and would require temporary lane/shoulder closures in work zones resulting in traffic delays that may affect emergency access. However, through implementation of a traffic control plan and other measures included as part of the project, project effects on the roadway network would not have a substantial adverse effect on emergency access.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.13 Air Quality and Climate Change</b>			
<b>4.13-1. Daily construction-generated emissions of reactive organic gases, oxides of nitrogen (NO<sub>x</sub>), respirable and fine particulate matter less than 10 microns and 2.5 microns in diameter (PM<sub>10</sub> and PM<sub>2.5</sub>), and carbon monoxide (CO).</b>	S (Alts. 1-4)	<b>Mitigation Measure 4.13-1a (Alts. 1-4): Develop and Implement a Construction Equipment Exhaust Emissions Control Plan.</b> <i>The applicant shall provide separate plans, for approval by PCAPCD and NSAQMD, demonstrating that the heavy-duty (50 horsepower</i>	SU (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<p>Construction-generated emissions in Placer County would exceed Placer County Air Pollution Control District (PCAPCD) significance thresholds for NO<sub>x</sub> and PM<sub>10</sub>. Construction-generated emissions in Nevada County would exceed Northern Sierra Air Quality Management District significance thresholds for NO<sub>x</sub>. Construction activity would also generate substantial levels of PM<sub>2.5</sub>. Implementation of the action alternatives would generate emissions that contribute to nonattainment status of ozone, PM<sub>10</sub> and PM<sub>2.5</sub> in the Mountain Counties Air Basin and the nonattainment status of PM<sub>10</sub> in the Lake Tahoe Air Basin.</p>		<p><i>[hp] or more) land-based, off-road vehicles to be used for project-related demolition and construction activity in their respective jurisdictions, including owned, leased, and subcontractor equipment, shall achieve a project wide fleet-average 20 percent NO<sub>x</sub> reduction and 45 percent particulate reduction compared to the most current ARB fleet average that exists at the time of construction. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The applicant shall submit to PCAPCD and NSAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventories shall include the horsepower rating, engine production year, and projected hours of use for each piece of equipment. The inventories shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs in the respective air district. At least 48 hours before the use of heavy duty off-road equipment, the applicant shall provide the respective air district with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. The applicant shall use Sacramento Metropolitan Air Quality Management District's Construction Mitigation Calculator (SMAQMD 2012), which is approved by PCAPCD and NSAQMD, to identify an equipment fleet that achieves this reduction.</i></p> <p><i>This measure does not apply to the use of a helicopter during construction activity because there are no state or federal emissions standards for helicopters and, therefore, no established set of state-wide emission rates. Also, the availability of a more emissions-efficient helicopter suitable for the project is unknown.</i></p> <p><b>Mitigation Measure 4.13-1b (Alts. 1-4): Pay Off-Site Mitigation</b></p>	

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts (by Alternative)	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
		<p><b>Fee to PCAPCD to Off-Set NO<sub>x</sub> Emissions Generated by Construction Activity in Placer County.</b></p> <p><i>The applicant shall pay an off-site mitigation fee into PCAPCD's Clean Air Grants Program for the purpose of reducing NO<sub>x</sub> emitted by project construction activities in Placer County to a less-than-significant level (i.e., less than 82 lb/day). The applicant shall provide a detailed construction schedule to PCAPCD before each construction season (i.e., May through October) that identifies when construction activities at different portions of the project site in Placer County may occur. The applicant shall calculate the fees associated with each construction phase in consultation with PCAPCD staff and the applicant shall pay the specific fee amounts to PCAPCD before each construction phase. The calculation of daily NO<sub>x</sub> emissions shall be based on the cost rate established by PCAPCD's Clean Air Grants Program at the time each calculation and payment is made. PCAPCD's Clean Air Grants Program is part of ARB's statewide Carl Moyer Memorial Air Quality Standards Attainment Program. The program provides grant funding for cleaner-than-required engines and equipment. Grants are administered by PCAPCD to support reductions in emissions of key pollutants which are necessary to meet clean air commitments under regulatory requirements. Eligible projects include cleaner on-road, off-road, locomotive, lawn &amp; garden, light duty passenger vehicles being scrapped and agricultural equipment (ARB 2012; PCAPCD 2012). At the time of writing this EIS/EIS/EIR the cost rate is \$17,080 to reduce 1 ton of NO<sub>x</sub> (ARB 2011; Kuklo, pers. comm., 2013).</i></p>	
<p><b>4.13-2. Contribution of ozone precursors to the Sacramento Federal Ozone Nonattainment Area.</b> Construction-generated emissions of ozone precursors (i.e., reactive organic gases and NO<sub>x</sub>) in the Sacramento Federal Ozone Nonattainment Area would not exceed the <i>de minimis</i> levels. Therefore, the General Conformity would not apply to the proposed project.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<b>4.13-3. Exposure of sensitive receptors to toxic air contaminants (TACs).</b> Some TAC-emitting construction activities would be located approximately 50 feet from existing sensitive receptors that are located adjacent to the power line ROW; however, exposure to sensitive receptors from construction-generated TACs would not be substantial because the duration of construction activity at any one location would be limited. Short-term construction and long-term operation of the proposed project would not result in the exposure of sensitive receptors to substantial TAC concentrations.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.13-4. Exposure of sensitive receptors to odors.</b> The type of proposed land use is not commonly considered a source of odors. While construction of the proposed project could result in temporary emissions of odorous diesel exhaust, it is not anticipated that this release would be excessive, nor would it affect a substantial number of receptors.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.13-5. Greenhouse gas (GHG) emissions.</b> GHG emissions associated with the proposed project would result in less-than-cumulatively considerable GHG emissions and would have a less-than-significant impact on climate change.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<b>4.13-6. Impacts of climate change on the project.</b> Climate change is expected to result in a variety of effects in the project area, including changes to timing and intensity of precipitation resulting in increased risk of landslides associated with ground saturation and increased stormwater runoff. Climate change could also result in increased temperatures, leading to increased wildland fire in the project vicinity. However, there are numerous programs and policies in place to protect against and respond to wildland fire. Moreover, implementation of the proposed project would increase the North Lake Tahoe Transmission System's resilience to disturbance.	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<b>4.14 Noise</b>			
<p><b>4.14-1. Short-term construction noise impacts.</b> Existing noise-sensitive receptors are located in close proximity to proposed construction areas. However, most construction activities would be limited to the less noise-sensitive hours of the day, as permitted by each local jurisdiction. Helicopters would be used for certain construction activities and could exceed noise standards of applicable local jurisdictions if used during the more sensitive times of the day as defined by each jurisdiction. Further, construction activity would be required at night in order to install power lines across I-80, as well as for other activities such as delivery of substation transformers, filling of substation transformers, system transfers, and pouring of foundations. Helicopter use or construction during the more sensitive times of the day could result in temporary increases in construction noise at nearby sensitive receptors (e.g., residences approximately 250 feet to the south of I-80 in the Town of Truckee) and exceed local nighttime noise standards.</p>	S (Alts. 1-4)	<p><b>Mitigation Measure 4.14-1 (Alts. 1-4): Potential Construction Activities Outside Allowable Timeframes.</b>  <i>For all construction activity that is to take place outside of allowable timeframes (typically nighttime construction) within 700 feet of any sensitive land use (e.g., houses, schools, churches, hospitals), the construction contractor shall ensure that noise levels at the nearest sensitive receptors do not exceed 45 dBA <math>L_{eq}</math> in Placer County, 50 dBA <math>L_{eq}</math> in the Town of Truckee, and applicable CNEL standards for TRPA PASs as shown in Table 4.14-3. To achieve compliance with these standards, the applicant shall:</i></p> <ul style="list-style-type: none"> <li><i>› Install temporary noise curtains that meet the following parameters:</i> <ul style="list-style-type: none"> <li><i>○ Install temporary noise curtains as close as possible to the boundary of the construction site within the direct line of sight path of the nearby sensitive receptor(s).</i></li> <li><i>○ Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.</i></li> </ul> </li> </ul>	LTS (Alts. 1-4)
<p><b>4.14-2. Short-term construction vibration impacts.</b> Existing noise-sensitive receptors are located in close proximity to proposed construction areas (e.g., residences in the Kings Beach area and Town of Truckee). Blasting could be required if a rock outcropping were encountered that could not be avoided. For safety reasons, blasting would only take place in remote locations away from residents and occupied buildings. With implementation of APMs NOI-4 and NOI-5, blasting would not result in structural damage to existing buildings or vibration impacts to sensitive receptors.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)

Table ES-2 Summary of Resource Topics/Impacts and Mitigation Measures			
Resource Topics/Impacts	Level of Significance before Mitigation (by Alternative)	Mitigation Measures	Level of Significance after Mitigation (by Alternative)
<p><b>4.14-3. Long-term increases in operational noise.</b> Long-term operational noise would result from stationary sources (e.g., corona noise from power lines, transformer noise from substations, and various noise sources from maintenance operations such as vegetation clearance and vehicles traveling on access roads). However, operation of the action alternatives would not result in any additional stationary noise sources or substantial increases in operational noise sources relative to existing conditions.</p>	LTS (Alts. 1-4)	No mitigation is required for any of the alternatives.	LTS (Alts. 1-4)
<p>Notes:                      NI - no impact                      LTS - less-than-significant impact                      PS - potentially significant impact                      S - significant impact                      SU - significant and unavoidable impact</p>			

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# 1 INTRODUCTION

The US Forest Service (USFS), Lake Tahoe Basin Management Unit (LTBMU) and Tahoe National Forest; the Tahoe Regional Planning Agency (TRPA); and the California Public Utilities Commission (CPUC) are preparing a joint environmental document for the California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade Project. The document is an environmental impact statement (EIS) for the LTBMU and Tahoe National Forest prepared pursuant to the National Environmental Policy Act (NEPA) (42 U.S. Code 4321-4347), the Council on Environmental Quality (CEQ) Regulations Implementing NEPA (40 Code of Federal Regulation [CFR] 1500-1508), Forest Service Manual 1950, and Forest Service Handbook 1909.15; an EIS for TRPA pursuant to the Tahoe Regional Planning Compact (Public Law 96-551), Code of Ordinances, and Rules of Procedure; and an environmental impact report (EIR) for CPUC pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). All three agencies have determined that an EIS/EIS/EIR is needed to effectively analyze the proposal and evaluate impacts. In addition, the US Army Corps of Engineers (USACE), as a federal cooperating agency, will be responsible for the scope and content of the NEPA portion of the environmental document as it pertains to lands within its jurisdictional boundaries in Martis Valley. CalPeco is the project applicant.

## 1.1 PROJECT REQUIRING ENVIRONMENTAL ANALYSIS

The proposed 625 and 650 Electrical Line Upgrade Project would consist primarily of an upgrade of CalPeco's existing 625 and 650 electrical power lines and associated substations from 60 kilovolt (kV) to 120 kV to allow the entire North Lake Tahoe Transmission System to operate at 120 kV. The project would consist of six primary components: 1) removal of the existing 625 Line and construction of a new, rerouted 625 Line; 2) rebuild of the existing 650 Line with potential for realignments based on the action alternatives considered; 3) realignment of two short segments of the 650 Line and removal of the replaced segments; 4) rebuild of the Northstar Tap into a fold (a "fold" allows for service to be maintained at a substation in the event of an interruption in service on either side of the power line feeding it); 5) rebuild of a 1.6-mile long section of the existing 132 Line in the Town of Truckee; and 6) upgrade, modification, and/or decommissioning of six substations. These improvements would increase the ability to maintain the current maximum system loads during an outage on any one of the four sections of the system (described in detail in Chapter 3), and decrease reliance on the Kings Beach Diesel Generation Station. In addition, rebuilding and realigning the power lines would reduce the likelihood of outages associated with high winds, downed trees, snow loading, and forest fires, and would improve access to the lines for maintenance, emergency outage response, and repair activities.

A majority of the project features and proposed activities are located on lands managed by the USFS; these lands are located in the LTBMU and Tahoe National Forest. (Of the approximately 24.1 miles of power line alignment under Alternative 4 [Proposed Alternative], 12.1 miles are in the LTBMU and 1.7 miles are in the Tahoe National Forest.) Portions of the project are also located in the Town of Truckee, in the unincorporated Placer County communities of Kings Beach and Tahoe City, on lands within the USACE owned Martis Creek Lake area managed by the USACE, on lands owned by the State of California, and on private lands.

Through public scoping and agency coordination, four action alternatives were identified for detailed analysis in the EIS/EIS/EIR. Several additional alternatives were considered but determined to be infeasible and rejected from detailed consideration. The four action alternatives define different approaches to implementing the project in various segments along the 625 Line and 650 Line alignments. The analysis included in this EIS/EIS/EIR will be used by the USFS, TRPA, and CPUC to render a decision and select an alternative.

## 1.2 INTENDED USES OF THE EIS/EIS/EIR AND REGULATORY DECISION FRAMEWORK

On May 18, 2011, the USFS LTBMU and Tahoe National Forest, TRPA, CPUC, and the USACE entered into a memorandum of understanding for the preparation of this EIS/EIS/EIR. TRPA, USFS, and CPUC will use the EIS/EIS/EIR to consider the environmental effects, mitigation measures, and action alternatives, when reviewing the project for approval. The EIS/EIS/EIR serves as the USFS's NEPA compliance document; TRPA's compliance document with respect to its Compact, Code of Ordinances, and Rules of Procedure; and as CPUC's CEQA compliance document. Federal cooperating agencies, including the USACE, and state responsible and trustee agencies (discussed below) may also use this EIS/EIS/EIR for subsequent discretionary actions.

### 1.2.1 NATIONAL ENVIRONMENTAL POLICY ACT

NEPA provides an interdisciplinary framework for federal agencies to develop information that will help them to take environmental factors into account in their decision-making (42 USC 4321, 40 CFR 1500.1). NEPA requires preparation of an EIS whenever a proposed major federal action (e.g., a proposal for legislation or an activity financed, assisted, conducted, or approved by a federal agency) would significantly affect the human environment. The principle objectives of NEPA and the CEQ regulations is for the federal government, and those regulated by federal agencies, to design, locate, and operate projects in ways that reduce adverse environmental impacts for existing and succeeding generations.

NEPA requires that a lead agency "include (in an EIS) appropriate mitigation measures not already included in the proposed action or alternatives (40 CFR 1502.14[f])." An EIS shall also include discussions of "means to mitigate adverse environmental impacts (if not fully covered under Section 1502.14[f])." In preparing a record of decision under 40 CFR 1505.2, a lead agency is required to, "[s]tate whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted and summarized where applicable for any mitigation."

CalPeco is seeking to obtain a Special Use Authorization from the USFS for construction of the project on National Forest System land. The USFS is also the lead federal agency for compliance with NEPA and will be responsible for compliance with Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act.

### 1.2.2 TAHOE REGIONAL PLANNING COMPACT, REGIONAL PLAN, AND CODE OF ORDINANCES

TRPA is a bi-state regional planning agency created in 1969 by federal law, the Tahoe Regional Planning Compact, to oversee development on both the California and Nevada sides of Lake Tahoe. Under the Compact, an EIS is an informational document used in the planning and decision-making process for a proposed project. The purpose of an EIS is not to recommend either approval or denial of the project, but to disclose objective information that can be used in rendering an informed decision.

Article VII of the Compact presents important TRPA policies relevant to the preparation and use of an EIS. Key provisions of the article are presented below:

- Article VII (a) (2) states that when acting upon matters that have a significant effect on the environment, TRPA shall "prepare and consider a detailed environmental impact statement before deciding to approve or carry out any project."

- ▲ Article VII (a) (3) states that the EIS shall “study, develop and describe appropriate alternatives to recommended courses of action for any project which involves unresolved conflicts concerning alternative uses of available resources.”
- ▲ Article VII (a) (5) requires TRPA to “initiate and utilize ecological information in the planning and development of resource-oriented projects.”

TRPA is the lead agency under TRPA laws and regulations. Section 6.16 of the TRPA Rules of Procedure require that an EIS is certified to be in compliance, procedurally and substantively, with Article VII of the Compact, Chapter 3 of the Code, and the Rules of Procedure before a project may be approved.

### 1.2.3 CALIFORNIA ENVIRONMENTAL QUALITY ACT

In accordance with the State CEQA Guidelines (14 CCR Section 15064[f][1]), preparation of an EIR is required whenever a project may result in a potentially significant environmental impact. An EIR is an informational document used to inform public agency decision-makers and the general public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts.

CEQA requires that state and local government agencies consider the environmental effects of projects over which they have discretionary authority before taking action on those projects (PRC Section 21000 et seq.). CEQA also requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant environmental effects of a project. If a project would result in significant and unavoidable environmental impacts that cannot be feasibly mitigated to less-than-significant levels, the project can still be approved, but the lead agency decision-makers must issue a “statement of overriding considerations” explaining in writing the specific economic, social, or other considerations that they believe make those significant effects acceptable.

The CPUC is the lead agency for compliance with CEQA for this project. CalPeco must comply with CPUC General Order 131-D, which contains the permitting requirements for the construction, replacement, and maintenance of facilities for the generation of electricity; transmission, power, and distribution line facilities; and substations. CalPeco is seeking to obtain a Permit to Construct (PTC) from the CPUC for this project.

## 1.3 SCOPE AND FOCUS OF THE EIS/EIS/EIR

Pursuant to NEPA, TRPA regulations, and CEQA, the discussion of potential effects on the environment is focused on those impacts that are potentially significant. The LTBMU Forest Plan Standards and Guidelines, TRPA’s Initial Environmental Checklist, and the State CEQA Guidelines Appendix G Initial Study Checklist were used, in part, to determine the scope and focus of this EIS/EIS/EIR.

On March 26, 2012, the USFS, TRPA, and CPUC issued a Notice of Intent (NOI)/Notice of Preparation (NOP). The NOI was published in the Federal Register Volume 77 Issue 69, on April 10, 2012. The NOI/NOP was also sent to the California State Clearinghouse, Nevada State Clearinghouse, cooperating agencies, California responsible and trustee agencies, other interested public agencies, interested parties and organizations and affected property owners (within 300 feet of the project boundaries). The NOI/NOP was used to solicit views of interested persons, organizations, and agencies as they relate to the scope and content of the information to be included and analyzed in the EIS/EIS/EIR, and provide information on the dates and times of public scoping meeting. There is no defined circulation period under NEPA or TRPA regulations; however, CEQA requires a minimum scoping period of 30 days. Accordingly, a public scoping period was set for a 30-day period, between

March 26, 2012 and April 25, 2012. Because the NOI was published in the Federal Register after release of the NOP/NOI, the comment period was extended to May 10, 2012.

Two public scoping meetings were conducted to provide interested parties with the opportunity to learn more about the project and to express their views on the content of the EIS/EIS/EIR. The scoping meetings were held on April 17, 2012 at the North Tahoe Event Center, 8313 North Lake Boulevard, Kings Beach, California; and, on April 19, 2012 at the Truckee Ranger District, 10811 Stockrest Springs Road, Truckee, California. The April 17, 2012 meeting was held before the TRPA Hearings Officer. Appendix A, Notice of Preparation and Scoping Summary Report, of this EIS/EIS/EIR contains the Scoping Summary Report with a table listing the substantive comments on the NOI/NOP as well as copies of the comment letters.

Based on a review of the project and the input received during the scoping process, this EIS/EIS/EIR includes an evaluation of the following environmental issue areas:

- ▲ Land Use
- ▲ Forestry Resources
- ▲ Scenic Resources
- ▲ Geology, Soils, and Land Capability and Coverage
- ▲ Hydrology and Water Quality
- ▲ Biological Resources
- ▲ Recreation
- ▲ Heritage and Cultural Resources
- ▲ Hazards and Hazardous Materials
- ▲ Public Services and Utilities
- ▲ Traffic and Transportation
- ▲ Air Quality, Greenhouse Gas Emissions, and Climate Change
- ▲ Noise
- ▲ Socioeconomics and Environmental Justice
- ▲ Growth Inducing Impacts

In addition, in accordance with the Compact, TRPA has adopted environmental quality standards, or “environmental threshold carrying capacities,” which were initially adopted by the TRPA Governing Board in 1982 (TRPA Resolution 82-11). This EIS/EIS/EIR provides an evaluation of the project alternatives in the context of TRPA’s environmental threshold standards and the ability to achieve and maintain such standards to protect the unique values of the Lake Tahoe Basin. The nine resource areas for which threshold standards were adopted by TRPA are:

- ▲ Water Quality
- ▲ Air Quality
- ▲ Scenic Resources
- ▲ Soil Conservation
- ▲ Fish Habitat
- ▲ Vegetation
- ▲ Wildlife Habitat
- ▲ Noise
- ▲ Recreation

Because the action alternatives would not affect any lands used for agricultural production, zoned for agriculture, or considered important farmland, this issue is not discussed in detail in the EIS/EIS/EIR. Housing is not discussed in detail in this EIS/EIS/EIR as the proposed project does not include construction of housing as part of the project, would not displace existing housing, and would not generate demand for new housing (i.e., no increase in year-round employees that seek housing). Potential project effects on population and employment are addressed in Section 5.5, Growth-Inducing Impacts of the Proposed Project, and Section 5.6, Socioeconomics and Environmental Justice.

## 1.4 USE OF THIS DOCUMENT BY OTHER AGENCIES

Other federal, state, regional, and local agencies are involved in the review and approval of the project, including cooperating federal agencies under NEPA and trustee and responsible agencies under CEQA. Under

NEPA, a cooperating agency can be any other federal agency that has jurisdiction by law, or other federal agency that has special expertise with respect to any environmental impact involved in an action (CFR Section 1501.6). Cooperating agencies are designated by agreement between the NEPA lead agency and the cooperating agency, and are encouraged to actively participate in the NEPA process of the lead agency, review and comment on the NEPA document, and use the document in project decision-making. The USACE will be a cooperating agency responsible for ensuring compliance with the scope and content of the NEPA portion of this joint EIS/EIS/EIR as it pertains to lands within the jurisdictional boundaries of the agency, specifically in Martis Valley.

Under CEQA, a responsible agency is an agency other than the lead agency that has legal responsibility for carrying out or approving a project or elements of a project (PRC Section 21069). A trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California (PRC Section 21070). Responsible and trustee agencies are consulted by the CEQA lead agency to ensure the opportunity for input and also review and comment on the draft document. Responsible agencies also use the CEQA document in their decision-making. For the purposes of this EIS/EIS/EIR document, responsible agencies include the Lahontan Regional Water Quality Control Board, California Department of Fish and Wildlife (CDFW), California Department of Forestry and Fire Protection, California Department of Transportation, California Department of Parks and Recreation, California Tahoe Conservancy, Placer County Air Pollution Control District, Northern Sierra Air Quality Management District, Placer County, and the Town of Truckee. CDFW would also be a trustee agency for the review of this document.

## 1.5 ORGANIZATION OF THIS EIS/EIS/EIR

This EIS/EIS/EIR is organized into the following chapters so that readers can easily obtain information about the project and its specific environmental issues.

The cover sheet identifies the lead agencies, contact information, contact persons, the title of the project and its location, a brief description of the project, a brief abstract, and comment submission information.

The **Executive Summary** presents an overview of the project alternatives, a listing of significant environmental impacts, and a description of areas of controversy and issues to be resolved.

**Chapter 1, Introduction** provides a brief project summary; describes the intended uses of the EIS/EIS/EIR and the regulatory framework; describes the focus and scope of the EIS/EIS/EIR; identifies lead, cooperating, responsible, and trustee agencies that may have discretionary authority or other jurisdiction related to the project; outlines the organization of the document; and provides information on public participation and terminology used in the EIS/EIS/EIR.

**Chapter 2, Purpose and Need** describes the need for the project, project objectives and purpose, and background information relative to the purpose and need.

**Chapter 3, Project Alternatives** provides a description of the existing North Lake Tahoe Transmission System and information on the need for improvement, describes the action alternatives and elements that are consistent across all action alternatives, and provides details for each action alternative. The No Action/No Project Alternative is then described as well as alternatives that were considered during development of the EIS/EIS/EIR but not evaluated further, and the rationale for their dismissal. Required permits and approvals needed for project implementation are listed, as well as measures proposed by the project applicant as part of the project (i.e., Applicant Proposed Measures or APMs) to address or manage potential environmental impacts.

**Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures** provides an introductory section and 14 impact analysis sections divided by resource topic area. The introductory section includes a description of the methodology used and projects considered for the cumulative impact analysis. Each

of the 14 impact analysis sections describes the affected environment (i.e., regulatory setting and environmental setting), presents the assumptions used in the environmental analysis and defines the types of environmental effects, then provides an analysis of impacts at an equal level of detail for all alternatives, including the No Action/No Project Alternative and mitigation measures that would avoid or eliminate significant adverse impacts or reduce them to less-than-significant levels, where feasible. Each impact analysis section also provides a discussion of the existing cumulative conditions and the effect that action alternatives would have on the cumulative condition.

**Chapter 5, Other NEPA, TRPA, and CEQA Mandated Sections** is divided into nine sections that address: 1) environmental effects found not to be significant; 2) significant environmental effects that cannot be avoided; 3) irreversible and irremediable commitment of resources and significant irreversible environmental changes; 4) the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity; 5) growth-inducing impacts; 6) socioeconomics and environmental justice; 7) environmentally superior/environmentally preferred project alternative; 8) consequences for TRPA environmental threshold carrying capacities; and 9) compliance with applicable federal laws, Executive Orders, and state laws and regulations.

**Chapter 6, Consultation and Coordination** identifies agencies and individuals that were contacted and coordinated with during preparation of the EIS/EIS/EIR.

**Chapter 7, References Cited** provides a bibliography of sources cited in the EIS/EIS/EIR.

**Chapter 8, Report Preparers** identifies individuals involved in preparing this EIS/EIS/EIR.

**Chapter 9, Acronyms and Glossary** provides a list of acronyms used in the document and a glossary defining key terms not typically found in common usage.

**Chapter 10, Index** is provided as required by NEPA for easier reference of topics and issues.

## **1.6 PUBLIC PARTICIPATION AND ADDITIONAL STEPS IN THE NEPA/TRPA/CEQA REVIEW PROCESS**

The draft EIS/EIS/EIR was distributed to interested agencies, stakeholder organizations, and individuals on November 8, 2013. This distribution ensured that interested parties had an opportunity to express their views regarding the environmental effects of the project and to ensure that information pertinent to permits and approvals is provided to decision makers.

Public meetings on the draft EIS/EIS/EIR were conducted at the TRPA offices (128 Market Street, Stateline, NV) on November 20 and December 4, 2013. Comments on the draft EIS/EIS/EIR were accepted at the meetings.

Following the close of the public comment period on January 7, 2014, this final EIS/EIS/EIR was prepared and circulated in accordance with NEPA, TRPA, and CEQA requirements and includes responses to all comments and selection of a preferred alternative. Following circulation of this final EIS/EIS/EIR, each of the lead agencies (USFS, TRPA, and CPUC) would follow their respective agency processes:

The Forest Service will follow the Project-Level Predecisional Review Process (Objection Process) (36 CFR 218 Subparts A & B). The Forest Supervisor for the LTBMU and the Forest Supervisor for the Tahoe National Forest are the Responsible Officials for the portions of the project on the respective National Forest System lands. Concurrent with the release of the final EIS/EIS/EIR, the Forest Supervisors will include a draft, unsigned Record of Decision. Individuals or entities who have submitted timely, specific written comments regarding this project will have 45 days to file an objection. The Pacific Southwest Region, Regional Forester is the Reviewing Officer

and will follow the procedures outlined in 36 CFR 218 to consider objections. The decision of the Responsible Officials will be presented in the final Record of Decision.

The District Engineer for USACE, Sacramento District, or a designated representative, is the Responsible Official for the portions of the project on lands managed by the USACE or for any proposed activities that involve the discharge of dredged or fill material into waters of the United States regulated under the Clean Water Act (33 USC 1251, et seq.). USACE will follow the procedures outlined in 33 CFR Parts 320 - 332 when reviewing any permit application submitted under the Clean Water Act.

The TRPA Governing Board will use the final EIS/EIS/EIR when considering approval of the project or an alternative to the project. Before consideration of the final EIS/EIS/EIR by the TRPA Governing Board, the Advisory Planning Commission will review and make a recommendation to the Board regarding certification. The TRPA Governing Board will hold a public hearing to consider certification of the final EIS/EIS/EIR and to decide whether or not to approve the project.

The CPUC will use the final EIS/EIS/EIR in conjunction with other information developed in the CPUC's formal record, to act on the CalPeco application for a PTC the project. The CPUC will determine the adequacy of the final EIS/EIS/EIR and issue a proposed decision that would certify the adequacy of the document and recommend approving or denying the PTC. This proposed decision would be circulated to the Commission where an alternative decision could be drafted. The Commission would vote on which decision to approve. If the CPUC were to approve a project with significant unavoidable environmental impacts, it must state why in a Statement of Overriding Considerations, which would be included in the CPUC's decision on the application.

This final EIS/EIS/EIR was circulated to agencies, organizations, and interested individuals on September 19, 2014. The document is available for review by the public during normal business hours at the following locations:

Tahoe Regional Planning Agency  
P.O. Box 5310  
128 Market Street  
Stateline, Nevada 89449

US Department of Agriculture  
Forest Service  
Lake Tahoe Basin Management Unit  
35 College Drive  
South Lake Tahoe, California 96150

California Public Utilities  
Commission  
505 Van Ness Avenue, 4th Floor  
San Francisco, CA 94102

The document is available online at:

<http://www.trpa.org/get-involved/major-projects/>

[www.fs.fed.us/r5/lbtmu](http://www.fs.fed.us/r5/lbtmu)

[www.cpuc.ca.gov](http://www.cpuc.ca.gov)

## 1.7 TERMINOLOGY USED IN THE EIS/EIS/EIR

The EIS/EIS/EIR uses the following terminology to denote the significance of potential environmental impacts of the project:

**No Impact:** Actions that result in no changes to the physical or human environment. This impact level does not require mitigation.

**Direct and Indirect Effects:** In accordance with NEPA, direct effects are caused by the action and occur at the same time and place, and indirect effects are caused by the action and are later in time or farther removed in distance, but still reasonably foreseeable.

**Beneficial Effect:** An effect that would result in an improvement or favorable change in the physical or human environment. This impact level does not require mitigation.

**Less-than-Significant Impact:** An impact that would not result in a substantial adverse change in the physical or human environment. This impact level does not require mitigation.

**Significant Impact:** A substantial adverse change in any of the physical conditions within the area affected by the project. Feasible mitigation measures or alternatives must be considered in an attempt to reduce significant impacts.

**Potentially Significant Impact:** An impact that would be considered a significant impact as described above if it were to occur; however, the certainty of the impact cannot be immediately determined. For example, although the EIS/EIS/EIR may identify that buried archaeological resources could be found in a particular location, the actual discovery cannot be determined until the time of project construction. For purposes of this EIS/EIS/EIR, a potentially significant impact is treated the same as a significant impact (i.e., it requires consideration of feasible mitigation measures and alternatives).

**Cumulative Impact:** An impact on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions.

**Significance Criteria:** A criterion established to define at what level an impact would be considered significant (i.e., if an impact exceeds a standard of significance, it would be considered significant). Significance criteria may consider scientific and factual data relative to the lead agency, expert opinion based on facts, and other factors.

**Applicant Proposed Measure:** An element incorporated into a project by the applicant for the purpose of lessening or avoiding a potential environmental impact.

**Mitigation Measure:** An action that could feasibly reduce a significant environmental effect. Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments.

In addition, because this environmental document serves three lead agencies, it is useful to identify other terms used herein that are defined by different agencies, and to clarify their meaning in the context of this EIS/EIS/EIR.

**Transmission Line:** CPUC defines “transmission line” as an electrical line that transmits electricity at high voltages, 200 kV or greater. While TRPA regulations do not include a specific definition for transmission lines, its planning documents use the term “transmission facilities” “power transmission” to mean electrical conveyance at any voltage. For purposes of this document, the term “transmission line” is used in accordance with the CPUC definition.

**Power Line:** CPUC defines “power line” as an electrical line that transmits electricity at lower voltages, between 50 kV and 200 kV. TRPA regulations and planning documents include no reference to “power lines.” For purposes of this document, the term “power line” is used to describe the existing and proposed upgraded lines.

**Road:** The criterion for defining a road varies by the agency with jurisdiction. Each land manager or owner may have different requirements for design, construction, maintenance, and use. For the purposes of this document, the term “road,” “roadway” or “access way” are used in a general context to identify the route within the project area that is required for construction and/or operation of the project.

**TRPA Road Definition:** TRPA Code defines “road” as a smooth or paved surface designed for travel by motor vehicles. In general, the impacts are assessed based on the coverage of the road surface.

**National Forest System Road:** Roads on National Forest System lands described in this project are either temporary or permanent. **Temporary Roads** are built as proposed to facilitate the construction of the project. They are completely restored at the conclusion of construction and no longer used or open to

vehicles. **Permanent Roads** are included as part of the National Forest Road System. They are classified in five levels from Maintenance Level 1 (basic custodial care, closed to vehicles) to Maintenance Level 5 (high comfort, passenger car). This project includes roads that are already included in the National Forest System (e.g., Fiberboard Freeway) and new roads. New roads may be both completely new construction or may utilize portions of old legacy roadways. For this project new roads, which include any road not previously part of the National Forest System, are assumed for analysis to be Maintenance Level 2, to facilitate the long term operational and maintenance needs of the project.

**Access Way:** The term “access way” is not specifically defined by any of the lead agencies, but is used generically herein to describe a route within the project area (that may or may not require widening or clearing), that is required for construction and/or operation of the project. For purposes of this document, access ways include several categories of routes, including existing dirt roads, National Forest System roads, existing roads that are not part of a formal designated travel system, new dirt roads constructed as part of the project, and existing and new “two-track” pathways intended for power line operations and maintenance access. The level of road development required is controlled by the land owner.

Definitions for other industry terms used in this document are provided in Chapter 9, Acronyms and Glossary.

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## 2 PURPOSE AND NEED

National Environmental Policy Act (NEPA) regulations (40 Code of Federal Regulations 1502.13) require that an environmental impact statement contain a statement of the purpose and need that briefly specifies the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action. The California Environmental Quality Act (CEQA) Guidelines, Section 15124(b), requires that the project description contain a clear statement of the project objectives, including the underlying purpose of the project. There are no requirements specifically addressing the description of a project's purpose and need in the Tahoe Regional Planning Agency Compact, Rules of Procedure, or Code of Ordinances.

This chapter describes the purpose and need and project objectives for the California Pacific Electric Company (CalPeco) 625 and 650 Electrical Line Upgrade Project in terms of its ability to address system inadequacies, reliability requirements, and federal and state standards.

### 2.1 BACKGROUND

#### 2.1.1 REGULATORY REQUIREMENTS

State and federal regulations govern the provision of safe and reliable electric service by public utilities. California Public Utilities Commission regulations for system reliability are contained in California Public Utilities Code Section 399, which implements the California Legislature's Reliable Electric Service Investments Act (the Act). The Act states that each electrical corporation must operate its electric distribution grid in its service area in a safe, reliable, efficient, and cost-effective manner [399.2(a)(1)] and that prudent investments continue to be made to protect the integrity of the electric distribution grid [399(c)(1)].

Federal requirements include the North American Electric Reliability Corporation (NERC) Reliability Standard TPL-002-0b. This NERC standard requires transmission systems have the capability to supply peak loads at adequate voltage levels without overloading the system components with any one component out of service. This is known as "single contingency reliability" or "N-1 contingency." The North Lake Tahoe Transmission System does not currently meet this federal standard.

#### 2.1.2 EXISTING ELECTRIC SERVICE SYSTEM

On January 1, 2011, CalPeco purchased the Sierra Pacific Power Company's (Sierra Pacific's) California electric service territory. The physical boundaries of the service territory include the California portion of the Lake Tahoe Basin and extend north to Portola and Loyalton and south to Walker in Mono County. The service territory includes the North Lake Tahoe Transmission System, which is a loop that runs from the substations of Truckee to Squaw Valley to Tahoe City to Kings Beach and then back to Truckee. The following lines comprise this loop:

- y one 60 kilovolt (kV) power line (the 609 Line) and one 120 kV power line (the 132 Line) from Truckee to Squaw Valley;
- y one 60 kV power line from Tahoe City to Squaw Valley (the 629 Line);
- y one 60 kV power line from Kings Beach to Tahoe City, (the 625 Line); and
- y one 60 kV power line from Truckee to Kings Beach, (the 650 Line).

The North Lake Tahoe Transmission System is described in detail in Section 3.2, Existing Electrical System.

In addition to these transmission facilities, the Kings Beach Diesel Generation Station provides up to 12 mega volt-amperes (MVA) of additional system capacity during power outages and peak demand periods. (MVA is a measure of electrical power capacity that considers voltage and amperes, similar to a watt). However, the air quality permit for the diesel generation station limits operation to a total of 721 hours per year (taking into account all six generators), providing an operational limit on the degree to which the system can rely on diesel generation of power.

### 2.1.3 SYSTEM CAPACITY DEMANDS

The CalPeco customers served by the North Lake Tahoe Transmission System reside in unincorporated communities along the north shore of Lake Tahoe (i.e., from Tahoe City to Kings Beach), the Northstar community located north of the Lake Tahoe Basin along State Route 267, and the Squaw Valley community located north of the Lake Tahoe Basin along State Route 89. A portion of the system (i.e., the NV Energy-owned section of the 132 Line between North Truckee Substation and Martis Valley Substation) also serves Truckee Donner Public Utility District customers in the Town of Truckee area (i.e., at the Truckee Donner Public Utility District-owned Martis Valley Substation). A resident population of approximately 28,000 is served by the North Lake Tahoe Transmission System (US Census Bureau 2010), but the number of connections and potential demand is actually much higher because the resident population does not reflect that many of the electric customers are second home owners. Approximately half of the electricity load that CalPeco delivers to residential customers is to second homes or rentals (Sierra Pacific 2010: p. 2-3). Tourist and recreation-related facilities are also significant sources of electrical demand in the system area, including ski resorts, hotels, and condominiums.

Seasonal, economic, and demographic characteristics of the region lend themselves to wide swings in electrical demand. Demand in the North Lake Tahoe Transmission System is greatest during the winter months, and typically peaks in late December and January as a result of electric heating of homes, businesses, and tourist accommodations, and ski resort loads, including ski lifts and snow-making. The North Lake Tahoe Transmission System is designed to supply a maximum of 88 MVA under ideal conditions with no lines out of service. In the event of a line loss, the system is only capable of supplying approximately 80 percent of maximum capacity with the Kings Beach diesel generators running at full capacity.

Because of stresses on system facilities, peak electrical demand should not exceed the maximum capacity of the system. However, this condition recently occurred during peak periods resulting in line stress, potential damage to system facilities, risk of extended outages, and the potential need for load shedding (i.e., rolling blackouts). Specifically, a conductor (power line) has a thermal rating that reflects the maximum amount of power that it can safely transmit. When a conductor is forced to transmit in excess of its design capacity thermal rating, the conductor becomes overheated and damaged, leading to risk of electrical fires. At a minimum, such lines experience severe wear, which requires more frequent replacement.

Recently, favorable winter conditions and high levels of tourist activity in the months of December 2012 and January 2013 generated very high electrical demand. On December 30, 2012, in particular, peak demand was extremely high (which is not uncommon in favorable winter conditions) and the system was stressed beyond its design capacity. Accordingly, the power flowing through the lines put the lines in danger of exceeding their thermal rating. Diesel generators were required to provide supplemental power until passage of the peak. In the event of a line loss during this peak period, there would have likely been an extended outage.

### 2.1.4 SYSTEM RELIABILITY

The current North Lake Tahoe Transmission System is exposed to potential outages, most commonly caused by high winds that blow down power line poles, trees that fall onto the power lines, and snow load that causes line

failure. While electrical outages can be commonplace in areas with such hazards as extreme weather and dense forest (in which falling trees can damage lines), a highly reliable electrical system is one that has the ability to respond quickly to such hazards; that is, that adequate power is available and can be redirected from other portions of the system if any one segment is interrupted, and that lines are accessible for repair within a reasonable timeframe.

The reliability of the North Lake Tahoe Transmission System is not adequate and is in need of upgrade. Electricity within the system is provided to end users along a loop of power lines, most of which are 60 kV and, as described above, have recently operated at maximum capacity or excess of maximum capacity during peak periods. Because the lines run so close to capacity during such a period, the ability of the system to reliably redirect power if any one segment is interrupted (single contingency reliability) is limited. This is unacceptable from the standpoint of utility operations, and inadequate to meet federal and state requirements.

Under peak demand conditions, the system cannot currently withstand the loss of a single line segment without overloading other portions of the system, even with the Kings Beach diesel generators operating at full capacity. With the 625 Line rated at 60 kV, the system is unable to maintain the necessary capacity to power Kings Beach under peak demand conditions if the 650 Line is damaged. Likewise, the system is unable to maintain necessary capacity to Tahoe City under peak demand conditions if the 629 Line or 132 Line is damaged. In such circumstances, line losses associated with transmitting electricity around the remaining two legs in the circuit—the 609 and 625 Lines—result in significant voltage drops that can lead to brownouts or blackouts, and overloading that subjects the facilities to potential damage. Increasing the voltage of the North Lake Tahoe Transmission System to 120 kV would provide sufficient reliability and capacity in each critical line of the system to carry maximum system loads during single-contingency outages, so that if one line in the system were not functioning, power could be re-routed and delivered to customers using the other lines in the system. It would also preserve the limited allowable use of the Kings Beach Diesel Generation Station for potential multiple contingency failures (i.e., two or more parts of the system out of service simultaneously). Additional information on system reliability, operation, and capacity is presented in Chapter 3, Project Alternatives (Section 3.2.4).

As noted above, another aspect of system reliability is ready access to the lines to effect repairs in the event of an outage. Currently, the 625 Line experiences the most outages in the North Lake Tahoe Transmission System, with the primary causes being snow loading and downed trees. With respect to access, the 625 Line represents a severe challenge due to its remote location and lack of adequate roadways. Inspections and maintenance are often deferred to the winter months because trucks cannot reach much of the alignment and over-snow vehicles must be used for access. The lack of vehicle access also slows repair response time, resulting in longer outages than if the line were more accessible.

With any one component out of service, the system does not currently have the capability to supply peak loads at adequate voltage levels without overloading the system components. As described above, such an overloaded situation has the potential to result in severe damage to system facilities, even with the Kings Beach diesel generators operating at full capacity. This condition does not meet federal and state reliability requirements.

## 2.1.5 PROJECT PLANNING HISTORY

The need for the project has long been known. Sierra Pacific (prior owner of the electrical lines) had been studying and planning the 625 and 650 Electrical Line Upgrade Project for several years when the system was purchased by CalPeco. The original planning assumptions, project scope, and schedule established by Sierra Pacific were based on a 1996 study of the system needs. Before proceeding with the application, CalPeco believed it necessary to update the assumptions and recommendations of the 1996 study. One of the key factors that supported the need for updated data was the assumed load growth. The annual load growth projected in the Sierra Pacific study was 3 percent, which included 1 percent for normal population and

technology growth factors (i.e., increased electrical usage from high-end televisions, computers, and other devices) and an additional 2 percent for large, sporadic load increases caused by additions or expansions at ski resorts, commercial facilities, or other developments. As Sierra Pacific monitored growth, it adjusted the planned implementation of the 625 and 650 Electrical Line Upgrade Project on an annual basis in response to the fact that actual growth rates were less than the original 3 percent projection.

Although the level of load growth in the North Lake Tahoe area remains uncertain, CalPeco revised the Sierra Pacific estimate of 3 percent load growth downward to 1 percent to account for the recent economic downturn and the limited growth potential in the North Lake Tahoe Transmission System service area. The Lake Tahoe Basin portion of the service area is nearing a buildout condition; approximately 90 percent of privately-owned parcels in the Region have been developed (TRPA 2012). The amount of growth attributable to new development under the recently adopted Regional Plan Update would be limited by the small number of residential development rights and allocations available in the Region, and other growth management regulations that are in effect. For the portions of the project area outside the Lake Tahoe Basin, growth is planned and regulated by the general plans and zoning codes of Placer County, Nevada County, and the Town of Truckee (see also Chapter 5, Other NEPA, TRPA, and CEQA Mandated Sections).

## **2.2 PURPOSE AND NEED AND PROJECT OBJECTIVES**

The proposed project would result in an essential increase in reliability of the North Lake Tahoe Transmission System through improved capacity, line accessibility, ability to re-route and redirect power so as to continue electrical service during a single-contingency outage, and minimizing the use of the Kings Beach Diesel Generation Station. Planned conversion of the North Lake Tahoe Transmission System from its current 60 kV loop with 88 MVA of capacity to a 120 kV loop with 114 MVA of capacity (without use of the Kings Beach Diesel Generation Station) is needed to provide single-contingency reliability in accordance with federal and state requirements.

### **2.2.1 PURPOSE AND NEED**

The project is needed to provide reliable power to the North Lake Tahoe area, to meet federal and state requirements of electrical utilities, and ultimately, to support public health and safety. The project would provide the necessary power to support residential and commercial operations in the service area, reduce potential for extended outages, and reduce fire risk. The current North Lake Tahoe Electric Transmission System has a normal capacity of 88 MVA. The Kings Beach Diesel Generation Station is capable of providing 12 MVA of additional (or back-up) capacity to the North Lake Tahoe Transmission System during outages or high demand and is currently the only source of supplemental power to maintain the current maximum system loads in the event of an outage on any one of the four legs of the system (single-contingency reliability).

The current system, even with the Kings Beach Diesel generators operating at full capacity, is unable to function with an N-1 contingency as is required by the federal agencies that regulate power supply and the associated facilities. This means that during the coincident peak load, even with the diesel generators in operation, if one of the critical line segments is lost, CalPeco would need to implement a load shedding plan. Load shedding is a process that is used to reduce load in the event of an emergency by requiring customer load to be dropped. This is typically handled through an established plan that rolls the blackout to balance the load reduction. Once the peak demand has passed, the system is then restored to normal operation. Use of rolling blackouts as a method of routine operation is unacceptable; for purposes of public health and safety, load shedding must only be used in the event of an emergency. The reason for this is that such an approach does not meet acceptable health and safety response to services such as street lights and traffic control, hospital and medical care, home health care for individuals on medical machines or equipment, fire threat due to line overloading and other critical services

for which consistent, reliable power is essential. The proposed project would meet NERC regulations to provide N-1 contingency and address the existing system limitations.

Load shedding, or outages that result from downed lines wherein the utility is unable to reroute the power, affects a large sphere. These impacts such as loss of power to medical facilities, or home health care, or street and highway traffic control can result in severe impacts to the health and safety of individuals and businesses. The Tahoe system has historically experienced outages from the current system limitations.

The need for the proposed 625 and 650 Electrical Line Upgrade Project has been confirmed both from a transmission planning perspective and from known operational shortcomings. Federal and state electric reliability standards require CalPeco to ensure that the North Lake Tahoe Transmission System performs safely under normal and contingency conditions. The current system does not perform adequately under contingency conditions, and without the proposed upgrades, will continue to fall short of federal reliability requirements.

Although the North Lake Tahoe Transmission System does not incur peak load levels at all times, it must be capable of meeting the maximum demand when it does occur. The system cannot currently provide single-contingency reliability during peak loads, even with use of the Kings Beach Diesel Generation Station, and is experiencing peak demands in excess of design capacity. The proposed project would ensure that the North Lake Tahoe Transmission System complies with federal and state electric reliability regulations and safety standards.

Addressing normal and projected loads, providing single-contingency reliability, and reducing dependence on the Kings Beach Diesel Generation Station would be achieved by upgrading the 625 and 650 Lines and associated facilities (e.g., substations) from 60 kV to 120 kV. Reducing the risk of wildfire hazard would be achieved by replacing existing wooden poles with the proposed steel poles, which are stronger and more resistant to wildfire (see Chapter 3, Project Alternatives, for more details on the proposed project elements). In addition, raising the elevation of the lines and widening the vegetation management corridor, both regulatory requirements when converting from the current 60 kV configuration to 120 kV, would reduce wildfire risk and risk of damage from encroaching vegetation. Increased access to the 625 Line for inspection, maintenance, and repairs would be achieved by re-routing the line to a less remote location with existing access roads, and creating new overland travel ways where needed. Improving truck access to the 625 Line for inspections and maintenance would also increase the lines' resilience to outages.

## 2.2.2 PROJECT OBJECTIVES

The CEQA objectives for the 625 and 650 Electrical Line Upgrade Project mirror those described above for the NEPA purpose and need, and those identified by Sierra Pacific in its 2010 California Public Utilities Commission application. In summary, the objectives of the project are to:

1. Provide normal capacity for current and projected loads.
2. Provide reliable capacity to assure adequate service to all customers during single-contingency outages.
3. Reduce dependence on the Kings Beach Diesel Generation Station.
4. Reduce the risk of fire hazards and outage durations associated with wooden poles and encroaching vegetation.
5. Provide more reliable access to the 625 Line for operation and maintenance activities.

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## **3 PROJECT ALTERNATIVES**

This chapter describes a reasonable range of project alternatives consistent with the requirements of the National Environmental Policy Act (NEPA), Tahoe Regional Planning Agency (TRPA) ordinances and procedures, and the California Environmental Quality Act (CEQA). The action alternatives carried forward for detailed evaluation and consideration in this joint Environmental Impact Statement/Environmental Impact Statement/Environmental Impact Report (EIS/EIS/EIR) have each been formulated to accomplish most of the basic objectives of the project discussed in Chapter 2, Purpose and Need.

### **3.1 REQUIREMENTS FOR ALTERNATIVES**

Consideration of alternatives that would achieve the basic objectives of a project is required under NEPA, TRPA, and CEQA regulations. To aid informed decision-making and public participation, four action alternatives were developed that comply with the specific requirements of these regulations and meet the underlying purpose and objectives of the project (described in Section 2.2, Purpose and Need and Project Objectives). This Draft EIS/EIS/EIR also describes and evaluates the No Project/No Action alternative (Alternative 5) to provide the decision-makers and the public with an overview of what could reasonably be expected to occur if none of the action alternatives were approved and implemented. This chapter also describes various alternatives that were considered but eliminated from detailed evaluation because they are either infeasible, do not meet most of the basic project objectives, or do not avoid or substantially lessen one or more of the potentially significant effects of other alternatives (see Section 3.5, Alternatives Considered but Eliminated from Detailed Evaluation, below).

#### **3.1.1 NATIONAL ENVIRONMENTAL POLICY ACT REQUIREMENTS**

The Council on Environmental Quality Regulations for Implementing NEPA Section 1502.14 require that an EIS:

- ▲ explore and objectively evaluate all reasonable alternatives,
- ▲ discuss reasons for eliminating considered alternatives,
- ▲ consider each alternative in a level of detail that allows for comparative evaluation,
- ▲ include reasonable alternatives not within the jurisdiction of the lead agency,
- ▲ analyze the no action alternative,
- ▲ identify the lead agency's preferred alternative, and
- ▲ include appropriate mitigation measures not already included in the proposed action or alternatives.

#### **3.1.2 TAHOE REGIONAL PLANNING AGENCY**

Environmental Impact Statements are addressed in Article VII of the TRPA Compact, which requires that TRPA prepare and consider a detailed EIS before deciding to approve or carry out a project. The EIS must study, develop, and describe appropriate alternatives to the recommended courses of action for any project that involves unresolved conflicts concerning alternative use of available resources.

#### **3.1.3 CALIFORNIA ENVIRONMENTAL QUALITY ACT**

In accordance with Section 15126.6 of the State CEQA Guidelines, the alternatives analysis must:

- ▲ describe a range of reasonable alternatives for the project that could feasibly attain most of the basic objectives of the project, but would substantially lessen or avoid any of the significant effects of the project;

- ▲ focus on alternatives capable of avoiding or substantially lessening any of the significant environmental impacts of the project, even if they may be more costly or could otherwise impede some of the project's objectives; and
- ▲ evaluate the comparative merits of the alternatives.

In addition to the guiding principles for selection of alternatives set forth above, the State CEQA Guidelines require that the environmental document evaluate a no project alternative (that is, the consequences of taking no action); identify alternatives that were initially considered but then eliminated from detailed evaluation and provide the reasoning for their dismissal; and identify the "environmentally superior alternative." In addition, CEQA Guidelines Section 15126.6(f)(2)(A) requires that the analysis of alternatives identify whether any of the potentially significant effects of the project would be avoided or substantially lessened by placing the project in another feasible location. Accordingly, this document includes a discussion of potential off-site alternatives that were considered but rejected for detailed evaluation and the reasons for their rejection (see Section 3.5, Alternatives Considered but Eliminated from Detailed Evaluation, below).

This document provides comparable detail in the analysis of the alternatives. A full range of reasonable alternatives (including the applicant's preferred alternative, identified as the Proposed Alternative) is presented for public review. The alternatives described and evaluated in detail in this document include variations on alignments and single circuit versus double-circuit configurations (a double circuit would put portions of the 625 and 650 Lines on the same poles) to provide flexibility to the US Forest Service (USFS), TRPA, and the California Public Utilities Commission (CPUC) in selecting the alternative that best meets the basic project objectives while taking into account the significant or potentially significant impacts on the human and physical environments. The Proposed Alternative was identified only after public scoping comments were received, environmental studies were completed, and input from the lead and cooperating agencies was considered.

## **3.2 EXISTING ELECTRICAL SYSTEM**

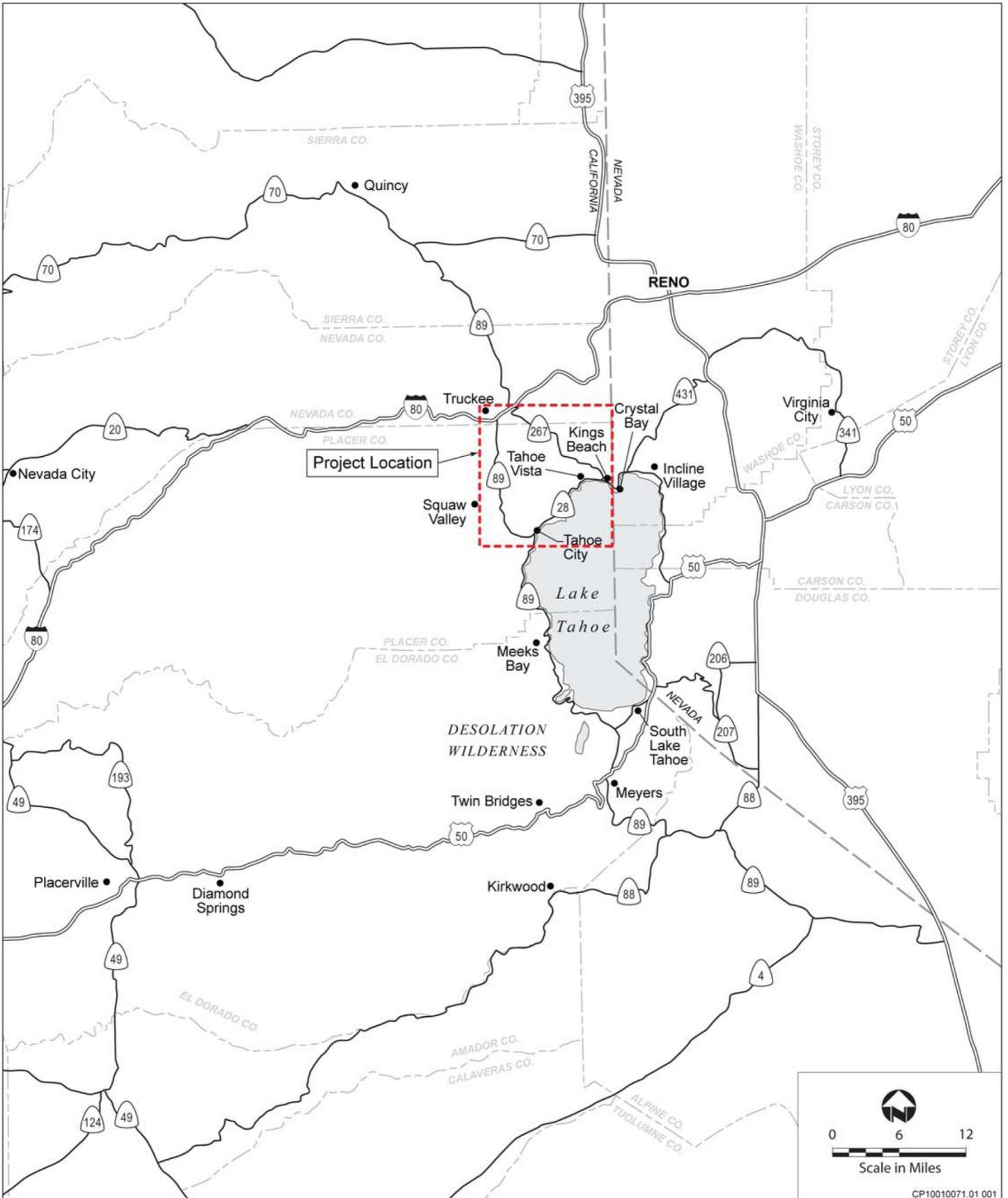
### **3.2.1 LOCATION**

The existing North Lake Tahoe Transmission System is located in northeastern Placer County and southeastern Nevada County, California (see Exhibit 3-1). The project components are predominantly located on lands managed by the US Department of Agriculture, USFS; these lands are located in the Tahoe National Forest and in the Lake Tahoe Basin Management Unit (LTBMU). The project area also includes the Town of Truckee and the unincorporated communities of Kings Beach and Tahoe City, as well as Martis Creek Lake managed by the US Army Corps of Engineers (USACE) and Burton Creek State Park (see Exhibit 3-2). The project area is predominantly forested, with segments of residential, industrial, and tourism-related land uses where the project components enter more developed communities.

### **3.2.2 SYSTEM OVERVIEW**

The electrical lines and associated infrastructure are owned by the California Pacific Electric Company (CalPeco), the applicant. The North Lake Tahoe Transmission System (so named by CalPeco although the loop includes components both within and outside of the Lake Tahoe Basin) is a loop comprised of 60 kilovolt (kV) and 120 kV electrical lines connecting Truckee, Squaw Valley, Tahoe City, and Kings Beach. As depicted in Exhibit 3-2, the North Lake Tahoe Transmission System currently consists of:

- ▲ one 60 kV power line (609 Line) and one 120-kV power line (132 Line) from Truckee to Squaw Valley,
- ▲ one 120 kV power line (currently operating at 60-kV) from Squaw Valley to Tahoe City (629 Line),
- ▲ one 60 kV power line from Tahoe City to Kings Beach (625 Line), and
- ▲ one power line from Kings Beach to Truckee (650 Line) that is 60 kV except for a segment (650-5) near the Placer/Nevada county line that was previously upgraded to 120 kV, but is currently operating at 60 kV.



Source: Adapted by Ascent Environmental in 2012

Exhibit 3-1

Regional Location



Typically, a 30-foot wide access/operations/maintenance right-of-way (ROW) easement is held for the existing lines and associated facilities, although the width of the easement may vary based on the needs for system operations and maintenance, the line voltage, negotiations with landowners, and other factors. The 60 kV loop serves four substations, and the single 120 kV circuit serves two substations. The 60 kV loop is fed from the Truckee Substation and the 120 kV circuit is fed from North Truckee Substation. See Exhibit 3-3, which depicts the current configuration of the North Lake Tahoe Transmission System.

### 3.2.3 SYSTEM ELEMENTS PROPOSED FOR MODIFICATION

The following is a detailed description of the components of the existing electrical system that are being considered for upgrade or modification as part of the 625 and 650 Electrical Line Upgrade Project. Exhibit 3-2 includes numbered segments to orient the reader to the respective sections of existing power line described, by segment, in the sections below.

#### 625 LINE

The existing 60 kV 625 Line generally runs in a northeast-southwest direction between the communities of Kings Beach and Tahoe City. The alignment is set back from (typically by a mile or more), but roughly parallel to, Lake Tahoe's northwest shoreline. Most of the 625 Line is located on land managed by the LTBMU and is within TRPA's planning area.

#### SEGMENT 625-1

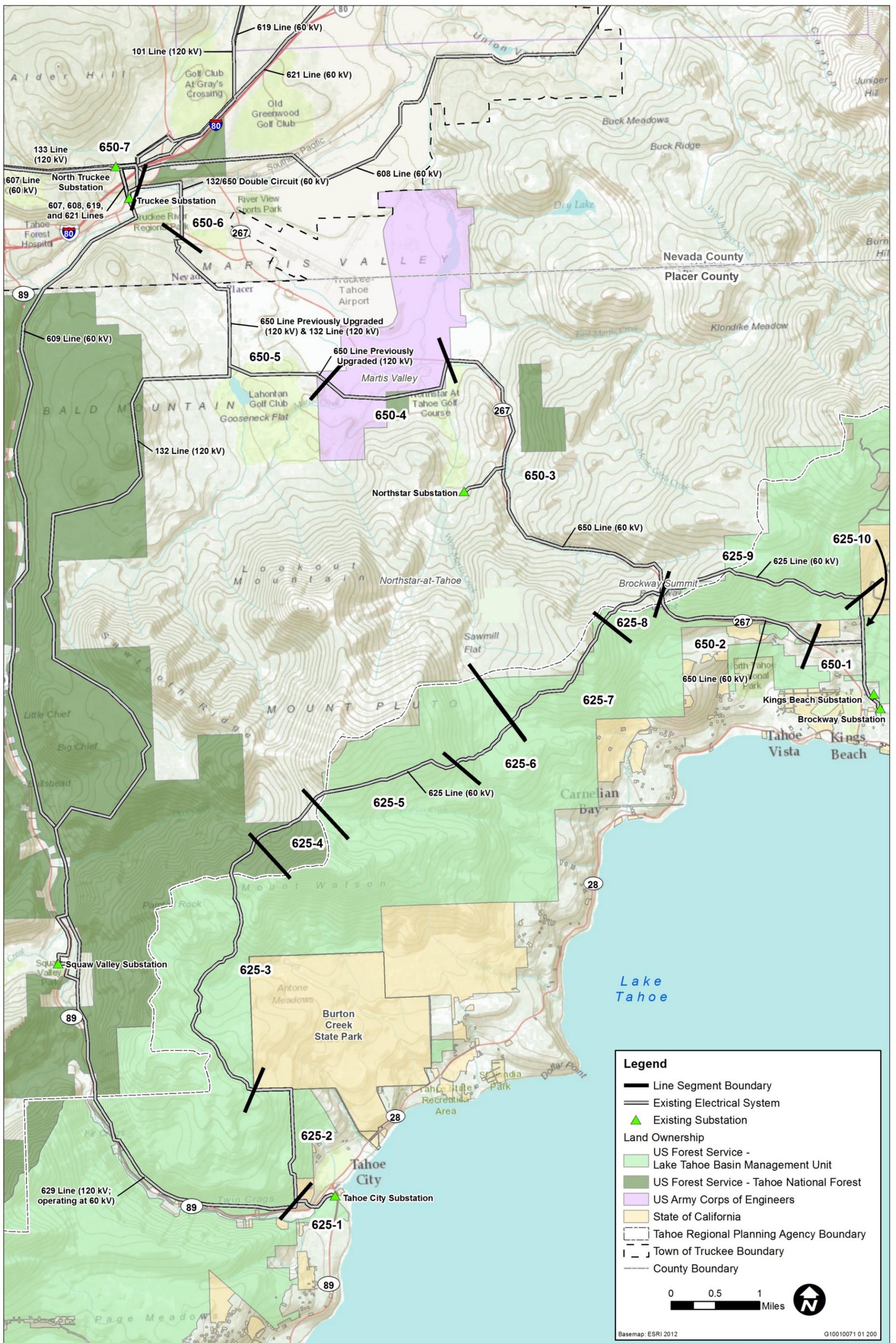
Segment 625-1 ties into the Tahoe City Substation south of the Truckee River and west of State Route (SR) 89. It is a double-circuit line that also includes the 60 kV 629 Line. The lines share tangent poles (poles used for straight lines), but are split onto separate poles at angle points (where the power line conductor [i.e., cable] changes direction in less than a 30 degree angle) so that guy wires can be used to anchor the poles. The line parallels the southern bank of the Truckee River for over 1,000 feet. Existing power poles are located in the riparian area north of the Tahoe Rim Trail and adjacent to the river. The power line crosses the Truckee River and SR 89 north of the California Department of Transportation's (Caltrans') Tahoe City Maintenance Station and approximately 0.25 mile west of the intersection of SR 89 and SR 28. At the crossing, there is a wooden power pole adjacent to the southbound lane of SR 89. The line continues northwest for approximately 1,000 feet on the north side on SR 89 before splitting into the 629 Line and Segment 625-2 of the 625 Line. The existing 625 Line contains distribution underbuild (smaller electrical distribution lines on the same pole, below the larger electrical line) near the Tahoe City Substation (the locations and fate of underbuild is described in more detail later in this chapter).

#### SEGMENT 625-2

The 625 Line trends north for approximately 1.25 miles through LTBMU land. The line then turns west for approximately 0.5 mile and follows the southern border of Burton Creek State Park. A portion of the line ROW encroaches into Burton Creek State Park and there are several poles just within the park boundaries.

#### SEGMENTS 625-3, 625-4, 625-5, 625-6, 625-7, AND 625-8

These segments generally follow, but are typically set back from, the Fiberboard Freeway through land managed by the LTBMU and Tahoe National Forest for approximately 9.5 miles to SR 267 at Brockway Summit. These segments span a relatively remote area between the shoreline of Lake Tahoe and the Northstar-at-Tahoe Resort, and, as such, access to these electrical structures is limited.

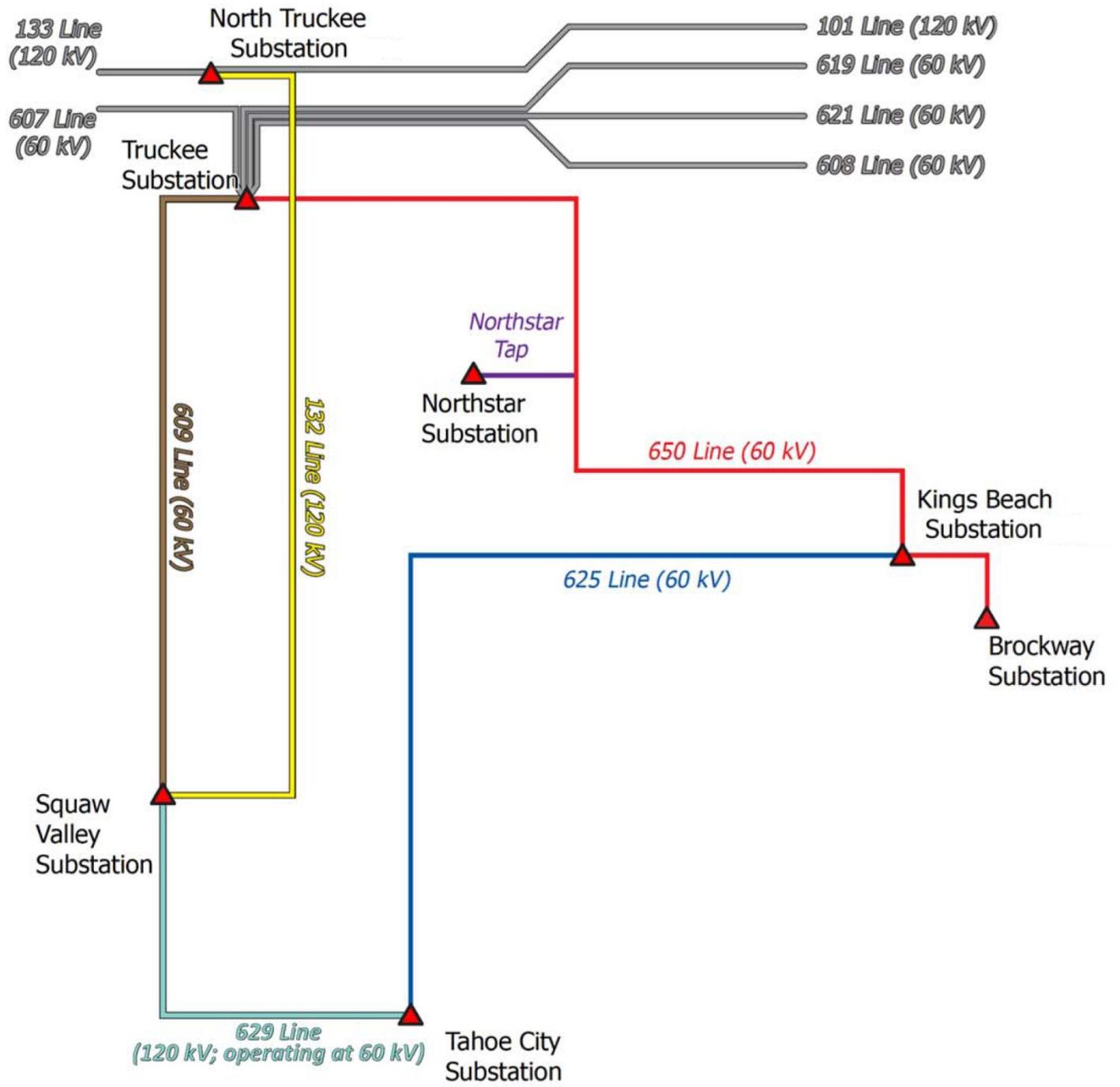


Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

Exhibit 3-2

Existing Electrical System





X10010071 01 002

Source: Received from Sierra Pacific 2010; adapted by Ascent Environmental in 2012

Exhibit 3-3

Existing Electrical System Schematic



## **SEGMENT 625-9**

East of SR 267, Segment 625-9 roughly follows the southeast trajectory of SR 267 through USFS land for approximately 2.25 miles, offset to the northeast of the highway by over 0.5 mile.

## **SEGMENT 625-10**

Segment 625-10 extends over 1 mile south to the Kings Beach Substation, which is located within the Kings Beach Diesel Generation Station that is situated north of the intersection of Deer Street and Speckled Street in Kings Beach.

## **650 LINE**

The 650 Line spans approximately 14 miles between the Truckee Substation, and the Brockway Substation in Kings Beach. This power line is primarily 60 kV, but facilities have been upgraded to accommodate 120 kV near the Tahoe Truckee Airport and the Placer/Nevada county line.

## **SEGMENT 650-1**

From the Brockway Substation, Segment 650-1 parallels the southern side of Speckled Street for approximately 150 feet to the west side of Deer Street. It parallels the western side of Deer Street for over 200 feet, and continues approximately 650 feet north to the Kings Beach Substation. From the Kings Beach Substation, the alignment is the same as Segment 625-10 for over 0.5 mile, with poles for the 650 Line side-by-side with poles for the 625 Line, to north of Canterbury Drive. At this point, Segment 650-1 heads west for over 0.5 mile to the eastern side of SR 267.

## **SEGMENTS 650-2 AND 650-3**

Segments 650-2 and 650-3 are 60 kV power line segments that parallel SR 267 for approximately 6 miles. The divide between the segments is located where the 625 Line crosses Brockway Summit (SR 267). The alignment is adjacent to the eastern side of the highway, except for a stretch of less than 0.5 mile south of Highlands View Road where the alignment switches to the western side of the highway.

## **Northstar Tap**

Within Segment 650-3, the 0.5 mile long Northstar Tap runs east-west between the Northstar Substation, located at the intersection of Stable Road and Highlands Valley Road, and the 650 Line east of SR 267.

## **SEGMENT 650-4**

Segment 650-4 spans Martis Valley south of SR 267 through an approximately 40-acre National Forest System (NFS) parcel managed by the Tahoe National Forest, and Martis Creek Lake managed by the USACE.

## **SEGMENT 650-5**

Segment 650-5 is approximately 3 miles in length. In the 1990s, this segment was upgraded to 120 kV capacity and portions of the segment were converted from an overhead to an underground configuration. The undergrounding was financed by property owners in the vicinity.

## SEGMENT 650-6

In Segment 650-6, the 60 kV electrical line is on a double circuit with the 120 kV 132 Line (i.e., the lines currently share poles). The line heads north, crossing Brockway Road, Estates Drive, the Truckee River, and the Union Pacific Railroad tracks to the north side of Glenshire Drive. The alignment parallels the north side of Glenshire Drive for approximately 0.5 mile to the intersection of Donner Pass Road.

Between the Truckee Donner Public Utility District's Martis Substation (located between the Truckee River and Estates Drive) and the North Truckee Substation, the 132 Line is owned by NV Energy.

## SEGMENT 650-7

Segment 650-7 spans between the North Truckee Substation and the Truckee Substation. From the North Truckee Substation, the power line crosses Comstock Drive and parallels the northern side of Comstock Drive for less than 1,000 feet to the east before turning south to the north side of Donner Pass Road, crossing Interstate 80 (I-80) and East Jibboom Street. This portion of Segment 650-7 is underbuilt with the 60 kV 132 Line.

Segment 650-7 then parallels the north side of Donner Pass Road for less than 600 feet before turning south, crossing over Trout Creek Road, Donner Pass Road, and East Keiser Avenue to reach the Truckee Substation. This portion of the segment is configured with a distribution line underbuild.

## SUBSTATIONS

Substations are high-voltage electric facilities that contain equipment used to regulate and distribute electrical energy. These facilities receive power from power lines and can perform various functions including regulation and distribution of energy, stepping voltage up and down, limiting power surges, and converting power from direct current to alternating current or vice versa. These facilities are also used to switch high-voltage power into different routes (cables and lines) or, as loading changes, into different transformers. The following facilities are part of the North Lake Tahoe Transmission System.

### BROCKWAY SUBSTATION

The Brockway Substation is located in Kings Beach, at the southeast corner of the intersection of Speckled Street and Deer Street. This substation is one terminus of the 650 Line.

### KINGS BEACH SUBSTATION AND DIESEL GENERATION SITE

The Kings Beach Substation is located within the Kings Beach Public Utility Center, which includes the Kings Beach Diesel Generation Station and is just north of the intersection of Speckled Street and Deer Street in Kings Beach. Currently, the existing 650 Line intercepts the Kings Beach facility before terminating at the Brockway Substation. The Kings Beach facility is one terminus of the 625 Line.

### NORTHSTAR SUBSTATION

The Northstar Substation is located near the intersection of Stables Road and Northstar Drive in Placer County. This substation is the termination point for the Northstar Tap. The existing substation operates at 60 kV (though currently constructed at 120 kV) and serves the electrical demands from the Northstar area.

## SQUAW VALLEY SUBSTATION

The Squaw Valley Substation is located at the intersection of Squaw Valley Road and SR 89 in Placer County. The 132, 609, and 629 Lines connect to the Squaw Valley Substation.

## TAHOE CITY SUBSTATION

The Tahoe City Substation is located west of SR 89 and south of the Truckee River. This substation is the termination point for the existing 625 Line and 629 Line.

## TRUCKEE SUBSTATION

The Truckee Substation is one terminus of the 650 Line and is located near the intersection of Donner Pass Road and East Church Street in Truckee. The 60 kV 607, 608, 609, 619, and 621 Lines also connect to this substation.

## NORTH TRUCKEE SUBSTATION

The North Truckee facility is located on Pioneer Trail Road just south of Comstock Drive. NV Energy owns the North Truckee Substation. The 120 kV 133, 132, and 101 Lines connect to this substation.

### 3.2.4 SYSTEM RELIABILITY, OPERATION, AND CAPACITY

System capacity can be quantified in terms of megavolt amperes (MVA), which is a measure of electrical power that considers voltage and amperes, similar to a watt. The North Lake Tahoe Transmission System has a normal capacity of 88 MVA. The Kings Beach Diesel Generation Station is capable of providing 11 MVA of additional (or back-up) capacity.

Electrical demand on the North Lake Tahoe Transmission System is the greatest during the winter months, and typically peaks during the week between the Christmas and New Year holidays as a result of electric heating and ski resort loads. Coincident peak demand is the electrical demand at the time when system-wide customer use is expected to be highest. Coincident peak loading of the North Lake Tahoe Transmission System has remained relatively stable over the last six years, between 79 and 88 MVA (see Table 3-1).

Year	Coincident Peak
2007	86.7 MVA
2008	82.9 MVA
2009	78.6 MVA
2010	86.0 MVA
2011	85.9 MVA
2012	88.4 MVA

MVA= megavolt-amperes.  
Source: Schlichting 2013

Electrical systems have reduced operating capacity when an element of the system fails (often due to external circumstances, such as weather). These events are referred to as contingencies. Failure of either a single element, or multiple elements that are physically or electronically linked and fail together as one, is referred to as a single contingency outage. System reliability is influenced by the likelihood and consequences of a

contingency. In general, five principle mechanisms could be responsible for outages associated with the power lines in the North Lake Tahoe Transmission System:

- ▲ high winds blowing poles over,
- ▲ trees falling onto the lines,
- ▲ snow loading,
- ▲ forest fires, and
- ▲ equipment failures.

Customer demand in the North Lake Tahoe Transmission System is essentially at the system's capacity, and there are circumstances where the system load has exceeded its current capacity. For example, on December 30, 2012 the North Tahoe area experienced extremely heavy tourism and ski resort activity. The result was an extremely large electric demand peak. The North Lake Tahoe Transmission System was forced to run at an overloaded capacity. Where the system is designed to supply a maximum of 88 MVA of electricity to the north Lake Tahoe area, on December 30, 2012 there was a system peak of 88.4 MVA. During this event, the Kings Beach diesel generators were run to provide sufficient power and the system operators were monitoring the line temperature and other elements of the system. This exceedance of design capacity resulted in a risk of damage to the line conductors. In addition, had one of the lines or other parts of the system gone out of service, there would have been blackouts over a significant area.

During outages or high demand, the Kings Beach Diesel Generation Station is currently the only source of the system's ability to maintain the current maximum system loads. However, even with the Kings Beach Diesel Generation Station in operation, the North Lake Tahoe Transmission System is not able to remain fully functional with a single contingency outage. Under the existing conditions, damage to some portion of the system could result in substantial voltage drops to other parts of the circuit. Potential scenarios affecting voltage in the system include: damage to the 650 Line, resulting in insufficient capacity to power Kings Beach; damage to the 629 Line or 132 Line, affecting capacity to Tahoe City; and, reduction in the overall system capacity from 88 MVA to 61 MVA, as a result of an outage of the 132 Line (99 MVA to 70 MVA if using backup supplies from the Kings Beach Diesel Generation Station).

If a single contingency outage occurs during the coincident peak load, customer demand must be forcibly reduced through a process known as load shedding. This is typically handled through an established plan of rolling blackouts that balances the load reduction. Once the peak demand has passed, the system is restored to normal operation. It is important to note that, from a regulatory standpoint, utilities are only able to do this in an emergency situation and are not permitted to use rolling blackout as a planning tool or regular mode of operation because they are obligated to provide reliable service under the Public Utilities Code. Due to the large area that can be affected during load shedding, it is not possible to avoid blackouts at critical facilities, including those for police/sheriff, fire, medical, and home care facilities. In addition, operation of the Kings Beach Diesel Generation Station is limited by its Placer County Air Pollution Control District permit to 721 hours per year. As a result, the facility's operating hours are generally reserved for multiple-contingency events (outages on multiple elements of the system).

It should be noted that the operation of the diesel generation facility at Kings Beach is necessary as emergency back-up and as offset when loads approach peak, and is not designed or intended to support normal base load. While the proposed project would help reduce the emergency dependency on the diesel generators, it would not provide back-up power such that the diesel generators could be removed. Alternatively, it is also important to understand that running the diesel generators at full operation would not replace the need for the proposed system upgrades. It would be inefficient and contrary to the system design for CalPeco to operate the diesel generators for any other reasons than anticipated or current emergencies. These units are expensive to operate, have greater air emissions than other power sources, and have limited annual hours of operation permitted by

regulatory agencies. In the planning of this project, the diesel units are not considered as a single contingency facility. Instead, they are in place for emergency situations, which can regularly occur in the Tahoe area due to storms and other events. Using the diesel generation facility in this manner is consistent with the regulations of the North American Electric Reliability Corporation and the Western Electricity Coordinating Council, and is an approved and warranted component of the system as emergency back-up.

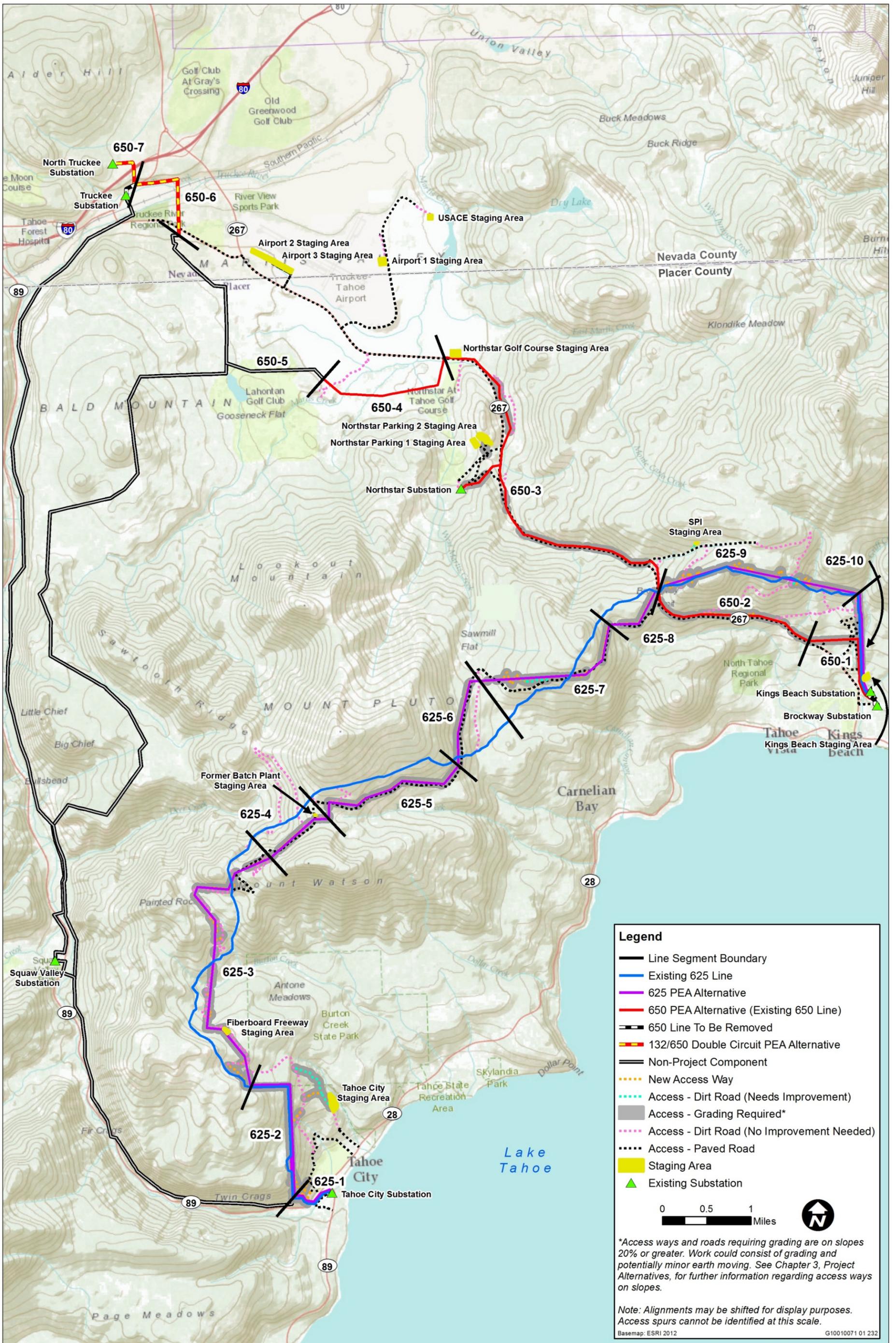
### 3.3 ACTION ALTERNATIVES

As described in Chapter 2, Purpose and Need, the applicant has determined that improved system reliability and resilience to outages would be achieved through upgrade of the existing 625 and 650 Lines and associated substations from 60 kV to 120 kV, which would permit the entire system to operate at 120 kV. The four action alternatives considered in this EIS/EIS/EIR are variations on addressing six key project components:

- ▲ rebuild of the existing 650 Line (with potential for realignments based on alternative);
- ▲ removal and realignment of two short segments of the 650 Line to straighten the line and remove angle points (simplifying line construction and maintenance);
- ▲ rebuild a 1.6-mile section of the existing 132 Line;
- ▲ rebuild of the Northstar Tap into the Northstar Fold (a “fold” allows for service to be maintained at a substation in the event of an interruption in service on the power lines feeding into either side of substation; for this project, this means that the Northstar Substation could be fed from the 650 Line to the north or south, whereas currently it is a single source feed);
- ▲ upgrade, modification, and/or decommission of six substations; and
- ▲ removal of the existing 625 Line and construction of a new, rerouted 625 Line.

These improvements would increase the ability to maintain the current maximum system loads during an outage on any one of the four legs of the system (i.e., 625 Line, 650 Line, 609 Line, and 629 Line), and decrease reliance on the Kings Beach Diesel Generation Station. In addition, rebuilding and realigning the power lines would reduce the likelihood of outages associated with high winds, felled trees, snow loading, and forest fires, as well as improve access to the lines for maintenance and repair activities.

Section 3.3.1, below, describes the features common to all action alternatives. This includes the primary project components (including power lines and substations), new conductors and power poles, ROW requirements, and general construction activities. Sections 3.3.2 through 3.3.5 describe the identified action alternatives. Section 3.3.6 describes the common project implementation processes of the action alternatives (e.g., phasing and schedule). Overviews of Alternatives 1 through 4 are depicted in Exhibits 3-4A through 3-4D, respectively. Detailed maps are provided in Appendix B. Alternative 1 was developed in the Proponent’s Environmental Assessment (PEA) prepared by the project applicant (Sierra Pacific Power Company at that time) as part of the original permit application submitted to the CPUC in 2010. Alternative 2 is a modified alternative, which is similar to Alternative 1 (PEA Alternative), but includes rerouting of some portions of the alignment based on public and agency input received during scoping, additional information gathered during detailed field reviews, and further progress on project engineering and design. The intent of the segment reroutes was to avoid or minimize effects on biological, visual, or cultural resources. Alternative 3 is a road focused alternative, which reroutes the 625 Line to more closely follow the Fiberboard Freeway (paved road between the Mount Watson area north of Tahoe City and the Brockway Summit area) and other area roadways and places more of the 650 Line alignment along SR 267. Alternative 3 (Road Focused Alternative) includes a double-circuit option segment alternative that is referred to as Alternative 3A. One intent of Alternative 3 (Road Focused Alternative) is to maximize the proximity of project facilities to existing roadways in order to minimize the need for new access ways and otherwise minimize ground disturbance and environmental effects. Alternative 4 (Proposed Alternative) is a combination of Alternative 3 (Road Focused Alternative) for the 625 Line improvements and

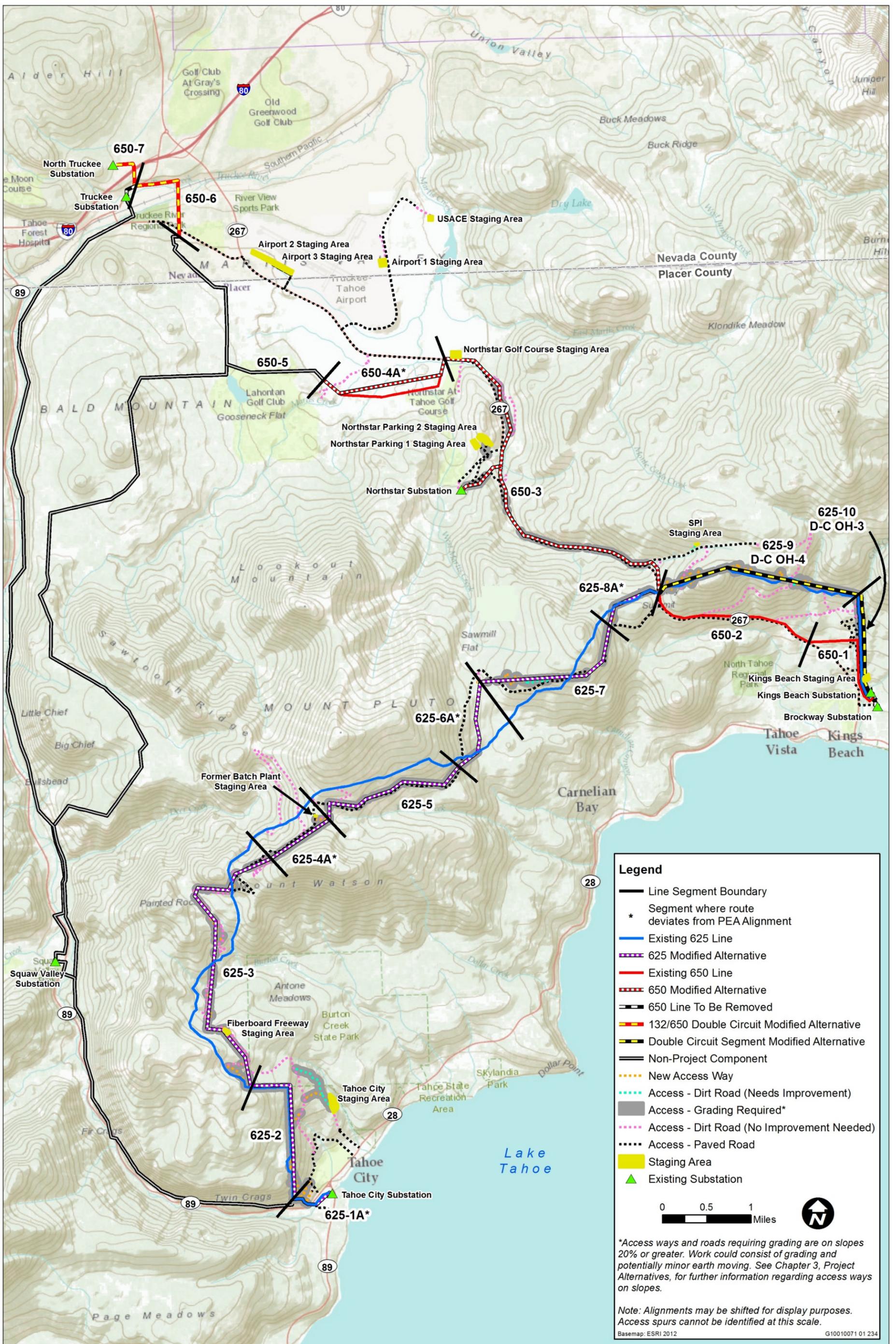


Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

Exhibit 3-4A

Alternative 1 (PEA Alternative)



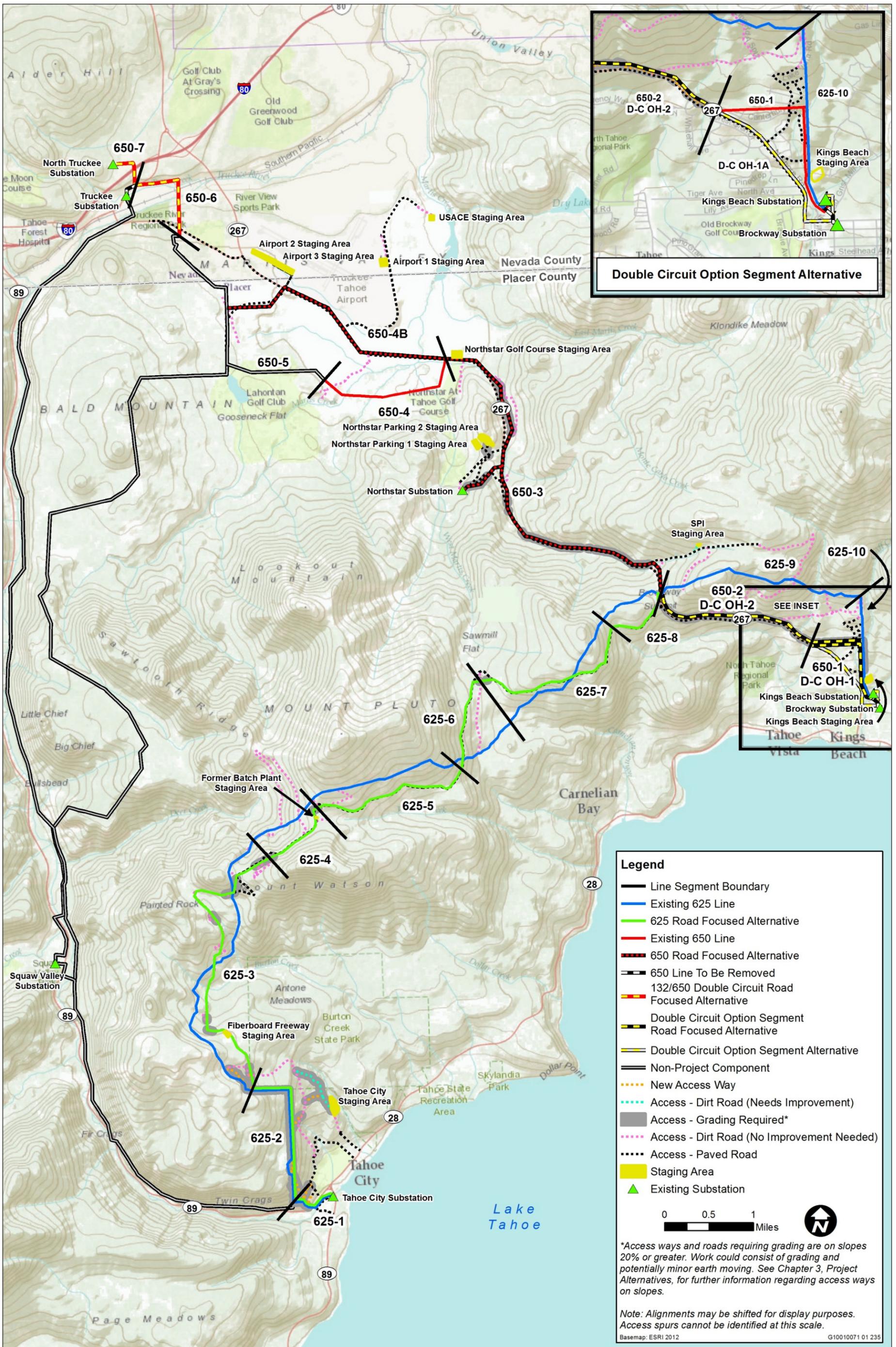


Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

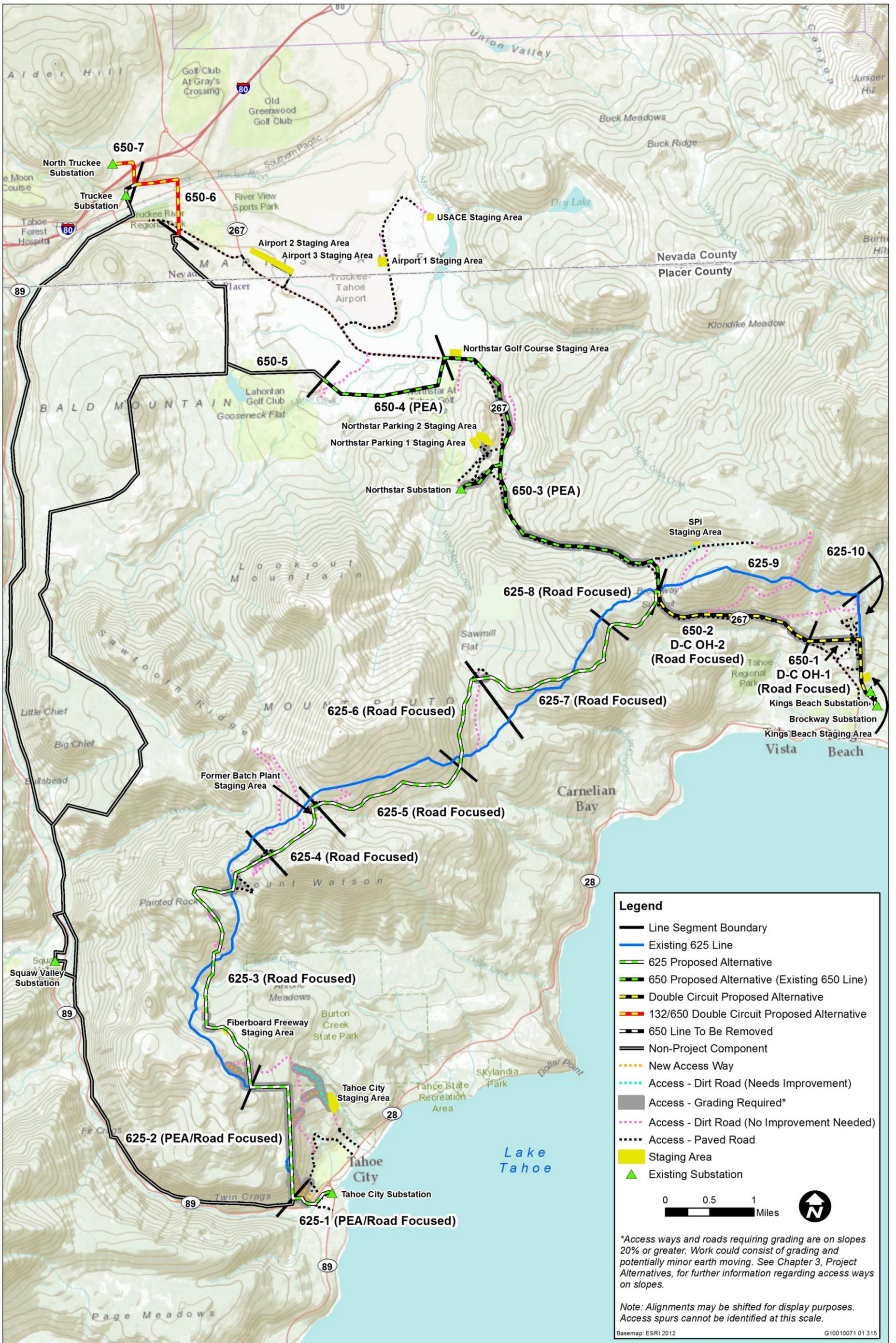
Exhibit 3-4B

Alternative 2 (Modified Alternative)





Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012



Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

elements of Alternative 1 (PEA Alternative) and Alternative 3 (Road Focused Alternative) for the 650 Line improvements. Alternative 4 (Proposed Alternative) allows facilities to be in proximity to existing roadways, while maximizing the use of the already upgraded portion of the 650 Line in Segment 650-5. Alternatives 2, 3, and 4 all contain double-circuit segments that place both the 625 and 650 Lines on the same poles, which could minimize the project footprint. Alternative 5 is the No Project/No Action Alternative.

### **3.3.1 COMMON PROJECT FEATURES OF THE ACTION ALTERNATIVES**

#### **PRIMARY PROJECT COMPONENTS**

Upon completion of the following six project components common to all of the action alternatives, the upgraded system (120 kV for the entire loop) would be capable of 114 MVA versus the current 88 MVA. This would better accommodate peak loads identified in Table 3-1, North Lake Tahoe Transmission System Non-Coincident Peak 2006 – 2008, and allow continuation of service during a broader range of line interruption scenarios without use of the Kings Beach Diesel Generation Station.

#### **REBUILD OF THE EXISTING 650 LINE**

Approximately 10 miles of the existing 650 Line would be rebuilt. Various segments would either be rebuilt in the existing ROW and alignment, or constructed along a new alignment, depending on the alternative being considered. Where the existing alignment would be followed, new poles would generally be placed 10 feet from the existing poles (which would be removed as part of the project), but in some areas new poles could be farther from existing poles to best support the system design. The 650 Line would be reconducted (i.e., old electrical line would be replaced with new line) with 397.5 thousand circular mil (MCM) all aluminum (AA) conductor (non-specular material) to allow transmission at 120 kV.

#### **REALIGNMENT OF 650 LINE SEGMENTS**

As stated above, various segments of the 650 Line could be relocated based on the alternative considered. However, for all action alternatives two short segments of the 650 Line would be removed; the segment originating at the Truckee Substation to the point where the 650 Line connects with the 132 Line in the Town of Truckee, and the segment that currently connects the Brockway Substation with the Kings Beach Substation. In both of these instances, the existing poles with telecommunications/cable lines would be left in place and the power line components would be removed. The poles would be topped (i.e., the extra height that accommodated the 60 kV line would no longer be needed and would be cut from the top of the pole). The current distribution lines coming out of Brockway Substation would either be extended (underground) to the Kings Beach Substation and the 60 kV tie would be eliminated, or, if Brockway is to remain in its current state, these lines would remain as they are now. (See description of the sub-alternatives of upgrade, modification, and/or decommissioning of substations below.)

#### **REBUILD A 1.6-MILE SECTION OF THE EXISTING 132 LINE**

The 132 Line is an existing 120 kV line that extends from Truckee to Squaw Valley. In the Town of Truckee, approximately 32 poles would be replaced and the line would be modified to allow a double-circuit configuration with the 650 Line and operation at 120 kV. The new steel poles would generally be placed 10 feet from the current wood pole locations.

## REBUILD OF THE NORTHSTAR TAP INTO A FOLD

The existing 60 kV Northstar Tap would be rebuilt into a line fold that would operate at 120 kV, tying into the existing terminals. This activity would require replacement of approximately 14 wood poles with 11 steel poles and approximately 0.5 miles of 397.5 MCM AA conductor (non-specular material). The existing Northstar Tap contains a distribution underbuild along its entire length; this distribution circuit would be transferred to the poles associated with the Northstar Fold.

## UPGRADE, MODIFICATION, AND/OR DECOMMISSIONING OF SUBSTATIONS

The Northstar, Squaw Valley, Kings Beach, Tahoe City, and North Truckee substations would be modified to accommodate the new 120 kV loop system, and the Brockway Substation would be decommissioned and the equipment would be removed. The future use of vacated Brockway Substation land is unknown at this time. All substation improvements would take place within parcels owned by CalPeco. See Appendix C, Substation Plot Plans and Elevation Drawings, for graphical representations of proposed changes to the substations.

### Kings Beach and Brockway Substations

The existing 60 kV Kings Beach Substation is proposed to be reconstructed as a 120 kV substation to accommodate the upgraded 650 and 625 lines. The substation rebuild would include 120 kV switches, two 120 kV/14.4 kV transformers, and 14.4 kV switchgear, plus the four relocated 14.4 kV distribution feeders which are currently above ground and would be placed underground, as described below. To facilitate the upgrade of this facility, some activities would occur outside of the existing facility's fence line; however, all work would occur within the larger CalPeco-owned parcel that houses the Kings Beach Utility Center.

Four new underground 14.4 kV distribution feeders at the Kings Beach Substation would be installed that would connect to the existing overhead distribution lines to maintain distribution service in the project area. Three distribution feeders would exit the Kings Beach Substation to the south via three underground duct packages, totaling approximately 500 feet in length. The feeders would be installed within the access road for the Kings Beach Substation and would continue within Deer Street to the intersection with Speckled Street. At this point, one of the feeders would head east, intersecting an existing distribution pole at the northeast corner of Deer Street and Speckled Street. The remaining two feeders would continue south, crossing Speckled Street to the intersection with Cutthroat Avenue, where the second feeder would head east and the third feeder would head west within Cutthroat Avenue until they intersect existing distribution poles. Sectionalizing switches would be installed on the existing overhead distribution lines on Deer Street and Cutthroat Avenue. The remaining distribution feeder would also exit the substation underground and travel west to a point approximately 25 feet beyond the fence line where it would intersect with the existing 650 Line poles that lead to the Brockway Substation. These poles would be topped, leaving the distribution circuit intact. New risers (i.e., conduits that house a power line vertically on a pole) would be installed at the termination of the underground portions of these four feeders to facilitate the conversion to an aboveground facility. The underground distribution facilities would be installed in a duct bank (where there are multiple conduits in one trench) comprised of two 6-inch-diameter polyvinylchloride (PVC) conduits. Approximately nine underground splice vaults (i.e., buried compartments typically accessed by a man-hole on the surface) measuring approximately 12 feet long, 6 feet wide, and 8 feet deep would be installed in line with the duct bank to facilitate pulling the conductor during construction, and access during inspection and maintenance activities. New lighting would be installed at the Kings Beach Substation in accordance with TRPA outdoor lighting codes. The lighting would be used on an as-needed basis during the operation and maintenance of the substation. The proposed substation rebuild, with these elements, would allow removal of the existing equipment at the Brockway Substation, located within the residential neighborhood between Speckled Avenue and Cutthroat Avenue, just east of Deer Street. The determination of future site use has not yet been determined, but ownership would remain with CalPeco.

### **Amendment of Plan Area Statement 019, Martis Peak**

Electrical substations are defined as *Public Utility Centers* in Table 21.4-A of the TRPA Code. Although the expanded substation rebuild is proposed on a parcel with an existing Public Utility Center, this use is not permissible on the subject property, which is located in Plan Area 019 – Martis Peak, a Conservation Plan Area, as defined in the Plan Area Statement (PAS). Therefore, the existing Public Utility Center (including the existing Kings Beach Substation and the proposed, new substation) is an approved nonconforming use, by definition, in the TRPA Code (Section 21.2.3). Although the project, as proposed, would allow the decommissioning of the Brockway Substation, the rebuild of the Kings Beach Substation would constitute *expansion, intensification, and/or modification* of a nonconforming use as defined in the TRPA Code (see TRPA Code Sections 21.2.3 and 21.5). To facilitate the proposed expanded substation in the most appropriate location (the site of the existing substation), TRPA proposes to address the nonconforming use through a staff-initiated amendment to PAS 019, Martis Peak, by adding Public Utility Centers as a special use within a new Special Area 1 of the PAS. In accordance with TRPA Code, such a PAS amendment is considered a project, a Regional Plan amendment, and a Plan Area amendment, subject to specific findings requirements, as described below.

To approve any project, TRPA must find, in accordance with Sections 4.2 and 4.3 of the TRPA Code, that:

- ▲ the project is consistent with, and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, PASs and Maps, Code and other TRPA plans and programs;
- ▲ the project will not cause the environmental threshold carrying capacities to be exceeded; and,
- ▲ wherever federal, state, or local air and water quality standards are applicable for the region, whichever are strictest must be attained and maintained pursuant to Article V (d) of the Tahoe Regional Planning Compact.

To amend the Regional Plan, including PASs and Maps, TRPA must find, in accordance with Sections 4.5 of the TRPA Code, that the Regional Plan, as amended, achieves and maintains the thresholds.

Finally, to approve any Plan Area Amendment, TRPA must make the following findings in accordance with Section 11.8.4 of the TRPA Code.

- ▲ The amendment is substantially consistent with the plan area designation criteria in subsections 11.6.2 and 11.6.3.
- ▲ If the amendment is to expand an existing urban plan area boundary or to add residential, tourist accommodation, commercial, or public service as permissible uses to a non-urban plan area, TRPA shall find that the amendment will make the plan area statement consistent with an adopted policy or standard of the Regional Plan, and that the amendment will satisfy one or more of the following criteria.
  - /// The amendment corrects an error that occurred at the time of adoption, including but not limited to a mapping error, an editing error, or an error based on erroneous information.
  - /// The amendment enables TRPA to make progress toward one or more environmental thresholds without degradation to other thresholds as measured by the Chapter 16: Regional Plan and Environmental Threshold Review, indicators.
  - /// The amendment is needed to protect public health and safety and there is no reasonable alternative.

TRPA's findings in support of the staff-initiated PAS amendment are detailed in a separate findings document, and are summarized as follows.

- ▲ Adding public utility centers as a permissible use in PAS 019 would make the existing substation located on the diesel generator property a conforming use, and would allow transfer of the functions currently provided by the Brockway Substation in the Kings Beach Industrial Community Plan to this property, thereby allowing its decommissioning.

- ▲ Reconstruction of the substation would result in the consolidation of electrical facilities within one secure compound area, out of view from the general public.
- ▲ The proposed PAS amendment is consistent with the goals of the Land Use and other elements of the TRPA Goals and Policies Plan which does not contain any specific restrictions on placement of public utility centers in conservation plan areas, such as PAS 019. A similar public utility center facility (a substation) exists in PAS 095 (Trout/Cold Creek) located on the south shore of Lake Tahoe near the old Meyers landfill site. PAS 095 is also a Conservation Plan Area, and Public Utility Centers are listed as a special use in PAS 095.
- ▲ Based on the Initial Environmental Checklist prepared for the plan area statement amendment, there are no significant environmental impacts associated with the new land use, and no impacts that would exceed environmental threshold carrying capacities.
- ▲ Adding a new public service land use to the Plan Area would not diminish the standards for air and water quality because the amendment only affects an electrical distribution facility where water quality and air quality standards are currently applicable. There are no additional impacts to air or water quality associated with the proposed amendment, and all future projects will be required to meet appropriate air and water quality development standards.
- ▲ The proposed PAS amendment would not affect the ability of the Regional Plan to achieve and maintain the thresholds, as documented in the Initial Environmental Checklist and this EIS/EIS/EIR.
- ▲ The proposed amendment would be limited to developed, private property, which contains existing regional-serving electrical facilities within a secure, fenced compound. Most of the area affected by the amendment is high capability land and the proposed plan area amendment would prohibit new or expanded public utility center facilities on low capability land. The affected property is immediately adjacent to the Kings Beach Industrial Community Plan Area and is not isolated from other development. For security and public safety reasons, the affected property is closed to the public and is not suitable for recreation, non-intensive agricultural, or resource management uses for this reason.
- ▲ The proposed PAS amendment would add a new public service use (public utility centers) to a Conservation Plan Area and would not expand an urban boundary.
- ▲ The proposed amendment corrects an error that occurred at the time of adoption; specifically, the adopted PAS does not identify the existing, extensive, and essential regional electrical distribution system that exists within the boundaries of the Plan Area.
- ▲ The amendment is a public health and safety measure and there is no reasonable alternative to plan area amendment because: 1) it would consolidate electrical facilities onto one property, reducing the potential for trespass and vandalism; 2) the electrical compound would be much less visible to the public and less of a potentially attractive hazard; and 3) the construction of an expanded Kings Beach Substation within the boundaries of the Kings Beach Industrial Community Plan (and therefore in close proximity to nearby residences) is unreasonable because a superior, more secure site is available that would consolidate electrical facilities onto one secure property, thereby improving efficiency.

As described above, one of the findings necessary to support a proposed PAS amendment include a finding that there are no reasonable alternatives. Consistent with this requirement, two alternative configurations for the Kings Beach Substation that would not require amendment of the Martis Peak (019) PAS were considered. These two configurations would involve locating the Kings Beach Substation within the Kings Beach Industrial Community Plan Area, where “Public Utility Center”—the use category that includes substations—is a permissible use under the special use provisions of the community plan (Tahoe Regional Planning Agency and Placer County 1996). The Kings Beach Industrial Community Plan Area is generally bounded by the northern boundary of the block of parcels north of Speckled Avenue, Cutthroat Avenue to the south, Secline Street to the west, and a few parcels of Coon Street to the east. It includes the southernmost portion of the Kings Beach Substation area, within the fence line at the northern terminus of Deer Street.

Under the first alternative configuration (Option 1, for purposes of this discussion), the Kings Beach Substation facilities would be located in the Kings Beach Industrial Community Plan and a new access way would be located in the Martis Peak Plan Area. The substation rebuild, including the 120 kV switches, two 120 kV/14.4 kV transformers, and 14.4 kV switchgear would be constructed on parcel 090-041-006 (refer to Exhibit 4.2-7). This parcel is owned by CalPeco and is within the Kings Beach Industrial Community Plan Area. The parcel would require alteration and upgrade of the access roads to allow adequate access to the facility. With this option, the Brockway substation would be decommissioned. To accommodate this, the footprint of the substation would be larger to accommodate the distribution functions that would be redirected from Brockway. Because of parcel size limitations and the addition of the functions currently served by Brockway, the substation layout would require the needed access way improvements to be outside the parcel, within the Martis Peak Plan Area (on parcel 090-090-029) and subject to the Martis Peak PAS. Although the new access road might be permissible as an accessory use, the Martis Peak PAS does not otherwise permit the construction of new roads.

A second alternative configuration (Option 2, for purposes of this discussion) also considered constructing the substation on parcel 090-041-006, but without an access road through the Martis Peak Plan Area (refer to Exhibit 4.2-8). Instead, the access way would be completely within the same parcel, within the Kings Beach Industrial Community Plan Area. With this configuration, there would not be sufficient space for the additional equipment that would be required to allow for the decommissioning of the Brockway Substation, as under the first option. Under this option, the Kings Beach Substation would include the 120 kV switches and one 120/60 kV transformer, but the parcel would not accommodate the 14.4 kV switchgear. As such, the Brockway Substation would need to remain operational in its current location to accommodate this function and the existing distribution feeders would remain in their current overhead state. The existing 60 kV overhead line from the Kings Beach facility to Brockway Substation would remain primarily in its existing route but would need to have a new termination into the relocated substation site. The purpose of this configuration is to address the TRPA PAS compliance, which would require all modifications to occur within the Kings Beach Industrial Plan area.

### **Northstar Substation**

To accommodate the upgrade of the existing 60 kV tap, a new 120/60/14.4 kV transformer (to accompany the existing 120/60/14.4 kV model already on site) would be installed. Once the North Lake Tahoe 120 kV system is completed, both transformers would be tapped at 120 kV and the substation would operate at 120 kV. In addition, all line terminals would be upgraded with new breaker switches. All work would occur within the existing substation fence line.

### **Squaw Valley Substation**

A minor 120 kV electrical transfer equipment upgrade and the installation of a new 120 kV circuit breaker at the Squaw Valley Substation would be necessary to operate the previously upgraded 629 Line. Work at this substation would occur within the existing substation fence line.

### **Tahoe City Substation**

The Tahoe City Substation would be rebuilt from 60 kV to 120 kV. This substation would be one terminus of the new 625 Line. The 120/60/14.4 kV transformer would be relocated and a new 120/14.4 kV transformer and two new 120 kV breakers would be installed. These new components would be installed within the existing substation fence line. To upgrade the substation while maintaining distribution capabilities, portable (temporary) transformers would be required during construction and would be connected to the 625 Line or 629 Line using temporary poles. These transformers would be located on the 64-acre parcel managed by the USFS immediately to the south of the Tahoe City Substation. The portable transformers would be mounted on two trailers, measuring 8 feet wide by 40 feet long. To ensure that the temporary transformers would not interfere with operation of the Tahoe City Transit Center, CalPeco would coordinate with the USFS and Placer County well in advance of construction to obtain permission to use the parcel. CalPeco would work to site the temporary transformers in undeveloped areas or in area designated for parking and restrict the public from this area. Temporary power poles would be similar to the existing 60 kV poles and would be required to maintain

distribution capabilities. Upon completion of the Tahoe City Substation upgrade, these temporary poles and transformers would be removed and the 625 and 629 Lines would be connected to the permanent, new transformers.

A stormwater infiltration trench would also be installed at the Tahoe City Substation. This trench would be 2 feet wide by 20 feet long, approximately 8 feet deep, and backfilled with drainage rock. All stormwater, including stormwater collected by secondary containment basins, would be directed toward the trench either by grading or with pumps and piping. New lighting would be installed at the Tahoe City Substation, in accordance with the TRPA outdoor lighting requirements, for use on an as-needed basis. Lighting would consist of one downward directed lamp with a 500-watt halogen bulb, located at the control building.

### **North Truckee Substation**

Upon completion of the North Lake Tahoe Transmission System upgrade, the northern terminus of the 650 Line would be relocated from the Truckee Substation to the North Truckee Substation after the installation of a new 120 kV bay. Work would occur within the existing facility fences.

### **REMOVAL AND RECONSTRUCTION OF THE EXISTING 625 LINE**

As part of the upgrade to 120 kV for the North Lake Tahoe Transmission System, CalPeco is proposing to “reconductor” and reroute the 625 Line with the objective that the new conductor could accommodate 120 kV, and to align more closely with the existing roadways in the area. The removal of the existing 625 Line would involve approximately 15 miles of conductor and 341 wooden poles. The new 120 kV 625 Line would use 397.5 MCM AA conductor (non-specular material) within a new 40-foot-wide permanent ROW.

### **POWER POLES**

As part of the upgrade of the 625 and 650 Lines, the existing wooden poles would be replaced by steel poles. The new steel poles would be approximately 7 to 12 feet taller than the existing wooden poles, which are between 48 and 80 feet above ground surface. On average, pole spacing would be 300 feet apart. The diameter of the existing wooden poles ranges from 13 inches to 16 inches. The diameter of the new poles would range from 15 inches to 19 inches at the base for poles buried in the ground. Poles would be buried 7 to 10 feet deep, depending on height. Guy wires may be connected to the poles in areas that need additional stability.

Self-supporting poles may be used where there would not be the option to use guy wires (e.g., where there are existing structures next to the site) or where conditions would not be suitable to adequately burying the pole base. The diameter of the self-supporting poles would vary based on whether the alternative calls for a single circuit, double circuit, if there is underbuild, and other factors. Self-supporting poles would be mounted on a concrete foundation, which would have a 3 to 6 foot diameter. These foundations typically extend above the ground surface to a height of 6 to 12 inches, but there could be site-specific circumstances where up to 2 feet of height would be required. The diameter of the self-supporting poles could be as much as 4.5 feet at the base where they are attached to the concrete foundations.

### **ELECTRIC AND MAGNETIC FIELD MANAGEMENT**

Electric and magnetic field (EMF) levels from power lines or related facilities, such as substations, are not presently regulated at the federal, state, or local level. However, the CPUC has implemented a decision (D.06-01-042) requiring utilities to incorporate “low cost” (up to approximately 4 percent of total project cost) or “no-cost” measures for managing EMF from power lines. The applicant has incorporated the following low-cost and no-cost measures to reduce EMF levels along the power line corridor and at substations.

Low-cost measures for all of the sections would include a standardized ROW width of 40-feet (which provides additional distance from the circuits to the ROW edge in some cases). Where feasible in light of other environmental constraints and permitting, all circuits would either maintain an attachment height at the power pole of 40.5-feet or have their present attachment height increased to 40.5-feet above ground level by the use of taller poles. For all sections, the phasing of the power line circuits would be arranged to maximize magnetic field reduction due to field cancellation (using reverse or unlike phasing arrangements). For lines 625 and 650, locations where these two circuits are individual single circuit configurations would be combined onto a common pole as a double circuit configuration, resulting in a more compact phase configuration and allowing the application of reverse or unlike phasing to increase magnetic field cancellation for both circuits. Finally, the loading on those circuits being upgraded from 60 kV to 120 kV operation would typically be reduced by 50 percent; which would reduce the associated magnetic field as well, since magnetic field levels are a function of loading. For the substations, high current devices associated with the project upgrade would be centrally located towards the interior of the substation and away from the property line boundaries. For more information on EMF, see Appendix D.

## **RIGHT-OF-WAY REQUIREMENTS**

### **REQUIREMENTS FOR PERMANENT RIGHTS-OF-WAY**

CalPeco currently holds easements from the USFS, USACE, the California Department of Parks and Recreation, Placer County, other public entities, and various private landowners that own properties that are crossed by the existing 650 Line, 625 Line, 132 Line, and Northstar Fold. The widths of the existing easements vary, but average approximately 30 feet. The easement for the proposed Northstar Fold would widen from approximately 40 feet to 95 feet between the westernmost pole and the Northstar Substation due to the divergence of the separate circuits. As part of project implementation, CalPeco would negotiate with the existing landowners to obtain a permanent easement of 40 feet for single-circuit options (one line on each pole) for the new 625 and 650 Lines for operation and maintenance purposes. For segments of Alternative 2 (Modified Alternative), Alternative 3 (Road Focused Alternative), and Alternative 4 (Proposed Alternative) where a double-circuit option is being considered, a permanent easement of 65 feet would be pursued. The wider easement and associated vegetation management is desired for double-circuit options because equipment damage from tree fall, wildfire, or other events could cause failure in two lines simultaneously and significantly affect service in the whole North Lake Tahoe Transmission System.

### **REQUIREMENTS FOR TEMPORARY RIGHTS-OF-WAY**

To accommodate construction, a temporary ROW width of 65 feet would be established for the new 625 Line and 650 Line (single-circuit options), the Northstar Fold, and the 132 Line. All disturbances outside of the permanent 40-foot wide easement described above would be temporary and the land would be restored to its original condition following construction, unless otherwise requested by the landowner or land management agency. For double-circuit options, all construction activity would occur within the 65-foot permanent easement.

## CONSTRUCTION ACTIVITIES

### ACCESS

The electrical line ROWs would primarily be accessed through the use of existing, paved municipal roadways and paved and dirt USFS system roads. However, additional access ways would need to be developed to facilitate access from existing roads to the power line ROWs for construction and later inspections, maintenance, and repairs. For the purpose of this assessment, all roads used to access the site are termed “access ways.”<sup>1</sup> Access ways include existing paved roads, existing dirt roads, and new dirt roads and “two-track” pathways that would be developed for the project. Where access ways would be on slopes greater than 20 percent, a wider access way would require grading, as discussed below. Exhibits 3-4A through 3-4D show existing and proposed access ways that would be used for project construction and operation. Roads on Exhibits 3-4A through 3-4D labeled as “Access – Dirt Road (No Improvement Needed) and “Access – Paved Road” are existing dirt and paved roads that would be used to access the power line ROWs during project construction and operation and maintenance activities. These roads would be used as they currently exist and no changes or modifications are proposed. If these roads are damaged during construction, they would be restored to pre-project conditions.

The category of “Access – Dirt Road (Needs Improvement)” represents existing dirt roads that would require some modification to support their use during project construction. In most instances, the improvement or modification would consist of removing rocks and logs that may have fallen onto the road and trimming brush, branches, and other vegetation encroaching on the roadway to provide sufficient width and clearance to allow construction vehicles (e.g., cable trucks, tensioning trucks) to pass. In some instances, water bars (an interceptor dyke that is used to prevent erosion on sloping roads) and other features that might obstruct use by construction vehicles would be removed and then replaced after the construction process is complete. After completion of construction, no further work on these existing dirt roads is proposed. If the roads were damaged during construction (e.g., if deep ruts or potholes were created), they would be repaired to pre-project conditions prior to project completion.

The category of “new access ways” indicates a location where a new vehicle travel pathway would be created where one does not currently exist. A majority of the mileage of new access ways would be within the power line ROWs providing “centerline access routes” (see Table 3-2, New and Improved Access Ways Required under the Action Alternatives). The Centerline Access Routes are not shown in Exhibits 3-4A through 3-4D as they would be located immediately under, or next to, the lines showing the power line routes. The centerline access routes would be approximately 10-foot wide, and although “centerline” is in the category title, in reality the route would move back and forth within the power line ROW, going on either side of power poles, avoiding boulders and other barriers, and responding to topography. In addition, turnouts (30-foot wide) would be needed approximately every 1,000 feet for vehicle passing. The power line ROWs would initially be cleared of

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<sup>1</sup> The criterion for defining a road varies by the agency with jurisdiction. Each land manager or owner may have different requirements for design, construction, maintenance, and use. TRPA Code defines “road” as a smooth or paved surface designed for travel by motor vehicles. In general, the impacts are assessed based on the coverage of the road surface. The project does not include the construction of any new paved roads. Roads on NFS lands described for this project are either temporary or permanent. Temporary Roads are built to facilitate the construction of the project. They are completely restored at the conclusion of construction and no longer used or open to vehicles. Permanent Roads would be included as part of the National Forest road system. They are classified in five levels from Maintenance Level 1 (basic custodial care, closed to vehicles) to Maintenance Level 5 (high comfort; passenger car). This project includes the use of roads that are already included in the NF (e.g., Fiberboard Freeway) and construction of new roads. New roads may be both completely new construction or may utilize portions of old legacy roadways. For this project, new roads, which include any road not previously part of the National Forest road system, are assumed for analysis to be Maintenance Level 2, to facilitate the long term operational and maintenance needs of the project. Given the different uses and definitions of the term “road,” the term “access way” is used in this document to encompass the various types of facilities that may provide vehicle access. The term “access way” is not specifically defined by any of the lead agencies, but is used generically herein to describe a route within the project area (that may or may not require widening or clearing), which is required for construction and /or operation of the project. For the purpose of this document, access ways include several categories of routes, including existing dirt roads, NFS roads, existing roads and trails that are not part of a formal designated travel system, new dirt roads constructed as part of the project, and existing and new “two-track” pathways intended for power line operations and maintenance access. Calculations of required access way mileage for each alternative are estimates based on preliminary engineering.

trees and shrubs as part of project construction. After completion of construction, the centerline access routes would be maintained in low growing vegetation for erosion control while allowing over-land vehicle travel by line trucks and inspection trucks (i.e., pickup trucks).

<b>Road Type</b>	<b>Alternative 1: PEA Alternative</b>	<b>Alternative 2: Modified Alternative</b>	<b>Alternative 3: Road Focused Alternative (Alternative 3A: Road Focused Alternative with Double Circuit Option)</b>	<b>Alternative 4: Proposed Alternative</b>
Miles of New Access Way within New Power Line ROW	5.9	5.8	1.5 (1.5)	1.5
Within Tahoe Basin	5.4	4.7	1.3 (1.3)	1.3
Outside Tahoe Basin	0.5	1.1	0.2 (0.2)	0.2
Miles of New Access Way within Existing Power Line ROW	9.4	7.3	8.2 (7.0)	8.2
Within Tahoe Basin	4.7	2.6	3.5 (2.3)	3.5
Outside Tahoe Basin	4.7	4.7	4.7 (4.7)	4.7
Miles of New Access Way outside Power Line ROW	8.9	7.7	2.1 (2.0)	2.0
Within Tahoe Basin	7.3	6.1	2.1 (2.0)	2.0
Outside Tahoe Basin	1.6	1.6	0 (0)	0
Miles of Dirt Road that Needs Improvement	1.2	1.2	0.7 (0.7)	0.7
Within Tahoe Basin	1.2	1.2	0.7 (0.7)	0.7
Outside Tahoe Basin	0	0	0 (0)	0
<b>Total</b>	<b>25.4</b>	<b>22.7</b>	<b>12.5 (11.2)</b>	<b>12.4</b>
<b>Total Within Tahoe Basin</b>	<b>18.6</b>	<b>14.6</b>	<b>7.6 (6.3)</b>	<b>7.5</b>
<b>Total Outside Tahoe Basin</b>	<b>6.8</b>	<b>8.1</b>	<b>4.9 (4.9)</b>	<b>4.9</b>

New access ways outside the power line ROW would be similar to centerline access routes in all respects except for location. They would first be developed during project construction to support construction vehicle access to the ROW. Many of the new access ways would consist of short spur roads connecting existing roadways to nearby portions of the power line ROW. Given the map scale of Exhibits 3-4A through 3-4D, these short spur roads are not visible, although they are included in the mileage calculations in Table 3-2, New and Improved Access Ways Required under the Action Alternatives. In instances where existing topography and vegetation allow vehicle access to the ROW without development of a spur road/new access way, no travel way would be developed and inspection and maintenance vehicles would drive over the existing ground surface. Trees and shrubs would be removed during construction to create an approximately 10-foot wide access way. After completion of construction, the new access way would be maintained in low growing vegetation to allow over-land vehicle travel for inspection and maintenance (Road Maintenance Level 2 per the Forest Service Handbook 7709.58, 10, 12.3).

Exhibits 3-4A through 3-4D also identify areas where grading would be required for a new access way. These are locations where the slope is estimated to be greater than 20 percent and it is assumed that some grading would be necessary to create a suitable access way (either within or outside the power line ROW) that can be traveled by maintenance and inspection vehicles. In particularly steep areas, the new access way would likely require switch back roadways to provide moderate grades and generally level cross-slopes, and would result in a noticeable change in the topography. New access ways requiring grading/earth moving due to terrain would be approximately 10 feet wide for straight sections and up to 25-feet wide at curves to safely allow the movement of construction equipment and vehicles to each site. Cut and fill slopes would disturb a wider area. Typically,

each access way requiring grading/earth moving would first be cleared of vegetation and graded by a bulldozer. A motor grader would then level the access way in accordance with the engineered specification. Erosion control best management practices (BMPs) (e.g., water bars) consistent with regulatory permit conditions, agency guidelines, and applicant proposed measures (APMs) described later in this chapter (see Section 3.7 and Table 3-8 below for a description of APMs) would also be installed to address erosion control and water quality protection concerns. Gravel would not typically be placed on these roadways. However, it may be applied where a dirt access way intersects a paved public road to minimize the potential for dirt and mud being tracked onto public roadway. Gravel may also be applied as an erosion control BMP if appropriate. The new access way would then be revegetated with low-growing vegetation and maintained as described above for other access ways, except where BMPs would not allow for revegetation.

Exhibit 3-5 shows a typical schematic cross section of three different scenarios. This graphic shows the pre-construction condition, the condition during construction, and a projection of how the access way would be maintained after vegetation growth returns.

The new access ways would not be intended for public access. Where new access ways connect to, or cross, existing roads or trails, barriers to access, such as boulders or gates would be placed at the entrance to the access way. Where temporary access ways used solely for construction connect to, or cross, existing roads or trails, barriers to access such as logs or rocks would be installed, restoration of the temporary access way would include efforts to minimize its visibility from existing roadways, and mulch or other materials may be used to further discourage motorized vehicle use. During maintenance and inspection activities, any evidence of public use would be noted and public access barriers would be adjusted, if needed.

## TRUCK TRIPS

Table 3-3, Estimated Truck Trips, provides the estimated number of truck trips associated with each project component. These would be one-way truck trips on and off the construction site and encompass all classes of trucks (e.g., material transport and delivery trucks, line tensioning trucks, cement trucks, crew trucks, cherry pickers, fuel trucks, logging trucks) except for employees driving to the job site in personal vehicles. Trip lengths would vary substantially based on the type of truck and the specific purpose (e.g., delivering materials to a staging area, moving materials from a staging area to the construction site, moving logs from the alignment to a staging or processing area, removing processed logs from the job site).

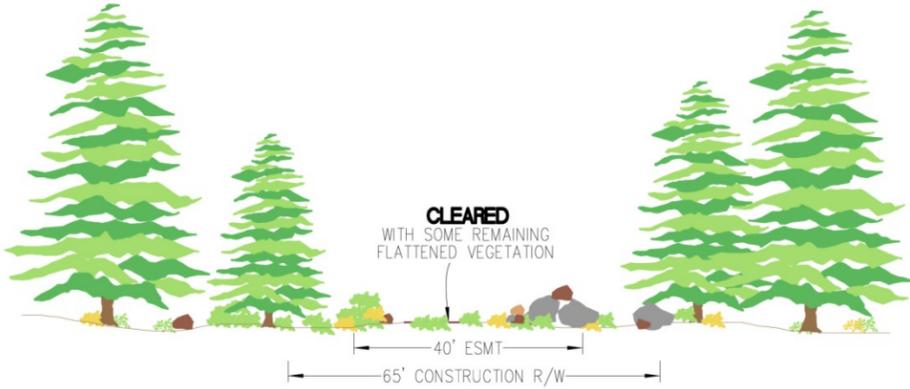
Component	Approximate Number of Truck Trips (one-way)			
	Alternative 1 (PEA Alternative)	Alternative 2 (Modified Alternative)	Alternative 3 (Road Focused Alternative)	Alternative 4 (Proposed Alternative)
<b>Phase 1</b>				
Northstar Substation	55	55	55	55
650 Line Upgrade	4,825	4,050	4,970	4,905
<b>Phase 2</b>				
King Beach, Northstar, North Truckee, and Brockway Substations	880	880	880	880
650 Line Upgrade	1,260	1,260	1,325	1,260
<b>Phase 3</b>				
Tahoe City, Squaw Valley, and King Beach Substations	1,065	1,065	1,065	1,065
625 Line Upgrade	6,580	6,710	5,330	5,330
Total Estimated Vehicle Trips	14,665	14,020	13,625	12,495

# 0-5% FLAT CROSS SLOPE

EXISTING CONDITION



PROJECT CONSTRUCTION CONDITION



FUTURE CONDITION  
(5 YEARS POST-CONSTRUCTION)

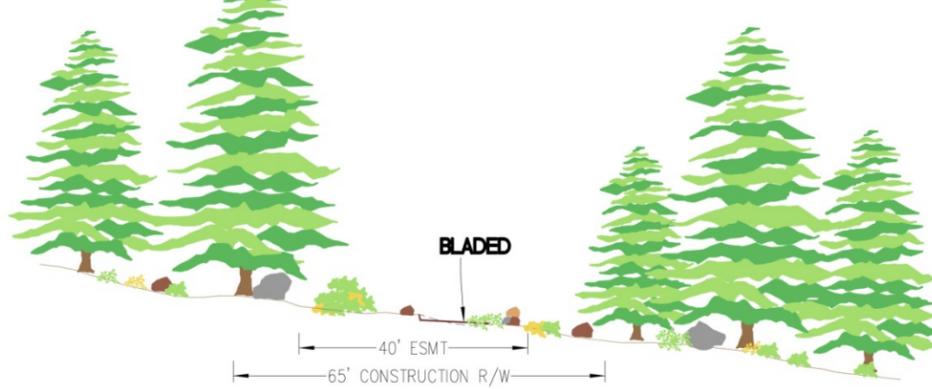


# 5-20% MODERATE CROSS SLOPE

EXISTING CONDITION



PROJECT CONSTRUCTION CONDITION



FUTURE CONDITION  
(5 YEARS POST-CONSTRUCTION)

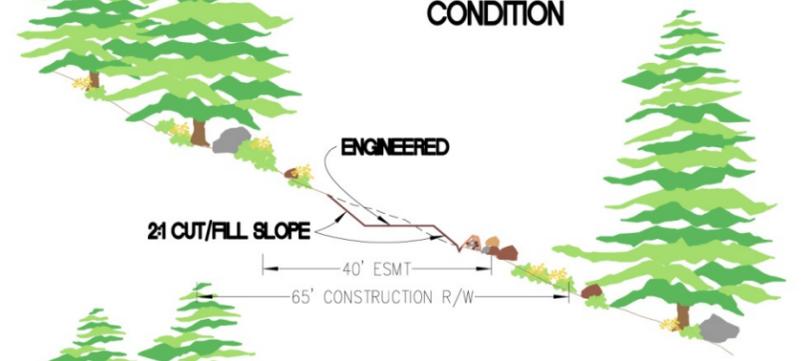


# 20%+ STEEP CROSS SLOPE

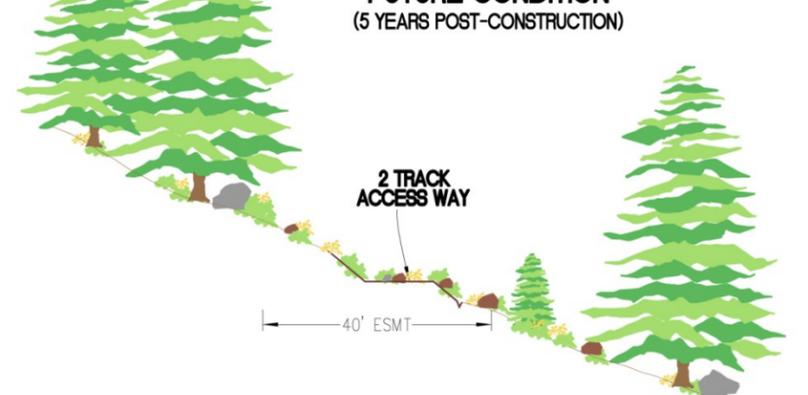
EXISTING CONDITION



PROJECT CONSTRUCTION CONDITION



FUTURE CONDITION  
(5 YEARS POST-CONSTRUCTION)



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## HELICOPTER ACCESS

Helicopters would be used to deliver and remove construction material from areas with rugged terrain, to support avoidance of sensitive biological resources, and where ground access would not safely accommodate the required construction equipment and vehicles. Helicopter landing areas identified for possible use include the Tahoe City Staging Area, the Kings Beach Staging Area, one of the Airport or the USACE Staging Areas, and one of the Northstar Parking Staging Areas, discussed below. These sites would be used for both helicopter landing and for equipment and material storage. The landing zone would be accessed using existing paved and dirt access roads. Because this landing zone would be located in a previously disturbed area, no additional grading would be required. However, some vegetation clearing may be required to provide a safe operating environment. The staging areas would be watered for dust control, as needed.

A Kaman K-Max K-1200 or similarly equipped helicopter would be used for tree removal and material delivery and removal activities in remote areas. Helicopters would typically be used during daylight hours between 6:30 a.m. and 4:00 p.m., or as allowed by local noise restrictions, to deliver and remove materials. Helicopters would not be used at night. Helicopters could also be used to remove materials and construction spoils from the ROW. The helicopters' flight paths would follow the ROW to the extent practical and would be coordinated with the Federal Aviation Administration and with permitting agencies. A "no-fly" zone may be enforced over USFS designated Protected Activity Centers (PACs) for certain wildlife species during the breeding season (typically February 15 to August 15).

## STAGING AREAS

Multiple staging areas would be required to store, stage, and distribute construction equipment and materials. A variety of potential staging areas have been included for study as part of this EIS/EIS/EIR (see Table 3-4, Staging Area Summary, below). The same staging areas are being considered for each action alternative, and all of the staging areas evaluated may not be required. The Tahoe City, Northstar Parking Lot, Northstar Golf Course and Sierra Pacific Industries (SPI) staging areas would only be used if an agreement can be reached with the landowner. Additionally, only one of the Airport 1, Airport 2, Airport 3, and USACE staging areas would be used, if an agreement can be reached with a landowner. All four are evaluated because it is unclear at this time which, if any, might ultimately become available.

Staging Area	Purpose	Required Improvements	Approximate Area (acres)
Tahoe City	Material and equipment storage and staging, and helicopter landing	Installation of temporary construction fencing	8.9
Fiberboard Freeway	Material and equipment storage, and staging and logging activities	Vegetation clearing, tree removal, and installation of temporary construction fencing	1.9
Former Batch Plant	Material and equipment storage, and staging and potentially logging activities	Vegetation clearing, tree removal, and installation of temporary construction fencing	0.2
Kings Beach	Material and equipment storage and staging, and helicopter landing	Vegetation clearing, minor access improvements, tree removal, and installation of temporary construction fencing	2.9
SPI	Material and equipment storage and staging	Vegetation clearing, improvement to existing dirt access road and new access way, and installation of temporary construction fencing	0.6

Table 3-4 Staging Area Summary			
Staging Area	Purpose	Required Improvements	Approximate Area (acres)
Northstar Parking 1	Material and equipment storage and staging, and helicopter landing	Installation of temporary construction fencing	3.5
Northstar Parking 2	Material and equipment storage and staging, and helicopter landing	Installation of temporary construction fencing	7.1
Northstar Golf Course	Material and equipment storage and staging	Vegetation clearing, minor access improvements, and installation of temporary construction fencing	5.1
Airport 1	Material and equipment storage and staging, and helicopter landing	Vegetation clearing, improvements to dirt access ways, installation of temporary construction fencing	4.1
Airport 2	Material and equipment storage and staging, and helicopter landing	Vegetation clearing and installation of temporary construction fencing	8.2
Airport 3	Material and equipment storage and staging, and helicopter landing	Vegetation clearing and installation of temporary construction fencing	7.6
USACE	Material and equipment storage and staging, and helicopter landing	Improvement to existing dirt access road and installation of temporary construction fencing	1.8

The staging areas considered in this EIS/EIS/EIR are generally situated in areas with pre-existing soil disturbance; however, some sites may require minimal vegetation removal and grading. There are existing paved or dirt access roads for all of the staging areas; only access to the SPI staging area would require new, temporary disturbance. Temporary chain-link fencing would be installed around the perimeter of the staging areas and security personnel would be posted, as needed. Typically, grid power is not available at these sites and a 5.5 kilowatt diesel-powered generator would be temporarily installed to provide power on an as-needed basis. During each phase of construction, one of the staging areas would also house office trailers to support the construction crew. The staging areas currently being considered are shown in Exhibits 3-4A, 3-4B, 3-4C, and 3-4D, their characteristics are summarized in Table 3-4, Staging Area Summary, and they are described in the following subsections.

### Tahoe City

The Tahoe City Staging Area would be located approximately 1 mile north of the Tahoe City Substation and would be accessed by an existing dirt road from Jackpine Street in Tahoe City. This staging area would be used as a helicopter landing zone and for material storage and staging. The staging area has previously been partially developed; approximately half of the area of potential disturbance is conifer and chaparral habitat. The site was used as a staging area and helicopter landing zone for the recent 629 Line upgrade (line extending along SR 89 from Squaw Valley to Tahoe City). Use of the site for staging would require installation of temporary fencing, but no other improvements would be required to prepare this staging area for use.

### Fiberboard Freeway

The Fiberboard Freeway Staging Area would be located east of Segment 625-3, and would be accessed from the Fiberboard Freeway. This staging area would be used to store and stage material and equipment, and for logging activities related to the project. This approximately 2-acre area has been previously disturbed, but has some vegetative cover. The vegetation on site is dominated by mountain whitethorn (*Ceanothus cordulatus*) with scattered pines (*Pinus* sp.). Vegetation and brush would be cleared and approximately five trees would be removed to prepare this staging area for use.

### Former Batch Plant

The Former Batch Plant Staging Area would be located just off the Fiberboard Freeway (near Segment 625-4). This staging area would be used to store and stage material and equipment, and could also be used for logging

activities related to the project. This approximately 0.2-acre area has been previously disturbed and supports little natural vegetation. The primary surrounding habitat is red fir forest. Vegetation and brush would be cleared and approximately 30 trees would be removed to prepare this staging area for use.

### **Kings Beach**

The Kings Beach Staging Area would be located just north of the Kings Beach Substation on NFS land, and would be accessed by an existing dirt road located at the end of Canterbury Drive. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. This site has a previously-disturbed area that measures approximately 300 feet by 300 feet and may have been used locally as a disposal site for inert refuse. Activity at this location would be focused in this previously-disturbed area (based on USFS review and authorization). The vegetation within the planned staging area mainly consists of bunch grasses and scattered Jeffrey pines (*Pinus jeffreyi*) under 10 feet in height. Minor improvements to the access road—including the removal of approximately 10 trees—would be required and a temporary fence would be installed around its perimeter.

### **SPI**

The SPI Staging Area would be located near the 625 Line east of SR 267. The staging area would be accessed off of Martis Peak Road and existing dirt access roads that would require limited improvements (e.g., trimming of vegetation encroaching on the road, minor grading). This staging area would also require approximately 0.3 acres of new disturbance for temporary access ways. Most of the staging area site has been previously disturbed.

### **Northstar Parking 1**

The Northstar Parking 1 Staging Area would be located in Northstar-at-Tahoe's Castle Peak Park and Ride lot off of Northstar Drive. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. The lot and access ways are paved and no ground disturbance or vegetation removal would be required.

### **Northstar Parking 2**

The Northstar Parking 2 Staging Area would also be located in Northstar-at-Tahoe's Castle Peak Park and Ride lot, east of the Northstar Parking 1 Staging Area. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. This 7-acre site and all access ways are paved and no ground disturbance or vegetation removal would be required.

### **Northstar Golf Course**

The Northstar Golf Course Staging Area would be located just north of SR 267, where the highway passes the Northstar Golf Course, and would be accessed by an existing dirt road located approximately 1.4 miles southeast of Martis Creek Road. The name, "Northstar Golf Course" was established when the PEA was prepared due to the proximity to the golf course and not land ownership. The land is owned by the Truckee Tahoe Airport District. This approximately 5 acre staging area would be used for material storage and equipment staging. The eastern and western sides of the small access road from SR 267 support different primary vegetation types. To the west of the access road, vegetation is primarily big sagebrush (*Artemisia tridentata*), low sage, lupine (*Lupinus* spp.), buckwheat (*Eriogonum* spp.), and Plumas ivesia (*Ivesia sericoleuca*). To the east of the access road, the primary vegetation types include those more typical of wet meadow habitat, including bentgrass (*Agrostis* spp.) and sedges (*Carex* spp.), with scattered low sage. To prepare this staging area, vegetation within the staging area footprint would be cleared and minor improvements would be made to the access road. A recorded cultural resources site is located next to this staging area. The boundary of the staging area would be adjusted, if needed, to avoid encroaching on this site. Signage would be placed on the perimeter fencing identifying the presence of a sensitive environmental resource and that all activities and personnel must stay within the defined boundary of the staging area.

## Airport 1

This approximately 4 acre staging area would be located on airport property in Nevada County, immediately west of Martis Creek Road. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. Most of the site is currently sagebrush scrub habitat.

## Airport 2

This approximately 8 acre staging area would be partially located on airport property in the Town of Truckee. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. Most of the site is currently sagebrush scrub habitat. Access to the site would be via existing paved access ways (Truckee Tahoe Airport Road and Soaring Way).

## Airport 3

The Airport 3 Staging Area would be located on airport property in Nevada County. Most of the site is currently sagebrush scrub habitat. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. Access to the site would be via existing paved access ways (Truckee Tahoe Airport Road and Soaring Way).

## USACE

The USACE staging area would be located on less than 2 acres in Nevada County. The entire site has been previously disturbed. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. Access to the site would be via existing paved (Martis Creek Road) and dirt access ways.

## POWER LINE CONSTRUCTION METHODS

### Stringing Site Preparation

Multiple stringing sites would be required during the removal and installation of the conductors. In general, stringing sites would be approximately 300 feet in diameter (approximately 1.6 acres) and would be spaced at distances between approximately 500 feet and 8,000 feet apart depending on the terrain and surface conditions along the ROW, as well as the placement of angle structures. On average, they would be located approximately 2,500 feet (approximately 0.5 mile) apart. Table 3-5, Estimated Number of Stringing Sites Required Under the Action Alternatives, shows the approximate number of stringing sites that would be required within and outside of the Lake Tahoe Basin. Stringing sites would require a relatively flat surface; therefore, they would need to be cleared and could need to be graded to allow for safe equipment operation. Site preparation would require heavy equipment for removing obstacles (e.g., large rocks, trees, brush). Vegetation would be removed, as necessary, to provide safe and efficient work areas. Mowing or grubbing would be the preferred method for clearing vegetation.

<b>Road Type</b>	<b>Alternative 1: PEA Alternative</b>	<b>Alternative 2: Modified Alternative</b>	<b>Alternative 3: Road Focused Alternative (Alternative 3A: Road Focused Alternative with Double-Circuit Option)</b>	<b>Alternative 4: Proposed Alternative</b>
Number of Stringing Sites Within the Basin	44	39	45 (43)	45
Number of Stringing Sites Outside of the Basin	27	27	25 (25)	24
<b>Total</b>	<b>71</b>	<b>66</b>	<b>70 (68)</b>	<b>69</b>

## Pole Installation

### ***Excavation***

Prior to excavation, topsoil would be salvaged from the area to be excavated and from any areas that would be used for spoil storage. Topsoil would be stored adjacent to the pole, kept separate from spoil material, and respread following pole installation to facilitate revegetation of the work site. Pole installation would begin by preparing a hole by auger or track-mounted backhoe, approximately 3 feet in diameter, in which the new pole would be buried. The depth of the hole would be determined by the height of the pole. As a general rule, 10 percent of the pole height plus 2 additional feet are buried below ground. The poles would range in height from approximately 50 to 80 feet, requiring holes between 7 and 10 feet deep. Where self-supporting steel poles would be used, larger holes between 6 and 8 feet in diameter and 20 to 30 feet deep would be excavated, and concrete foundations would be poured. The permanent footprint of angle and tangent poles (poles where there is a turn in the line) would be approximately 2 square feet, while the total permanent footprint of self-supporting structures would be approximately 50.2 square feet and would displace up to 55.9 cubic yards (CY) of soil.

Blasting (outside of developed areas) or soundless chemical demolition agents (typically materials that expand in rock fissures to split larger rocks) may be required in rocky areas where normal excavation methods are unable to meet project excavation specifications. As a safety precaution, excavations would be covered, flagged, or temporarily fenced during periods of inactivity. Up to 1 CY of soil would be mounded around the base of the newly installed poles. Any remaining excavated spoil would be removed from the ROW by dump truck and stored at the staging areas. Excess spoil not used for backfilling or restoration efforts would be removed from the project site and sent to an approved landfill for reuse or disposal.

Additionally, holes for guy wire anchors would be excavated at pole sites, where required. The anchor would be a 2-foot-diameter disk attached to a steel rod with an eye at the top. The disk would be bolted perpendicular to the rod, requiring a 2-foot-diameter hole between 4 and 8 feet deep. Anchors would typically be located at a distance equal to the total pole height away from the pole's base. After installation, each anchor would be compacted and tested using a large bulldozer and winch lines, or with specific anchor testing equipment.

An additional temporary work area would be required for each anchor being installed outside of the temporary ROW. In these instances, a 15-foot by 50-foot work area, extending from the ROW to the anchor location, would be established to provide access for the track-mounted equipment. Disturbance would include vegetation removal, rock and downed tree relocation, and overland travel. To facilitate the installation of the anchor, an approximately 4-foot by 6-foot area surrounding the anchor location would be cleared of existing brush. A track-mounted backhoe would then be used to excavate a 2-foot-diameter hole, and the excavated soil stockpiled for backfilling after completion of the anchor installation. It is anticipated that all of the soil removed from the hole would be used for backfill, unless deemed unsuitable, in which case it would be hauled off site.

### ***Assembly and Erection***

Once excavation activities for the poles have begun, materials, including poles, insulators, and hardware, would be delivered to the site, assembled, and attached to the new poles to form a complete unit. Direct-buried poles would be buried in the ground, and native soil would be used to fill the holes (imported soil and in some cases concrete would be used if native material is unsuitable for compaction or could not support the pole). Concrete would be sourced from the nearest commercial batch plant. Up to 1 CY of soil would be mounded around the base of the newly installed poles. Self-supporting steel poles would be placed onto concrete foundations using cranes and would be secured using the appropriate hardware.

Helicopters may be used to deliver material to the ROW and install poles, as necessary, in areas of rough terrain or in areas otherwise inaccessible to ground crews and other construction equipment. If poles are to be installed using helicopters, they would be assembled at one of the staging areas prior to delivery to the ROW. The assembled poles would then be placed into the excavated holes using cranes. Poles to be placed by helicopters

would be assembled at the helicopter landing zone, transported, and placed in the excavated holes with assistance from ground crews.

## **Conductor Removal and Installation**

The following steps describe the construction techniques for removing and installing conductor. Exhibit 3-6 is a graphical representation of the conductor installation process. In most areas where reconductoring is proposed (i.e., old electrical line would be replaced with new line), the new conductor (i.e., electrical cable) would be of the same type as the existing conductor; specifically, 397.5 MCM AA conductor (non-specular material that reduces light reflection off the metal). An approximately 8.8-mile section of the 650 Line between Kings Beach and Martis Valley currently has aluminum core steel reinforced conductor.

### ***Conductor Removal***

The conductor would be removed by sectioning the conductor at dead-end poles. If feasible, the conductor would be spliced together in areas with multiple dead-end poles prior to removal. A heavy reel puller would be staged at stringing sites or various intersections of existing access roads, and the conductor would be pulled through the ROW to the reel puller. The conductor would be pulled under a controlled tension to keep it elevated and away from obstacles. Two crew members would walk the ROW as the conductor is being pulled and assist if the conductor snags. During the pull, the conductor forces at the poles located at each end of the pull sections would be transferred to trucks, tensioners, and pullers. The existing conductor would be placed in a hoist and attached at one end to the pole to support the down-strain load, removing load on the existing insulator. The removed conductor would be spooled onto reel trucks in 25,000 pound sections and taken along with related hardware to an existing CalPeco storage facility for reuse, or would be recycled or disposed of at an appropriate landfill. Helicopters are not anticipated to be used during conductor removal. However, if there are areas where the terrain is too rugged for truck access to a suitable pull sites, crews would access areas by foot, use all-terrain vehicles, or use a helicopter.

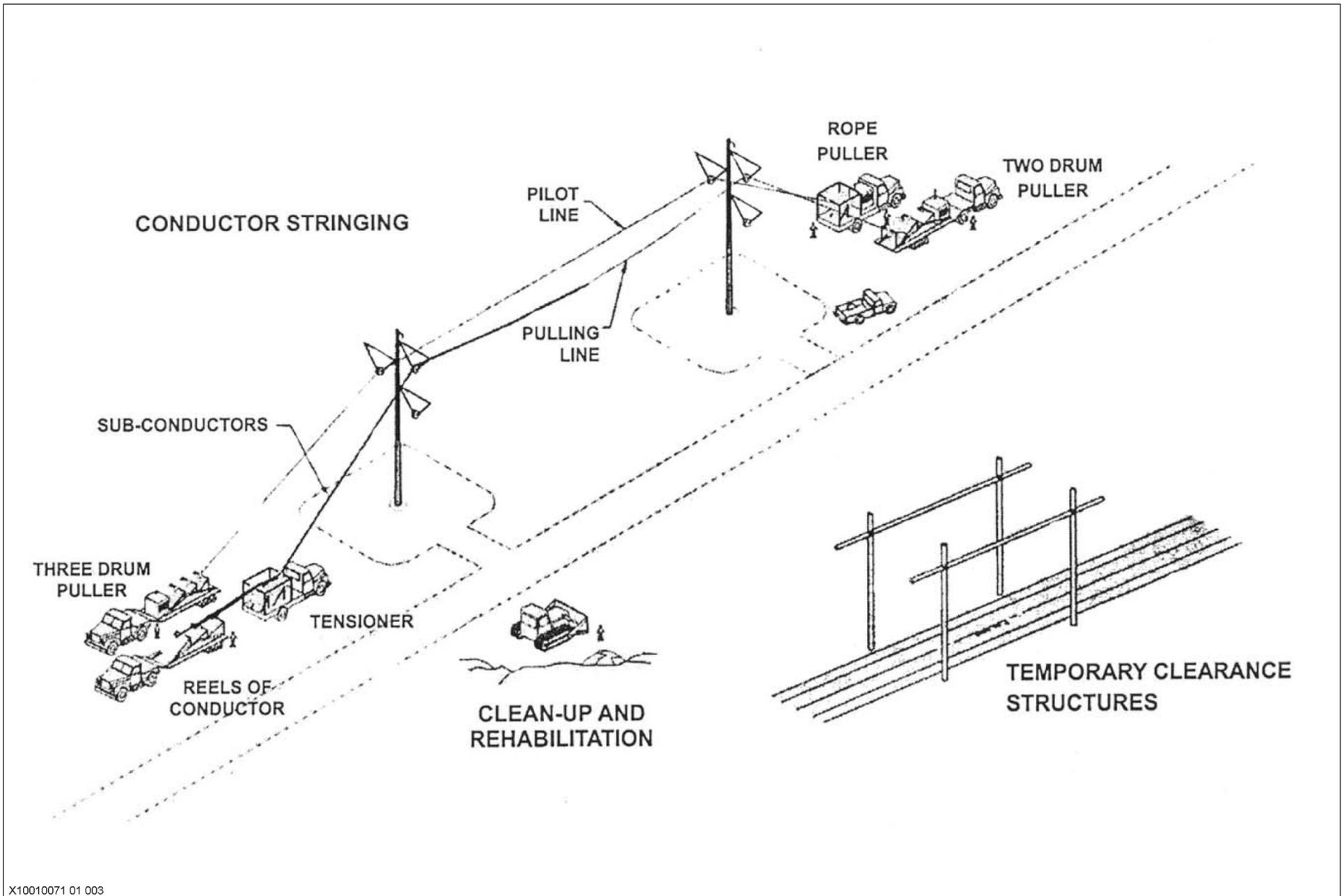
### ***Conductor Installation***

The new conductor would be attached to the sock line (i.e., a light rope or cable use to pull the conductor) and pulled back through each pole to the next conductor pulling site. After the conductor reaches the pulling site, it would be sagged and tensioned to design specifications. The 120 kV line would be installed with a minimum ground clearance of 25 feet where there are no obstructions, 30 feet where the line crosses roads, and 34 feet for any railroad crossings. The new conductor would then be clipped into the end of each insulator on each pole, any travelers (temporary rollers or pulleys hung from the poles to assist with line pulling) would be removed, and vibration dampers and other hardware would be installed.

### ***Highway and River Crossings***

At highway and river crossings, temporary clearance structures, which consist of vertical wood poles with netting strung between them to suspend any conductor that accidentally falls, would be erected prior to conductor removal and installation. An auger or backhoe would excavate the holes in which the poles for crossing structures would be installed, and a crane would lift the structure elements into place. The total temporary disturbance associated with the installation and removal of each crossing structure would be approximately 0.25 acre (100 feet by 100 feet). The temporary clearance structures would be removed after the completion of conductor stringing, and the holes would be backfilled with the excavated soils.

Any work proposed and performed within the State's right-of-way would require a Caltrans Encroachment Permit (TR-0100) prior to construction. Construction of power lines across I-80, SR 267, and SR 89 would require an encroachment permit from Caltrans for each crossing location. In conjunction with the permits, traffic control would be implemented. For I-80, rolling breaks (i.e., Highway Patrol vehicles slowing traffic behind them to provide a break in traffic ahead of them where work could be conducted) of durations sufficient for construction personnel to install pull rope and string conductors across the freeway would be used.



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Source: Received from Sierra Pacific 2010; adapted by Ascent Environmental in 2012

Exhibit 3-6

Conductor Installation



Whether rolling breaks or a traditional road closures are used, I-80 is the only crossing location where nighttime construction could be required. This option would only be used if a temporary daytime shutdown of all travel lanes as the cable is strung across the highway would not be permitted by Caltrans during daylight hours. At crossings with SR 267, SR 89, and local roadways, flaggers may temporarily hold traffic during stringing activities and reconductoring work.

The power line would span all waterways. No construction would occur in the Truckee River channel; although some pole installations and removals may be required below the ordinary high water mark. Work would only occur on the river banks and would be scheduled during low-flow conditions.

### ***Underground Distribution Duct Package and Cable Installation***

New underground distribution feeders would be installed at the Kings Beach Substation in order to maintain distribution service in the project area. Each distribution feeder would leave the Kings Beach Substation via an underground duct package and intercept the overhead distribution lines via new risers. The underground power facilities would be installed in a duct bank comprised of two 6-inch-diameter PVC conduits. Approximately nine underground splice vaults would be installed in line with the duct bank at intervals of approximately 900 feet or where the line must turn a corner.

Two to 14 days prior to trenching, CalPeco would notify other utility companies (via Underground Service Alert) and request that they locate and mark existing underground utilities along the proposed underground alignment. Exploratory excavations (potholing) would also be conducted to verify the locations of existing facilities in the field, if necessary. One short trench and three generally parallel trenches, measuring approximately 2 feet wide and 5 feet deep and separated by 5 feet, would be excavated using a backhoe. One approximately 25 foot long trench would exit the substation and head west. The remaining three trenches, approximately 980, 1,160, and 1,360 feet long, would head south. To accommodate the installation of the underground splice vaults, an approximately 14-foot long segment of trench would be expanded at splice vault locations to approximately 8-feet wide by 9-feet deep.

Upon completion of trench excavation, the underground splice vaults and 6-inch-diameter PVC conduits would be lowered into the trench. The conduits would be encased in at least 24 inches of compacted sand. The trench would then be backfilled using Type II aggregate base and compacted according to engineering specifications. The top of the duct package would be approximately 4 feet below the ground surface. Upon completion of the installation of the duct bank, the three conductors would be installed in one of the PVC conduits, leaving the other empty for future use.

The approximately 3,525 feet of trenches and underground splice vaults would result in the excavation of approximately 1,306 CY and 252 CY of material, respectively. After installation of the duct bank and underground splice vaults, approximately 1,340 CY of sand and aggregate would be used to backfill the trench. The excavated material would be incorporated into the Kings Beach Substation grading or disposed of at an appropriate facility. After the conductor has been installed, the ground surface would be restored to near pre-construction conditions, and vegetation would be replanted or the streets would be repaved, as appropriate.

Individual lanes of traffic could be closed for a period of up to one week during trench excavation, duct bank and vault installation, and pulling activities. Because Deer Street, Speckled Street, and Cutthroat Avenue are all two-lane roads, two-way traffic would continue and would be controlled using flaggers. The intersection of Deer Street and Speckled Street would be closed for up to one day during construction.

### **Pole Removal**

Following installation of the new steel poles and removal of the conductor, the hardware on the old poles would be dismantled using cranes and bucket trucks. The old poles would then be cut off at ground level and transported off site by truck for disposal at an approved facility. Crews would use existing access roads, new

spur roads, and the power line ROW to access pole work areas by truck. In areas where the terrain is too rugged for truck access, crews would use all-terrain vehicles or would hike in on foot to access the poles.

In areas with rough terrain or limited access, the poles would be cut off at ground level and transported to the nearest suitable staging area by helicopter. Poles that have not been treated may be repurposed or recycled (e.g., chipped and used at biomass energy facilities, or in landscaping or soil stabilization projects), or taken to an appropriate landfill if no other use can be found. Repurposing may include chipping for use as biomass, groundcover, or other use. Poles that have been treated, or are otherwise unacceptable for biomass or other uses, would be disposed of at an appropriate disposal site. The existing pole work areas would then be restored. In some instances, agencies have historically requested that some wood poles be left on site for a specific purpose such as raptor perching and nesting, trail alignment borders, or for erosion control in areas of steep terrain. If this occurs, CalPeco will comply with the requests.

### ***Underbuild***

The existing power line poles that would be affected by the proposed project are at heights between 48 and 80 feet above ground surface (Sierra Pacific 2010; Attachment 3-B). Sections of both of the 625 and 650 Lines include poles that accommodate the existing power line at the top of the pole, as well as existing electrical distribution lines and/or communication lines (such as cable and telephone) on the lower portion of the pole. The existing electrical distribution lines and/or communication lines that share the power poles are referred to as underbuild. Exhibit 3-7 shows the locations along the existing 625 and 650 Lines affected by the project where there is existing underbuild. Exhibit 3-7 also illustrates the different types of underbuild along these lines; the categories of underbuild are: (1) distribution underbuild only, (2) communication underbuild only, and (3) both distribution and communication underbuild. As shown in Exhibit 3-7, the existing 625 Line has a limited amount of underbuild—only two short sections of electrical distribution line, one in Tahoe City and the other just east of SR 267 at Brockway Summit. Conversely, almost the entire portion of the 650 Line affected by the project includes underbuild.

As part of all of the action alternatives, existing underbuild would be transferred to the new power poles to the extent feasible. Where the underbuild is not transferred to the new power poles, the existing poles would remain in place, the existing powerline and related equipment would be removed, and the poles topped. Generally, remaining poles that accommodate distribution only or distribution and communication underbuild would be topped to a height of about 40 feet above ground surface (+/- 5 feet) (Bengochea, pers. comm., 2012). If the remaining poles would support communication underbuild only, the remaining poles would be topped to a height of about 30 feet above ground surface (+/- 5 feet). Instances where existing poles would remain in place would typically occur in urbanized or developed areas where buildings are currently served by electrical distribution and/or communication lines. Under action alternatives where these buildings could not be adequately served by distribution or communication lines attached to new 625 or 650 Line poles (e.g., 625 or 650 Line would be moved to a new route), existing poles would remain to support the underbuild facilities. In addition, where the 650 Line parallels SR 267, north of Kings Beach to Brockway Summit, the lead agencies are in discussions with the owners of the telecommunications underbuild (e.g. AT&T) regarding relocation of the new 650 Line poles. The preferred option for the underbuild would be to co-locate these lines on the new power line poles. However, the telecommunications underbuild might remain on the existing poles, with the poles topped, as described above.

Where transfer of the underbuild to new poles would be feasible, CalPeco would be responsible for transferring the distribution underbuild. This would occur simultaneously with new power pole construction. CalPeco does not have the authority to transfer the communication lines. In accordance with the Joint Pole Agreements established between CalPeco and communication providers, owners of the communication underbuild would be responsible for transfer of these lines to the new poles generally within 60 days following construction of the new poles. Under some circumstances (such as new power poles being constructed late in the fall and weather precluding relocation to the new poles in the same season, or extended negotiations occurring with the communications underbuild

owner), the relocation of the communication underbuild could extend beyond 60 days. In these instances there would be two sets of parallel lines for a period until the communication underbuild could be relocated. After all facilities have been moved from existing poles to new poles, CalPeco lineman would remove the poles (cutting them to ground surface) (Bengochea, pers. comm., 2012).

Each of the action alternatives evaluated in this EIS/EIS/EIR involves some locations where power lines along the 625 and/or 650 Lines would be removed, but some poles would remain and be topped only. Common to all of the action alternatives, the section of the 650 Line that currently connects to the Truckee Substation would be removed. In this instance, the poles with existing distribution would remain in place and would be topped to a height of approximately 40 feet above ground surface to accommodate the remaining distribution underbuild. The extent to which alternatives would involve rerouting portions of the power lines to locations where transferring the underbuild to the newly rerouted line would not be feasible because of the need to maintain service to uses along the existing line varies by alternative and is described for each action alternative below and depicted in Exhibits 3-8, 3-9, 3-10, and 3-11.

## **SUBSTATION CONSTRUCTION METHODS**

To accommodate the upgrade to 120 kV, modification or reconstruction of the existing substations would be required. All of the proposed modifications would take place within CalPeco-owned parcels. Existing facilities not proposed for major changes—Squaw Valley Substation, North Truckee Substation, and the Northstar Substation—would not require extensive site grading or excavation. Construction activities at the Tahoe City Substation would require more extensive excavation and the upgrade at the Kings Beach Substation would require the import of 5,000 CY of engineered fill to build up the substation pad so it is level with the existing substation and grading.

Substation equipment would be removed by hand or by crane and recycled, reused, or disposed of at an appropriate landfill. Necessary equipment would include a crew truck, a small crane, a backhoe, a flatbed truck, and a dump truck. Foundations would be removed where they interfere with the installation, operation, or maintenance of the new equipment, and as necessary to meet land coverage requirements and in areas that are to be restored. Foundations would be dug up and larger slabs would be broken apart for loading into a dump truck to be hauled away.

An auger would be used for excavations for deep footings, rather than a backhoe or excavator, to minimize soil removal. The volume of soil that would be excavated at each substation is as follows.

- ▲ Squaw Valley Substation: Seven new footings totaling approximately 22 CY.
- ▲ North Truckee Substation: Five new footings totaling approximately 18 CY.
- ▲ Northstar Substation: One new transformer and regulator oil containment basin (transformer and regulator footings are contained inside the basin) totaling approximately 140 CY.
- ▲ Tahoe City Substation: 20 new footings, two transformer oil containment basins, and one switchgear building footing totaling approximately 400 CY.
- ▲ Kings Beach Substation: 16 new footings, two transformer oil containment basins, and one switchgear building foundation totaling approximately 285 CY.

Once excavations are complete, cranes or similar equipment would be used to install the new hardware. After installation of new equipment, it would be connected to the existing equipment and upgraded power lines. Because the substations are existing facilities (except for the Kings Beach Substation) with landscaping already in place, and all new equipment would be installed within the facilities' existing outer fence lines and at similar heights to existing equipment, additional landscaping or landscape plans are not proposed. The proposed Kings Beach Substation is within a portion of the CalPeco-owned parcel next to the existing substation and diesel generating facility, which is fenced and not visible from nearby residential areas or public travelways.

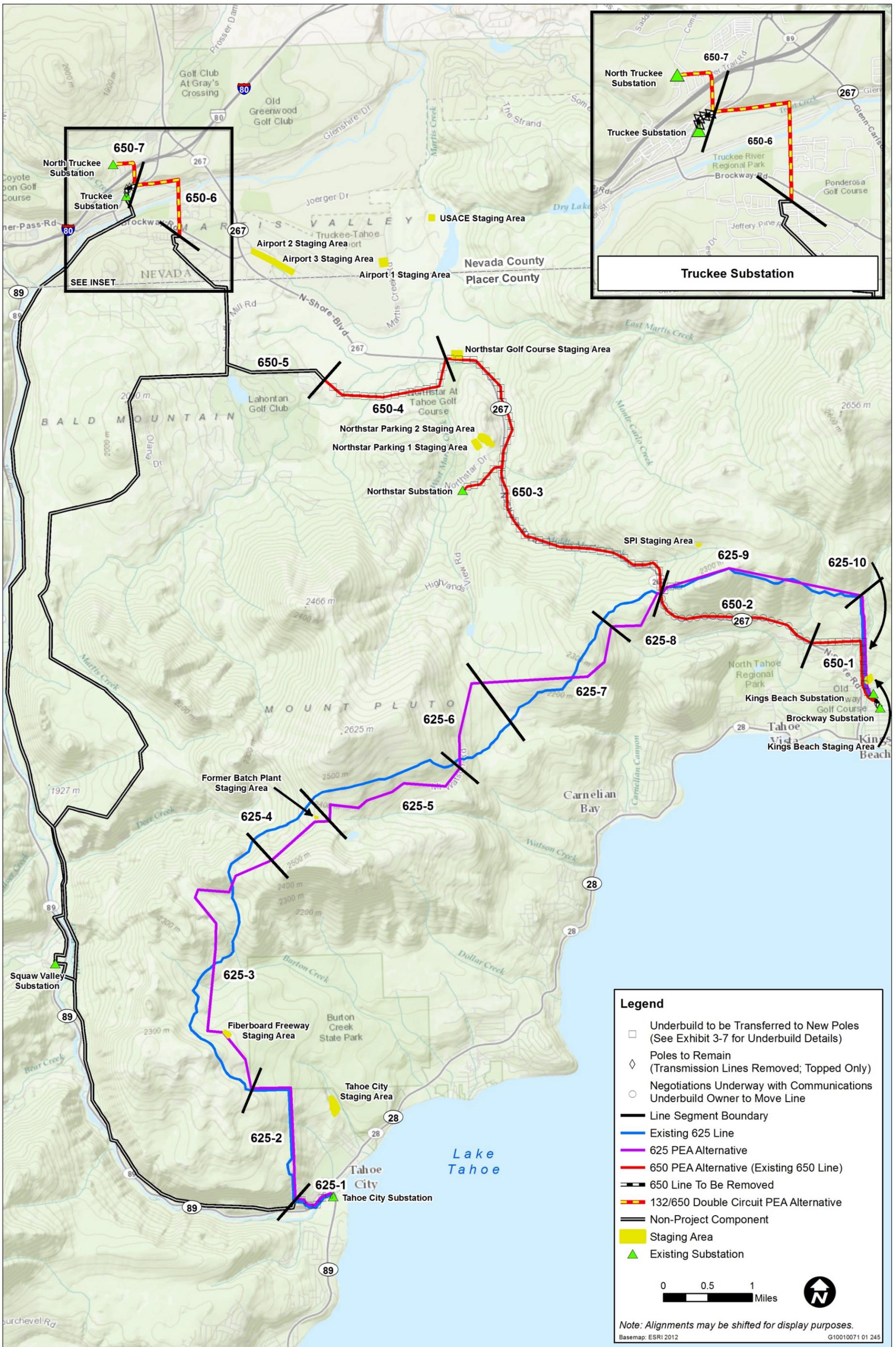


Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

Exhibit 3-7

Locations of Existing Distribution and Communication Underbuild

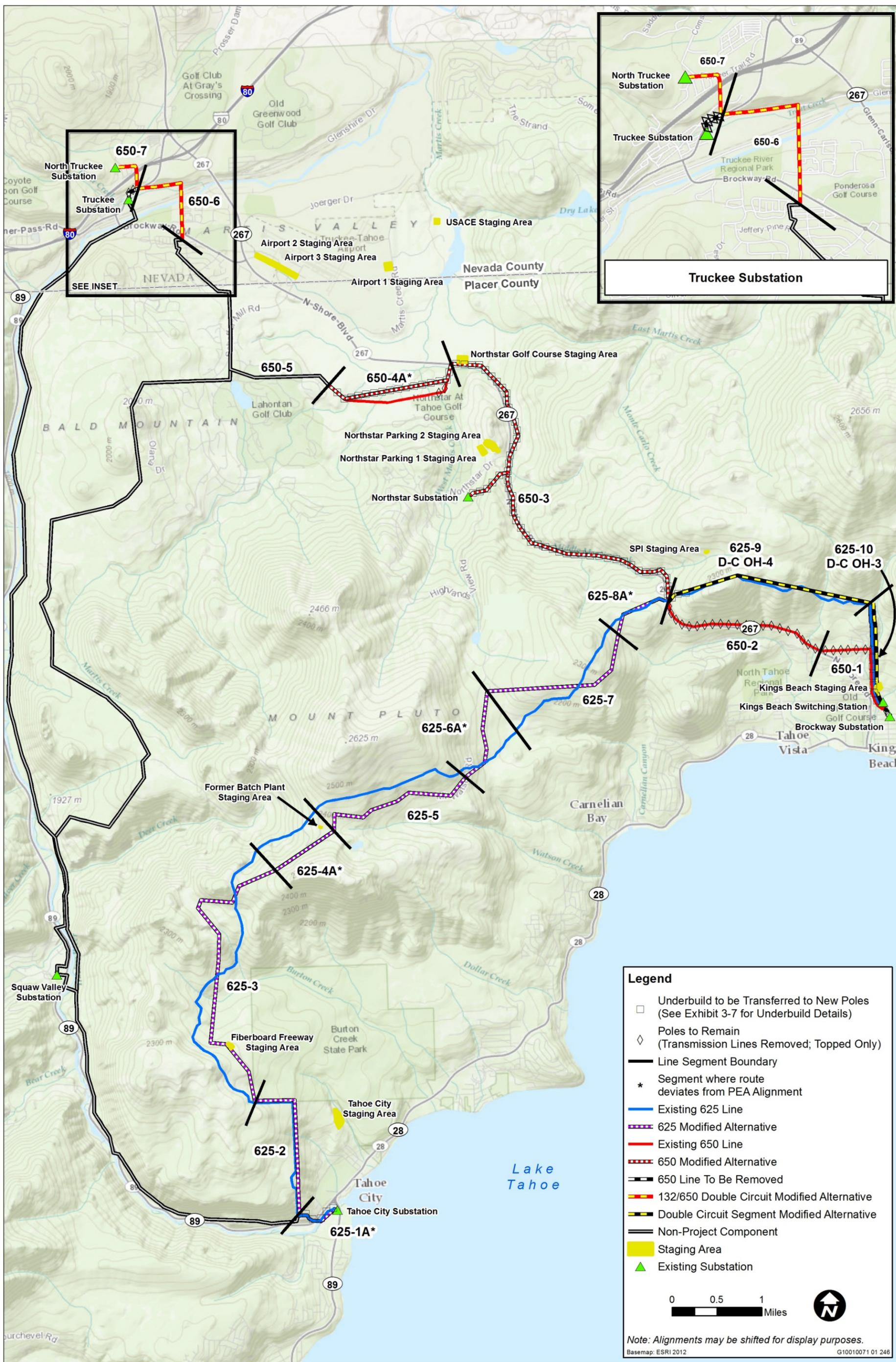




Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

Exhibit 3-8 PEA Alternative - Locations Where Existing Poles Supporting Underbuild Would Remain (Topped Only)

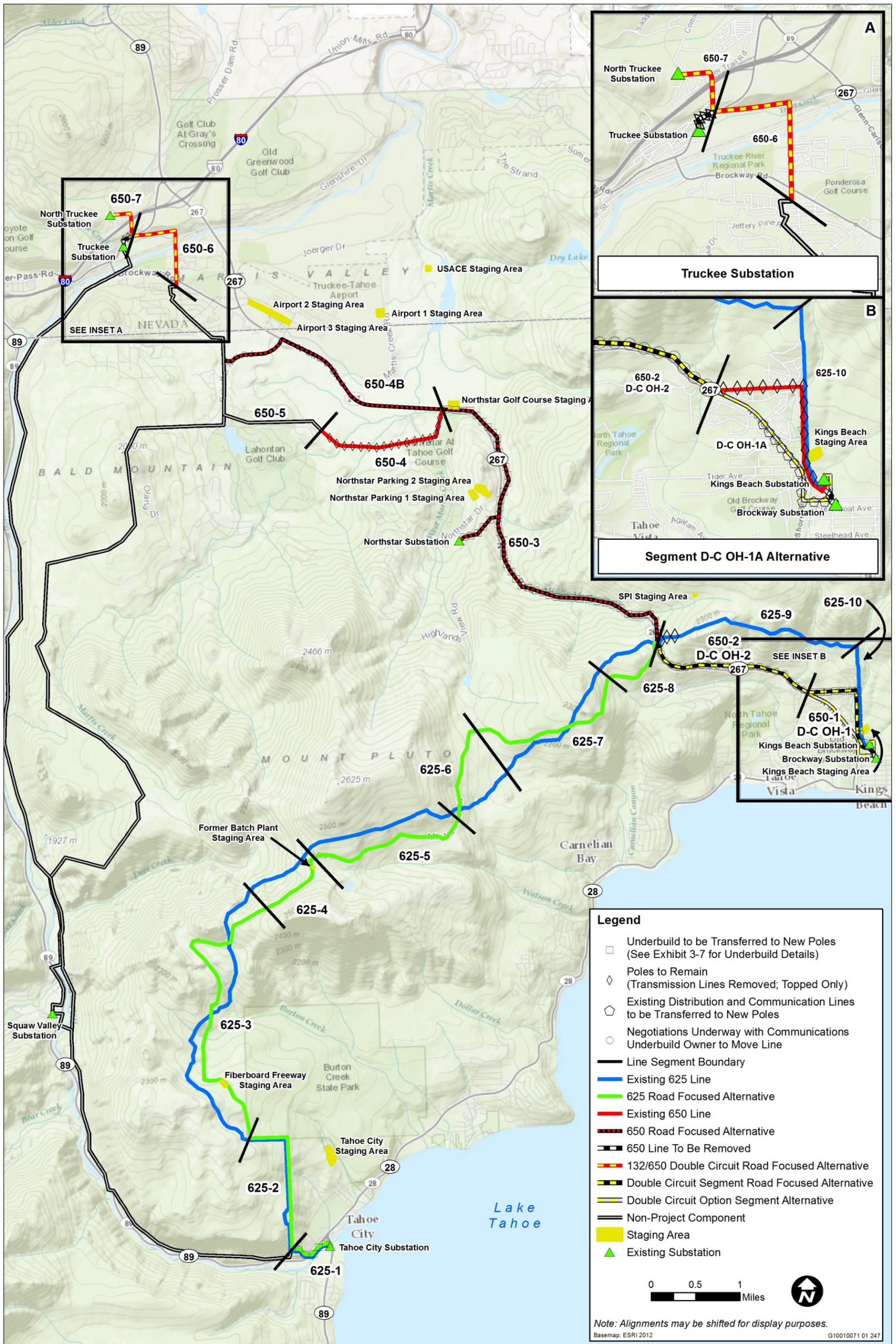




Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

Exhibit 3-9 Modified Alternative - Locations Where Existing Poles Supporting Underbuild Would Remain (Topped Only)

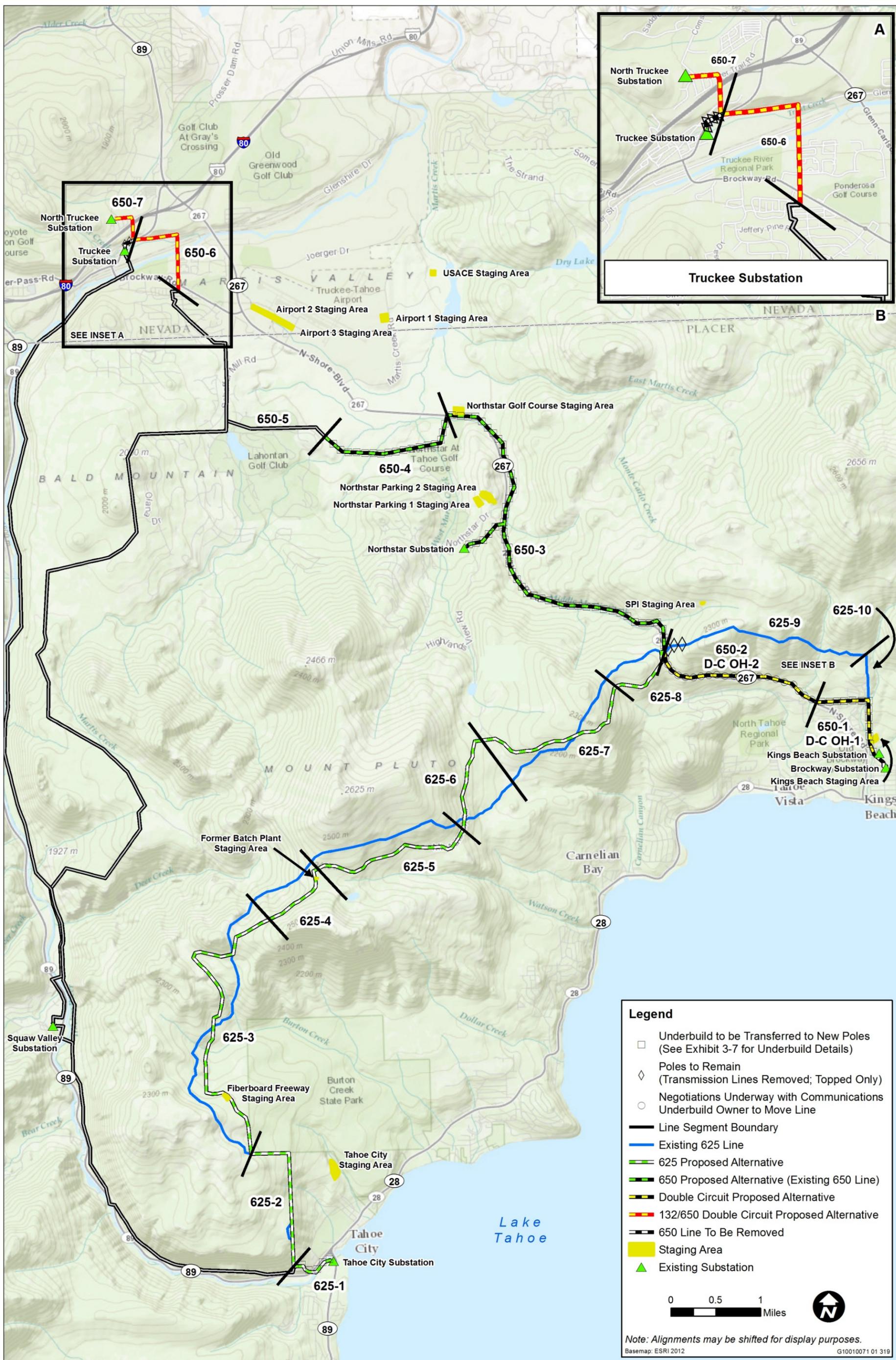




Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

Exhibit 3-10 Road Focused Alternative - Locations Where Existing Poles Supporting Underbuild Would Remain (Topped Only)





Source: Data received from TriSage 2012; Adapted by Ascent Environmental in 2012

Exhibit 3-11 Proposed Alternative - Locations Where Existing Poles Supporting Underbuild Would Remain (Topped Only)



Note: Alignments may be shifted for display purposes.  
 Basemap: ESRI 2012 G10010071 01 319

## CONSTRUCTION WORKFORCE AND EQUIPMENT

During construction, up to 50 workers, one helicopter crew of five personnel, and five construction inspectors would be actively working at various locations along the project site. Additionally, between one and three environmental monitors would be working with the crews to monitor implementation of the project consistent with the project description and APMS (see Section 3.7 and Table 3-8 below for a description of APMs), and adherence to mitigation measures and any additional regulatory permit conditions. Environmental monitors would be independent auditors, and would report directly to the USFS, TRPA, or other agreed upon agency. In total, approximately 65 people are anticipated to be on the project at any one time during pole removal and installation. The specific number of personnel and construction equipment anticipated on site for each project component during peak construction conditions is shown in Appendix E, Construction Personnel and Equipment on Table E-1, Peak Construction Personnel. Table E-2, Typical Major Construction Equipment, also includes an estimated quantity for each equipment type and approximate duration of use for each project component. Table E-3, Access Road Construction Equipment, lists the types of equipment required to construct access roads.

## CLEAN-UP AND POST-CONSTRUCTION RESTORATION

Surplus material, equipment, and construction debris would be removed at the completion of construction activities. All man-made construction debris would be removed and recycled or disposed of at permitted landfill sites, as appropriate. Cleared vegetation would typically either be chipped and stored on the ROW for later use during restoration or disposed of off-site, depending on landowner and agency agreements and requirements. In some instances, agencies have historically requested that some wood poles be left on site for a specific purpose such as raptor perching and nesting, trail alignment borders, or for erosion control in areas of steep terrain. If this occurs, CalPeco will comply with the requests.

Areas of temporary disturbance around each pole, as well as areas used for conductor stringing and staging, would be restored to preconstruction conditions, to the extent feasible, following construction. This would include returning areas to their original contours and reseeding in accordance with USFS guidelines, USACE guidelines, and/or prearranged landowner/manager/agency agreements and requirements. CalPeco would restrict vehicle access to areas that would not remain open to the public or that were seeded until the restoration success criteria were achieved. Boulders removed during access would be redistributed over the ROW to resemble adjacent site conditions. Further restoration process details are provided in the APMs (see Section 3.7 and Table 3-8 below for a description of APMs).

## OPERATIONS AND MAINTENANCE

Operations and maintenance of the action alternatives would be the same as under existing conditions (i.e., no change in baseline conditions), which would be equivalent to Alternative 5 (No Project/No Action Alternative). The CalPeco North Lake Tahoe District Office operations personnel would patrol the lines on an annual basis. Separately from these yearly patrols, CalPeco vegetation management staff would conduct an annual hazard tree inspection, in conjunction with a California Registered Forester (more details on hazard tree identification and management are provided below in the subsection titled "Tree Removal"). As needed, CalPeco operations staff would also patrol the lines in the event of unexplained outages or significant natural incidents, such as fire, flood, or electrical storms, to inspect and repair damage. Inspections would be conducted using helicopters, all-terrain vehicles, and/or line trucks.

The typical inspections would involve a visual review of the line along a path that is roughly parallel to the centerline and along existing dirt access roads. Vegetation management activities would include tree and vegetation trimming or removal to maintain the 40-foot or 65-foot wide easement in accordance with CPUC General Order (GO) 95, Rule 35 and California Public Resources Code Section 4293. Hazard trees (i.e., dead, dying, diseased, decaying, or bug-infested trees) would also be removed as part of these vegetation management activities. In addition to the annual inspections, CalPeco operation and maintenance personnel would conduct pole-climbing inspections every five years. These inspections would include accessing each power pole site using four-wheel-drive vehicles on existing dirt access

roads. CalPeco personnel would climb each pole to inspect the integrity and condition of the hardware and insulators. Quarterly inspections would be conducted for each substation to record operation counters in the breakers, transformers, and regulators, and to address discrepancies.

The electrical line would be accessed via the centerline access routes established during construction. After completion of construction, the centerline access routes would be maintained in low growing vegetation that provides erosion control while allowing over-land vehicle travel by line trucks and inspection trucks (i.e., pickup trucks). Line trucks would access the power line ROW using the centerline access routes several times per year for routine maintenance, while inspection trucks would access the ROW one to two times per year. Vehicles would also travel on the centerline access routes as needed to perform repairs. If any of the existing access roads become impassable, CalPeco would contact the property owner prior to use or conducting any potential improvements.

### **3.3.2 ALTERNATIVE 1: PROPONENT'S ENVIRONMENTAL ASSESSMENT ALTERNATIVE**

#### **650 LINE**

Approximately 10 miles of the existing 650 Line would be rebuilt as part of this alternative, and two portions would be removed (parts of Segment 650-7 and Segment 650-1, described below).

#### **REBUILD**

##### **Segment 650-1**

From the Kings Beach Substation, Segment 650-1 of Alternative 1 (PEA Alternative) would run north, generally to the east of the residences off of Commonwealth Drive. The alignment would span over 0.5 mile to north of the Commonwealth Drive/Cantebury Lane intersection before turning west for just over 0.5 mile to SR 267. The line would then parallel the east side of SR 267.

##### **Segment 650-2**

The 650 Line would continue northwest for approximately 2 miles to cross the 625 Line near Brockway Summit. In this area, implementation of APM SCE-7 would result in the power line alignment being set back up to 200-foot farther from SR 267 than originally identified. The text of APM SCE-7 is provided in Table 3-8 below, and the resulting setback is described in detail in the description of Segment D-C OH-2 in Section 3.3.5, Alternative 4: Proposed Alternative.

##### **Segment 650-3**

The 650 Line would parallel the east side of SR 267 for approximately 4 miles from the existing and new 625 Line near Brockway Summit to south of the Truckee town limits.

##### **Segment 650-4**

The line would turn south for approximately 0.25 mile and cross SR 267. Segment 650-4 would then trend west across the Martis Creek Lake, crossing an approximately 40-acre NFS parcel managed by the USFS Tahoe National Forest, and continuing west through the Martis Creek Lake for approximately 0.5 mile to intersect with the previously upgraded portion of the 650 Line (See Exhibit 3-4A, Segment 650-5).

#### **REMOVAL**

##### **Segment 650-1**

The portion of Segment 650-1 that would be removed is located between the existing Kings Beach Substation and Brockway Substation. From the Kings Beach Substation, the segment trends in a generally southeast direction for approximately 0.2 mile, crosses Speckled Street, crosses Deer Street, and terminates at the

Brockway Substation. This segment is configured with a distribution line underbuild, which would remain in place upon completion of the project.

### **Segment 650-7**

The portion of the 650 Line proposed for removal originates at the Truckee Substation and heads north, crossing over Trout Creek Road, Donner Pass Road, and East Keiser Avenue. The segment then turns east until intersecting with the existing 132 Line. This segment is approximately 0.2 mile long and is configured with a distribution line underbuild, which would remain in place upon completion of the project.

## **132 LINE**

### **Segments 650-6 and 650-7**

The portion of the 132 Line associated with this alternative extends from the North Truckee Substation to a recently upgraded portion of the 650 Line (shown as Segment 650-5 in Exhibit 3-4A), just south of SR 267 in Truckee. This section of the 132 Line would be rebuilt to accommodate a double-circuit with the 650 Line. The distribution underbuild associated with the existing 650 Line would be transferred to the new 132/650 Line double-circuit. Throughout Segment 650-7 (between the North Truckee Substation and the portion of the 650 Line to that would be removed), a second distribution circuit would be underbuilt. This distribution line would continue to the Truckee Substation. On the 132 Line, approximately 32 poles would be replaced and the line would be reconfigured to allow a double-circuit configuration with the 650 Line and operation at 120 kV.

## **625 LINE**

Implementation of Alternative 1 (PEA Alternative) would include reconductoring and rerouting the 625 Line with the objective that the new conductor would accommodate 120 kV. Implementation would require the removal of approximately 15 miles of conductor and 341 wooden poles associated with the existing 625 Line. The new 120 kV 625 Line would consist of approximately 16 miles of new conductor within a new 40-foot-wide permanent ROW (See Exhibit 3-4A).

### **Segment 625-1**

From the Tahoe City Substation, this route would follow the alignment of the existing 625 Line, heading southwest to parallel the south side of the Truckee River before turning northwest and spanning the river and SR 89. In this area, implementation of APM SCE-8 would set the new power line further back from the Truckee River than originally identified, locating the line behind an existing line of trees on the south bank of the river, outside the river corridor such that visibility of the power line would be minimized as viewed from SR 89, the Truckee River, Truckee River Bike Trail, and the pedestrian bridge. The text of APM SCE-8 is provided in Table 3-8 below, and the resulting setback is described in detail in the description of Segment 625-1 in Section 3.3.5, Alternative 4: Proposed Alternative.

### **Segment 625-2**

The new 625 Line would turn to the north and continue through NFS lands managed by the USFS LTBMU for over 1 mile. The alignment would then turn west for approximately 0.5 mile and run adjacent to the southern border of Burton Creek State Park (with a portion of the 40-foot wide operations/maintenance/ access easement crossing over the park boundary).

### **Segments 625-3, 625-4, 625-5, 625-6, 625-7, and 625-8**

The new 625 Line alignment would generally follow the route of the Fiberboard Freeway across lands managed by the USFS LTBMU and Tahoe National Forest for approximately 10 miles.

## Segment 625-9

The line would turn east for approximately 2.25 miles and span SR 267 to connect to Lake Vista Road.

## Segment 625-10

The line would then turn south for approximately 1 mile, spanning an unpaved portion of Lake Vista Road. It would then turn southeast and span over 1,000 feet to connect to the Kings Beach Substation.

## 629 LINE

The portion of the 629 Line from its intersection with the existing 625 Line to the Tahoe City Substation would be rebuilt with the double circuit configuration maintained. This double-circuit portion would be upgraded and reconducted as a result of this project. The angle poles would be replaced with single self-supporting steel poles (i.e., no guying). Once the remainder of the project has been completed and would be ready for operation at 120 kV, the 629 Line would have the capability to be operated in its entirety at 120 kV.

## UNDERBUILD

Under this alternative, nearly all of the underbuild would be transferred to new power poles (Exhibit 3-8). An exception would be the portion of the 650 Line in the Town of Truckee connecting to the Truckee Substation and between the Kings Beach Substation and Brockway Substation site, where the poles and distribution underbuild would remain (as described above). In addition, where the 650 Line parallels SR 267 in Segment 650-2, the lead agencies are in discussions with the owners of the telecommunications underbuild (e.g., AT&T) regarding relocation of the new 650 Line poles. The preferred option for the underbuild would be to co-locate these lines on the new power line poles. However, the telecommunications underbuild might remain on the existing poles, with the poles topped, as described previously. All other underbuild on the 625 and 650 Lines would be transferred to the new power poles.

### 3.3.3 ALTERNATIVE 2: MODIFIED ALTERNATIVE

## 650 LINE

Approximately 8 miles of the existing 650 Line would be rebuilt from Segment 650-3 through Segment 650-7. The same two portions of the existing 650 Line would be removed as in Alternative 1 (PEA Alternative). Segment 625-9 and Segment 625-10 would be built as a double circuit of the 625 and 650 Line, with an approximate 4-mile length.

### Segment 650-1 Replaced by Segment 625-10 D-C OH-3

Segment 650-1 would not be included in this alternative because this segment would be built as a double circuit with the 625 Line along the new alignment of the 625 Line. See the description below for Segment 625-10 D-C OH-3, below.

### Segment 650-2 Replaced by Segment 625-9 D-C OH-4

Segment 650-2 would not be included in this alternative because this segment would be constructed as a double circuit with the 625 Line along the new alignment of the 625 Line. See the description for Segment 625-9 D-C OH-4, below.

### Segment 650-3

This segment would follow the same alignment as under Alternative 1 (PEA Alternative), above.

### **Segment 650-4A**

This segment alignment deviates from Alternative 1 (PEA Alternative). The segment would be moved north to avoid sensitive cultural resources areas in the Martis Creek Lake. As with Alternative 1 (PEA Alternative), this segment would connect to the existing upgraded portion of the 650 Line.

### **Segments 650-5, 650-6 and 650-7**

These segments follow the same alignment as Alternative 1 (PEA Alternative), discussed above.

## **132 LINE**

### **Segments 650-6 and 650-7**

These segments follow the same alignment and have the same characteristics as Alternative 1 (PEA Alternative), discussed above.

## **625 LINE**

As with Alternative 1 (PEA Alternative), implementation of Alternative 2 (Modified Alternative) includes reconductoring and rerouting the 625 Line with the objective that the new conductor could accommodate 120 kV. Approximately 15 miles of conductor and 341 wooden poles would be removed. The new 120 kV 625 Line would consist of approximately 12 miles of new conductor on a single circuit (Segment 625-1A through Segment 625-8), and approximately 4 miles of new conductor on a double circuit with the 650 Line (Segment 625-9 and 625-10). The single circuit line would be within a new 40-foot-wide permanent ROW, and the double circuit line would be in a 65-foot-wide permanent ROW (See Exhibit 3-4b).

### **Segment 625-1A**

This segment would originate at the Tahoe City Substation and head southwest along the southern bank of the Truckee River. Unlike the existing alignment, this segment would be setback from the river roughly 100 feet, to the southern side of existing vegetation, and onto the 64-Acre Site. The setback would permit a straighter alignment and would minimize visibility from SR 89 and the Truckee River.

### **Segments 625-2 and 625-3**

These segments follow the same alignment as Alternative 1 (PEA Alternative), above.

### **Segment 625-4**

This segment alignment would be moved upslope of the Fiberboard Freeway as compared to Alternative 1 (PEA Alternative) to reduce visibility of the line from panoramic views seen by recreational users along the road.

### **Segment 625-5**

This segment would follow the same alignment as Alternative 1 (PEA Alternative), described above.

### **Segment 625-6A**

This segment would be oriented farther east than the Alternative 1 (PEA Alternative) alignment. The segment would follow Mt. Watson Road along the outer edge of an existing Goshawk PAC to avoid this sensitive biological resources area.

### **Segment 625-7**

This segment would follow the same alignment as Alternative 1 (PEA Alternative), described above.

### **Segment 625-8A**

This segment would deviate from the Alternative 1 (PEA Alternative) alignment, following the existing 625 Line route more closely in order to utilize some portion of the existing line where it could be at a distance from the Fiberboard Freeway (a recreational use road where no utility lines are currently located) and to place the line outside the boundary of the Lake Tahoe Basin.

### **Segment 625-9 D-C OH-4**

This segment would follow the same alignment as Alternative 1 (PEA Alternative) for Segment 625-9. However, under this alternative, this segment would be built as a double circuit with the 650 Line, eliminating Segment 650-2 from this alternative. (Note: The use of “D-C” in this and other segment titles indicates a “double circuit” option and the “OH” stands for an “overhead” line.)

### **Segment 625-10 D-C OH-3**

This segment would follow the same alignment as Alternative 1 (PEA Alternative) for Segment 625-10. However, under this alternative, this segment would be built as a double circuit with the 650 Line, eliminating Segment 650-1 from this alternative.

## **629 LINE**

The 629 line would be rebuilt in the same manner as described above for Alternative 1 (PEA Alternative).

## **UNDERBUILD**

Similar to Alternative 1 (PEA Alternative), this Modified Alternative would transfer most of the underbuild to the new power lines (Exhibit 3-9). Of the action alternatives, this alternative would have the greatest number of existing poles that would remain in place to support existing underbuild. As with the Alternative 1 (PEA Alternative), the poles and distribution underbuild along the portion of the 650 Line in the Town of Truckee connecting to the Truckee Substation and between the Kings Beach Substation and Brockway Substation site would remain with Alternative 2 (Modified Alternative). The majority of the underbuild on poles in the Martis Creek Lake would be transferred to the new poles; two or three of the existing poles in this area would be topped and remain in place creating a lateral to feed the existing pump house at the Northstar Golf Course.

The most important difference between this Modified Alternative and the other action alternatives relates to the stretch of the 650 Line within the Lake Tahoe Basin. This Modified Alternative proposes a double-circuit line extending along the existing 625 Line route between Kings Beach and the Brockway Summit, which would result in removal of the power line along SR 267. However, the existing poles along SR 267 leading up to a point just north of Stewart Way would be topped to a height of approximately 40 feet and would remain in place to continue providing electrical distribution and communication service to existing development.

## **3.3.4 ALTERNATIVE 3: ROAD FOCUSED ALTERNATIVE**

### **650 LINE**

Approximately 9 miles of the existing 650 Line would be rebuilt from Segment 650-3 through Segment 650-7. The same two portions of the existing 650 Line would be removed as in the Alternative 1 (PEA Alternative) and the Alternative 2 (Modified Alternative). Segment 650-1 and Segment 650-2 would be built as a double circuit of the 625 and 650 Lines, with a length of approximately 3 miles.

### **Segment 650-1 D-C OH-1**

This segment would follow the same alignment as under Alternative 1 (PEA Alternative) for Segment 650-1. However, under this alternative, this segment would be built as a double circuit with the 625 Line, eliminating Segment 625-10 from this alternative.

### **Segment 650-1 D-C OH-1A (Alternative 3A)**

Under Alternative 3A (Road Focused Alternative with Double Circuit Option), Segment 650-1 would deviate from the alignment of Alternative 1 (PEA Alternative) to instead follow along SR 267. The double-circuit option would realign the power line along SR 267 to Speckled Street and then along Speckled Street. With this sub-alternative (Exhibit 3-10, inset map), the existing, unrelated distribution and communication lines that run along SR 267 in Kings Beach, between Commonwealth Drive and Speckled Street and between Speckled Street and Deer Street, would be transferred to the double circuit poles to the extent feasible. It is expected that most, if not all, of these poles could be removed. Some poles may be associated with service drops or communication taps, in which case specific poles may need to remain in place. Similarly, with this option existing underbuild on the stretch of the 650 Line leading away from SR 267 and to the Kings Beach Substation would remain (Exhibit 3-9, inset map) and the poles would be topped to a height of about 40 feet above ground surface.

### **Segment 650-2 D-C OH-2**

This segment would follow the same alignment as under Alternative 1 (PEA Alternative) for Segment 650-2. However, under this alternative, this segment would be built as a double circuit with the 625 Line, eliminating Segment 625-9 from this alternative. In this area, implementation of APM SCE-7 would result in the power line alignment being set back up to 200 feet farther from SR 267 than originally identified. The text of APM SCE-7 is provided in Table 3-8, below, and the resulting setback is described in detail in the description of Segment 650-2 D-C OH-2 in Section 3.3.5, Alternative 4: Proposed Alternative.

### **Segment 650-3**

This segment would follow the same alignment as under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), above.

### **Segments 650-4B and 650-5**

This segment would deviate from Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative). This alternative would use Alignment 650-4B along SR 267, Schaffer Mill Road, and a small segment of existing dirt road to connect to the existing, previously upgraded portion of the 650 Line (i.e., Segment 650-5). This alternative would connect to the middle of Segment 650-5 rather than at the southern terminus, making much of the southern portion of the previously upgraded line in Segment 650-5 no longer necessary. This alternative would not include removal of the southern portion of the existing upgraded line in Segment 650-5. At this time, it is assumed that the line would remain in place after project completion.

### **Segments 650-6 and 650-7**

These segments follow the same alignment and would have the same characteristics as under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), above.

## **132 LINE**

### **Segments 650-6 and 650-7**

These segments follow the same alignment as under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), above.

## 625 LINE

As with Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), implementation of Alternative 3 (Road Focused Alternative) includes reconductoring and rerouting the 625 Line with the objective that the new conductor could accommodate 120 kV. Implementation would require the removal of approximately 15 miles of conductor and 341 wooden poles associated with the existing 625 Line. The new 120 kV 625 Line would consist of approximately 13 miles of new conductor on a single circuit (Segment 625-1 through Segment 625-8), and approximately 3 miles of new conductor on a double circuit with the 650 Line (Segments 650-1 D-C OH-1/1A and 650-2 D-C OH-2). The single circuit line would be within a new 40-foot-wide permanent ROW, and the double circuit line would be in a 65-foot-wide permanent ROW. Project components associated with the 625 Line are intended to increase access for construction and maintenance activities (See Exhibit 3-4c).

### Segment 625-1

This segment would follow the same alignment as under Alternative 1 (PEA Alternative), above. Also, like for Alternative 1 (PEA Alternative), implementation of APM SCE-8 in this segment would set the new power line further back from the Truckee River than originally identified, locating the line behind an existing line of trees on the south bank of the river, outside the river corridor such that visibility of the power line would be minimized as viewed from SR 89, the Truckee River, Truckee River Bike Trail, and the pedestrian bridge. The text of APM SCE-8 is provided in Table 3-8, below, and the resulting setback is described in detail in the description of Segment 625-1 in Section 3.3.5, Alternative 4: Proposed Alternative.

### Segment 625-2

This segment would follow the same alignment as under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), above.

### Segments 625-3, 625-4, 625-5, 625-6, 625-7, and 625-8

These segments would deviate from the alignments for Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) to follow the Fiberboard Freeway along the entire route.

### Segment 625-9 Replaced by Segment 650-2 D-C OH-2

Segment 625-9 is not included in this alternative because this segment would be built as a double circuit with the 650 Line along the new alignment of the 650 Line. See the description for Segment 650-2 D-C OH-2, above.

### Segment 625-10 Replaced by Segment 650-1 D-C OH-1/1A

Segment 625-10 is not included in this alternative because this segment would be built as a double circuit with the 650 Line along the new alignment of the 650 Line. See the description for Segment 650-1 D-C OH-1/1A, above.

## 629 LINE

The 629 Line would be rebuilt in the same manner as described above for Alternative 1 (PEA Alternative).

## UNDERBUILD

Similar to Alternative 1 (PEA Alternative), this road focused alternative would transfer most of the underbuild to the new power poles (Exhibit 3-10). As with Alternative 1 (PEA Alternative), the poles and distribution underbuild along the portion of the 650 Line in the Town of Truckee connecting to the Truckee Substation, and between the Kings Beach Substation and Brockway Substation site would remain in place. In addition, where the 650 Line parallels SR 267 in Segment 650-2 D-C OH-2, the preferred option for the underbuild would be to co-locate these lines on the new power line poles. However, the telecommunications underbuild might remain on the existing poles, with the poles topped, as described previously.

One important difference between Alternative 3 (Road Focused Alternative) and Alternative 1 (PEA Alternative) involves the stretch of the 650 Line that crosses the Martis Creek Lake area. With this Road Focused Alternative, the power line would be rerouted along SR 267. In this case, the existing poles that cross Martis Creek Lake would remain in place to support the distribution and communication underbuild that exists today. Additionally, a short stretch of existing poles along the 625 Line just east of SR 267 at Brockway Summit would remain in place. In both instances, the poles would be topped to a height of approximately 40 feet above ground surface.

### 3.3.5 ALTERNATIVE 4: PROPOSED ALTERNATIVE

#### 650 LINE

Approximately 10 miles of the existing 650 Line would be rebuilt as part of this alternative, and two portions would be removed (i.e., Segments 650-7 and 650-1, described below) (See Exhibit 3-4d).

#### REBUILD

##### Segment 650-1 D-C OH-1

This segment would follow the same alignment as under Alternative 1 (PEA Alternative) for Segment 650-1. However, under this alternative, this segment would be built as a double circuit with the 625 Line, eliminating Segment 625-10 from this alternative.

##### Segment 650-2 D-C OH-2

This segment, as initially considered, would follow the same alignment as under Alternative 1 (PEA Alternative) for Segment 650-2. Under this alternative, this segment would be built as a double circuit with the 625 Line, eliminating Segment 625-9 from this alternative. To minimize the scenic effects of new double-circuit poles along SR 267 in this area, APM SCE-7 has been incorporated into the project and is considered part of Alternative 4 (Proposed Alternative). APM SCE-7, which is provided in Table 3-8 below, reads:

In cases where replacement poles for the 650 Line are adjacent to SR 267 and will be visible in unobstructed foreground public views from the roadway, poles will be carefully sited to eliminate or substantially reduce their visibility from the highway within the Tahoe Basin as compared to the existing 650 Line without causing new visual impacts from tree removal or construction of access ways that would be required to erect and maintain the line. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.

With APM SCE-7, replacement poles for the 650 Line would be sited further from SR 267 to eliminate or substantially reduce their visibility from the highway within the Lake Tahoe Basin, as compared to the existing 650 Line, without causing new visual impacts from tree removal or construction of access ways that would be required to erect and maintain the line. The setback alignment developed to implement APM SCE-7 is shown in Exhibits 3-12a and 3-12b and is considered part of Alternative 4 (Proposed Alternative).

##### Segment 650-3

The line would parallel the east side of SR 267 for approximately 4 miles from the existing and new 625 Line near Brockway Summit to south of the Truckee town limits.

##### Segment 650-4

The line would turn south for approximately 0.25 mile and cross SR 267. The Proposed Alternative would then trend west across the Martis Creek Lake area, crossing an approximately 40-acre NFS parcel managed by the USFS Tahoe National Forest, and continue west through Martis Creek Lake for approximately 0.5 mile to intersect with the previously upgraded portion of the 650 Line (Segment 650-5).

## REMOVAL

### Segment 650-1

The portion of Segment 650-1 that would be removed is located between the existing Kings Beach Substation and Brockway Substation. From the Kings Beach Substation, the segment trends in a generally southeast direction for approximately 0.2 mile, crosses Speckled Street, crosses Deer Street, and terminates at the Brockway Substation. This segment is configured with a distribution line underbuild that would remain in place upon completion of the project.

### Segment 650-7

The portion of the 650 Line proposed for removal originates at the Truckee Substation and heads north, crossing over Trout Creek Road, Donner Pass Road, and East Keiser Avenue. The segment then turns east until its intersection with the existing 132 Line. This segment is approximately 0.2 mile long and is configured with a distribution line underbuild, which would remain in place upon completion of the project.

## 132 LINE

### Segments 650-6 and 650-7

The portion of the 132 Line associated with this alternative extends from the North Truckee Substation to a recently upgraded portion of the 650 Line (shown as Segment 650-5 in Exhibit 3-4d) just south of SR 267 in Truckee. This section of the 132 Line would be rebuilt to accommodate a double-circuit with the 650 Line. The distribution underbuild associated with the existing 650 Line would be transferred to the new 132/650 Line double-circuit. A second distribution line would be underbuilt between the North Truckee Substation and the Truckee Substation. On the 132 Line, approximately 32 poles would be replaced and the line would be reconfigured to allow a double-circuit configuration with the 650 Line and operation at 120 kV.

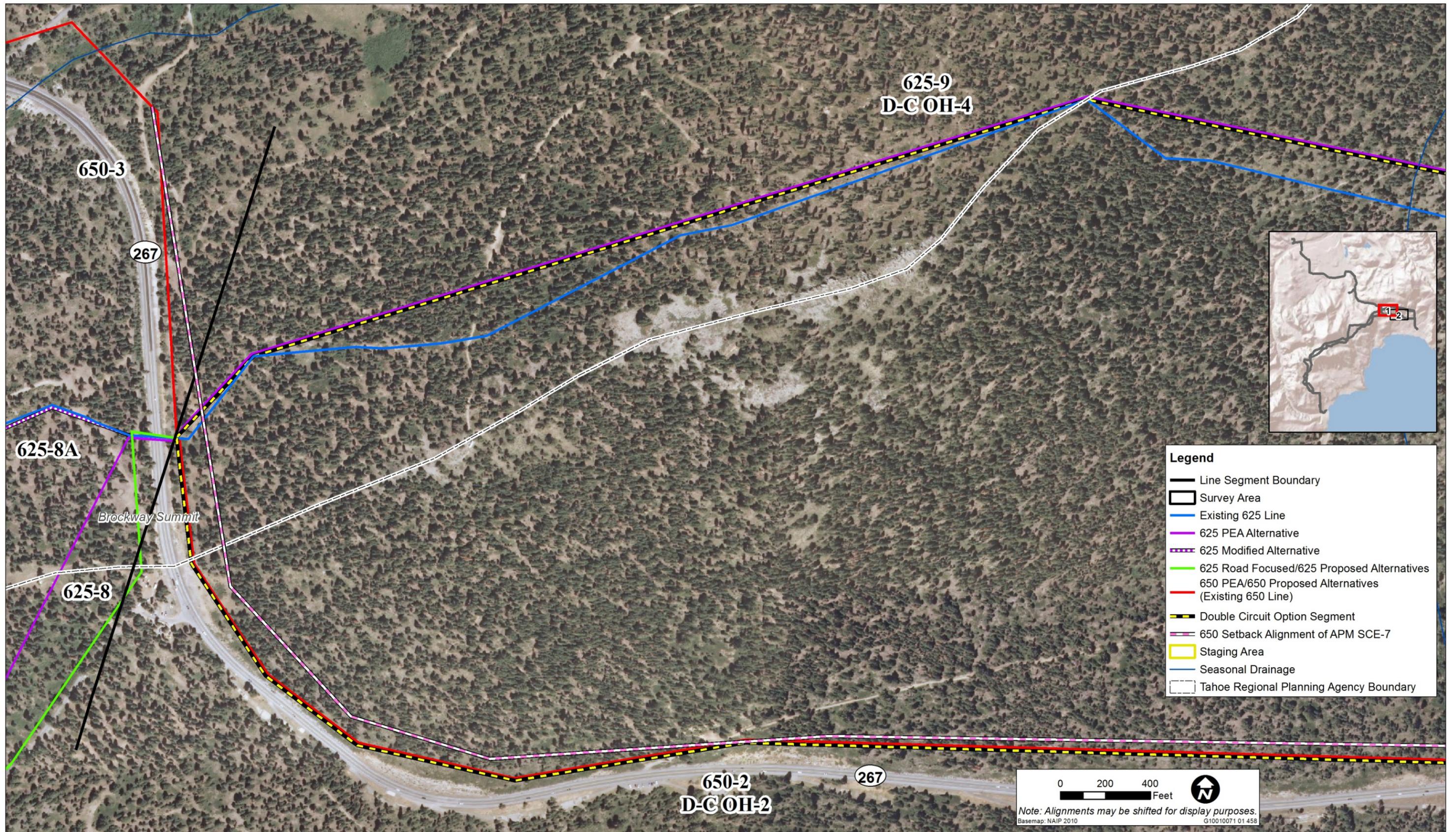
## 625 LINE

To achieve 120 kV, Alternative 4 (Proposed Alternative) would include reconductoring and rerouting the 625 line. The existing 15 miles of conductor would be replaced with approximately 13 miles of new conductor on a single circuit (Segment 625-1 through Segment 625-8), and approximately 3 miles of new conductor on a double circuit with the 650 Line (Segments 650-1 D-C OH-1/1A and 650-2 D-C OH-2) (See Exhibit 3-4d).

### Segment 625-1

This segment would follow the same alignment as Alternative 1 (PEA Alternative) and Alternative 3 (Road Focused Alternative), above. However, as discussed above for these other alternatives, implementation of APM SCE-8 in this segment would set the new power line further back from the Truckee River corridor than originally considered. The setback would place the line further into a recreation area identified as the 64-Acre Recreation site and is intended to shield views of the power line from SR 89 and the Truckee River. APM SCE-8 has been incorporated into the project and is considered part of Alternative 4 (Proposed Alternative). APM SCE-8, which is provided in Table 3-8 below, reads:

In cases where replacement poles for the 625 Line are adjacent to the Truckee River and would be visible in unobstructed foreground public views along the river or adjacent trails, poles will be carefully sited to minimize their visibility. The westernmost pole on the south bank of the Truckee River where the power line crosses the river will be placed far enough from the river so as to be substantially unseen from the pedestrian bridge. The remaining poles along the south bank of the river will be located southward, outside the river corridor and behind the trees that line the riverbank such that visibility of the power line is minimized as viewed from SR 89, the Truckee River, and the pedestrian bridge. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.



Source: Data provided by TriSage in 2013; adapted by Ascent Environmental in 2013

Exhibit 3-12A

650 Setback Alignment of APM SCE-7 - Map 1 of 2



**Legend**

-  Line Segment Boundary
-  Survey Area
-  Existing 625 Line
-  650 PEA/650 Proposed Alternatives (Existing 650 Line)
-  Double Circuit Option Segment
-  650 Setback Alignment of APM SCE-7
-  Staging Area
-  Seasonal Drainage
-  Tahoe Regional Planning Agency Boundary

0 200 400 Feet 

*Note: Alignments may be shifted for display purposes.*

Basemap: NAIP 2010 G10010071 01 459



Source: Data provided by TriSage in 2013; adapted by Ascent Environmental in 2013



Implementation of APM SCE-8 would locate the new power line behind the existing line of trees on the south bank of the Truckee River, outside the river corridor such that visibility of the power line would be minimized as viewed from SR 89, the Truckee River, Truckee River Bike Trail, and the pedestrian bridge.

### **Segment 625-2**

This segment would follow the same alignment as Alternative 1 (PEA Alternative), Alternative 2 (Modified Alternative), and Alternative 3 (Road Focused Alternative).

### **Segments 625-3, 625-4, 625-5, 625-6, 625-7, and 625-8**

These segments would follow the Fiberboard Freeway along the entire route, as described above for Alternative 3 (Road Focused Alternative).

### **Segment 625-9 Replaced by Segment 650-2 D-C OH-2**

Segment 625-9 is not included in this alternative because this segment would be built as a double circuit with the 650 Line.

### **Segment 625-10 Replaced by Segment 650-1 D-C OH-1/1A**

Segment 625-10 is not included in this alternative because this segment would be built as a double circuit with the 650 Line.

### **629 LINE**

The 629 Line would be rebuilt in the same manner as described above for Alternative 1 (PEA Alternative).

### **UNDERBUILD**

Similar to the Alternative 1 (PEA Alternative), the Proposed Alternative would transfer most of the underbuild to the new power poles (Exhibit 3-11). In Tahoe City, between the Tahoe City Substation and the Truckee River crossing, the existing underbuild would be transferred to new poles. The existing underbuild would also be transferred along much of the 650 Line between Kings Beach and Martis Valley (Segments 650-1 D-C OH-1, 650-3, and 650-4). However, where the 650 Line parallels SR 267 in Segment 650-2 D-C OH-2, the preferred option for the underbuild would be to co-locate these lines on the new power line poles. However, the telecommunications underbuild might remain on the existing poles, with the poles topped, as described previously. On the 625 Line, approximately three poles immediately east of the 650 Line would be topped to continue to support underbuild. Poles would also be topped and left in place to support underbuild between the Truckee Substation and Segment 650-7.

## **3.3.6 COMMON PROCESSES OF THE ACTION ALTERNATIVES**

### **PHASING AND SCHEDULE**

For the purposes of this environmental review, the proposed project was assumed to be constructed in three phases over five construction seasons between 2013 and 2019. Rebuild and upgrade of the 650 Line, which would include the Northstar Fold, would be completed in the first phase. This is the most critical project component, and was planned to be in service prior to the 2014 season peak in December. The second phase was initially estimated to occur in 2016 and would consist of substation upgrades. Upgrade of the 625 Line and additional modifications to the substations would occur in the third phase. After completion of this phase, the entire North Lake Tahoe Transmission System would operate at 120 kV. The third phase was initially estimated to be constructed in 2018 and 2019 to provide timing assumptions to support the EIS/EIS/EIR analysis; however, implementation would be based on peak demand and could begin sooner, or later.

Relative to timing of electrical demand and project implementation, a system analysis addendum was prepared by Z-Global in 2014 and an independent review of the addendum was provided to the lead agencies by Paul Scheurman, a licensed electrical engineer with has 45 years of experience in the field of long and short term electrical power planning field. Mr. Scheurman's project review is described in more detail in Master Response 6 and response to Comment Letter 57 in Appendix P. Information from this review is incorporated into the project phase descriptions below.

The annual construction season in the project area is generally May through November, weather permitting. The project is anticipated to result in a total of 14 months of activity spread over a five construction season period. Outside of the general construction season, limited activities could occur, including maintenance and inspection of erosion control measures and other BMPs, material deliveries to staging areas, vegetation management, and staging area maintenance.

### **PHASE 1: 650 LINE REBUILD**

Phase 1 would include rebuilding/reconductoring the 650 Line, 132/650 Line double-circuit, and upgrading the structures and conductor to 120 kV capacity from Truckee to Northstar, and Northstar to Kings Beach. Phase 1 would also involve rebuilding the existing 60 kV Northstar Tap into a line fold tying into the existing terminals, and the installation of a transfer trip on the 609 Line and the installation of capacitor banks at the Northstar Substation to address the immediate issue of low-voltage conditions. The 650 Line would continue to operate at 60 kV until the second phase is completed. This phase is the most critical for system reliability and construction of elements of this phase were initially estimated to begin as early as fall of 2013 (if all agency approvals had been achieved) with the improvements completed and in operation in 2014. Construction would begin as soon as possible after all approvals are received to accommodate current system demand of 86 MW.

### **PHASE 2: UPGRADE THE 650 LINE TERMINATIONS TO 120 kV OPERATION**

Phase 2 would include improvements to the North Truckee, Northstar, and Kings Beach substations. This phase would also include the decommissioning the Brockway Substation with re-routing of the 14.4 kV distribution feeders to the Kings Beach Substation. Construction of this phase is proposed to occur when system demand approaches 89 megawatts (MW). At an estimated load growth of 1 MW per year (the assumption used in the Z-Global system analysis addendum), it is anticipated that Phase 2 would need to be completed by 2016 and, once completed, would allow the applicant to operate the 650 Line at 120 kV.

### **PHASE 3: 625 LINE RECONDUCTOR AND RELOCATION**

Phase 3 would involve the rebuild of the 625 Line and improvements to complete the 120 kV loop. Phase 3 would include improvements to the Tahoe City, Kings Beach, and Squaw Valley substations. Completion of Phase 3 would allow for the entire loop to operate at 120 kV, including the 629 Line between Truckee and Tahoe City that has previously been upgraded with 120 kV facilities. For the purposes of the environmental analysis, the construction of this final phase was initially estimated to begin in approximately 2018, with completion and operation anticipated for the following year; however, it is acknowledged that construction could commence sooner, or later, based on need (i.e., growth of service area electricity demand). It is projected that construction of this final project phase will be necessary when system demand approaches 100 MW. Using the estimated 1 MW per year of load growth assumed in the Z-Global addendum, Phase 3 would be needed by 2027. However, if actual load growth is slower or faster, timing for reaching the 100 MW system demand would be altered.

## CONSTRUCTION HOURS

Construction hours would generally be between 7:00 a.m. and 7:00 p.m., six days per week, with adjustments made to respond to applicable local agency noise control requirements. As further described in Table 3-8, Applicant Proposed Measures (at the end of this section), NOI-4, construction activities would occur during the times established by local ordinances, with the exception of certain activities where nighttime construction would be necessary, such as delivery of substation transformers, filling of substation transformers, and pulling of the conductor across major roadways (including I-80) which must occur during off-peak hours in accordance with agency requirements. In Placer County, allowable construction hours are 6:00 a.m. to 8:00 p.m. Monday through Friday and 8:00 a.m. to 8:00 p.m. Saturday and Sunday. In the Town of Truckee, allowable construction hours are 7:00 a.m. to 9:00 p.m. Monday through Saturday and 9:00 a.m. to 6:00 p.m. on Sunday. TRPA identifies allowable construction hours as 8:00 a.m. to 6:30 p.m. seven days a week. The applicant may obtain waivers from local agencies to work outside of these limitations if necessary.

## TEMPORARY WORK AREAS

Power line construction would require the use of various temporary work areas. For example, construction at the Tahoe City Substation would require a temporary work area outside of the existing fence line on an adjacent USFS-owned parcel. Staging areas would be considered temporary work areas, as well as work areas at road crossings, both of which have been described previously. During pole installation, each angle pole would require an approximately 0.5-acre work area measuring approximately 65 feet by 335 feet and each tangent pole would require an approximately 0.25-acre work area measuring approximately 65 feet by 170 feet. Pole work areas would typically be accessed by truck using existing access roads or new spur roads and the power line ROW. In areas where the terrain is too rugged for truck access, crews would use all-terrain vehicles or would hike in by foot to access the pole sites.

An additional temporary work area may be required in instances where guy wire anchors would be installed outside of the temporary ROW. In these instances, a work area up to 15 feet wide and 50 feet long, extending from the ROW to the anchor location, would be established to provide access for the construction equipment and crew.

Some vegetation removal and grading may be required at various temporary work areas to accommodate equipment and materials, and to provide level areas to help ensure safe equipment operation. Where topsoil is present, it would be salvaged from areas to be graded whenever possible. Following construction, each temporary work site would be restored to preconstruction conditions to the extent practical, and revegetated.

## EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION

A Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented as part of the project. This plan would detail the BMPs that would be implemented to minimize erosion, reduce sediment transport, and control stormwater flow from the project area. In addition, the SWPPP would generally describe the terrain type and slope at temporary construction areas, and would address grading and slope stabilization methods, as well as construction waste disposal methods.

## DUST SUPPRESSION

Pre-construction activities would include vegetation clearing, and access and spur road construction. Water application would be required for dust abatement to work areas and unpaved access and spur roads. The volume of water required for dust abatement over the five season construction window is estimated to be 8,016,000 gallons (Sierra Pacific 2010: pp. 4.8-21). Water required for project construction would likely be obtained from the various utilities serving the region, including North Tahoe PUD, Tahoe City PUD, Northstar

CSD, and Truckee Donner PUD. Non-potable water would be obtained through permit(s), metered, and extracted from designated wells or existing hydrants in the public ROW.

## VEGETATION CLEARING

### BRUSH CLEARING

To prepare the ROW and work areas for construction activities, existing native vegetation would need to be cleared. However, this would not be the case in portions of the project area where existing poles and conductor would be removed and the ROW abandoned (e.g., portions of the existing 625 Line). In these instances, it is anticipated that conductor and pole removal can be completed using existing roads/access ways, or crews could travel by foot or all-terrain vehicle, or helicopters would be used and no vegetation removal would be needed. All treatments would be consistent with applicable APMs provided in Table 3-8. All treatment on state and privately owned lands would be in accordance with the requirements set forth in the Forest Practice Rules Chapter 4 Article 7 "Hazard Reduction" for the "North Forest District" outside of the Lake Tahoe Basin and for the "Southern Forest High Use Subdistrict" within the basin. Mowers, excavators, front-end loaders, bulldozers, and similar equipment would be used. During clearing activities, vegetation would be mowed or grubbed, leaving root systems intact wherever possible to encourage resprouting and minimize erosion. Where it would not impede construction, a post-treatment residual vegetative cover consisting of a mosaic of live brush, grasses, and forbs would be retained throughout the ROW. For ground-based construction, cleared vegetation may either be removed or chipped or masticated and spread onsite. Where sensitive resource limitations do not exist, all slash (woody debris remaining after tree removal) generated from the creation of new ROWs, staging areas, roads, and pulling sites could be removed for utilization off-site. A minor component of biomass chips may be utilized on site for soil stabilization. Brush and shrubs that must be removed would be placed at the edge of the ROW or moved to an approved staging area. During clean-up and restoration activities, salvaged brush could be respread in disturbed areas after seeding to encourage revegetation, where approved by landowner and agency agreements.

All vegetation removal would be conducted in a manner consistent with USFS and CalFire standards. Residual post-treatment surface fuel loads left onsite would be maintained at levels equal to or less than 10 tons per acre for areas outside of sensitive environment zones (SEZs). Within SEZs or PACs, residual post treatment surface fuel loads would be treated by hand work to not exceed levels of 15 tons per acre. Where chip material must be left onsite, chip depth would not exceed 4 inches and would be evenly dispersed across the forest floor. This activity would be limited to areas where activity fuels are lightly distributed across the landscape and retention activity fuels do not exceed the tons per acre standards for acceptable fuel loading. Slash depth from lop and scatter activities would not exceed 18 inches in height and would be spread on a non-contiguous manner not exceeding fuel load specifications. Where feasible, all harvest slash material located within 150 feet of a high public use and travel areas would be removed. Chip material would not be left within SEZs unless approved for erosion control. No mastication would occur in SEZs.

### TREE REMOVAL

Due to the importance of maintaining electric reliability on key system lines, regulatory standards for tree trimming and removal are greater on double circuit electrical lines than on single circuit lines. Timber removal would be required to gain access to the project footprint during construction and to maintain system reliability during operation. The estimated number of trees (over 1 inch diameter at breast height) that would require removal during construction of the action alternatives would vary between 42,500 for Alternative 3A (Road Focused Alternative with Double Circuit Option) and 55,200 for the Alternative 1 (PEA Alternative) (including hazard trees, which are discussed below) (refer to Section 4.3, Forestry Resources, for a detailed assessment of tree removal). Consistent with state-mandated vegetation management requirements for conductor clearance, the action alternatives would include:

- ▲ removal of all branches that overhang the electrical conductors;
- ▲ removal of all trees within the 40-foot ROW for the single circuit segments, and within the 65-foot ROW for the double circuit segments; and
- ▲ removal of hazard trees (e.g., severely damaged or diseased trees, or dead trees) outside the 40-foot or 65-foot ROW but within a 150-foot buffer of the project centerline that could damage the conductor if they were to fall into the ROW.

Where hazard trees are located outside of the construction ROW (or the permanent ROW during operations and maintenance in later years), additional workspace would be required to access the tree removal locations. The size of the workspace would be dependent on various factors such as the size of the tree, proximity of the tree to the power line ROW or an existing road, whether multiple hazard trees occur in the same area, the method of tree removal (e.g., helicopter, wheeled vehicle, cable), and whether an alternative treatment can be implemented such as only topping the hazard tree, or felling and leaving in place. The estimated number of hazard trees that would require removal during construction of the action alternatives would vary between 320 for Alternative 3A (Road Focused Alternative with Double Circuit Option) and 410 for the Alternative 2 (Modified Alternative). A Timberland Conversion Permit would not be required for the area between the ROW edge and the 150-foot buffer because this area would remain forested. Slash from hazard trees would be either processed at a landing if a whole tree yarding is possible or lopped and scattered on site per the California Forest Practice Rules, USFS specifications, and the TRPA Code of Ordinances. The *Hazard Tree Guidance for Forest Service Facilities and Roads in the Pacific Southwest Region* would be used as the standard for hazard tree identification.

All tree removal, hazard tree removal, and vegetation fuels management would be completed prior to the start of any on-the-ground construction activities and would be implemented consistent with applicable APMs in Table 3-8. Timber would be harvested via tractor, cable, or helicopter. Helicopters would only be used where ground-based operations would not meet the requirements of TRPA and USFS disturbance regulations. Ground-based log skidding (haul by dragging) would be focused within the designated ROW, and would use the roads and other infrastructure identified in this EIS/EIS/EIR to the maximum extent feasible.

Trees removed from the ROW and hazard trees would be felled and delimbed, skidded or cabled to the nearest access road, and loaded onto trailers for further processing (reduced in size or chipped) at the nearest staging area where log processing is established. Trees removed from areas without suitable road access could be transported by helicopter to a processing/landing area.

Chain-saws and other mechanized tree clearing equipment would be used to fell and delimb trees. Log loaders, log trailers, chippers, and chip vans would be used to transport and process cleared trees. Excess slash would be chipped or masticated and either stored on the ROW to be re-spread during restoration, or blown or loaded into trucks where it would be transported to an appropriate facility, such as a cogeneration plant (if a local plant is operational at the time of tree clearing) or landfill, or made available for an appropriate use. Wood chips could be spread out in disturbed areas for erosion control purposes to a maximum depth of 4 inches.

All tree removal activities on USFS-managed land, including the felling and skidding of trees, would be performed in accordance with a Timber Sale Contract to be established with the USFS. This contract would include details about the tree removal activities, including which trees would be removed, the price paid for the trees, and the timeframe for the forestry activities. Tree removal on USFS land would be coordinated with any ongoing fuels management projects. Logs removed from federal land would be kept separate from those removed from private lands.

When working near aquatic resources, trees will be cut by hand and felled away from such features and helicopters may be considered as an option for tree removal. Within SEZs trees will be removed by hand, by cable system, or by helicopter. Landings will not be located in Riparian Conservation Areas (RCAs) or Stream Environment Zones (SEZs). Ground based equipment may be used if conditions are determined suitable by

applicable regulatory agencies. The skidding of trees through aquatic resources will not be permitted. Trees may be left in stream channels if there is an ecological reason to do so, such as adding coarse woody debris to a stream to enhance fish habitat. Leaving coarse woody debris in perennial or intermittent stream channels and similar habitat enhancements would be coordinated with the applicable land owner/manager and regulatory agency staff, such as a USFS watershed specialist or fish biologist.

Outside of aquatic resource areas, ground based tree removal methods would typically be considered in areas with slopes less than 30 percent for activities within the Lake Tahoe Basin. In areas with steeper slopes cable systems or helicopters would be used or material would be removed by hand. Outside the Basin, there are locations where applicable regulations could allow for use of ground based equipment on slopes up to 45 percent.

All relevant Occupational Health and Safety Administration requirements would be adhered to during timber removal. Where public recreation trails are within clearance areas, temporary trail or recreation area closures would be required during active timber operations to maintain public safety. Public notice would be given prior to closure of trail heads, or any forest closure order, and signage would include specific locations of trail closures. Active onsite patrols would be employed to restrict unauthorized public access during active timber operations. It is expected that these restrictions would only be in place for one day per specific crossing location. Weekends and holidays would be avoided, and there could be restricted hours of timber harvest to accommodate recreation. Helicopter flight paths may also follow these restrictions, depending on proximity to trails or recreational use areas.

## **ROAD DECOMMISSIONING**

To optimize the network of forest roads, the USFS LTBMU reviews proposed projects in the context of the existing roadway network and to identify appropriate response actions (including constructing, reconstructing, or decommissioning roads). Since the action alternatives would result in the relocation of portions of the 625 Line and 650 Line, it may be appropriate to decommission USFS roads no longer necessary for access. Roads with USFS numeric designations (e.g., T16N75.2) that may be considered for decommissioning may also have segments that are on non-USFS lands. The USFS would not decommission road segments on non-USFS lands, and roads on USFS lands with easements cannot be decommissioned.

Decommissioning would likely include decompaction to a depth of 10-inches with winged rippers or a subsoiler. Once this is completed, the area would be covered with 2 to 4 inches of native mulch or wood chips. Other options for decommissioning would include blocking road access throughout the length of the decommissioned segment with rocks and logs, placing materials in clumps and at irregular spacing and burying rocks out to the widest dimension for natural appearance. Road intersections may also be disguised, and recontouring may be completed where roads intersect to prevent user-created roads from developing. Decommissioning roads would generally reduce the net increase in access way mileage and land coverage; however, since the particulars of which roads would be determined at a later date by the USFS, the potential benefits of roadway decommissioning are not included in this analysis. The roads proposed for closure under each of the action alternatives are provided in Appendix F.

## **3.4 NO ACTION ALTERNATIVE**

### **3.4.1 ALTERNATIVE 5: NO ACTION/NO PROJECT ALTERNATIVE**

As discussed above, in Section 2.1, NEPA, TRPA, and CEQA Requirements, NEPA and CEQA regulations require analysis of a no action alternative (CFR 1502.14[d]) and a no project alternative (California Code of Regulations Section 15126.6[e]), respectively. While NEPA requires that the no action alternative is analyzed at a comparable

level to the proposed project, CEQA only requires a discussion of reasonably foreseeable consequences of not approving the project. This document analyzes Alternative 5 (No Action/No Project Alternative), at an equal level of detail to the action alternatives. Chapter 4, Affected Environment, Environmental Consequences, and Mitigation Measures provides an analysis of the environmental impacts resulting from not approving an action alternative (i.e., implementing the No Action/No Project Alternative).

Under Alternative 5 (No Action/No Project Alternative), CalPeco would be forced to implement a load shedding plan to address events when the system reaches a stressed condition. In this scenario, lines would be operated close to or above their ratings, which would put the line conductor at high risk of annealing (excessive heating and cooling of a conductor that results in decreased tensile strength). The Kings Beach Diesel Generators would be used when needed, but because the permit for the generators limits the total number of operating hours each year, use would have to be judicious so that hours could be retained throughout the year to ensure sufficient operation during emergency scenarios throughout the year and into the heavy snow periods. To avoid risk of fire resulting from overheated lines, additional vegetation management would be conducted. This would be evaluated based on the surrounding area and density of trees, but most likely clearing outside of the ROW would be necessary. Additionally, each pole would be evaluated and any compromised poles would be replaced. All of this would be completed under the existing ROW, permits, and easement agreements with no additional environmental study. Due to the remote locations of several segments of the 625 Line, roadway access could be bladed into the areas during emergency outages. CalPeco would also seek additional wider easements to allow for a safer vegetation management to address the anticipated overstressed/overheated operation of the conductor.

## **POWER LINES**

Under Alternative 5 (No Project/No Action Alternative), additional inspections and maintenance may be needed along the line routes due to the stressed operation of the conductor. Damaged conductor would be replaced as necessary and could likely result in pole replacements as overheated conductor can damage multiple aspects of the poles, equipment, hardware and conductor. This would be completed in addition to the normal inspection and maintenance that would occur, as described above for the action alternatives. In addition, these lines would immediately be investigated upon project denial, and all poles that are compromised would be replaced. Additionally, a new Timber Harvest Plan would be developed to address the vegetation management requirements associated with the risk of fire during normal operations. This would include all necessary roadway access to be completed to support the on-going operation of the existing lines. Supplemental risk assessments would be conducted on approximately a 10 year rotation. All additional work would be completed under an emergency scenario to minimize, among other issues, risk of line arcing (the flow of electricity through the air from one conductor to another, often as a result of snow bending tree branches near the power line, a voltage surge due to lightning, or sagging lines as a result of line heating from heavy electrical loads or warm weather) or annealing. The USFS would be notified of the critical operation of the lines and the additional fire risk resulting from the high temperature operation. While the work would originally be completed within the existing ROW, CalPeco could seek additional ROW to allow for further tree/vegetation management to help reduce the increased risk of fire from the overheated line operation.

## **SUBSTATIONS**

CalPeco crews maintain a minimum quarterly inspection schedule of each substation within CalPeco's service territory. During these inspections the crews record all operation counters in the breakers, transformers, and regulators. The inspectors also record any discrepancies such as broken insulators, oil leaks, and gate or fence disrepair. Significant discrepancies are fixed immediately and less significant discrepancies are scheduled for repair on a case-by-case basis. Under Alternative 5 (No Project/No Action Alternative), these inspections would likely be stepped up to monthly or weekly to allow for monitoring of the at-risk parameters.

The substation controls are operated remotely from an Electric Systems Control Center. The substation circuit breakers can also be manually opened or closed by troublemen (CalPeco employees who patrol, repair, and restore service or report the nature of the trouble found on electrical lines, and inspect and operate automatic substation equipment) at the substations, as needed. Under Alternative 5 (No Project/No Action Alternative), the operational personnel would have the load shedding scheme available for implementation, if needed.

## **RISKS ASSOCIATED WITH NO PROJECT/NO ACTION ALTERNATIVE**

Under Alternative 5 (No Project/No Action Alternative), the north Tahoe area could experience two different operating scenarios. In the event of mild weather and no line outages, the system could perform in its current normal state. However, in the event of winter weather and a critical line outage, the North Tahoe area could experience load shedding. During such an event, the risks to the community include traffic signal outages, risk to life support equipment in residences, and loss of power to residences and business (which could result in revenue loss). Depending on the level of the load shedding, there could be impacts to sewage management facilities, water service, and fire suppression sources. Additionally, line loadings would increase annually and, as the lines are operated to their limit, the associated operating temperature of the lines would increase and pose both annealing and arching concerns. In either case, the risk of fire to forested lands is increased.

Another risk with Alternative 5 (No Project/No Action Alternative) is a potential indirect effect in response to the level of outages. The purchase of stand-alone generators for residences and businesses to provide power during extended outages could increase. This could result in the increase use of fossil fuels, and, similarly, an increase in wood stove and fireplace use.

## **3.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED EVALUATION**

### **3.5.1 REGULATORY BACKGROUND**

NEPA, the TRPA Compact, and CEQA all require that alternatives be evaluated in this EIS/EIS/EIR; however, not every possible alternative or option for project implementation need be fully examined. Issues related to practicality, feasibility, and ability to meet project objectives may result in an alternative being eliminated from detailed evaluation.

In accordance with Council on Environmental Quality Regulations for Implementing NEPA Section 40 CFR 1501.2(c), the USFS must study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources as provided by Section 102(2)(E) of NEPA. Specifically, Section 1502.14 requires that an EIS examine all reasonable alternatives to the proposed action and briefly discuss the reasons for eliminating considered alternatives. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint. An alternative should also meet the purpose and need, and address one or more significant issues related to the proposed action. Since an alternative may be developed to address more than one significant issue, no specific number of alternatives is required or prescribed (36 CFR 220.5(e)).

Environmental Impact Statements are addressed in Article VII of the TRPA Compact, which requires that TRPA prepare and consider a detailed EIS before deciding to approve or carry out a project. The EIS must study, develop, and describe appropriate alternatives to the recommended courses of action for any project that involves unresolved conflicts concerning alternative use of available resources. Guidance is not provided regarding a specific number of alternatives to consider or the evaluation of the reasonableness or feasibility of alternatives.

CEQA Guidelines (Section 15126.6 (a-c)) state that an EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. Any alternatives that were considered by the lead agencies, but were rejected during the planning or scoping process should also be identified and the reasons underlying the lead agency's determination should be briefly explained.

### 3.5.2 ALTERNATIVES SCREENING METHODOLOGY

Numerous alternative methods to implementing the proposed project (including specific input on project activities in a particular area) were suggested during the scoping period. Other alternatives were presented by Sierra Pacific Power Company (the original applicant) in its PEA, or considered by the EIR/EIS/EIS team (i.e., lead agencies, applicant, and consultants) as the draft document was being prepared. Many of these suggestions, alternatives, or elements of alternatives (collectively referred to as "alternatives" in the remainder of this section), are incorporated into the action alternatives described above. However, several alternatives were determined to be unsuitable for detailed evaluation in this EIS/EIS/EIR. To assess the proper approach for addressing each alternative, the description of each alternative was clarified to allow a meaningful comparative analysis, then they were evaluated using each Lead Agency's criteria, and a finding of suitability for full analysis in the EIS/EIS/EIR was made. Alternatives that did not meet the selection criteria were removed from further analysis.

- ▲ To comply with NEPA/CEQA requirements, each alternative that has been suggested or developed for this project has been evaluated against the following three criteria:
  - /// Does the alternative meet the project purpose and need/objectives?
  - /// Is the alternative feasible (i.e., legal, regulatory, technical)?
  - /// Does the alternative avoid or substantially lessen any significant effects of the proposed project (including consideration of whether the alternative itself could create significant effects potentially greater than those of the proposed project)?

These criteria are described in more detail below. In total, the alternatives screening process culminated in the identification and screening of 16 potential alternatives for the proposed project, the four action alternatives described above, and 12 additional alternatives considered but eliminated from detailed evaluation (described below). These alternatives range from a different substation location and power line alignments and designs, to various expansions of existing system options, as well as "non-wires alternatives." "Non-wires alternatives" include methods of meeting project objectives that do not require major electrical lines (e.g., development of renewable energy supplies, conservation and demand side management to reduce electrical usage and prevent the need for facility upgrades).

### CONSISTENCY WITH PROJECT PURPOSE AND NEED/OBJECTIVES

For purposes of NEPA, an alternative should meet the purpose and need and address one or more significant issues related to the proposed action. State CEQA Guidelines require the consideration of alternatives capable of eliminating or reducing significant environmental effects while feasibly attaining most of the project objectives, although an alternative may "impede to some degree the attainment of project objectives" (Section 15126.6 (a) and (b)). Therefore, it is not required that each alternative meet all of the applicant's objectives.

The purpose and need/objectives of the project used for the alternatives screening are the same as those listed in Chapter 2, Purpose and Need:

- ▲ provide normal capacity for current and projected loads,
- ▲ provide reliable capacity to assure adequate service to all customers during single-contingency outages,
- ▲ reduce dependence on the Kings Beach Diesel Generation Station,
- ▲ reduce the risk of fire hazards and outage durations associated with wooden poles and encroaching vegetation, and
- ▲ provide more reliable access to the 625 Line for operation and maintenance activities.

## FEASIBILITY

Under NEPA, reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant. The CEQA Guidelines (Section 15364) define feasibility as being “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” In addition, CEQA requires that the Lead Agency consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and applicant’s control over alternative sites in determining the range of alternatives to be evaluated (State CEQA Guidelines, Section 15126.6(f)(1)).

For the screening analysis, the legal, technical, and regulatory feasibility of potential alternatives was assessed. An alternative was excluded from detailed analysis if a determination was made that there was anything about the alternative that would be infeasible on technical, legal, or regulatory grounds. For this analysis, these feasibility criteria were applied as follows.

- ▲ **Legal Feasibility:** Does the alternative have the potential to affect lands that have legal protections that may prohibit or substantially limit the feasibility of permitting the project?
- ▲ **Regulatory Feasibility:** Does the alternative have the potential to affect lands that have regulatory restrictions that may substantially limit the feasibility of, or permitting of, the project within a reasonable period of time?
- ▲ **Technical Feasibility:** Is the alternative feasible from a technological perspective, considering available technology; the construction, operation, and maintenance or spacing requirements of multiple facilities using common ROW; and the sensitivity to common failure mechanisms (e.g., weather, tree fall) and ability to repair failures?

While the screening analysis does include cost information where available, the analysis does not focus on relative economic factors or costs of the alternatives (as long as they are found to be economically feasible) since the State CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may “impede to some degree the attainment of project objectives or would be more costly” (State CEQA Guidelines Section 15126.6(b)).

## POTENTIAL TO ELIMINATE SIGNIFICANT ENVIRONMENTAL EFFECTS

Under NEPA, an alternative should address one or more significant issues related to the proposed action. Under CEQA, an alternative should have the potential to “avoid or substantially lessen any of the significant effects of the project” to be fully considered in an EIR (State CEQA Guidelines, Section 15126.6(a)). If an alternative was identified that clearly would not provide potential overall environmental advantage as compared to the action alternatives receiving detailed review, it was eliminated from further consideration. At the screening stage, it is neither possible, nor legally required, that impacts of each potential project option be compared against the action alternatives with absolute certainty, nor is it necessary to quantify impacts for every alternative put

through the screening process. However, it is possible to identify elements of an alternative that are likely to be the sources of impact and to relate them, to the extent possible, to similar impacts from the action alternatives.

The following environmental issue areas where significant effects could occur as part of the action alternatives were used to determine whether an alternative met NEPA/CEQA guidance on avoiding and lessening significant environmental effects:

- ▲ Scenic Resources;
- ▲ Hydrology and Water Quality;
- ▲ Biological Resources;
- ▲ Heritage, Cultural, and Paleontological Resources;
- ▲ Hazards and Hazardous Materials;
- ▲ Air Quality; and
- ▲ Noise.

### 3.5.3 RESULTS OF SCREENING

Table 3-6 provides a composite list of the alternatives considered but eliminated from detailed evaluation, and the results of the screening analysis with respect to the criteria findings for consistency with project objectives, feasibility, and environmental effectiveness. A description of each of these alternatives is then provided with a discussion of the screening analysis and results.

Alternative Title	Consistent with Project Purpose and Needs/Objectives	Feasibility			Potential to Eliminate Significant Environmental Effects	Alternative Eliminated from Detailed Evaluation
		Legal	Regulatory	Technical		
Rebuild Only the 650 Line at 120 kV	No	Yes	Yes	Yes	No	Yes
Operate the 629 Line at 120 kV	No	Yes	Yes	Yes	Yes	Yes
Rebuild the 625 Line along its Existing Route	No	Yes	Yes	Yes	No	Yes
Reconductoring the 609 Line from Truckee to Squaw Valley	No	Yes	Yes	Yes	No	Yes
Completing a Closed 120 kV Loop to the Incline Substation from Kings Beach Substation	No	Yes	Yes	Yes	No	Yes
Utilizing Distribution Backup for Single-contingency Transmission Outages on the North Lake Tahoe Transmission System	No	Yes	Yes	Yes	Yes	Yes
Utilizing Additional Diesel Generation to Provide Reliable Capacity for Transmission Outages	No	Yes	Yes	Yes	No	Yes

**Table 3-6 Summary of Screening Analysis for Alternatives  
Considered but Eliminated from Detailed Evaluation**

Alternative Title	Consistent with Project Purpose and Needs/Objectives	Feasibility			Potential to Eliminate Significant Environmental Effects	Alternative Eliminated from Detailed Evaluation
		Legal	Regulatory	Technical		
Submarine Cable Alternative	No	Yes	Yes	Yes	Potential to reduce some significant effects while generating new or more severe significant effects	Yes
Installing Power Lines Underground	Yes	Yes	Yes	Yes	No	Yes
Non-Wires Alternative – Demand Management Conservation	No	Yes	Yes	No	Yes	Yes
Utilizing Reactive Capacitance to Delay the Need for the Project	No	Yes	Yes	No	No	Yes
Relocate the Tahoe City Substation	No	Yes	Yes	Yes	No	Yes

## ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

### Rebuild Only the 650 Line at 120 kV

#### *Description*

Rebuild only the 650 Line at a 120 kV capacity with new, larger conductor to be operated at 60 kV with the ability to use the increased capacity of the larger conductor to operate the line at 120 kV when more incremental capacity would be needed. The upgraded line would follow the route of the existing 650 Line, putting it in the same alignment as Alternative 1 (PEA Alternative). No improvements would be made to the 625 Line. The design, construction, operation, and maintenance activities described above under the 650 Line portion of Alternative 1 (PEA Alternative) would be the same under this alternative.

#### *Rationale for Elimination*

This alternative would be feasible from a technical, legal, and regulatory perspective. The overall environmental effects would be similar to Alternative 1 (PEA Alternative). However, neither the project objective of providing reliable capacity to assure adequate service to all customers during single-contingency outages nor the objective of reducing dependence on the Kings Beach Generation Station would be met.

Based on system planning analysis, this alternative could provide a reliable capacity of 91 MVA, including use of the generators at Kings Beach Diesel Generation Station, until about 2019 when coincident peak is projected to exceed 91 MVA. The reliable system capacity is determined with one leg of the system out of service. The loss of the 132 Line would result in the 650 Line being overloaded and would require load shedding (i.e., rolling blackouts) even with the Kings Beach generators in operation. To avoid this situation, the remainder of the project, as proposed in the action alternatives, would be required to be in service in approximately 2019. Therefore, from an environmental perspective, the spatial effects would be similar to the action alternatives but temporally they would occur over a longer period of time. However, this alternative would not provide adequate long term reliable capacity system-wide and was therefore dismissed from further evaluation because it would not meet the objectives of the project.

## Operate the 629 Line at 120 kV

### **Description**

The 629 Line, which generally runs parallel to SR 89, comprises the southwest side of the North Lake Tahoe Transmission System and was previously upgraded with large conductor to accommodate 120 kV but currently operates at 60kV. Under this alternative, the 629 Line would be operated at 120 kV to utilize the increased current capacity; however, the 625 Line and 650 Line would not be upgraded.

### **Rationale for Elimination**

This alternative would be feasible from a technical, legal, and regulatory perspective. Under this alternative, the overall environmental effects would be less than the action alternatives because the 625 Line and 650 Line would not be upgraded. System planning analysis indicates that operating the 629 Line at 120 kV would provide a reliable capacity of 85 MVA, which would not meet current peak electrical needs. Without the ability of switching the full capacity of the 629 Line to the 625 and 650 Lines, this alternative would essentially provide an island of increased reliability in the system, and would not improve single contingency reliability.

A peak electrical demand situation occurred on December 30, 2012 in which the contingency that was of concern was the loss of the 629 Line. In the event of the 629 Line being lost during this peaking period, a critical situation would have occurred, potentially requiring load shedding. A loss of the 629 Line, on peak, could cause the current 650 Line to overload, and result in a situation where the applicant would have had to run the Kings Beach diesel generators as well as shed load. Even with implementation of this alternative, the loss of the 629 Line during peak loads (such as those experienced December 30, 2012) would still result in load shedding, even with Kings Beach diesel generators in operation and the 650 Line operating at 120 kV. Therefore, neither the project objective of providing reliable capacity to assure adequate service to all customers during single-contingency outages, nor the objective of reducing dependence on the Kings Beach Generation Station would be met. This alternative was, therefore, dismissed from further evaluation because it would not meet the objectives of the project.

## Rebuild the 625 Line along its Existing Route

### **Description**

The existing 625 Line was originally routed in the early 1970s in a remote location which provided visual screening by intervening vegetation and topography. The line has many angle points and is difficult to access for inspection, maintenance, and repairs. The remoteness of the line and high numbers of angle points (which have a higher probability for failure) has proven problematic in terms of reliability (i.e., when the line fails, which is typically during weather events, it is difficult to access for emergency repairs).

Under this alternative the 625 Line would be rebuilt, typically following the existing alignment, but would deviate in some locations to allow straightening of the line to reduce the number of angle points. Where the new alignment would deviate from the existing ROW, tree removal to accommodate a 40 foot ROW and other construction related activities associated with installation of a new power line alignment would be required. In addition, where the existing ROW would continue to be used, widening of the 20 foot vegetation management corridor to 40-feet would be required to meet CPUC regulatory requirements under GO 95 for a 120 kV line.

Based on available USGS topographic maps and use of as many existing roadways as possible, the applicant designed a conceptual access way plan for this alternative which indicated that construction of approximately 18 miles of new access ways would be required. However, the extreme terrain would limit access in many places; so that overland vehicle access to the entire line would not be attained, even with the new access way system. Given the rough terrain, the installation of the new 625 Line (once the logging, vegetation removal, and access way building operations were complete) would be slower than normal, likely requiring a two season construction window.

Other than the distinctions described above, construction, design (except the modification to the original alignment and access ways), operation and maintenance activities described above under the 625 Line portion of Alternative 4 (Proposed Alternative) would generally be the same under this alternative.

### ***Rationale for Elimination***

This alternative would be feasible from a technical, legal, and regulatory perspective. This alternative would not meet the project objective of providing reliable overland vehicle access to the 625 Line for inspection, maintenance, and repairs because, as discussed above, the extreme terrain would limit overland vehicle access in many places even with the new access way system. Since full access would not be achievable, the reliability would not be addressed and, therefore, this project objective would not be met.

Moreover, this alternative would not minimize environmental effects, but would cause impacts greater than those identified for the action alternatives primarily due to the need for more new access ways than the action alternatives. Specifically, this alternative would require approximately 18 miles of new access ways where the action alternatives would require between 4 and 16 miles of new access ways. Accordingly, because this alternative would not meet the project objectives and would not reduce environmental effects, it was eliminated from further review and consideration.

## **Reconductoring the 609 Line from Truckee to Squaw Valley**

### ***Description***

This alternative would include reconductoring the 609 Line, which parallels the 132 Line from Truckee to Squaw Valley and comprises the northwest side of the North Lake Tahoe Transmission System, with larger conductors. While reconductoring the 609 Line would provide benefit to the overall system in the event of an outage on the 132 Line, it would not provide a benefit to the overall system in the event of an outage on the 629 Line because it would not provide a strong, reliable electricity source on the eastern side of the North Lake Tahoe Transmission System which is also needed to increase the reliability of the overall system. Accordingly, upgrading the 625 and 650 Lines as described above under the action alternatives would still be required.

### ***Rationale for Elimination***

This alternative would be feasible from a technical, legal, and regulatory perspective. However, this alternative would result in greater environmental effects than the action alternatives and would not meet the project objectives and goals. It would include the additional construction activity of reconductoring the 609 Line. Increasing capacity of the 609 Line conductor would also require modification (i.e., installation of relay switches) within the fence lines of the substations associated with this line. Given that the construction effects associated with reconductoring the 609 Line would be greater than those associated with the action alternatives alone, this alternative was eliminated from further review and consideration. Additionally, this project does not address the reliability concern nor does it allow for better line access.

## **Completing a Closed 120 kV Loop to the Incline Substation from Kings Beach Substation**

### ***Description***

This alternative would include: (1) installation of a new 120 kV line to connect the Incline Substation (northeast of the project area/transmission system shown in Exhibit 3-2) to the Kings Beach Substation; (2) upgrade of the 650 Line to 120 kV, as described above for the action alternatives; and (3) continued operation of the 625 Line within its existing alignment at 60 kV with construction of approximately 18 miles of new access ways to address access issues as described above under the alternative considered but rejected entitled "Rebuild the 625 Line along its Existing Route." This alternative would require the relocation of the California Substation phase shifter (in Truckee) to the Pacific Gas and Electric Company side of the North Truckee Substation, which would require modification and expansion to the California and North Truckee substations, respectively. Additionally, the 607 Line would have to be phase-shifted (power flow regulation by adjusting the angle at which the power is

transmitted). A phase shifter would be required at the Truckee Substation for the 607 Line that connects the Truckee Substation to the Glenshire Substation (located east of Truckee and outside the project area shown in Exhibit 3-2).

### ***Rationale for Elimination***

This alternative would be feasible from a technical, legal, and regulatory perspective; however, this alternative would not meet the project objective of providing reliable overland vehicle access to the 625 Line for inspection, maintenance, and repairs; nor would it reduce potential environmental effects. In particular, as discussed above, under the alternatives considered but rejected entitled “Rebuild the 625 Line along its Existing Route,” full access to the 625 Line would not be achievable and the project objective of reliability would not be addressed. Moreover, this alternative would not minimize environmental effects and would cause impacts greater than those identified for the action alternatives, primarily due to the need for a new transmission line corridor between Incline and Kings Beach, potential expansion at the North Truckee and Truckee Substations to accommodate the required phase shifters, and more new access ways when compared to the action alternatives. Because this alternative would not meet the project objectives and would not reduce environmental effects, it was eliminated from further review and consideration.

## **Utilizing Distribution Backup for Single-contingency Transmission Outages on the North Lake Tahoe Transmission System**

### ***Description***

This alternative would include installation of a 12 MVA transformer at the Truckee Substation along with a new distribution feeder line to the Northstar-at-Tahoe Resort. The intent would be to provide an alternative line to deliver power to the Northstar Substation, thereby decreasing demand on the 650 Line and allowing more capacity in the line to accept rerouted power during an outage elsewhere in the system. Improvements to the 650 Line included in the action alternatives would not be implemented under this alternative.

### ***Rationale for Elimination***

This alternative would be feasible from a technical, legal, and regulatory perspective. However, this alternative would not meet the project objective of providing reliable capacity to assure adequate service to all customers during single-contingency outages. While this alternative would alleviate some of the load to the Northstar Substation by relieving the 650 Line in the event of an outage elsewhere in the system, it would not relieve sufficient load such that power could be transferred around the loop in the event of a single-contingency outage. In summary, the proposed enhancement of the distribution level infrastructure would not be sufficient to support the larger power line infrastructure during a single contingency outage. From an environmental perspective, effects would be reduced since modification to the system would be limited. However, because this alternative would not meet the project objective of assuring adequate service to all customers during single-contingency outages, it was eliminated from further review and consideration.

## **Utilizing Additional Diesel Generation to Provide Reliable Capacity for Transmission Outages**

### ***Description***

This alternative would include constructing one or more additional diesel generation stations outside the Lake Tahoe Basin to provide power during system failures. Any new diesel generation facilities would need to be located in the vicinity of a substation to allow power from the generators to be fed into the transmission system. Under this alternative, the issue of power line capacity during single or multiple contingency outages would still occur; that is, the existing 60 kV lines would still not be of sufficient size to reliably accept re-routed power if one or more other lines in the system were not operational. There would be greater flexibility in power sources, but the existing 60 kV lines would still limit delivery of that power to different parts of the system. Therefore, under

this alternative the power line and substation upgrades associated with the action alternative would still be required.

Note that an in Tahoe Basin scenario was also considered where a significant portion of the generation would need to be installed near an existing substation (i.e., Tahoe City or Kings Beach). Based on preliminary review, it was determined that this scenario would likely not be feasible from a regulatory perspective (i.e., air quality/stationary source emissions regulations). If some level of in basin diesel power generation were feasible (which is not likely given the current regulatory air controls), the allowable generation capacity or hours of operation would not be sufficient to meet the project objectives of providing reliable capacity to assure adequate service to all customers during single-contingency outages and reducing dependence on the Kings Beach Generation Station. The Kings Beach Diesel Generation Station is currently limited to 721 hours of annual operation. Although it is likely infeasible, it is reasonable to assume that new generation would have similar or potentially greater, limitations. Therefore, if there were a need for use of both the existing and new generation stations, after 1,442 hours of total use no back up would be available. Therefore this scenario was not considered further.

### ***Rationale for Elimination***

This alternative would be feasible from a technical, legal, and regulatory perspective. However, this alternative would result in greater environmental effects than the action alternatives and would not meet the project objectives and goals. Specifically, the environmental effects of the action alternatives would occur since the power lines and associated facilities would require upgrades; plus, increased environmental effects would occur from construction, operation, and maintenance of one or more additional diesel generation stations. Although the diesel generators would primarily be run during peak power demand periods or during outages of parts of the system, and they would meet more stringent Tier II emission standards, substantial adverse air quality impacts could as a result of operation. Increased noise impacts and fuel handling and storage would also be a concern. Therefore, even though this alternative would be feasible and meet project objectives, since it would not reduce environmental effects but would result in greater environmental effects, specifically increased operational effects related to air quality and noise, this alternative was eliminated from further review and consideration.

## **Submarine Cable Alternative**

### ***Description***

This alternative to the 625 Line rebuild would include installation of an approximately 10 mile long special water rated 120 kV submarine high voltage alternating current (HVAC) cable between the Kings Beach and Tahoe City Substations. This cable would be buried from the substations to the lake entrance points and would then be laid along the bottom of Lake Tahoe. Installation is estimated to require 25 cable splices to join segments of cable over the 10 mile route. Due to the required splicing of the cable, which would contribute to outage risk or failure to the 120 kV loop system, the existing 625 Line would need to remain in service with some additional substation modifications to allow for the existing 60 kV system to remain operational as a limited backup in the event of failure. Under this alternative the 650 Line would be upgraded consistent with one of the approaches in the action alternatives.

### ***Rationale for Elimination***

This alternative would be feasible from a technical, legal, and regulatory perspective. However, this alternative would not meet the project objective of providing reliable capacity to assure adequate service to all customers during single-contingency outages.

The following issues have been identified.

- ▲ **Reliability.** Similar lines operating in the United States are primarily direct current (DC) and generally not critical as single contingency outage lines. Utilities typically utilize high voltage (HV) DC cable in applications similar to this alternative where there is a submarine length requirement longer than 10 miles, and a voltage transmission above 60 kV. This is because HVDC cables are more efficient for long distance transmission than HVAC cables due to heat generation and power losses in the cable. The North Lake Tahoe Transmission System is an AC system with no ability to integrate DC conversion into the termination points of the submarine cable due to the required land and high cost. Given this, the submarine cable alternative evaluation was completed using HVAC.

Another technical constraint is the splicing of submarine cable. Splicing in general is not desirable because these locations are typically where failures occur. Due to the length of this alternative, approximately 25 splices would be required. Introducing this many points of potential failure causes operational and maintenance concerns. Additionally, in the event of failure, there is concern that the repair process (i.e., lifting the cable from the lake bottom) could impact the cable casing and adjacent splices and, in essence, create a weakened system with the potential for on-going “cascading” failure at the splice points. Technology does exist that would allow for the cable to be manufactured in one continuous length, which would eliminate the splicing concerns. This type of cable is cross-linked polyethylene cable, manufactured in Sweden, and is being used in the off shore wind generation and oil drilling industries. Essentially, as the cable is extruded, it is loaded onto ships for transport and installation. Transporting a 10 mile length of cable from Sweden to Lake Tahoe via ship would be impossible. Hence, using this technology was not given further consideration. To address this reliability concern, and to allow for switching in the event of failure, the existing 60 kV 625 Line would need to remain in service and the Tahoe City and Kings Beach substations would need to be expanded to accommodate the addition of 120/60 kV transformers.

- ▲ **Installation and repair.** The HVAC cable is special water-rated cable that is manufactured overseas. It would be necessary to purchase the cable from a proven manufacturer that would provide a full warranty for an extended period of time. As such, that manufacturer would also be required to complete the installation and any maintenance or emergency repair. The installation of this cable is conducted utilizing a barge that is brought to the job site on trucks and assembled on site. In the case of the distribution submarine cable installed at Emerald Bay, that barge required three trucks with special permitting to allow travel into the Lake Tahoe area. For a three phase 120 kV installation, the cable manufacturer indicated that the required barge would be substantially larger. Further investigation would need to be conducted to establish the barge size requirements and transport needs, as well as the necessary permitting. Note that a similar barge would also be needed in the event of a cable failure in order to complete the repairs. Unlike the existing Emerald Bay Cable, which is a distribution line (14.4 kV), does not contain splices, and has contingency options, this alternative would likely require long repair times due the need for specialized work crews.
- ▲ **Cost.** Preliminary cost estimates for the initial installation project costs of four to five times the other alternatives under consideration (\$62 million versus \$14 million for an overhead line). This is just for the cable installation and does not include any terminations, which would add substantially to the cost. It also does not include potentially expensive maintenance costs.

In addition, although construction of an upgraded 625 Line would not be required on land under this alternative, thus potentially avoiding or minimizing some significant environmental effects, installation of a submarine cable in Lake Tahoe could generate different or more severe water quality, recreation, biological, and hazard and hazardous materials impacts than those associated with the action alternatives. Therefore, because this alternative would not provide reliable capacity to assure adequate service to all customers during single-contingency outages, and could result in new or more severe environmental effects, it was eliminated from further review and consideration.

## Installing Power Lines Underground

### **Description**

This alternative would include underground installation (“undergrounding”) of significant portions of the 625 and/or 650 Lines. A preliminary review was completed to determine viable routes for consideration. Based on this review by a design engineer, it was determined that SR 28 was the most direct route for the 625 Line; however, due primarily to the limited shoulder along the highway as well as conflicts with multiple existing utility lines, the entire 625 Line should be installed underground within the SR 28 travel lanes. During the design engineer evaluation of undergrounding of the 625 Line from the Tahoe City Substation to the Kings Beach Substation along SR 28, it was identified that this section of highway is very congested with existing overhead utilities, including power distribution, telephone, and cable television lines. For the purposes of this evaluation, it was assumed that only the transmission line would be put underground and the other utilities would remain.

Under this alternative, a significant portion of the 650 Line would be installed in and along SR 267, and portions of the remaining power lines would be undergrounded along specific overland portions of the existing routes to minimize the visibility of project facilities. In forested areas where the line would be undergrounded, there could be a reduced width of the tree removal/vegetation management corridor from the 40-foot identified for the project, but undergrounding would not eliminate tree removal and vegetation management entirely. Trees, brush, and boulders would need to be removed to install an underground power line, and trees would not be allowed to regrow over the line to maintain vehicle access for inspections, maintenance, and repairs, and to prevent tree root damage to the buried conduit.

SR 28 is a heavily traveled roadway that provides the primary access around Lake Tahoe between Tahoe City and Kings Beach. As such, there can be considerable congestion during the summer months. Construction on this route would require extensive lane closures and traffic delays. The construction pace would be slow and with the short TRPA-established construction season (between May 1st and October 15th), it would extend over approximately five seasons (summers).

During operation, underground facilities are generally less apt to fail in winter weather, but are more difficult to access due to limited visibility and use of the roadway medians and shoulders to store ploughed snow. Vaults would be located approximately 2,600 feet apart. In addition to needing access to these vaults during outages, crews would need access periodically (usually during the summer) for inspection and routine maintenance. Accessing these vaults would require lane closures and traffic delays where they are within or adjacent to roadways.

### **Rationale for Elimination**

This alternative would be feasible from a technical, legal, and regulatory perspective and would largely meet the project objectives and need. One objective that may be compromised would be to provide more reliable access to the 625 Line for operation and maintenance activities. While undergrounding often does provide more reliable access, seasonal traffic and snow storage would result in reduced access in the project area.

This alternative would not reduce overall environmental effects as potential benefits of undergrounding would be outweighed by the substantial environmental effects that could occur. For instance, substantial ground disturbance is typically required for undergrounding. Underground installation is a slower process, increasing the time period for construction and construction-related impacts to air quality, noise, and traffic (i.e., lane/road closures). Effects could include increased:

- ▲ potential for erosion and sedimentation;
- ▲ disturbance to previously undisturbed habitat that supports special-status vegetation communities, plants, and wildlife;

- ▲ potential to disturb currently undocumented hazardous materials sites;
- ▲ potential to disturb known and unknown potentially significant archeological resources and resources of concern to Native American Tribes;
- ▲ air emissions of criteria pollutants due to an increase in required construction equipment for trench activities (e.g., excavators, back hoes), dust generation, and truck trips to haul trench spoils and import bedding and back-fill;
- ▲ construction related noise both on-site and off-site (i.e., increase in truck trips); and
- ▲ traffic effects on local area roadways from increased truck trips.

This alternative was identified to reduce environmental concerns related to aesthetics, fire risk, and vegetation management. However, it would create issues related to stormwater management and vehicle emissions. A key environmental issue would be the pumping of vault water and the management of the runoff from the vaults. This is a problem that is difficult to address. During emergency outage situations, vaults are often full of run-off water and must be immediately pumped. Under the California State Water Resources Control Board regulations, pumping directly to the storm drain is not allowed within the Lake Tahoe Basin. As such, pumper trucks would be needed. Again, similar to the effect of snow storage, this effort could greatly increase outage durations. Another increased environmental issue would be automobile emissions during traffic stoppages and/or delays during construction. These stoppages and delays would occur during construction (five summers) and continue (on a lesser scale) during summer inspection and maintenance periods.

Based on the general discussion above, as well as the more specific preliminary evaluation of the undergrounding of the 625 Line along SR 28, it has been determined that while this alternative is feasible and would meet several of the project objectives, it would result in increased environmental effects when compared to the project alternatives. Accordingly, this alternative has been eliminated from further consideration.

## **Non-Wires Alternative – Demand Management Conservation**

### ***Description***

Demand management conservation programs are designed to reduce and/or manage customer energy consumption. These programs are designed to either reduce the overall use of energy or to shift the consumption of energy to off-peak times. By reducing or better managing energy consumption, development or upgrading of delivery infrastructure may not be needed. CPUC regulatory requirements dictate that supply-side (e.g., energy generation and delivery infrastructure) and demand-side (e.g., energy conservation) options should be considered on an equal basis in a utility's plan to acquire lowest cost resources.

CalPeco currently offers a number of energy efficiency programs in California, under the umbrella of its Rebate and Savings program. The specific programs are divided into residential, business, builders and buyers, and energy management assistance programs. Under this alternative further energy efficiency and management programs would be considered in an attempt to meet the project objectives through demand-side options.

### ***Rationale for Elimination***

Reductions in demand through energy conservation programs are part of CalPeco's future operations and are incorporated into its long-term peak load forecasts. Existing demand management conservation programs run by CalPeco include programs that offer energy saving measures and rebates to customers who participate and implement energy saving projects. However, these programs require voluntary participation. As separate and standalone programs, CalPeco cannot guarantee that such voluntary programs would provide sufficient energy conservation to achieve either the capacity or reliability needs of CalPeco in the Tahoe Basin, as stated in the objectives for the project. With current energy demands in the North Lake Tahoe Transmission System meeting, and during peak demand periods exceeding, the design capacity of the system, it is not technically feasible to implement sufficient demand-side measures to avoid the need for improvements to delivery infrastructure

included in the action alternatives. Although demand management conservation may be feasible from a legal and regulatory perspective, and would eliminate significant environmental effects associated with the action alternatives, because this approach would not meet the project objectives/need, and is not technically feasible, this alternative has been eliminated from further consideration.

## Utilizing Reactive Capacitance to Delay the Need for the Project

### *Description*

Reactive capacitors are a piece of equipment that can be added to substations that can allow utilities to increase the amount of power that can be transmitted over their lines. Under this alternative, reactive capacitors would be added to substations in the North Lake Tahoe Transmission System.

### *Rationale for Elimination*

This alternative would be feasible from a legal and regulatory perspective, but would be technically problematic and ultimately would not meet the project objectives and need. While the installation of reactive capacitors is a valid consideration and is used by some utilities to defer installation or upgrading of facilities, it is a scenario that is problematic with specific types of electrical loads. The applicant evaluated this option but determined that specific issues unique to the North Lake Tahoe Transmission System warrant that large scale installation of capacitors should not be relied upon as a substitute for the proposed project.

Modeling of the North Lake Tahoe Transmission System found that, not only was the harmonic resonance a concern, but that there was not sufficient space at the Brockway and Squaw Valley Substations to complete installation of reactive capacitors in a safe manner for operation and maintenance. The following specific concerns were identified:

- ▲ **Harmonic tuning issues.** In the Lake Tahoe region, equipment that utilizes adjustable speed drives and could be effected by harmonic tuning includes ski resort equipment such as chair lifts and trams, and machinery used for various industries, such as wood working equipment. This equipment is operated with the use of variable speed drives or adjustable speed drive motors. Variable speed drives are susceptible to harmonic tuning issues that can occur when capacitor banks are switched. Harmonics would be particularly sensitive when large amounts of capacitors are switched in multiple banks, as would be the case at the Squaw Valley Substation. In order to delay the 625 and 650 Electrical Upgrade Project, multiple capacity banks would be required.
- ▲ **Reactive Concerns.** An example of a reactive concern is that adding capacitors to a peak load would cause a significant leading power factor. The resulting leading power factor would make operations for voltage regulators (oil type) and breakers difficult, causing potential operating problems, especially with older equipment. These situations could arise by adding capacitors to the Squaw Valley and the other substations in North Lake Tahoe.
- ▲ **Limited Room.** In many of the CalPeco substations in the North Lake Tahoe Transmission System, space is limited and there would simply be no room for installation of reactive capacitors and the associated need for upgraded voltage regulators and breakers. This issue involves not only ease and efficiency of operations, but is critical to the safety of operation inside the substations. This is specifically the case at the Brockway and Squaw Valley Substations. Preliminary evaluations showed that multiple reactive capacitance banks would be necessary at Squaw Valley.

If reactive capacitors were installed at substations in the North Lake Tahoe Transmission System, it would only delay for a short time the need for the proposed project as they would not produce a large enough increase in system capacity to address the peak demands that currently meet or exceed the system's design capacity. Therefore, installation of reactive capacitors would not meet any elements of the project purpose and need and objectives. Ultimately, implementation of this alternative would involve installation of reactive capacitors and

related equipment at substations, and the expansion of some substations to accommodate this equipment, plus implementation of one of the action alternatives, resulting in greater environmental effects than the action alternatives alone. Therefore, because the alternative would only delay implementation of the proposed project, would increase the overall environmental effects due to the required substation additions, and could reduce reliability by introducing new technical issues into the system, it has been eliminated from further consideration.

## Relocate the Tahoe City Substation

### *Description*

The Tahoe City Substation was constructed in 1937. It functions as one of the critical substations in the North Lake Tahoe Transmission System. Within the substation, there are two power line terminations and multiple distribution getaways. Specifically, the 629 Line which runs between the Tahoe City and Squaw Valley Substations, and the 625 Line which runs between the Tahoe City and Kings Beach Substations both terminate at this facility. Electricity from these lines is stepped down at the substation to lower voltages to supply power to the Tahoe City area. See Exhibit 3-2 for the elements of the overall North Lake Tahoe Transmission System and specifically the line terminations into the Tahoe City Substation. Upon relocation, the existing Tahoe City Substation would be maintained by CalPeco for use as a material storage yard.

In 1994, TRPA and the Placer County Board of Supervisors approved the Tahoe City Community Plan, which recommended consideration of substation relocation. This alternative was considered to address that recommendation (Tahoe Regional Planning Agency and Placer County 1994). Ownership of the parcel identified for relocation of the facility has since been transferred, and it is no longer available as an alternative location. Further, one of the reasons given in the community plan for the relocation was to improve scenic quality for the SR 89 TRPA travel route. Since publication of this plan, the travel route rating for this section of highway has increased as a result of other improvements in the community plan and the affected unit is now in attainment with the TRPA threshold. Therefore, the need to relocate this facility is significantly diminished and may no longer exist.

### *Rationale for Elimination*

This alternative could be feasible from a technical, legal, and regulatory perspective (with significant challenges described below) and would meet the project objectives and need. However, this alternative would not reduce overall environmental effects of the project such that these benefits would outweigh the substantial environmental effects that could occur with relocating a substation.

For instance, relocating a substation would require locating a new site approximately of 0.5 acre that would be graded to prepare the site for installation of the substation and connections to the electrical grid. Grid connections would require power lines and distribution lines into and out of the substation, as well as electrical vaults (that require excavation) for shifting the overhead distribution lines to underground conduit to enter the substation site. The existing conduits in the bridge spanning the Truckee River do not have sufficient capacity for the reroute of all the distribution lines.

Relocation rather than rebuilding of the Tahoe City Substation would also lengthen the construction period, thereby increasing construction-related impacts such as air emissions, noise, and traffic (i.e., lane/road closures). Effects of relocation of the Tahoe City Substation, similar to those discussed for undergrounding, could include increased:

- ▲ potential for erosion and sedimentation;
- ▲ disturbance to previously undisturbed habitat that supports special-status vegetation communities, plants, and wildlife;
- ▲ potential to disturb known and unknown hazardous materials;

- ▲ potential to disturb known and unknown potentially significant archeological resources and resources of concern to Native American Tribes;
- ▲ air emissions of criteria pollutants due to an increase in required construction equipment for site preparation and excavation activities (i.e., grading equipment, hauling out excess site and excavation material), dust generation, and truck trips to haul spoils from the site;
- ▲ construction related noise both on-site and off-site (i.e., increase in truck trips);
- ▲ traffic effects on local area roadways from increased truck trips; and
- ▲ visual effects because the site would be visible from Lake Tahoe and due to the need to string distribution over the Truckee River because there is not sufficient capacity within the existing conduits in the bridge to accommodate this alternative.

Accordingly, although the substation could be relocated, the increased environmental effects that could result would not justify relocation. Moreover, there are no significant adverse effects associated with the modification to the Tahoe City Substation as proposed and analyzed in this EIS/EIS/EIR that would warrant consideration of this alternative. Once all considerations were reviewed and evaluated, it was determined that this alternative does not better address any of the project goals, would have a substantially increased impact on the ratepayers, and would pose potential technical hurdles that may not be able to be feasibly addressed within the established schedule. As such, this alternative was eliminated from further consideration.

## 3.6 REQUIRED PERMITS AND APPROVALS

CalPeco is seeking permit approvals from the three lead agencies with primary discretionary approval for the project evaluated in this EIS/EIS/EIR.

Specifically, CalPeco is seeking to obtain a Special Use Authorization from the USFS, both the LTBMU and the Tahoe National Forest units, for implementation of the project on NFS land managed by the USFS. Of the approximately 24.1 miles of power line alignment under Alternative 4 (Proposed Alternative), 12.1 miles are in the LTBMU and 1.7 miles are in the TNF. The USFS is also the federal lead agency for the project for compliance with NEPA. As the federal lead agency, the USFS would be responsible for compliance with Section 7 of the federal Endangered Species Act and Section 106 of the National Historic Preservation Act.

As part of the USFS issuance of a Special Use Authorization, the USFS would require that the project include implementation of applicable standard BMPs developed on both a national and regional level. Although focused on soil and water resources, these BMPs address a variety of related environmental issue areas such as management of hazardous materials, protection of waters of the U.S. and wetlands, vegetation management, and timber harvest practices. These BMPs are contained in two documents:

- ▲ National Best Management Practices for Water Quality Management on National Forest System Lands, Volume 1: National Core BMP Technical Guide. USDA Forest Service, FS-990a. April 2012; and
- ▲ Region 5 Forest Service Handbook (FSH) 2509.22 Soil and Water Conservation Handbook, Chapter 10 Water Quality Management Handbook, Amendment No: 2509.22-2011-1, December 5, 2011

A summary of the applicable national and regional BMPs and the project design features, project description elements, APMs (discussed below), and mitigation measures that implement them is provided in Appendix G. In addition, through coordination with the Lahontan Regional Water Quality Control Board (LRWQCB) over the past several years, the LTBMU has developed a standard set of vegetation management design features that assist LTBMU projects in meeting LRWQCB Timber Waiver requirements. Many of the standard vegetation management design features are incorporated into the project design, APMs, mitigation measures, and BMPs identified in Appendix G. However, additional standard design features not clearly identified in these sources, or that provide additional detail not identified in these sources are listed in Appendix G. As needed, these standard

vegetation management design features would be included in the USFS Special Use Authorization, Timber Sale Contracts, or other applicable agreements or authorizations.

CalPeco is also seeking to obtain a Land Use and Development Permit from TRPA for implementation of all project components that fall within the Lake Tahoe Basin boundaries. TRPA is responsible for ensuring that the project is consistent with the Tahoe Regional Planning Compact, the TRPA Rules of Procedure, and the TRPA Code of Ordinances, and that the project would allow for the attainment and maintenance of environmental thresholds established to protect the unique values of the Lake Tahoe Basin.

Public electric utilities are regulated by the CPUC, which is the lead agency for compliance with CEQA for this project. The CPUC reviews the permit application for adequacy in conjunction with environmental review pursuant to CEQA. CalPeco must comply with the CPUC's GO 131-D, which contains the permitting requirements for the construction of substations and power line facilities and GO No. 95, which details the requirements for overhead line design, construction, and maintenance. CalPeco is seeking to obtain a Permit to Construct (PTC) from the CPUC for this project pursuant to GO 131-D, and submitted a PEA to the CPUC in August of 2010 as required by the Public Utilities Code.

No local discretionary permits are required, since the CPUC has preemptive jurisdiction over the construction, maintenance, and operation of CalPeco's facilities, as outlined in Section XIV.B of GO 131-D. The applicant would still have to obtain all ministerial building and encroachment permits from local jurisdictions, and GO 131-D requires that the applicant comply with local building, design, and safety standards to the greatest degree feasible to minimize project conflicts with local conditions.

CalPeco would obtain all other applicable permits for the project from federal, state, regional and local agencies with approval authority over the project.

Table 3-7, Required Permits and Authorizations, lists the potential permits and approvals required for project implementation.

<b>Agency</b>	<b>Permit/Authorization</b>	<b>Action Requiring Permit Approval or Review</b>
<b>Federal</b>		
USFS (LTBMU and Tahoe National Forest)	Special Use Authorization	Construction on NFS lands
	NEPA Review/Approval as a Lead Agency	Issuance of a Special Use Authorization
	Timber Sale Contract	Harvesting of timber on NFS lands
US Fish and Wildlife Service	Section 7 Consultation (through the USFS review process)	Potential impacts to a federally listed species or its habitat
Advisory Council on Historic Preservation	Section 106 Consultation (through the USFS review process)	Potential impacts to cultural resources
US Army Corps of Engineers	Section 404 Individual or Nationwide Permit	Potential work in waters of the United States, including wetlands
	NEPA Review/Approval as a Cooperating Agency	Authority to Construct on USACE Land
Federal Aviation Administration	Air Traffic Consultation	Review and authorization of helicopter operations (e.g., flight paths, communication protocols)
<b>State</b>		
CPUC	PTC	Construction or upgrade of facilities under 200 kV
	CEQA Review/Approval as a Lead Agency	Issuance of a PTC

<b>Table 3-7 Required Permits and Authorizations</b>		
<b>Agency</b>	<b>Permit/Authorization</b>	<b>Action Requiring Permit Approval or Review</b>
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Potential disturbance to the bed or bank of jurisdictional waters
	2081 Incidental Take Permit	Potential impacts to a state-listed species
State Historic Preservation Officer (SHPO)	SHPO Consultation (through the Section 106 process)	Potential impacts to cultural resources
California Department of Forestry	Timber Harvest Plan	Harvesting of timber on private lands
State Water Resources Control Board	Water Quality Order No. 99-08 – National Pollution Discharge Elimination System (NPDES) General Permit for Stormwater Discharges associated with Construction Activity	Discharges of stormwater runoff associated with construction activity involving land disturbance of 1 or more acres
	Water Quality Order No. 2003-0003 – Statewide General Waste Discharge Requirements for discharges to land with a low threat to water quality	Dewatering of excavations to land surface
Lahontan Regional Water Quality Control Board	Section 401 Water Quality Certification	Potential impacts to state water quality; required when a federal permit is issued
	Board Order No. R6T-2007-0008 – Waiver of Waste Discharge Requirements Related to Timber Harvest and Vegetation Management Activities	Potential impacts to state water quality resulting from tree and vegetation removal activities
	Board Order No. R6T-2005-2007 – Waste Discharge Requirements and NPDES General Permit No. CAG616002	Discharges of stormwater runoff associated with construction activity involving land disturbance of 1 or more acres in the Lake Tahoe hydrologic unit
	Board Order No. R6T-2008-0023 – Renewed Waste Discharge Requirements and NPDES General Permit for Limited Threat Discharges to Surface Waters	Dewatering of excavations to surface waters (if overland discharge is not feasible)
Caltrans	Encroachment Permit	Construction, operation, and maintenance within, under, or over state highway ROWs
California Department of Parks and Recreation	Encroachment Permit/Easement Expansion	Authority to conduct construction activities on State Parks land.
<b>Local</b>		
Tahoe Regional Planning Agency	Project Review/Approval as the Lead Agency	Issuance of a Linear Public Service Construction Permit
	Linear Public Service Construction Permit	Work within the Lake Tahoe Basin
	Tree Removal Permit	Removal of trees in the Lake Tahoe Basin
Placer County and Nevada County	Special Use Permit/Modification to Existing Special Use Permit	Construction, operation, and maintenance within, under, or over county road ROWs
Northern Sierra Air Quality Management District and Placer County Air Pollution Control District	Dust Control Plan	Disturbance of more than 1 acre of topsoil
Town of Truckee	Encroachment Permit	Construction, operation, and maintenance within, under, or over town road ROWs

## 3.7 APPLICANT PROPOSED MEASURES

Table 3-8 identifies CalPeco's APMs. These APMs were originally proposed in the June 2010 PEA, and have been modified during project development. All APMs would be followed during project planning, construction, and operations and maintenance activities. CalPeco has committed to implementing these measures in order to reduce the potential direct and indirect impacts that could result from the action alternatives. Therefore, the APMs are considered part of the project description.

The impact analysis in this EIS/EIS/EIR assumes implementation of all APMs. However, where other impacts are identified that are not addressed by these APMs, or where the APMs are not adequate to reduce impacts to less than significant levels, the EIS/EIS/EIR recommends additional mitigation measures. APMs will be incorporated into the Mitigation Monitoring, Compliance, and Reporting Program developed for this Proposed Project, and implementation of the APMs will be monitored in the same fashion as the mitigation measures developed in this EIS/EIS/EIR.

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
<b>Scenic Resources</b>								
SCE-1	<p>The following measures will be implemented during construction:</p> <ul style="list-style-type: none"> <li>/// Construction activities will be kept as clean and inconspicuous as practical.</li> <li>/// Construction storage and staging will be screened, where practical, with opaque fencing from close-range residential views and public viewing areas.</li> <li>/// Slash treatment will be chipping, mastication, or lop and scatter as determined by the applicable land owner/manager.</li> <li>/// When “cut-tree” marks are utilized, marks will be placed on back sides of trees or away from views of the travelling public.</li> <li>/// Within the immediate to middle-distance foreground (300 feet), log skidding trails will be re-graded, to the degree possible, back to their original, natural contour and rehabilitated with vegetation.</li> <li>/// Non-affected timber and ground vegetation will be protected during harvesting and slash treatment.</li> <li>/// Trees and vegetation within the “clear zone” that do not pose a risk to power lines will be preserved.</li> <li>/// Visual diversity of the ground surface will be maintained through irregular scatter of limbs, seeding, and other means as practicable.</li> <li>/// Barriers/boulders/downed logs will be placed in strategic locations to discourage the establishment of user-created trails. Implement</li> </ul>	<p>Construction-related visual impacts associated with grading and ground disturbance required for the installation of new structures and access roads could occur. While it is expected that these visual impacts would be short-term, this measure would minimize the potential for views from nearby residences and the general public to be significantly impacted during the duration of construction.</p>	✓	✓	✓	✓	✓	✓

APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	restoration of temporary access ways in a manner that minimizes visibility from intersecting roads. / Cut stumps will be 6-inch maximum height measured from the uphill side.							
SCE-2	Self-weathering dark brown steel poles (CorTen), or equivalent, will be used for the power lines to reduce potential visual contrast.	This measure would require that the new power line poles be dark brown to blend with the color of the coniferous forest backdrop so that the poles would not substantially alter or degrade the existing visual character or quality of the project's setting.		✓	✓	✓	✓	
SCE-3	Non-specular conductors will be used for the power lines to reduce the potential for new sources of glare. Non-specular conductor has been either mechanically or chemically treated to reduce reflectivity and has a smooth matte finish which blends more naturally with the environment.	On the power lines, non-specular conductors would be used to reduce the potential for adverse impacts on views in the area as a result of glare from the conductors.		✓	✓	✓	✓	
SCE-4	A non-reflective finish will be used for substation equipment at all substations to reduce the potential for new sources of glare.	Using a non-reflective finish for substation equipment would minimize glare that could potentially adversely affect day or nighttime views in the area.						✓
SCE-5	Screening through landscaping and non-vegetative means will be installed at the Tahoe City Substation to the degree that the rebuilt substation will not be obvious to the casual observer, and will account for public views of the substation from all sides. Plant material will be appropriate to the local landscape setting and will be consistent with CalPeco's technical requirements for landscaping in proximity to substation and transmission facilities. More specifically, the following will be implemented:	The Tahoe City Substation is located within a TRPA scenic roadway unit and vista, as identified in the Lake Tahoe Basin Scenic Resource Inventory. This measure provides for landscape screening to reduce the project's potential visual impacts from SR 89 and the recreation trail.						✓ <sup>2</sup>

<sup>2</sup> SCE-5 applies only to the Tahoe City Substation.

APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	<ul style="list-style-type: none"> <li>/// With the property owner’s permission, native conifer trees will be planted outside of the perimeter fence along the southwest and southeast sides of the substation site. Tree planting will replace existing trees that will be removed and will provide additional screening and landscape backdrop with respect to views from SR 89.</li> <li>/// With the property owner’s permission, on the southeast side of the substation, a mixture of trees and tall shrubs will be planted along the recreational trail adjacent to SR 89 to provide additional screening.</li> <li>/// With the property owner’s permission, at the western corner of the substation site, a mixture of shrubs will be planted outside of the perimeter fence in order to screen views from the recreation trail.</li> </ul>							
SCE-6	Poles proposed in the vicinity of the highly visible clearing adjacent to Mount Watson Road will be placed so as to span the clearing or otherwise minimize their visibility from the Fiberboard Freeway.	In one location along the new 625 Line under Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), an angle pole would be located in an open clearing along Mount Watson Road. This pole has the potential to appear prominent from the roadway. This measure would require the relocation of the pole to the eastern edge of the clearing to reduce project visibility.		✓				
SCE-7	In cases where replacement poles for the 650 Line are adjacent to SR 267 and will be visible in unobstructed foreground public views from the roadway, poles will be carefully sited to eliminate or substantially reduce their visibility from the highway within the Tahoe Basin as compared to the existing 650 Line without causing new visual impacts from tree removal or construction of access	This measure would require carefully siting replacement poles along the 650 Line to minimize their visibility from SR 267, which is identified as a scenic roadway unit in the Lake Tahoe Basin Scenic Resource Inventory.			✓			

Table 3-8 Applicant Proposed Measures									
APM Number	Description	Justification	Project Component						
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations	
			Existing	New					
	ways that will be required to erect and maintain the line. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.								
SCE-8	In cases where replacement poles for the 625 Line are adjacent to the Truckee River and will be visible in unobstructed foreground public views along the river or adjacent trails, poles will be carefully sited to minimize their visibility. The westernmost pole on the south bank of the Truckee River where the power line crosses the river will be placed far enough from the river so as to be substantially unseen from the pedestrian bridge. The remaining poles along the south bank of the river will be located southward, outside the river corridor and behind the trees that line the riverbank such that visibility of the power line is minimized as viewed from SR 89, the Truckee River, and the pedestrian bridge. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.	This measure would require carefully siting replacement poles along the 625 Line to minimize their visibility from the Truckee River and adjacent 64-Acre Recreation Site		✓					
SCE-9	In consultation with the USFS and to reduce potential project visibility, selective, site-specific conifer tree planting will be considered in limited areas along the new 625 Line route where relatively unobstructed foreground views of new structures are seen from Mount Watson Road. Placement of new trees will not conflict with project operations or safety requirements.	New conifer tree planting in selected areas would provide screening, thereby reducing the project's visibility and visual contrast from Mount Watson Road, which is a key public viewpoint.		✓					
<b>Air Quality</b>									
AQ-1	The applicant will submit a Construction Emission/Dust Control Plan to the NSAQMD and PCAPCD for approval prior to ground disturbance or vegetation removal associated with construction of the proposed project. The Dust Control Plan will summarize the APMs related to	This measure would assist in preventing exceedances in air pollution control district thresholds for emissions of particulate matter (PM).	✓	✓	✓	✓	✓	✓	✓

APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	emissions control during construction.							
AQ-2	Unpaved areas subject to vehicle access will be stabilized using water at least two times daily, or as needed to control fugitive dust. On NFS lands, unpaved roads will be watered at least as often as specified in Forest Service Handbook 2409.15 (USFS 1992). A locally approved chemical dust palliative, applied according to the manufacturer's recommendations, may be substituted for watering with approval from the applicable land owner/manager.	This measure would help ensure that dust abatement is implemented on a regular basis and as needed throughout construction and that only approved chemical dust palliatives would be used (where they are authorized). APM AQ-2, in conjunction with the other APMs for air quality, would assist in compliance with local air standards and plan thresholds for dust and PM.	✓	✓	✓	✓	✓	✓
AQ-3	All inactive, disturbed portions of the project's ROW will be covered, seeded, or watered, as needed to control fugitive dust, until suitable vegetative cover is established.	Watering, seeding, or covering of disturbed inactive areas would minimize fugitive dust and support compliance with local air quality thresholds.	✓	✓	✓	✓	✓	✓
AQ-4	Prior to any ground disturbance, sufficient water will be applied to the area to be disturbed in order to control fugitive dust emissions.	Watering the ground prior to disturbance would help to suppress dust. The measure, in conjunction with the other APMs for air quality, would support compliance with local air quality standards and thresholds.	✓	✓	✓	✓	✓	✓
AQ-5	If wind-driven fugitive dust cannot be stabilized using water or a chemical dust suppressant such that the resulting dust plume crosses the nearest property line, all grading and excavating activities must cease until dust can be effectively controlled.	This measure would limit the potential for fugitive dust to become a safety hazard or a nuisance to adjacent uses (such as roads and highways) and property owners during construction.	✓	✓	✓	✓	✓	✓
AQ-6	Exposed stockpiles (e.g., dirt, sand, etc.) will be covered and/or stabilized with water or a locally approved chemical dust stabilizer as needed to control fugitive dust emissions. When loading or unloading stockpiled material, material will be stabilized using water and/or drop heights will be minimized to control fugitive dust.	This measure is intended to reduce wind-driven fugitive dust from spoil stockpiles and when loading and unloading soil material.	✓	✓	✓	✓	✓	✓
AQ-7	Traffic speeds on unpaved roads and the ROW will be limited to 15 miles per hour.	This measure is intended to reduce fugitive dust by limiting vehicle speeds on unpaved access roads.	✓	✓	✓	✓	✓	✓
AQ-8	Construction vehicles and equipment will be cleaned to	This measure is intended to avoid tracking silt, mud,	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures									
APM Number	Description	Justification	Project Component						
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations	
			Existing	New					
	prevent dust, silt, mud and dirt from being tracked off-site prior to entering public roadways.	and dirt onto public roadways and reduce fugitive dust emissions.							
AQ-9	Any visible trackout deposited on paved, public roadways will be cleaned up at the conclusion of each workday or at 24-hour intervals for continuous operation. If trackout extends for a cumulative distance greater than 50 feet, it will be cleaned up within 1 hour. Trackout will be cleaned with a wet sweeper or vacuum device.	This measure is intended to reduce fugitive dust by keeping public roadways clean so that dirt deposited on road surfaces by construction equipment does not become dust due to vehicles traveling over it. This measure also provides guidance on when, where, and how trackout should be cleaned from roadways.	✓	✓	✓	✓	✓	✓	✓
AQ-10	Trucks transporting bulk materials off-site will be maintained such that no spillage can occur from holes or other openings in the cargo compartments. Loads will be completely covered or the bulk material will be wetted and loaded to maintain 6 inches of freeboard from the top of the container.	This measure is intended to reduce fugitive dust by minimizing the potential for materials to blow out of or spill from the beds of haul trucks.	✓	✓	✓	✓	✓	✓	✓
AQ-11	CalPeco will limit actively graded areas to a cumulative total of 5 acres per day in order to control fugitive dust. The total area of disturbance can exceed this acreage so long as the actively graded portion is below this threshold.	This measure would control the amount of earth disturbance occurring simultaneously on different project components in order to keep fugitive dust emissions below established thresholds.	✓	✓	✓	✓	✓	✓	✓
AQ-12	Traffic will be controlled by flaggers or other methods, as necessary, to improve traffic flow along roadways in the project area.	Improving traffic flow along roadways would reduce idling time of vehicles. Reducing idling time would reduce vehicle emissions.	✓	✓	✓	✓	✓	✓	✓
AQ-13	Construction activities in more populated areas will be scheduled during off-peak hours, to the extent practical, to minimize impacts to traffic flow.	This measure would improve traffic flow along roadways, which would reduce idling time of vehicles and the associated emissions.	✓	✓	✓	✓	✓	✓	✓
AQ-14	Vehicle idling time will be limited to a maximum of 5 minutes for vehicles and construction equipment, except where idling is required for the equipment to perform its task.	As stated previously, reducing idling time would reduce emissions.	✓	✓	✓	✓	✓	✓	✓
AQ-15	All off-road diesel engines with a rated output of greater than 100 horsepower will, at a minimum, meet the Tier II California Emissions Standards for Off-Road Compression	This measure would reduce the emissions of PM and oxides of nitrogen emitted by heavy construction equipment, which would help to	✓	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures									
APM Number	Description	Justification	Project Component						
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations	
			Existing	New					
	Ignition Engines. If reasonably available, Tier III engines will be employed.	reduce project emissions.							
<b>Biological Resources</b>									
BIO-1	Prior to construction, all CalPeco, contractor, and subcontractor project personnel will receive training from a qualified resource specialist regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including appropriate wildlife avoidance measures, impact minimization procedures, the importance of sensitive resources, and the purpose and methods for protecting such resources. Among other topics, the training will also include a discussion of BMPs to reduce the potential for erosion and sedimentation during construction. Additionally, CalPeco and designated environmental monitors for project construction will coordinate with the applicable public land owners/managers on communication, documentation and reporting, and data submittal protocols.	This measure is intended to provide all project personnel sufficient detail regarding the project’s APMs, applicable environmental laws, regulations, and sensitive resources that have the potential to be encountered in the project area. This training would provide a basic level of environmental awareness to all project personnel.	✓	✓	✓	✓	✓	✓	
BIO-2	CalPeco will conduct a complete floristic survey, including surveys for all special-status botanical species and invasive plants, during a time that coincides with the greatest number of blooming periods for target species. This survey will be conducted no more than one year prior to the start of construction. Occurrences of special-status botanical species and weed-infested areas will be flagged or fenced no more than 30 days prior to the start of construction. Flagging and fencing will be refreshed and maintained throughout construction. Implementation of this measure will occur in coordination with USFS	This measure would allow sensitive plants to be identified prior to construction and protected during construction. In addition, invasive plant populations would be avoided to the extent possible, thereby minimizing the potential spread of these species throughout the area by construction vehicles and equipment.	✓	✓	✓	✓	✓		
BIO-3	CalPeco will complete an invasive plant risk assessment for all ground-disturbing activities.	This measure is being implemented to respond to the USFS requirement for a weed risk assessment.	✓	✓	✓	✓	✓		
BIO-4	Before construction activities begin, CalPeco will treat	This measure would help prevent the accidental	✓	✓	✓	✓	✓		

APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	invasive plant infestations where feasible. Treatments will be selected based on each species ecology and phenology. All treatment methods—including the use of herbicides—will be conducted in accordance with the law, regulations, and policies governing the land owner (e.g., TRPA in the Lake Tahoe Basin; LTBMU Forest Supervisor and Tahoe National Forest Supervisor on NFS lands). Land owners will be notified prior to the use of herbicides. In areas where treatment is not feasible, CalPeco will clearly flag or fence infested areas in order to clearly delineate work exclusion. Appropriate treatments will also be incorporated into tree removal and construction activities, such as a requirement that all cut live conifer stumps greater than 6 inches in diameter be treated with Sporex or an EPA-registered borate compound to prevent the spread of Annosus root disease.	spread of invasive plants and invasive plants into new areas where they do not currently exist. This measure also manages herbicide use in the Lake Tahoe Basin.						
BIO-5	Vehicles and equipment will arrive at the project area clean and weed-free and will be inspected by the on-site environmental monitor for mud or other signs that weed seeds or propagules could be present prior to use in the project area. If the vehicles and equipment are not clean, the monitor will deny entry to the ROW and other work areas.	This measure is intended to prevent the accidental introduction and spread of invasive plants via construction-related equipment by ensuring that the equipment is clean prior to use.	✓	✓	✓	✓	✓	✓
BIO-6	Vehicles and equipment will be cleaned using high-pressure water or air at designated weed-cleaning stations after exiting an infested area. Cleaning stations will be designated by a botanist or invasive plant specialist and located away from aquatic resources.	This measure is intended to prevent the accidental spread of invasive plants from areas of existing infestation to areas of non-infestation. Thorough cleaning of vehicles is one of the most cost-effective and efficient means of controlling the spread of invasive plants.	✓	✓	✓	✓	✓	✓
BIO-7	Only certified weed-free construction materials, such as sand, straw, gravel, seed, and fill, will be used throughout the project.	This measure would help prevent the introduction and spread of invasive plants from imported materials.	✓	✓	✓	✓	✓	✓
BIO-8	If invasive plant-infested areas are unavoidable, invasive	This measure would help prevent the spread of	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	plants will be cut, if feasible, and disposed of in a landfill in sealed bags or disposed of or destroyed in another manner acceptable to the USFS, TRPA, USACE, or other agency as appropriate. If cutting is not feasible, layers of mulch, degradable geotextiles, or similar materials will be placed over the infestation area to minimize the spread of propagules by equipment and vehicles during construction. These materials will be secured so they are not blown or washed away.	existing invasive plant infestations, if they are unavoidable during construction. Coordination with the applicable agency would promote proper implementation of the measure so that the spread of weeds is minimized.						
BIO-9	Exclusion zones will be established around any identified special-status botanical species. In consultation with a qualified biologist, CalPeco will first attempt to avoid effects of project implementation on special-status plants and protect occurrences <i>in situ</i> . In the event that a special-status plant occurrence cannot be avoided by construction activities, CalPeco will notify CPUC, CDFW, TRPA, and/or USFS, as applicable depending on the species regulatory status. CalPeco will consult with CDFW, TRPA, and/or USFS in order to establish appropriate mitigation measures. If seed collection or transplantation are selected as appropriate mitigations, then the following measures will apply: a) CalPeco will collect any mature seeds from the affected plants and store them at an appropriate native plant nursery or comparable facility; b) upon the completion of work, CalPeco will redistribute the seeds within the original location of the occurrence; c) CalPeco will establish performance standards for survivorship and will also monitor and document the success rate of the transplanted individuals for three consecutive growing seasons; d) if performance standards are not met, corrective measures will be implemented and monitoring and adaptive management continued until success criteria are met. Specifically for <i>Plumas ivesia</i> : if, through consultation with an occurrence’s land manager, it is determined that	This measure is intended to prevent or compensate for impacts to rare plants, including <i>Plumas ivesia</i> . Consulting with the CDFG in the event the measure cannot be implemented would promote protection of the species.	✓	✓	✓	✓	✓	

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	Plumas ivesia plants cannot be avoided or protected <i>in situ</i> , then CalPeco will attempt to relocate all Plumas ivesia individuals. Plants that cannot be avoided during construction will be relocated to suitable habitat surrounding the 650 Line. If relocation is unsuccessful, CalPeco will consult with the CDFW and USFS in order to determine the cause of relocation failure and to establish appropriate corrective remedial measures.							
BIO-10	Any special-status botanical species identified during the floristic surveys will be documented, photographed, and submitted to the CNDDDB. CalPeco will notify and provide documentation to CPUC, CDFW, TRPA, and/or USFS, as applicable depending on the species listing status.	Identification and documentation of rare plants would be included in a widely-used database, providing increased scientific knowledge regarding species.	✓	✓	✓	✓	✓	
BIO-11	CalPeco will conduct protocol-level surveys during the appropriate season prior to construction in a particular area to determine whether northern goshawks or California spotted owls are nesting in planned work areas within suitable habitat along the new 625 Line, existing 625 Line, and 650 Line, including USFS-designated PACs or Home Range Core Areas (HRCAs).	This measure would identify the locations of any nesting California spotted owls and northern goshawks so they can be avoided during construction, as described in APM-BIO-12.	✓	✓	✓			
BIO-12	No vegetation management or treatment or other construction activities, other than vehicle passage on existing roadways, will occur within 0.25 mile of active California spotted owl nests during the breeding season (March 1 to August 31) or within 0.50 mile of active northern goshawk nests during the breeding season (February 15 to September 15), unless protocol-level surveys confirm that the birds are not nesting. A qualified biologist will have the ability to amend the start and end dates of these breeding seasons with concurrence from appropriate agencies if it can be determined that breeding has not started or that fledglings have left the nest. If the location of a nest site within a PAC is unknown, either surveys are required to locate the nest stand and	This measure is intended to avoid impacts to nesting California spotted owls and northern goshawks. The measure also provides for any changes to vegetation management to be approved by the appropriate agency.	✓	✓	✓			

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	determine nesting status or, as an alternative to surveys, an activity buffer will be applied to the 0.25-mile area surrounding the PAC. The activity buffer may be waived for activities of limited scope and duration, when a biological evaluation determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location. Where a biological evaluation concludes that a nest site will be shielded from planned activities by topographic features that will minimize disturbance, the buffer distance may be modified in coordination with the USFS.							
BIO-13	To offset permanent removal of suitable habitat within designated PACs and HRCAs, CalPeco will assist the USFS in locating additional suitable habitat immediately adjacent to the PAC or HRCA removed to form a new PAC to support the USFS's goal of establishing additional PACs and maintaining specific acreages of California spotted owl and northern goshawk PACs and HRCAs. The amount of suitable habitat designated as a PAC or HRCA for each species is as follows: a spotted owl PAC is 300 acres, a northern goshawk PAC is 200 acres, and a spotted owl HRCA is 1,000 acres. CalPeco will coordinate with the USFS to identify areas of interest and understand the desirable components or key criteria of suitable habitat used for PAC and HRCA designation. As an alternative to assisting USFS in locating additional suitable habitat adjacent to a PAC or HRCA, CalPeco will provide monitoring support for new PAC or HRCA areas established by USFS as a result of the project. The specific objectives, timing, and duration of monitoring will be agreed upon by CalPeco and USFS.	This measure is intended to offset permanent impacts to California spotted owl and northern goshawk habitat by providing additional survey efforts in locations chosen in consultation with the USFS or funding for surveys, restoration, or protection of habitat.	✓	✓	✓			
BIO-14	CalPeco will conduct protocol-level surveys for willow flycatcher in the Martis Valley, within suitable habitat that could be affected by project activities associated with segments 650-4, 650-4A, and 650-4B. Suitable habitat	This measure is intended to avoid impacts to nesting willow flycatchers by defining survey locations and appropriate buffer zones.			✓			

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	within 200 feet of these segments is identified in Exhibit 4.7-7. (Additional suitable habitat not shown on Exhibit 4.7-7 is present along Martis Creek adjacent to these segments and may require consideration for surveys.) The survey will follow <i>A Willow Flycatcher Survey Protocol for California</i> (Bombay et al. 2003). The protocol requires a minimum of two survey visits to determine presence or absence of willow flycatcher: one visit during survey period 2 (June 15–25) and one during either survey period 1 (June 1–14) or period 3 (June 26–July 15). This measure is based on willow flycatcher sightings made in 2007 during field surveys to support the PEA, recent CNDDDB records, and habitat mapping conducted during the 2012 surveys. If nesting willow flycatchers are discovered within the survey area, 250-foot exclusionary buffer zones will be established to exclude work during the breeding season—June through August—or until young have fledged the nest. If an area is given clearance to proceed with construction and nesting activities subsequently occur, it will be assumed that the nesting pair is acclimated to the ongoing disturbance of construction. If circumstances exist such that future activities may result in the abandonment or failure of the nest, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by CalPeco, in coordination with the CDFW, to protect nesting birds.							
BIO-15	Preconstruction biological surveys will be conducted no more than 30 days prior to construction activities to identify biological resources, including burrows and den sites, which could be impacted by construction activities. All burrows and den sites will be inspected for use by sensitive mammals, and buffers may be established based on occupation. If an area is given clearance to proceed with construction and burrowing or denning activities subsequently occur, it will be assumed that the individuals	This measure is intended to identify sensitive mammals and burrows in the project area in order to facilitate the implementation of avoidance measures and lessen potential impacts.	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	are acclimated to the ongoing disturbance of construction. However, the den will be flagged to prevent damage during construction. If circumstances exist such that future activities may result in the abandonment of the burrow or den site, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by CalPeco, in coordination with CDFW, USFS, and, if necessary, the USFWS.							
BIO-16	If a potentially active sensitive mammal burrow or den site is unavoidable, CalPeco will employ den-dusting or scoping to determine the species and reproductive status of the animal. If the burrow or den is determined to be active and does not contain young, CalPeco will excavate the burrow by hand, remove the den, or block the entrance to prevent re-entry until after the completion of work. If the animal is determined to be raising young, CalPeco will establish a 200-foot exclusionary buffer surrounding the burrow or den until it is determined that the young have left the den. After it is determined that young have left the den, CalPeco will commence hand excavation or removal of the den structure. CalPeco will contact CDFW, USFS and/or USACE prior to any den-dusting, scoping, burrow excavation, or den structure removal.	The measure would protect sensitive young mammals in active burrows through the implementation of appropriate exclusionary buffers around the burrows. The measure also requires that any burrows (not containing young) are excavated so that animals are not harmed during construction activities.	✓	✓	✓	✓	✓	✓
BIO-17	Concurrent with the preconstruction surveys described in APM BIO-15, surveys will be conducted for amphibians, including eggs or juveniles, at aquatic habitat crossed by the project. If adults, juveniles, or eggs of sensitive amphibians are discovered, a permitted specialist will relocate the individuals to suitable habitat outside of the construction area. If amphibians are discovered in the construction area after the start of work, the environmental monitor will allow the individuals to leave under their own volition. As an alternative, an agency-approved biologist may relocate the individuals from the	This measure is intended to identify sensitive amphibians in the project area so that they can be relocated or allowed to leave construction areas unharmed. The measure also calls for appropriate agency coordination in the event of a required relocation.	✓	✓	✓	✓	✓	

APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	project area to similar, suitable habitat. CalPeco will coordinate with the CDFG, USFWS, USFS, and/or USACE prior to relocating any individuals. If it is determined that surveys would have potential to result in harassment or other forms of take of a federally listed species (e.g., Sierra Nevada yellow-legged frog), survey and potential relocation methods will be coordinated with and authorized by USFWS.							
BIO-18	For bird species not specifically addressed in other APMs, nesting bird surveys will be conducted no more than 30 days prior to construction activities if work is scheduled to occur during the breeding season—March to September. Exclusionary buffer zones (to be determined based on species-specific needs) will be created surrounding any active nests along the project alignment. Buffers will be established by a qualified biologist prior to the start of construction. If an area is given clearance to proceed with construction and nesting subsequently occurs, it will be assumed that the individuals are acclimated to the ongoing disturbance of construction. If circumstances exist such that future activities may result in the abandonment or failure of the nest, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by CalPeco in coordination with the CDFW, USFS, and/or USACE.	This measure is intended to identify and protect nesting birds during the avian breeding season, thus complying with state endangered species and migratory bird protection laws and lessening any impact.	✓	✓	✓	✓	✓	
BIO-19	Power poles will be constructed to conform to the practices described in the Suggested Practices for Avian Protection on Power Lines Manual developed by the Avian Power Line Interaction Committee (2006).	This measure is intended to help prevent accidental injury or mortality of avian species, which could occur from electrocution.	✓	✓	✓	✓	✓	✓
BIO-20	Bat surveys will be conducted in the spring, no more than 30 days prior to the start of construction, in order to identify active bat roosting sites, such as snags or dense trees. All potential roosting sites will be surveyed by a qualified biologist in order to determine usage. Specific survey methodologies will be determined in coordination with	This measure is intended to avoid potential impacts to bats and bat roosting sites in the project area. By conducting preconstruction bat surveys in the appropriate season, active bat roosting sites would be identified and could be protected through the implementation of this measure.	✓	✓	✓	✓	✓	

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	CDFW and the appropriate land manager (e.g., USFS, USACE). All non-active roosting sites will be trimmed within 30 days of the surveys in order to prevent new roosts from being established. If it is determined that an active roosting site will be impacted, CalPeco will consult with CDFW, USFS and/or USACE in order to acquire appropriate authorizations to remove the roosting sites. All active non-maternity roosting sites will be fitted with passive exclusion devices, such as one-way doors, and all bats will be allowed to leave voluntarily. Once it is confirmed that all bats have left the roost, crews will be allowed to continue work in the area. If a maternity roosting site is discovered, CalPeco will consult with the CDFW, USFS and/or USACE in order to establish appropriate exclusionary buffers until all young are determined to be volant by a qualified biologist. Once it is determined that all young are volant, passive exclusion devices will be installed and all bats will be allowed to leave voluntarily. Once it is determined by a qualified biologist that all bats have left the roost, crews will be allowed to work within the buffer zone.							
BIO-21	Qualified environmental monitors will be present with each crew during all vegetation-removal activities to help ensure that impacts to biological resources are minimized to the extent possible. For all other construction activities, monitors will be allowed to cover up to 5 miles of the project area at once to allow multiple crews to work in close proximity to each other at the same time. Environmental monitors will have the authority to stop work or direct work in order to help ensure the protection of resources and compliance with all permits.	The highest potential of encountering sensitive species occurs during initial clearing and vegetation removal. This measure specifies the appropriate coverage area for the environmental monitors. The measure is intended to place a qualified biologist with each clearing crew to prevent accidental harm or take of sensitive species and promote compliance with project permits.	✓	✓	✓	✓	✓	

APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
BIO-22	An environmental monitor will inspect all pole excavations and areas of active construction on a daily basis for trapped wildlife. Wildlife found in active construction areas will be allowed to passively leave the site. If necessary, wildlife may be relocated by a qualified biologist. The construction foreman will notify the environmental monitor immediately if any wildlife enters or becomes trapped in the work area.	This measure is intended to minimize wildlife entrapment in open excavations or trenches. This measure is also intended to help ensure that in the event that wildlife does inadvertently enter construction areas, individuals would be allowed to passively escape. Further, should an animal fail to escape on its own, this measure provides that qualified individuals would remove the animal unharmed.	✓	✓	✓	✓	✓	✓
BIO-23	Topsoil, where present, will be salvaged in areas that will be graded or excavated. Topsoil will be segregated, stockpiled separately from subsoil, and covered. These soil stockpiles, as well as any others created by the proposed project, shall have the proper erosion control measures applied until they are removed. The topsoil will then be replaced to the approximate location of its removal after project construction has been completed to facilitate revegetation of disturbed areas. Top soil will not be salvaged from areas infested with invasive plants.	This measure would facilitate restoration and revegetation of disturbed areas and help ensure that topsoil is not lost or mixed with subsoil. This measure would help prevent the accidental spread of invasive plants into new areas where they do not currently exist.	✓	✓	✓	✓	✓	
BIO-24	If invasive plant infestations are later identified throughout the course of construction in staging areas, parking areas, or access routes, they will be treated according to APM BIO-4 & BIO-8.	This measure would help prevent the accidental spread of invasive plants into new areas where they do not currently exist.	✓	✓	✓	✓	✓	
BIO-25	If the environmental monitor determines that construction is occurring in an active mule deer fawning area, they will have the authority to temporarily halt or relocate work until the fawns move out of the project area. In addition, helicopter flight paths may be rerouted to avoid these areas if it is determined that helicopter use may impact fawns.	This measure is intended to avoid impacts to mule deer and mule deer fawns that might be sensitive to construction activity and helicopter noise.	✓	✓	✓			
BIO-26	Work areas will be clearly marked with fencing, staking, flagging, or another appropriate material. All project personnel and equipment will be confined to delineated work areas. In the event that work must occur outside of	Clearly delineating work areas and requiring activities to be performed only in the designated areas would minimize impacts to sensitive habitat and species located outside of the work areas, and	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
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			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	the work area, approval from lead and other agencies with jurisdiction over the property will be obtained prior to the commencement of activities.	would limit the project’s overall disturbance.						
BIO-27	Helicopters will be used, where necessary, to avoid impacts to waterways or in areas of rough terrain. Appropriate measures, including regular watering, will be implemented at landing zones in order to control dust. Helicopter use within HRCAs, PACs, and TRPA disturbance zones will be prohibited if vegetation treatment restrictions are concurrently in place.	Using helicopters near waterways or in areas of rough terrain would protect habitat and eliminate the need to grade new access roads in those areas. Because helicopter use has the potential to increase fugitive dust, the dust control techniques identified in this measure would be implemented. Because helicopter-related noise also has the potential to impact nesting northern goshawk and California spotted owl, use within PACs and HRCAs may be limited.	✓	✓	✓	✓	✓	
BIO-28	CalPeco will minimize vegetation and tree removal to only the areas necessary for construction, with particular attention given to minimizing effects on riparian areas and preserving trees greater than 30 inches diameter at breast height (dbh).	This measure would minimize impacts to habitat, particularly in sensitive riparian areas.	✓	✓	✓	✓	✓	
BIO-29	Skidding of trees will not be permitted in waters of the United States or waters of the State, including wetlands. Within these waters tree removal may be conducted by hand, use of cable systems, helicopter yarding, or use of ground based equipment when determined suitable for ground based mechanical harvest. Any work conducted in the vicinity of waters of the United States, waters of the State, and wetlands will have an environmental monitor present, consistent with the requirements of APM WQ-4. Other APMs applicable to the protection of aquatic resources will also be implemented.	This measure would reduce potential temporary impacts to aquatic resources and existing drainage patterns during construction.	✓	✓	✓	✓	✓	
BIO-30	Prior to commencing construction in any area containing aquatic resources or potential wetlands, a qualified biologist will conduct a delineation of waters of the United States according to methods established in the USACE	Temporary impacts to wetlands, aquatic resources, and existing drainage patterns would be minimized and avoided during construction as a result of this measure. This measure would also help ensure that	✓	✓	✓	✓	✓	

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	wetlands delineation manual (Environmental Laboratories 1987) and Western Mountains, Valleys, and Coast Region Supplement (Environmental Laboratories 2010). The delineation will map and quantify the acreage of all aquatic habitats on the project site and will be submitted to USACE for verification. CalPeco will determine, based on the verified wetland delineation and the project design plan, the acreage of impacts on waters of the United States and waters of the state that will result from project implementation. Impacts will be avoided to the extent practicable through the siting of poles and other facilities outside of delineated waters of the United States and waters of the state. Work in wetlands or wet meadow habitats with saturated soil conditions will be scheduled when soils are dry to the extent possible. If soils become saturated, timber mats will be installed along all vehicle and equipment access routes to minimize rutting. Prior to disturbance of waters of the United States or waters of the state, an environmental monitor will record via photographs and field notes the pre-disturbance condition of the water. Disturbed waters will be restored to preconstruction conditions and seeded with a native species, consistent with the vegetation community present prior to disturbance, to stabilize the soils and minimize the introduction of invasive plants, as specified by the USACE and RWQCB. In accordance with the USACE "no net loss" policy, all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio. This mitigation will come in the form of either contributions to a USACE-approved wetland mitigation bank or through the development of a Compensatory Mitigation and Monitoring Plan aimed at creating or restoring wetlands in the surrounding area (although creation is not authorized by TRPA in their jurisdiction).	there is no permanent net loss of waters of the United States upon completion of the project. This measure also requires that disturbed wetlands are restored per RWQCB and USACE specifications.						

Table 3-8 Applicant Proposed Measures									
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BIO-31	Visibility permitting, all excavations will be inspected for sensitive aquatic wildlife prior to dewatering. Wildlife found in excavations will be allowed to leave passively or will be relocated by a qualified biologist.	This measure is intended to prevent mortality of sensitive species due to the use of dewatering pumps and other machinery. This measure also requires that, in the event that wildlife inadvertently enters an excavation and is unable to escape passively, a qualified individual would remove the animal.	✓	✓	✓	✓	✓	✓	
BIO-32	If dewatering of an excavation is needed, all dewatering pump intakes will be fitted with filter screening to prevent impacts to aquatic wildlife that may accidentally enter excavations. Water will not be pumped directly from rivers, streams, ponds, or other waters of the U.S. or wetlands (although as stated above, dewatering of excavations is permitted).	Installation of dewatering pump intake screens would help ensure that aquatic wildlife are not harmed during dewatering of excavations. Prohibitions on pumping water from rivers, streams, ponds and similar features would prevent the accidental entrainment of aquatic wildlife in pumps.	✓	✓	✓	✓	✓	✓	
BIO-33	All trash and food will be removed from the site at the end of each workday in order to deter wildlife from entering the site.	This measure is intended to prevent attracting wildlife to the project area.	✓	✓	✓	✓	✓	✓	
BIO-34	No pets or firearms will be allowed in the project area.	This measure is intended to prevent hunting, accidental injury, harassment, or killing of native and sensitive wildlife.	✓	✓	✓	✓	✓	✓	
BIO-35	No harm, harassment, or collection of plant and wildlife species will be allowed. Feeding of wildlife will be prohibited.	This measure is intended to avoid impacts to sensitive plant and animal species.	✓	✓	✓	✓	✓	✓	
BIO-36	Prior to construction, CalPeco will develop a Restoration Plan that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. The plan will be consistent with, and implement related commitments and requirements included in the EIS/EIS/EIR project description, other APMs, mitigation measures, and agency permit requirements. The Restoration Plan will address loosening of any compacted soil, restoration of surface residue, and reseeded. If existing unpaved roads require modification to temporarily	Development and implementation of a Restoration Plan would help ensure that landowners and agencies are consulted regarding restoration, that the project area is returned to preconstruction conditions, and that long-term restoration procedures are identified.	✓	✓	✓	✓	✓		

Table 3-8 Applicant Proposed Measures								
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			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	allow passage of construction equipment during the construction period, these roads will be returned to their original footprint after construction is complete. On NFS lands, restoration activities will be designed and implemented to meet invasive plant management guidelines and Visual Quality Objectives (VQO) for the area. Areas temporarily disturbed by cut and fill activities will be re-graded to blend with the natural topography. On public land, CalPeco will coordinate with the land management agency to determine an appropriate seed mix or tree planting plan as well as other elements of the plan applicable to lands managed by the agency. On private land, CalPeco will coordinate with the landowner and/or provide the landowner with a suggested seed mix based on consultation with the agency of jurisdiction. The plan will include approved seed mixes, application rates, application methods, methods to record pre-disturbance conditions, success criteria for vegetation growth, monitoring and reporting protocols, and remedial measures if success criteria are not met. If broadcast seeding is determined to be the most feasible application method, seeding rates will be doubled relative to the standard seeding rate and the seeding method rationale will be explained. The plan will also include long-term erosion and sediment control measures, slope stabilization measures, criteria to determine the success of these measures, remedial actions if success criteria are not met, and monitoring and reporting procedures. As part of normal equipment inspections during project operation, an evaluation of access ways will be conducted to confirm that use has not resulted in compaction that will result in "coverage" per TRPA standards.							
BIO-37	Decommissioning the existing 625 Line ROW and allowing natural regeneration of coniferous forest and other native	Revegetation along the existing 625 Line would partially offset the impacts to habitat and species as	✓					

Table 3-8 Applicant Proposed Measures								
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			Existing	New				
	<p>vegetation types will assist in offsetting or reducing the permanent loss of trees and other vegetation along the new 625 Line ROW. Prior to the removal of poles and conductor, a qualified biologist or soil scientist will identify areas of the abandoned ROW that contain unnaturally compacted soil (resulting from unauthorized public use, development of user-created trails, or other factors) that could limit the natural reestablishment of vegetation and assess whether local treatments will be needed to facilitate native vegetation recruitment and development. CalPeco will consult with the applicable land owner/manager to verify that areas identified for treatments are appropriate (e.g., not part of a system road, authorized trail network, or other desired use) and secure approval for restoration. Restoration of these sites will be overseen by a qualified biologist and will likely consist of a combination of the following.</p> <ul style="list-style-type: none"> <li>/// Barricade existing access points and post appropriate signage to discourage use. Also incorporate into restoration actions minimizing the visibility of potential access points from intersecting roadways.</li> <li>/// Loosen compacted soil to a depth of 6 to 8 inches.</li> <li>/// Incorporate logs, boulders, mulch and other materials into the disturbed area to discourage use.</li> <li>/// Apply appropriate erosion control BMPs (e.g., installation of check dams, mulch, log and/or rock stabilization) in areas where evidence of sheet, rill, or gully erosion exists.</li> <li>/// Seed with a certified weed-free seed mix, approved by the applicable land owner/manager, containing native, site-appropriate species.</li> <li>/// Apply 1 to 2 inches of locally obtained mulch such</li> </ul>	a result of the tree removal associated with the new 625 Line.						

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			Existing	New					
	<p>as pine needles, wood chips, or tub grindings.</p> <ul style="list-style-type: none"> <li>■ Monitor for new invasive plant invasions and expansion of existing weed populations following treatments, and implement weed control measures where needed. Post-treatment monitoring for invasive plants will be conducted annually for up to three years, similar to the frequency and duration specified for USFS land in the USFS Invasive Plant Risk Assessment prepared for the project.</li> <li>■ Conduct post-treatment monitoring and reporting every two years for up to 10 years, to evaluate success of restoration treatments. The details of the monitoring and reporting program, including identification and implementation of potential adaptive management actions based on monitoring results, will be developed jointly by CalPeco, TRPA, and the land owner/manager.</li> </ul>								
<b>Cultural Resources</b>									
CUL-1	To the extent feasible, project design will avoid disturbance to significant heritage and cultural resources recommended or considered eligible for listing in the NRHP or CRHR. Avoidance may be achieved by various means such as placing poles outside the resource and spanning conductor across the resource and adjusting access way boundaries to avoid a resource. Resources to be avoided within the APE, or those immediately adjacent to the APE, will be designated as exclusion zones for all construction activity, including tree removal, and will be clearly marked with fencing, staking, flagging, or another appropriate material. Signage will be placed on the markers identifying the exclusion zone and stating that construction vehicles, equipment, and personnel are not	This measure documents the applicant’s intent to avoid cultural resources where possible.	✓	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
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			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	permitted in the exclusion zone. If complete avoidance is not feasible, construction and/or tree removal methods will be implemented that minimize potential impacts, such as hand excavating holes with an archeological monitor present to inspect spoils and using a helicopter for pole placement to avoid vehicles passing over the resource. Appropriate construction methods for each situation will be developed in coordination with a qualified archeologist, the land owner/manager, relevant federal or state agencies, and Native American representatives if a Native American site.							
CUL-2	The proposed Northstar Golf Course Staging Area is located adjacent to a known heritage and cultural resources site considered eligible for listing in the NRHP or CRHR. If needed, the boundary of the staging area will be adjusted to provide at least a 10-foot buffer between the edge of the staging area and the identified edge of the resource site. A temporary barrier such as a fence or K-rail will be installed at the edge of the staging area adjacent to the resource site. Signage will be placed on the barrier identifying the exclusion zone and stating that construction vehicles, equipment, and personnel are not permitted in the exclusion zone.	This measure stipulates avoidance techniques so that potential impacts to a known cultural resource would be avoided.						✓
CUL-3	If impacts to known, unevaluated archaeological resources cannot be avoided, a detailed test excavation plan and research design that follows the Secretary of the Interior’s standards and guidelines will be developed to evaluate the sites that will be impacted. The plan and research design will be provided to the relevant federal or state agencies and the SHPO for review and approval before implementation. If such sites are determined ineligible for National Register or California Register listing (with concurrence from the SHPO), the sites will require no further consideration. If any of the tested resources are determined eligible to either register	If unevaluated archaeological resources could not be avoided, this measure requires that they are evaluated per the Secretary of Interior’s standards and guidelines, and in coordination with the SHPO. This measure also defines the procedures to follow for both eligible and ineligible sites, and requires the SHPO’s concurrence with the determination.	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
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			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	(with SHPO concurrence), a detailed data recovery plan will be developed for those parts of the resources that would be damaged or destroyed by the project, and provided to the relevant federal or state agencies and the SHPO for review and approval. Results of test excavations and data recovery will also be provided to Tribal representatives. Data recovery excavations may be sufficient to reduce impacts to the resources to the less-than-significant level.							
CUL-4	If impacts to historic-era resources cannot be avoided during project activities, the resources will be evaluated by a qualified historical archaeologist in coordination with relevant federal or state agencies. If the resources are determined ineligible for National Register or California Register listing (with SHPO concurrence), the resources will require no further consideration. If any of the resources are determined eligible to either register (with SHPO concurrence), a detailed treatment plan will be developed for those resources, and provided to the relevant federal or state agencies and SHPO for review and approval. Treatment may include additional archival research and/or field recordation	Several identified historic-era resources require more detailed analysis if they could not be avoided. This measure requires a detailed treatment plan for those resources that are determined to be eligible for listing on historic registers.		✓	✓	✓	✓	
CUL-5	As outlined at 36 CFR part 800, the implementing regulations of Section 106 of the NHPA, if NRHP-eligible heritage and cultural resources will be adversely affected by a proposed undertaking, a Memorandum of Agreement (MOA) or Programmatic Agreement (PA) will be developed and signed by appropriate parties (i.e., the LTBMU, Tahoe National Forest, USACE, ACHP, California SHPO, CPUC, interested tribes, local governments, and other parties) to identify appropriate treatment measures and implement procedures for mitigating adverse effects to the resources. If it is determined that the NRHP-eligible resources cannot be avoided or preserved in place through identification of construction exclusion zones, through route/project re-	Implementation of this measure would reduce potential impacts to NRHP-eligible heritage and cultural resources.	✓	✓	✓	✓	✓	✓

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			Existing	New				
	design, or capping an archaeological site with soil, mitigative treatment may include data recovery, archival research, and/or field recordation consistent with APMs CUL-3 and CUL-4, excavation as mitigation (data recovery restricted to the parts of the resource that would be damaged or destroyed by the project), archaeological monitoring during construction, Tribal monitoring, a plan for unanticipated discoveries, curation, reporting, or similar measures. Compliance with the requirements of Section 106 of the NHPA will also result in compliance with Chapter 67 Resource Protection of the TRPA Code of Ordinances, including Section 67.3.3 Resource Protection Plan.							
CUL-6	CalPeco will ensure completion of heritage and cultural resources survey of all areas within the ultimate project APE of the selected alternative that have not already been surveyed, such as property where access was not previously available, future minor changes in the alignment of the power line and access roads or the location of other components that may be proposed because of engineering constraints, the need to avoid other sensitive resources, and other considerations. Each of these unsurveyed areas will be added to the project's APE as appropriate, and will be intensively surveyed prior to ground disturbance to document and record the presence or absence of heritage and cultural resources. The work may require preparation of a supplemental inventory report for review and approval by the relevant federal or state agencies. Where landowners may legally limit the ability to conduct surveys, the survey area may be restricted to only the area of ground disturbance, or other accommodations made in coordination with lead agencies participating in the Section 106 process (e.g., intensive monitoring during ground disturbance).  Prior to any tree removal activities associated with project	Implementation of this APM would help ensure proper identification and recordation of heritage and cultural resources within the APE prior to the start of construction ground-disturbing activities.  Should tree removal be required outside of the APE, this measure requires that the area is surveyed for cultural resources so that known cultural resources are avoided. In the event that unevaluated resources cannot be avoided, this measure requires their proper evaluation and treatment.	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures									
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			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations	
			Existing	New					
	construction that occur outside of the APE in which cultural resources surveys have been completed, a cultural resources survey of the area will be performed by a professional archaeologist to help ensure no known resources would be impacted. If cultural resources are discovered, they will be treated consistent with the requirements of other applicable APMs.								
CUL-7	<p>CalPeco will design and, with agency approval, implement a Worker Environmental Awareness Program (WEAP) that will be provided to all construction personnel and supervisors who will have the potential to encounter and alter heritage and cultural resources. The topics to be addressed in the WEAP will include, at a minimum:</p> <ul style="list-style-type: none"> <li>/// types of heritage and cultural resources expected in the project area;</li> <li>/// types of evidence that indicates heritage or cultural resources might be present (e.g., ceramic shards, trash scatters, lithic scatters);</li> <li>/// roles and responsibilities of the construction monitors;</li> <li>/// importance of avoiding areas flagged or otherwise identified as sensitive;</li> <li>/// what to do if a worker encounters a possible resource;</li> <li>/// what to do if a worker encounters bones or possible bones; and</li> <li>/// penalties for removing or intentionally disturbing heritage and cultural resources, such as those identified in the Archeological Resources Protection Act (ARPA).</li> </ul>	Implementation of this mitigation measure would assist in reducing potential project impacts by ensuring construction workers are educated about site protection requirements.	✓	✓	✓	✓	✓	✓	
CUL-8	Prior to construction, CalPeco will prepare for agency approval a Construction Monitoring and Unanticipated	Implementation of this measure would help to ensure that actions taken by field personnel are	✓	✓	✓	✓	✓	✓	

Table 3-8 Applicant Proposed Measures								
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			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	Discovery Plan that will present, in detail, procedures to be implemented during construction (e.g., numbers of archaeological and Native American monitors, the qualifications of monitors [expertise in Washoe cultural resources], buffer zones, work stoppage guidelines). At a minimum, if a potential heritage or cultural resources is discovered, construction will be halted within 50-feet of the site until a qualified archeologist can evaluate the find. If the archeologist can determine at the time that the find would not be eligible for the NRHP or CRHR and does not contain human remains, construction may proceed after the find is properly documented and/or collected. Otherwise, applicable elements of other APMs will be implemented. The Construction Monitoring and Unanticipated Discovery Plan will also discuss procedures for immediate work stoppage and treatment in the event of discovery of human remains during construction activities.	compliant with the measure in this document and applicable regulations.						
CUL-9	If human remains are discovered, all work within 50 feet of the discovery site will halt immediately. CalPeco will notify the County Coroner, as stipulated in Section 7050.5 of the HSC. The Coroner will determine whether the remains are Native American and, if so, will contact the NAHC by telephone within 24 hours. The commission will follow the stipulations in Section 5097.98 of the PRC, including notification of those persons it believes to be most likely descended from the deceased Native American. If the commission is unable to identify a descendant, the descendant is unable to make a recommendation, or the landowner rejects the recommendation, the NAHC will mediate any dispute between the parties. Where such mediation fails to provide measures acceptable to the landowner, the landowner shall reinter the human remains and associated funerary items with appropriate dignity on the property, in a location not subject to further	The measure would help ensure that human remains encountered during construction are treated in consistence with applicable laws and regulations.	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
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			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	subsurface disturbance. If human remains are discovered on federally managed lands, the provisions of NAGPRA will apply. For NAGPRA-associated discoveries, it may be necessary to provide 24-hour, onsite security.							
CUL-10	The WEAP prepared for other resources will also address the identification and appropriate treatment of potential fossil finds. If fossils or other paleontological resources are encountered during construction, all work will be halted within a 30-foot radius of the find and a qualified paleontologist will be contacted to examine the find and evaluate its significance. If the find is deemed to have scientific value, the paleontologist and CalPeco will formulate a plan to either avoid impacts or to continue construction without disturbing the integrity of the find (e.g., by carefully excavating the material containing the resources under the direction of the paleontologist followed by routine conservation, laboratory preparation, and curation).	The measure would help ensure that impacts to paleontological resources encountered during construction are avoided or the resources are properly evaluated and/or recovered by a qualified individual.	✓	✓	✓	✓	✓	✓
<b>Geology, Soils, and Seismicity</b>								
SOILS-1	Sediment control structures, such as silt fencing, coir logs, wattles, straw mulch, and straw bale check dams will be installed, as appropriate and effective given the situation, to contain sediment within construction work areas and staging areas. Where soils and slopes exhibit high erosion potential, additional sediment control structures, such as erosion control blankets, matting, and other fabrics may be installed. Implementation and maintenance of these BMPs and any others identified in the SWPPP will be monitored by a qualified environmental monitor to ensure effectiveness. In addition, a winterization plan will be prepared and incorporated into the SWPPP addressing erosion and sediment management on the project site during the winter months. Implementation, monitoring,	This measure would control erosion that could occur as a result of construction and complement implementation of required plans.	✓	✓	✓	✓	✓	✓

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			Existing	New				
	and maintenance of BMPs will be adjusted accordingly during the winter months consistent with the winterization plan.							
SOILS-2	<p>A California Registered Professional Geologist or a California Registered Civil or Geotechnical Engineer will conduct a geotechnical analysis and prepare a Geotechnical Engineering Report that will be used to develop the final design of all project components (access ways, staging areas, substations stations, and poles) in order to avoid or minimize damage related to geologic hazards, including seismic activity, slope stability, and soil limitations (expansive and unstable soils) and to ensure that all applicable codes and seismic standards are adequately addressed in the design and construction of the project. The report will address and make recommendations on the following:</p> <ul style="list-style-type: none"> <li>/// Access way and road design;</li> <li>/// Structural foundations;</li> <li>/// Grading practices;</li> <li>/// Erosion/winterization;</li> <li>/// Special problems discovered on-site (i.e., groundwater, expansive/unstable soils, etc.);</li> <li>/// Slope stability; and</li> <li>/// Post-construction restoration.</li> </ul> <p>The Geotechnical Engineering Report will also incorporate construction standards required by the CPUC and standards recommended by the Institute of Electrical and Electronics Engineers (IEEE 693), "Recommended Practice for Seismic Design of Substations." The final design will be reviewed and approved by a Professional Engineer registered in the State of California prior to construction. The Geotechnical Report will be provided to the lead</p>	This measure helps ensure that site-specific conditions are considered in the final design of the project and requires documentation from a Professional Engineer that the project design meets all applicable regulations and safety standards.	✓	✓	✓	✓	✓	✓

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			Existing	New				
	agencies. It is the responsibility of the applicant to provide for engineering inspection and certification that earthwork has been performed in conformity with the recommendations contained in the report.							
<b>Hazards and Hazardous Materials</b>								
HAZ-1	Prior to construction, all CalPeco, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs to comply with the applicable environmental laws and regulations associated with hazardous materials.	This measure would reduce the potential of an accidental release of hazardous materials, promotes proper clean-up and handling of spilled material, and reduces unnecessary exposure of hazardous materials to workers and the public by training project personnel on appropriate work practices.	✓	✓	✓	✓	✓	✓
HAZ-2	Prior to the ground disturbance at the Brockway Substation parcel, if disturbance is determined to be necessary, a Phase I environmental site assessment (ESA) will be conducted for the site to determine if there is any surface or subsurface contamination. Recommendations included in the Phase I ESA will be implemented. If hazardous materials are identified, recommendations could include, but would not be limited to, a Phase II ESA and/or cleanup of known identified hazardous wastes. If contamination is found to be present, remediation will occur in accordance with all applicable federal, state, and local regulations.	Phase I and Phase II ESAs would help ensure that future use of the Brockway Substation parcel would not result in a significant hazard to the public or the environment from unknown contaminated soils.						✓ <sup>3</sup>
HAZ-3	During the Brockway Substation decommissioning process, the existing equipment to be removed will be tested in accordance with federal, state, and local standards to determine appropriate recycle, reuse, or disposal alternatives.	This measure would help ensures that workers and the public would not be exposed to hazardous materials, such as asbestos or lead, during the decommissioning and removal of the Brockway Substation. In addition, it requires the recycling or						✓ <sup>3</sup>

<sup>3</sup> HAZ-2 and HAZ-3 apply only to the Brockway Substation.

Table 3-8 Applicant Proposed Measures									
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		reuse of materials where feasible.							
HAZ-4	CalPeco will coordinate with the Truckee-Tahoe Airport Land Use Commission (ALUC) to obtain approval of the height increase for the 132/650 Line double-circuit and the 650 Line to help ensure that the project will not create a new airport hazard in accordance with the Truckee-Tahoe ALUC Plan.	The measure requires coordination, communication, and approval of the height increase for the 132/650 Line double-circuit and the 650 Line, so that the project would not conflict with the Truckee-Tahoe ALUC Plan and that an airport safety hazard would not result.			✓	✓			
HAZ-5	Prior to construction, CalPeco will prepare a Fire Suppression and Prevention Plan that will discuss necessary fire equipment to be stored at the project staging areas, appropriate protective wear, preconstruction and construction fire prevention measures, fire-fighting methods, and notification procedures in the event of a fire. This plan will be submitted to the USFS and/or TRPA, or other applicable land management agency for review and approval prior to the start of construction.	This measure would reduce the potential to start a wildland fire during construction of the project.	✓	✓	✓	✓	✓	✓	
HAZ-6	Smoking will only be allowed in designated cleared areas or enclosed vehicles to reduce the potential for wildfires.	This measure would reduce the potential to start a wildland fire during construction of the project.	✓	✓	✓	✓	✓	✓	
<b>Hydrology and Water Quality</b>									
WQ-1	All refueling will be conducted at least 100 feet away from waterways, within designated refueling stations. If refueling within 100 feet of a waterway or RCA is unavoidable, CalPeco will require that spill kits are on site, install secondary containment to control accidental spills, and notify an environmental monitor prior to fueling. Environmental monitors will regularly inspect refueling areas to help ensure that proper measures are being implemented in accordance with the project's SWPPP and Spill Prevention, Control and Countermeasure (SPCC) Plan.	This measure would help ensure that impacts to waterways as a result of accidental spills would be avoided during the refueling of equipment. It includes inspections to address proper implementation and compliance with the SWPPP and SPCC Plan.	✓	✓	✓	✓	✓	✓	
WQ-2	All concrete washouts will be conducted either into excavations where the concrete was poured, within	Because the use of concrete near aquatic resources has the potential to affect water quality by	✓	✓	✓	✓	✓	✓	

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	designated concrete washout areas, or will be captured using a washout-recycling system. Crews will not be allowed to dispose of concrete directly onto the ground.	increasing the pH levels, this measure requires proper handling and disposal of concrete so that it would not contribute to water quality degradation.						
WQ-3	Where feasible (e.g., landowner approval is provided, sufficient space with permeable surfaces is available, slopes are gentle enough to allow control of potential sediment transport), all stormwater or groundwater removed from excavations will be discharged overland into well-vegetated areas to promote the settling of sediment. If overland discharge is not possible, then water removed from excavations will be collected, treated, and disposed of consistent with requirements of the Lahontan Regional Water Quality Control Board and any other agencies with jurisdiction over the activity.	This measure would help ensure that dewatering activities would not increase the potential for sedimentation and degradation of aquatic resources.	✓	✓	✓	✓	✓	✓
WQ-4	When working near aquatic resources, poles and trees will be cut by hand and felled away from such features (unless there is an ecological reason to do otherwise that is approved by applicable regulatory agencies, such as adding coarse woody debris to a stream to enhance fish habitat). The skidding of poles and trees through aquatic resources will not be permitted. Within Stream Environment Zones (SEZs) poles and trees will be removed by hand, by cable system, or by helicopter. No mastication will occur in SEZs and no chip material will be left in SEZs unless approved for erosion control. Vehicles and equipment will be staged away from aquatic features, along designated access routes or within staging areas. If there are circumstances where disturbance to the bank or channel of an aquatic feature is unavoidable, CalPeco will restore the banks and channels to preconstruction conditions immediately afterwards. An environmental monitor will be present in all instances where disturbance to an aquatic feature may occur to ensure conditions of this APM and any other applicable APMs, permit conditions, and mitigation	This measure would reduce potential temporary impacts to aquatic resources and existing drainage patterns during construction by mandating avoidance and/or restoration of the resources. By requiring the presence of an environmental monitor, CalPeco would help ensure that impacts are avoided where possible, that activities are documented, and that these features are adequately restored.	✓	✓	✓	✓	✓	

Table 3-8 Applicant Proposed Measures									
APM Number	Description	Justification	Project Component						
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations	
			Existing	New					
	measures are complied with.								
WQ-5	When construction activities are required adjacent to flowing streams or rivers, work will be conducted during low-flow conditions (i.e., when surface flow is restricted to the low-flow channel, as confirmed by the environmental monitor).	This measure would minimize potential water quality impacts from sedimentation and erosion that could occur if work is conducted within close proximity to flowing waterbodies. In low-flow conditions, the distance between the water and the work area would increase, thereby reducing the potential for water quality degradation.	✓	✓	✓	✓	✓		
WQ-6	In areas where topsoil has not been salvaged, construction activities will be limited when the environmental monitor determines that the soil is too wet to adequately support vehicles and equipment. Where soil conditions are deemed too wet to work, one of the following measures will apply. <ul style="list-style-type: none"> <li>/// Access will be limited to the minimum area feasible for construction. Where possible, vehicles and equipment will be routed around wet areas so long as the re-route does not cross into sensitive resource areas.</li> <li>/// If wet areas cannot be avoided and soil moisture is too high to strip topsoil, BMPs, including the use of wide-track or low ground pressure equipment or installation of prefabricated equipment pads or timber mats, will be implemented for use in these areas to minimize rutting and off-site sedimentation.</li> </ul>	The measure would minimize rutting and associated damage to topsoil.	✓	✓	✓	✓	✓	✓	
WQ-7	CalPeco will minimize vehicle and equipment usage within and crossing of stream channels and other aquatic resources consistent with the requirements of other APMs. If vehicles and equipment must cross stream channels or other aquatic resources, CalPeco will construct shoo-fly access roads, install culvert crossings, or use other methods to access either side of the resource or utilize existing	This measure would minimize impacts to aquatic resources and water quality by avoiding stream channels and other aquatic resources whenever possible. If aquatic resources could not be avoided, this measure would help ensure that temporary impacts from project construction would not substantially alter existing drainage patterns.	✓	✓	✓	✓	✓		

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	bridges, where feasible, in order to minimize the need to install temporary bridges. Limit crossings to no more than one for every 800 feet of channel. If there are no existing crossings and the construction of shoo-fly roads or other crossing methods may cause greater resource impact, CalPeco will install timber mats, slash mats, or other materials suitable for a temporary bridge. If bridges are installed over streams with discernible flow, all attempts will be made to span the channel. Temporary crossings on ephemeral or intermittent drainages will be constructed and removed, to the maximum extent feasible, when the channels are dry and will be removed before the winter season begins. These crossings will be designed to not obstruct water flow and fish passage and to accommodate flows from a 1 inch or greater precipitation event.							
WQ-8	CalPeco will obtain permits from appropriate regulatory agencies prior to commencing work in waters of the United States or waters of the state. Following construction, CalPeco will restore any impacted waterbodies and wetlands to pre-project conditions and compensate for any permanent wetland impacts in accordance with the US Army Corps of Engineer's "no net loss" policy.	This measure requires that there is no net loss of waters of the United States or waters of the state through restoration of temporarily affected waters and compensation for permanent wetland losses.	✓	✓	✓	✓	✓	
<b>Noise</b>								
NOI-1	CalPeco will provide notice of construction to all property owners within 300 feet of the project by mail at least 1 week prior to the start of construction activities. The announcement will state the construction start date, anticipated completion date, hours of operation, and the project's website where questions can be asked and complaints can be received.	This measure requires proper notice to residents in the vicinity of the project so they can be prepared for the construction activities that would occur nearby. The measure would also provide residents with a process by which they would be able to resolve noise-related issues and assist in ensuring compliance.	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
NOI-2	CalPeco will post a telephone number for excessive noise complaints in conspicuous locations in the vicinity of the project site when within 1,000 feet of residences.	The measure would provide residents with a process by which they could notify CalPeco of noise-related issues so that CalPeco could work to resolve any issues.	✓	✓	✓	✓	✓	✓
NOI-3	CalPeco will designate a Disturbance Coordinator, who will be responsible for responding to any local complaints about construction noise. The Disturbance Coordinator will determine the nature of the noise complaint and will propose reasonable measures to correct the problem.	The measure provides residents a process by which they would be able to notify CalPeco of noise-related issues. A designated Disturbance Coordinator would provide a single point of contact for residents for noise-related complaints and issues to be resolved.	✓	✓	✓	✓	✓	✓
NOI-4	Construction activities, including any blasting and helicopter flights, will occur during the times established by local ordinances (and allowing for any exceptions that local agencies and ordinance conditions may provide)—8:00 a.m. to 6:30 p.m. in TRPA jurisdiction, 6:00 a.m. to 8:00 p.m. Monday through Friday and 8:00 a.m. to 8:00 p.m. Saturday and Sunday in Placer County and 7:00 a.m. to 9:00 p.m. Monday through Saturday and 9:00 a.m. to 6:00 p.m. on Sunday in the Town of Truckee—with the exception of certain activities where nighttime construction activities are necessary. These activities include, but are not limited to, the delivery of substation transformers, filling of substation transformers, system transfers, pouring of foundations, and pulling of the conductor across major roadways, which require continuous operation or must be conducted during off-peak hours per agency requirements.	This measure promotes project compliance with the noise regulations contained within Placer County Municipal Code and the Town of Truckee Development Code.	✓	✓	✓	✓	✓	✓
NOI-5	No blasting will occur within 50 feet of any existing building, or within 250 feet of a residence or other occupied structure, or in a location or manner that would be inconsistent with other APMs. If large rock outcroppings need to be removed and are within 50 feet of a building or 250 feet of an occupied structure, alternative methods to blasting, such as silent chemical	This measure helps prevent damage to structures from blasting activities by restricting blasting activities near structures to methods that do not produce vibration.	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures									
APM Number	Description	Justification	Project Component						
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations	
			Existing	New					
	demolition, may be used to break apart and remove the rock.								
NOI-6	All internal combustion-engine driven equipment will be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment.	Intake and exhaust mufflers would reduce the overall noise levels associated with construction equipment.	✓	✓	✓	✓	✓	✓	✓
NOI-7	Stationary noise-generating equipment will be located as far as possible from sensitive receptors when they adjoin or are within 1,000 feet of a construction area.	Maximizing the distance between stationary noise-generating equipment (e.g., generators) and sensitive receptors would reduce noise exposure for the receptors.	✓	✓	✓	✓	✓	✓	✓
NOI-8	Quiet air compressors and other stationary equipment will be utilized when possible within the Town of Truckee limits and within developed areas of Tahoe City and Kings Beach.	This measure is intended to comply with the noise regulations contained in the Town of Truckee Development Code as well as minimize noise generation in other communities.				✓			✓
NOI-9	Helicopter flight patterns will be designed to avoid and minimize flights over residential areas to the extent practical.	Minimizing helicopter flights over residential areas would reduce noise exposure for sensitive receptors.	✓	✓	✓	✓	✓		
NOI-10	CalPeco will respond to third-party complaints of audible noise generated by operation of system facilities by investigating the complaints and by implementing feasible and appropriate measures. As a part of CalPeco's repair inspection and maintenance program, the power line will be patrolled and damaged insulators or other power line materials, which could cause interference and result in atypically loud corona noise, would be repaired or replaced.	Regular maintenance and response to noise complaints minimizes the public's exposure to project noise during operation.	✓	✓	✓	✓	✓	✓	✓
NOI-11	Caution will be exercised during construction to try to avoid scratching or nicking the conductor surface, which may provide points for corona generation to occur.	Careful construction methods will minimize the public's exposure to project noise during operation.	✓	✓	✓	✓	✓	✓	✓
<b>Recreation</b>									
REC-1	A public-liaison will be assigned by CalPeco to provide the public with advance notification of construction activities at least 15 days prior to the start of construction activities.	A designated public liaison would help ensure that the public is notified of construction activities and has a point-of-contact for information. The project	✓	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	A project website will be developed for the public to ask questions about the construction process and schedule. Concerns related to dust, noise, odor, trail closures, and access restrictions associated with construction activities will be addressed within this program.	website would further aid in information dissemination regarding any trails or recreational facilities that might be temporarily impacted by the project. This measure would promote public awareness of alternate recreational facilities that would be accessible during any potential closures as a result of construction activities, thus lessening the potential impact of trail closures.						
REC-2	CalPeco will provide the USFS, in the form of an annual construction plan, with advance notice of all construction activities potentially within its jurisdiction and affecting recreation areas and trail systems, including temporary trail closures, within the forest. CalPeco will coordinate with USFS prior to preparation of the plan to avoid conflicts with known, scheduled, permitted events. Such avoidance will be reflected in the annual construction plan. Notification to USFS officials will be provided at least 60 days before construction begins in these areas.	Notifying USFS staff of construction activities in the forest would allow for coordination regarding any regulations or requirements that the USFS may have. USFS staff can also provide the location of and information about potential alternative recreational trails and facilities to the public in order to aid in the implementation of APM REC-3, thus reducing the impact of trail closures upon recreationists.	✓	✓	✓			✓
REC-3	Signs advising recreationists of construction activities and directing them to alternative trails or bikeways will be posted at all trail access points or in locations as determined through coordination with the respective jurisdictional agencies. Signage describing the closures will be posted at trail access points one week prior to closures, will remain posted during the entire closure period, and will be removed upon completion of construction.	The signage at trail access points would notify the public of closures and would suggest potential alternative facilities that can be accessed, thus reducing the impact of trail closures.	✓	✓	✓	✓	✓	
REC-4	Where helicopters will be used for construction, signage advising equestrians of the schedule for helicopter use will be posted at all equestrian trail-access points within the vicinity of the flight paths one week prior to helicopter activity. These signs will be checked and maintained daily until helicopter operation in the area ceases.	Horses are particularly sensitive to helicopter noise. This measure would allow the equestrians to avoid helicopter use areas, thus avoiding potential safety issues and impacts to the enjoyment of the activity.	✓	✓	✓		✓	✓
REC-5	Pulling of conductor over the Truckee River will occur	The peak rafting season is May through September.		✓				

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	during the months of April, October, or November to minimize impacts to rafting operations.	Limiting conductor pulling activities to April, October, or November would reduce impacts to rafting operators and recreational rafters.						
REC-6	CalPeco has agreed at the request of California State Parks to complete construction in the vicinity of Burton Creek State Park with no new access and with limited impact to the existing ROW for an agreed upon section of three poles. Excavation for pole installation in Segment 625-2 between southwest corner of Burton Creek State Park and the southernmost portion of Segment 625-3, where the State Park road meets the Fiberboard Freeway, will be done by hand; pole removal and replacement will be carried out by helicopter. All access ways created for the 625-Line between the end of pavement of the Fiberboard Freeway and the east west alignment of the existing 625 Line alignment in the vicinity of the southwest corner of Burton Creek State Park, will be closed to recreational access to prevent non-State Park system route and trail proliferation. This is an approximately 1,800 foot segment of the proposed 625 Line alignment.	Limiting impacts to the existing ROW in Burton Creek State Park would minimize any potential impact to recreational use of the park. This would be completed by helicopter installation for a span of two to three poles, and has been proposed to limit future recreational travel ways.		✓				

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
REC-7	CalPeco will install access way barriers (e.g., gates where system maintenance and administrative access is anticipated, boulders, logs) and signage along any overland travel ways to minimize the possibility of establishing new recreational paths (both motorized and non-motorized). Other methods to manage recreational use, such as applying layers of mulch to prevent motorized route development, providing wayfinding signage to direct non-motorized use, and using restoration plantings to screen temporary access ways that are no longer used, can also be employed. Temporary access ways that are no longer used will be permanently blocked. These actions will be completed as prescribed under the Construction Operation and Maintenance Plan for the project that will be prepared by the Applicant and approved by the USFS prior to construction.	Placing boulders or gates to block access following construction would limit habitat degradation as a result of unauthorized use of access ways.	✓	✓	✓		✓	
REC-8	Several APMs address management, protection, and restoration of physical conditions in the project construction zone (e.g., APMs SCE-1, BIO-23, BIO-28, BIO-36, SOILS-2). APM BIO-36 specifically calls for development and implementation of a site Restoration Plan. The Restoration Plan developed under APM BIO-36 will also address final clean-up, stabilization, and reconstruction of recreation areas and access points on NFS lands disturbed by the project. The plan will be consistent with, and implement related commitments and requirements included in the EIS/EIS/EIR project description, other APMs, and mitigation measures. The Restoration Plan will address restoration of the recreation facilities to a pre-construction condition, and will be consistent with the USFS Recreation Opportunity Spectrum (ROS) system, Built Environment Image Guide (BEIG), and accessibility requirements. Restoration activities will be sufficient to result in no permanent net loss of recreation facilities or	This APM would prevent permanent net loss of recreation facilities or loss of character to these facilities on NFS lands upon completion of the project.	✓	✓	✓			✓

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	loss of character to these facilities on NFS lands upon completion of the project.							
<b>Utilities</b>								
UTL-1	<p>During the project design process, the applicant will coordinate with utility providers in the project area to identify the location of underground facilities in the vicinity of the selected alignment and staging areas. The final excavation and grading plans will avoid existing utilities where possible; and where it is not possible to avoid utilities, the applicant will coordinate with service providers to minimize disturbance. Prior to start of construction, the applicant will verify utility locations through field surveys and use of the Underground Service Alert (USA) services. Any buried utility lines will be clearly marked in construction areas.</p> <p>Prior to start of construction, the applicant will prepare a response plan to provide procedures to be followed in the event of accidental damage to a utility line. The plan will identify chain-of-command rules for notifying authorities and appropriate actions and responsibilities for ensuring the safety of the public and workers. Worker education training in response to such events will be conducted by the contractor.</p> <p>The applicant will provide adequate notice to utilities and affected customers of planned service disruptions associated with transmission line construction activities.</p>	This would minimize adverse impacts area resident and local businesses from utility service interruptions.	✓	✓	✓	✓	✓	✓
<b>Traffic and Transportation</b>								
TRAN-1	<p>The applicant will develop and implement a Traffic Control Plan to minimize disruptions to surface travel and protect the safety of workers and the traveling public. The Traffic Control Plan will include, but not be limited to, the following:</p> <ul style="list-style-type: none"> <li>/// coordination with local transportation agencies</li> </ul>	Preparation of a Traffic Control Plan would limit the potential disturbance to individuals traveling on local roadways and reduce the potential for impacts to emergency service providers.	✓	✓	✓	✓	✓	✓

Table 3-8 Applicant Proposed Measures								
APM Number	Description	Justification	Project Component					
			625 Line		650 Line	132/650 Line Double-Circuit	Northstar Fold	Substations
			Existing	New				
	<p>and emergency service providers for temporary lane and road closures and implementation of measures to maintain emergency vehicle access;</p> <ul style="list-style-type: none"> <li>/// provide mechanisms to prevent construction activities from interfering with emergency response or emergency evacuation plans in the event an evacuation plan were to be activated during the construction period;</li> <li>/// identification of any time restrictions on construction activities that could affect roadways;</li> <li>/// traffic control measures (flagging methods, signage, reduced speeds in work zones, parking restrictions);</li> <li>/// provision for maintaining safe pedestrian and bicycle travel (e.g., signage to direct pedestrians and bicyclists to safe routes around construction areas); and</li> <li>/// public outreach advising the travelling public of construction activity and travel restrictions.</li> </ul> <p>The Traffic Control Plan measures will be monitored by the applicant for effectiveness and adjustments will be made as needed to the implementation of the Traffic Control Plan to further minimize travel disruptions and maintain safety. The Traffic Control Plan will meet the requirements of agencies with jurisdiction over the roadways being affected, such as Caltrans for I-80 and SR 267 effects, and TRPA if any actions trigger TRPA code 22.7.6 Traffic Mitigation requirements within the Lake Tahoe Basin.</p>							

# 4 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

## 4.1 INTRODUCTION

### 4.1.1 ORGANIZATION OF THE ANALYSIS AND EVALUATION METHODOLOGY

This chapter provides a detailed analysis of environmental resource areas (e.g., biological resources, air quality, hydrology and water quality, and noise) with respect to their applicable regulatory background, existing environmental setting, potential to be significantly affected by the project alternatives, and mitigation measures to reduce or avoid potentially significant impacts. The resource areas evaluated in Chapter 4 include those originally identified for review in the notice of preparation (NOP)/notice of intent for this environmental impact statement (EIS)/EIS/environmental impact report (EIR), those identified for consideration in the National Environmental Policy Act (NEPA), environmental topics originating from the California Environmental Quality Act (CEQA) Guidelines Appendix G Checklist, and issue areas identified in the Tahoe Regional Planning Agency (TRPA) Initial Environmental Checklist. Exceptions are agricultural resources and population and housing. As discussed in Section 1.3, Scope and Focus of the EIS/EIS/EIR, agricultural resources are not evaluated because the action alternatives would not affect any lands used for agricultural production, zoned for agriculture, or considered important farmland. As also identified in Section 1.3, housing is not discussed in detail in this EIS/EIS/EIR as the proposed project does not include construction of housing as part of the project, would not displace existing housing, and would not generate demand for new housing. Potential project effects on populations and employment are addressed in Section 5.5, Growth-Inducing Impacts of the Proposed Project, and Section 5.6, Socioeconomics and Environmental Justice.

Sections 4.2 through 4.14 of this EIS/EIS/EIR are organized into the following major subsections.

**Regulatory Setting:** This section presents the applicable regulatory framework and planning context, if any, for the specific technical issue, under which the proposed project would be implemented. The section includes a discussion of applicable federal, state, TRPA, and local regulation. At the local level, plans reviewed in the preparation of each section, at a minimum, include the Placer County General Plan, Community Plans, Plan Area Statements, the Town of Truckee General Plan, and the Martis Valley Community Plan. Other plans were also reviewed where they were applicable to particular environmental resource area; for example, consideration of the Placer County 2035 Regional Transportation Plan Document in Section 4.12, Traffic and Transportation.

California Public Utilities Commission (CPUC) General Order No. 131-D establishes that local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. For this project, Placer County, Nevada County, and the Town of Truckee would not have discretionary permitting authority over the project. However, for informational purposes, pertinent local regulations and policies are identified in this EIS/EIS/EIR and under the provisions of General Order No. 131-D, the Applicant is encouraged to seek resolution of any land use issues with these entities. In the event that resolution of land use conflicts cannot be achieved, either party to the dispute may file a notice of such with the CPUC and a hearing shall be held on the matter within 30 days of receipt of the notice.

**Existing Conditions/Affected Environment:** This section describes the existing regional and local environmental conditions relevant to the issue under evaluation. The regional setting provides context for the analysis of conditions within the project footprint. For the purpose of this EIS/EIS/EIR, the project footprint includes the right-of-way (ROW) for all alternative power line alignments, stringing sites, access ways and roads, staging areas, and substations. The potential removal of hazard trees outside the defined alignment ROW is considered as

appropriate in each section. Except as otherwise noted, the study area under consideration for the environmental resources is generally analogous with the project footprint. Expanded study areas have been established for some resource discussions, as determined by the potential for environmental impact (e.g., hazard tree removal outside the defined ROW) or the potential for information outside the project footprint to inform the analysis (e.g., special-status species occurrences outside the ROW indicating the potential for a species to occur inside the ROW).

**Environmental Consequences and Recommended Mitigation Measures:** This section identifies the criteria used to determine the level of significance of an environmental impact and discusses potentially significant effects of the project alternatives on the existing environment. Both direct and indirect environmental effects are considered. Criteria to determine the significance of impacts were derived from several sources. The TRPA Initial Environmental Checklist (IEC) poses questions related to various environmental issue areas to assist in determining whether environmental effects may occur. However, the purpose of the TRPA IEC is primarily to determine if an EIS is required and to help define the topics to be evaluated in greater detail. While many of the IEC checklist questions are conducive for use as significance criteria (that is, they include a defined standard, qualitative or quantitative), many are not. For example, the IEC poses the question pertaining to air quality: “Will the proposal result in increased use of diesel fuel?” Because the question does not include a standard, a “yes” answer does not necessarily mean a significant air quality impact will occur as a project could result in a very minor increase in diesel fuel use (e.g., a gallon a day) and could include elements that have beneficial effects on air quality. The IEC questions are used as a guide in evaluating impacts in this EIS/EIS/EIR and in some cases have been tailored to function as significance criteria.

The sample environmental checklist provided in Appendix G of the State CEQA Guidelines is also used as a source of significance criteria. Because the checklist includes standards (qualitative or quantitative), the questions are generally well suited for use as significance thresholds; however, they are modified or expanded as needed in this EIS/EIS/EIR to better reflect the nature and location of the project, and to support the environmental analysis. For example, local air pollution control district quantitative emission thresholds are used to elaborate on the thresholds provided in Appendix G.

To comply with NEPA, an environmental document must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are typically encompassed by the TRPA and CEQA criteria used for this analysis. However, where appropriate, specific significance criteria not encompassed by the TRPA IEC checklist or the State CEQA Guidelines Appendix G checklist may be added to address topics of particular concern to the US Forest Service (NEPA lead agency) or the US Army Corps of Engineers (NEPA cooperating agency).

Project impacts are numbered sequentially for Alternative 1 (PEA Alternative) through Alternative 5 (No Action/No Project Alternative) in each section, with the alternative identified in parenthesis in the impact title. For example, impacts in Section 4.2 are numbered 4.2-1 (Alt. 1), 4.2-2 (Alt. 1), 4.2-3 (Alt. 1), and so on for Alternative 1 (PEA Alternative). Impacts in Section 4.2 for Alternative 2 (Modified Alternative) are numbered 4.2-1 (Alt. 2), 4.2-2 (Alt. 2), 4.2-3 (Alt. 2), and so on. A bold font impact title, and a summary of each impact and its level of significance, precedes the full discussion of each impact. The full impact discussion considers the potential for the alternative to result in environmental impacts in light of established applicant proposed measures (APMs) designed to minimize environmental effects (described in Section 3.7, Applicant Proposed Measures) and provides the evidence on which conclusions are made. In cases where impacts are still considered significant after implementation of applicable APMs, and feasible mitigation would reduce these effects, a mitigation measure (or measures) is described below the impact discussion, and the significance of the impact after mitigation is identified. The mitigation measures are numbered to correspond with the impact addressed by the measure; therefore, if Impact 4.2-1 (Alt. 1) is addressed by a single mitigation measure, the measure would be numbered Mitigation Measure 4.2-1 (Alt. 1). If multiple mitigation measures are provided for a single impact, a letter is added to the end of each mitigation measure number. For example, mitigation measures for Impact 4.2-1 (Alt. 1) would be numbered: Mitigation Measure 4.2-1a (Alt. 1), Mitigation Measure 4.2-1b (Alt. 1), and so on.

The CalPeco 625 and 650 Electrical Line Upgrade Project alternatives, Alternatives 1 (PEA Alternative) through Alternative 5 (No Action/No Project Alternative), are analyzed at an equal level of detail in this chapter. Impacts and associated mitigation measures, if necessary, are identified for each alternative in each of the resource sections. Because all project alternatives except Alternative 5 (No Action/No Project Alternative) contemplate some level of development in the project area, the alternatives may have many of the same or similar impacts, use of APMs, and mitigation measures where necessary. In these instances, rather than repeating the entire impact discussion and mitigation measures for each alternative, the reader is referred to the initial impact discussion and mitigation descriptions provided for Alternative 1 (PEA Alternative), and any different conditions under Alternative 2 (Modified Alternative), Alternative 3 (Road Focused Alternative), or Alternative 4 (Proposed Alternative) are identified.

**Cumulative Impacts:** At the end of each resource section is a discussion of project effects in the context of other existing and proposed development that may contribute to cumulative impacts. Cumulative impacts are further described below, including the assumptions and approach used for the cumulative impacts analysis in each resource section.

## 4.1.2 CUMULATIVE IMPACT ANALYSIS METHODOLOGY

This section provides information on the cumulative impact analysis methodology common to the evaluation of cumulative impacts for all environmental issue areas later in this chapter. Each discussion of cumulative impacts provided in Sections 4.2, 4.3, 4.4, etc. utilizes the information provided here.

### DEFINITION OF CUMULATIVE IMPACTS

NEPA implementing regulations require consideration of cumulative impacts (40 Code of Federal Regulations 1508.25). Cumulative impacts are defined as 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 regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 Code of Federal Regulations 1508.7).

Section 15130(a) of the State CEQA Guidelines requires a discussion of the cumulative impacts of a project when the project’s incremental effect is cumulatively considerable. Cumulatively considerable, as defined in State CEQA Guidelines Section 15065(a)(3), means that the “incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

TRPA looks to NEPA and CEQA for guidance in assessing cumulative impacts (and thus the analysis contained in this document is sufficient for TRPA purposes).

### CUMULATIVE IMPACT APPROACH

State CEQA Guidelines Section 15130 identifies two basic methods for establishing the cumulative environment in which a project is considered: 1) the use of a list of past, present, and probable future projects; or 2) the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. NEPA and TRPA do not provide similarly detailed guidance on methods for cumulative impact analysis. This cumulative analysis uses the “list” approach to identify the cumulative setting. The effects of past and present projects on the environment are reflected by the existing conditions in the project area. A

list of probable future projects is provided below. Probable future projects are those in the project vicinity that have the possibility of interacting with the proposed project to generate a cumulative impact (based on proximity and construction schedule) and either:

- ▲ are partially occupied or under construction,
- ▲ have received final discretionary approvals,
- ▲ have applications accepted as complete by local agencies and are currently undergoing environmental review, or
- ▲ are proposed projects that have been discussed publicly by an applicant or that otherwise become known to a local agency and have provided sufficient information about the project to allow at least a general analysis of environmental impacts.

## CUMULATIVE SETTING

### GEOGRAPHIC SCOPE

The geographic area that could be affected by the project varies depending on the type of environmental resource being considered. When the effects of the project are considered in combination with those other past, present, and probable future projects to identify cumulative impacts, the other projects that are considered may also vary depending on the type of environmental effects being assessed. Table 4.1-1 presents the general geographic areas associated with the different resources addressed in this analysis.

<b>Resources Issue</b>	<b>Geographic Area</b>
Land Use	limited to project site
Forestry Resources	the Truckee-Tahoe region
Scenic Resources	project site and surrounding public viewpoints
Geology, Soils, and Land Capability Coverage	regional for Land Capability Coverage; for geology and soils activities in the immediate vicinity
Hydrology and Water Quality	local and regional watersheds
Biological Resources	defined differently for each species, based on species distribution, habitat requirements, and scope of impact from proposed activities
Recreation	regional (overall accessibility of recreational opportunities) and local (interactions with individual recreational activities)
Heritage, Cultural, and Paleontological Resources	limited to project site
Hazards and Hazardous Materials	immediate project vicinity
Public Services and Utilities	regional (water, wastewater, electricity, natural gas, solid waste) and local (police and fire)
Traffic and Transportation	regional and local roadways where the project could contribute traffic
Air Quality, Greenhouse Gas Emissions and Climate Change	regional (pollutant emissions that affect the air basins), immediate project vicinity (pollutant emissions that are highly localized), and global/statewide for greenhouse gasses
Noise	immediate project vicinity where project-generated noise could be heard concurrently with noise from other sources

## PROJECT LIST

Table 4.1-2, below, provides the list of probable future projects that meet the requirements stated above, in the Cumulative Impact Approach section. Projects are listed that are in the project vicinity and that have the possibility of interacting with the proposed project to generate a cumulative impact. This list of projects was utilized in the development and analysis of the cumulative settings and impacts for each resource. Past and current projects in the project vicinity were also considered as part of the cumulative setting, as they contribute to the existing conditions/baseline upon which the proposed project and each probable future project's environmental effects are compared, but are not listed in Table 4.1-2. The locations of cumulative projects listed in Table 4.1-2 relative to the project area are shown on Exhibit 4.1-1, Cumulative Projects.

Significance criteria, unless otherwise specified, are the same for cumulative impacts as project impacts for each environmental topic area. When considered in relation to other probable future projects, cumulative impacts to some resources could be significant and more severe than those caused by the proposed project alone.

<b>Project Name (Exhibit 4.1-1 Key)</b>	<b>Location</b>	<b>Description</b>	<b>Residential Units and/or Non-Residential Area</b>	<b>Project Status</b>
Truckee Railyard Master Plan (1)	The eastern end of historic downtown Truckee	Mixed commercial and residential development. Includes Trout Creek District (6 acres of primarily mixed housing), Industrial Heritage District (8.5 acres of office, residential, and mixed use buildings), and Downtown Extension District (12 acres of commercial development).	75 acres	Adopted in 2009.
Coldstream Specific Plan (2)	Coldstream Road south of Interstate 80, Truckee	Planned community.	300 residential units; 30,000 square feet of commercial	Plan and EIR have been revised following 2011 release of a draft EIR. As of preparation of this document project has not been considered by the Town of Truckee and construction timing is uncertain.
Pollard Station – A Senior Neighborhood (3)	10335 Old Brockway Road, Truckee (West of Pine Cone Road terminus, at Hilltop)	Age-restricted senior neighborhood: lodge and condominiums (8-acres in the Hilltop Master Plan area).	86 unit senior lodge and 40 to bedroom condominium units	Revised application submitted January 2013.

Table 4.1-2 Cumulative Project List				
Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
Joerger Ranch Specific Plan (4)	Intersection of SR 267, Brockway Road, and Soaring Way, Truckee	70-acre mixed use planned community including industrial, office space, public facility, transportation, and apartment uses.	97 dwelling units	EIR in preparation.
Canyon Springs Subdivision (5)	West of Martis Peak Road and south of Glenshire Drive, Truckee	Clustered residential development including single family and affordable housing/multifamily units	177 single-family lots and 8 affordable housing lots, 204 total units; 171 acres of open space	Draft EIR comment period ended March 2013. The Final EIR is in preparation, Project development, if approved, would occur in phases starting no earlier than 2015.
Martis Valley Trail (6)	Town of Truckee to Brockway Summit	The proposed project is a paved, multi-use recreational trail extending from the southern limits of the Town of Truckee at the Nevada/Placer County line eastward to the ridgeline defining the Lake Tahoe Basin. A 5.4-mile section will run along SR 267 between Truckee and Northstar.	--	CEQA environmental review completed in 2012; project approved. Construction will be a multi-year effort. Construction of Phase 1 (Shaffer Mill Road to the wildlife viewing area along SR 267) to begin in 2014.
Northstar Mountain Master Plan (7)	5001 Northstar Drive, Truckee	Mountain Master Plan for the existing ski resort area. Various additions and changes to ski lifts, snowmaking, trails, bridges, access, ropes course, bike trails, and campsites.	--	Notice of Preparation public review ended December 2012. Final EIR published in June 2014. Project build out would occur between 2024 and 2029.
Northstar Highlands Phase II (8)	Northstar Drive, Truckee	Modifications to the original subdivision approval, reducing the development area and number of housing units (from 576 units to 446 units).	50 townhomes, 10 single family lots, 386 condominiums, up to 147 commercial condominiums, 4,000 square feet of commercial space	Initial study checklist has been prepared.

Table 4.1-2 Cumulative Project List				
Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
Cabin Creek Biomass Facility Project (9)	900 Cabin Creek Road, Truckee	Develop a two megawatt wood-to-energy facility that would utilize a gasification technology. Would support fuels reduction and thinning activities within and outside of the Lake Tahoe Basin. Fueled by forest-sourced material only.	--	EIR certified by Planning Commission in December 2012. Construction could begin as early as 2014.
Truckee River Corridor Access Plan (10)	Truckee River Watershed, Placer and Nevada counties	Continuous and coordinated system of preserved lands and habitat, with a connecting corridor of walking, in-line skating, equestrian, bicycle trails, and angling and boating access from Lake Tahoe to the Martis Valley.	--	Application submitted; design and environmental review underway.
Squaw Valley Red Dog Lift Replacement (11)	Terminus of Squaw Valley Road, west of State Route 89, Squaw Valley	Replace the existing triple chairlift with a high-speed, detachable, 6-place chairlift.	--	Mitigated negative declaration prepared, public comment period closed February 2013.
Village at Squaw Valley Specific Plan (12)	Western end of Squaw Valley	Establishes the guiding principles for comprehensive development of approximately 100 acres of the previously developed Squaw Valley Olympic Village.	Up to 1,295 resort residential units and 454,000 square feet of commercial	NOP public review period ended November 2012. Draft EIR in preparation.
Squaw Valley Timberline Twister (13)	Squaw Valley	Construction of an alpine coaster attraction in a triangular stand of trees between the Lower Far East and lower Red Dog chairlift alignments.	--	Application submitted to Placer County in August 2012. Could be installed in the summer of 2013.
Alpine Sierra Subdivision (14)	Terminus of Alpine Meadows Road near Alpine Meadows Ski Resort	44-acre planned development to include single-family lots and commonly held parcels.	47 units	Environmental review complete. Construction schedule unknown.
Alpine Meadows Hot Wheels Lift Replacement (15)	Alpine Meadows Ski Resort, Alpine Meadows	Replace the existing triple chairlift with a detachable quad chairlift	--	Environmental review complete; project approved in December 2012. Implementation could begin in the summer of 2014.

Table 4.1-2 Cumulative Project List				
Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
Homewood Mountain Resort Master Plan (16)	5145 Westlake Boulevard, Homewood	Redevelop mixed-uses at the North Base area, residential uses at the South Base area, a lodge at the Mid-Mountain Base area, and ski area.	299 units North Base: 36 residential condos; 20 whole ownership units; 75 traditional hotel rooms; 40 two-bedroom for sale condo/hotel units; 30 penthouse condos; 25,000 square feet of commercial floor area; 13 employee/workforce housing units; 30,000 square feet of skier services Mid Mountain: 15,000 square foot day-use lodge	Litigation of 2011 EIR/EIS settled in early 2014. Construction anticipated 2015 to 2022.
SR 89/Fanny Bridge Community Revitalization Project (17)	State routes 89 and 28 at the Truckee River Crossing, Tahoe City	Construction of a new bridge over the Truckee River, repair or replacement of Fanny Bridge, and various other improvements.	--	Application complete. NOP released, scoping period ended January 30, 2012. EIR/EIS/Environmental Assessment under preparation. Construction target is 2014-2015.
Tahoe City Vision Plan (18)	Tahoe City (contiguous with Tahoe City Community Plan boundaries)	Visioning effort to guide Area Plan development.	--	Planning effort. Vision planning underway.
Dollar Creek Shared-Use Trail (19)	Between the existing trail at Dollar Hill and the Cedar Flats neighborhood on the North Shore	2.5 mile long shared-use trail.	--	Environmental review complete; project approved. Construction expected to occur between 2013 and 2015.

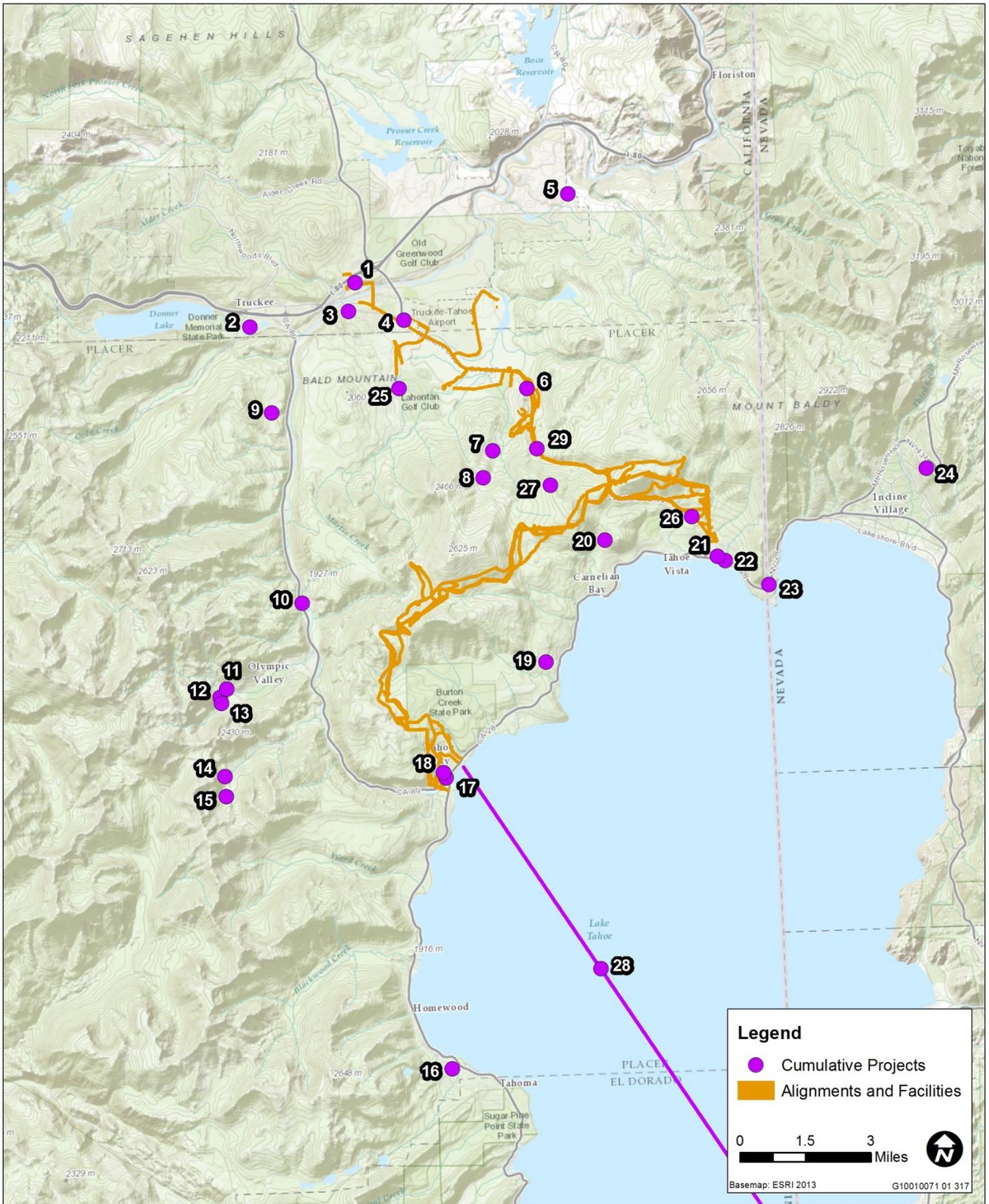
Table 4.1-2 Cumulative Project List				
Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
Carnelian Fuels Reduction and Healthy Forest Restoration Project (20)	Adjacent to Cedar Flat, Carnelian Bay, Tahoe Vista, and Kings Beach	Mechanical, hand, and prescribed burning treatments to reduce surface fuels and conifer density.	--	Decision notice signed on August 20, 2012. Implementation is expected to begin in 2013 and be completed within 7-10 years, depending on funding and contractor availability.
Rainbow Parking (21)	8334 Rainbow Avenue, Kings Beach	18-space public parking lot off of Rainbow Drive. Pervious concrete proposed for 16 spaces, with asphalt handicapped parking space, adjacent space, and drive aisle. Landscaping and wooden fencing proposed as a visual screen.	--	Negative Declaration complete.
Kings Beach Commercial Core Improvement Project (22)	Kings Beach	Project involves reducing SR 28 in Kings Beach from a 4-lane highway to a 3-lane highway with a roundabout. Project is a SR 28 beautification project, and includes off-highway and water quality improvement components.	--	Environmental review complete; project approved. Construction of off-highway and water quality improvements and neighborhood traffic calming measures underway in 2013. Construction will be a multi-year effort. County requires additional funding to complete project. Therefore, completion date is unknown at the time of writing of this document.

Table 4.1-2 Cumulative Project List				
Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
Boulder Bay Project (23)	Crystal Bay, Nevada	Redevelopment of Tahoe Biltmore on North Shore. Project includes a four-story, 275-room hotel with a 10,000 square-foot casino. Implementation of the project would reduce the total commercial floor area at the site from approximately 56,000 to 21,000 square feet.	275 tourist accommodation units; 59 whole ownership residential condos; 14 onsite affordable employee housing and 10 infill affordable housing units; 18,715 square feet of commercial floor area; 67,338 square feet hotel and accessory floor area; 10,000 square feet casino; 5.7 acres of open space and/parks	Environmental review complete; project was approved on April 27, 2010. Construction was planned for 2012, but applicant is still securing financing. Construction start date unknown at the time of writing of this document.
Incline Fuels Reduction and Healthy Forest Restoration Project (24)	Adjacent to Incline Village, Nevada	Mechanical, hand, and prescribed burning treatments. Tree thinning, biomass removal, prescribed burning, chipping, and mastication.	--	Decision notice signed on February 15, 2013. Implementation is expected to begin in 2014 and be completed within 10 years, depending on funding and contractor availability.
Martis Camp (25)	1200 Lodgetrail Drive, Truckee	A private golf and ski club community of upscale second homes.	663 lots (between 2.5 and 0.5 acres) on over 2,000 acres	Opened in 2006. Partially built-out. Many homes and community facilities are in place, but there are also lots available.
Kingswood Alternate Feed Project (26)	Hwy 267 at Kingswood Subdivision	5-pole distribution tap off of the existing 650 Line underbuild to be used as an alternate feed for the Kingswood Subdivision.	--	Construction scheduled for 2013 pending final permits.
Martis Valley Opportunity at Northstar (27)	Northstar	Mixed residential uses (including single family, town homes, cabins, condos) and commercial development (including resort services, fitness center, family entertainment, and community center).	760 residential units; approximately 7 acres of commercial development	Draft EIS/EIR in preparation.

Table 4.1-2 Cumulative Project List

Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
Lake Tahoe Passenger Ferry (28)	Cross-lake ferry service with a South Shore Ferry Terminal at the Ski Run Marina in South Lake Tahoe and a North Shore Ferry Terminal at the Grove Street Pier west of the Tahoe City Marina	Year-round waterborne transit between north and south shores of Lake Tahoe.	--	NOP/NOI released in November 2013. Draft EIS/EIS/EIR in preparation.
Caltrans' Highway Improvement Projects (29)	SR 267	Planned Improvements (those included in a long-term plan that can be funded) and Programmed Improvements (those included in a near-term programming document that identifies funding amounts by year) in the 2012 Transportation Corridor Concept Report for SR 267 include: widening to four lanes between the Placer County line and Northstar Drive, rehabilitating pavement and widening shoulders between Placer County line and Brockway Summit, plant establishment and protection from Northstar Drive to SR 28, class II bike lane from Brockway Summit to SR 28	--	Anticipated construction between 2014 and 2025

Sources: USDA Forest Service LTBMU 2013, Placer County 2013, Placer County 2014, Town of Truckee 2009, Town of Truckee 2012, Town of Truckee 2013, Tahoe Transportation District 2012, Endres 2013, Northstar 2012, Federal Transit Administration 2013, Caltrans 2012



Source: adapted by Ascent Environmental 2013

Exhibit 4.1-1

Cumulative Projects



## 4.2 LAND USE

This section describes applicable land use policies and plans in the study area and existing conditions related to land uses. Potential short-term and long-term land use impacts that could result from project implementation are described and mitigation measures are recommended as necessary to reduce potentially significant adverse effects.

Refer to Section 4.3, Forestry Resources (Impact 4.3-1), for a discussion of potential conflict with existing zoning of forest and timberlands.

### 4.2.1 REGULATORY SETTING

A variety of plans and policy statements administered by federal, state, regional, and local agencies apply to the action alternatives. Relevant planning guidance used to evaluate the potential for land use impacts resulting from project implementation are described below.

#### FEDERAL

##### US FOREST SERVICE

The project components are predominantly located on National Forest System (NFS) lands managed by the US Department of Agriculture, US Forest Service (USFS); these lands are located in the Tahoe National Forest and in the Lake Tahoe Basin Management Unit (LTBMU). The management of NFS lands in each of these forests is guided by separate Land and Resources Management Plans. The current plans are summarized below.

##### Lake Tahoe Basin Management Unit—Land and Resource Management Plan

LTBMU manages more than 75 percent of lands within the Tahoe Region, including lands located within the project study area. Land management is guided by the LTBMU Land and Resource Management Plan (Forest Plan) (USFS 1988), as amended by the Sierra Nevada Forest Plan Amendment (SNFPA) (USFS 2004), described below. The Forest Plan sets the framework for how the resources of the national forest are managed. The plan translates national laws, policies, and regulations into guidance for activities that occur on the NFS lands.

The LTBMU Forest Plan is currently being revised and is undergoing environmental review. The plan revision is occurring concurrently with the environmental review for the CalPeco 625 and 650 Electrical Line Upgrade Project (proposed project) evaluated in this EIS/EIS/EIR. Because the timing of adoption and implementation of the plan revision is speculative, specific guidance in the 1988 Forest Plan provides the basis for evaluating the proposed project's consistency with LTBMU planning guidance. The project's consistency with the Forest Plan is considered in the National Forest Management Act (NFMA) Forest Plan Consistency Checklist, a planning tool developed and used by LTBMU staff, included in Appendix G of this EIS/EIS/EIR. As described in the NFMA checklist, incorporated by reference here, the action alternatives would be consistent with the relevant Forest Plan directives. Therefore, specific Forest Plan directives are not included for consistency analysis in this section.

##### Tahoe National Forest—Land and Resource Management Plan

The Tahoe National Forest is located in the north central Sierra Nevada in California and is bounded on the north by the Plumas National Forest, on the east by the Toiyabe National Forest and LTBMU, and on the south by the Eldorado National Forest. The Forest Plan (USFS 1990) provides direction for managing the Tahoe National Forest, which includes an approximately 1-mile stretch of the 625 Line (portions of Segment 625-3 and Segment 625-4/4A) and a 0.25 mile stretch of the 650 Line (Segment 650-4; the existing and rebuilt 650 Line along Glenshire Drive [Segment 650-6] is outside of the NFS boundary in this location) within the project study area.

Specifically, Chapter V, Management Direction, presents both forest-wide and area-specific management direction for the Tahoe National Forest. The forest-wide management direction consists of forest goals and desired future conditions, objectives, and forest-wide standards and guidelines. Specific management direction for each of the 106 management areas includes: management emphasis for the area, selected standards and guidelines, and compatible available management practices. The Tahoe National Forest, Forest Plan is amended by the Sierra Nevada Forest Plan Amendment (USFS 2004), described below. The project's consistency with the Tahoe National Forest Plan is considered in a matrix similar to the NFMA checklist described above for the LTBMU (but with relevant standards and guidelines only) and is included in Appendix G of this EIS/EIS/EIR. As described in the Tahoe National Forest NMFA checklist, incorporated by reference here, the action alternatives would be consistent with the Tahoe National Forest standards, guidelines, and management practices. Therefore, specific Tahoe National Forest standards, guidelines, and management practices are not included for consistency analysis in this section.

### **Sierra Nevada Forest Plan Amendment**

The Sierra Nevada Forest Plan Amendment of 2004 (USFS 2004) amends the Forest Plans for the 11 National Forests that fall within the Sierra Nevada, including the LTBMU Forest Plan and the Tahoe National Forest Plan, described above. The SNFPA Final Supplemental Environmental Impact Statement and Record of Decision (ROD) describe the amendments to the Sierra Nevada Forest Plan developed to improve protection of old forests, wildlife habitats, watersheds and communities in the Sierra Nevada and Modoc Plateau. Appendix A of the ROD provides management direction for the Record of Decision. The appendix is divided into six parts.

- ▲ Part A presents broad management goals and strategies for addressing the five problem areas: old forest ecosystems and associated species; aquatic, riparian, and meadow ecosystems and associated species; fire and fuels management; noxious weeds; and lower westside hardwood ecosystems.
- ▲ Part B describes desired conditions for land allocations across Sierra Nevada national forests.
- ▲ Part C describes management intents and objectives.
- ▲ Part D describes management standards and guidelines that provide direction for specific aspects of project planning and analysis.
- ▲ Part E sets forth management direction for the Herger-Feinstein Quincy Library Group Pilot Project Area during the life of the pilot project.
- ▲ Part F describes the monitoring plan for the ROD.

While the ROD generally establishes broad goals, the Management Direction appendix (Appendix A of the ROD) is intended to provide more specifics at the objectives and implementation level. The project's consistency with specific guidance provided in the SNFPA is considered in the NFMA Forest Plan Consistency Checklist included as Appendix D of this EIS/EIS/EIR. As described in the NFMA checklist, incorporated by reference here, the action alternatives would be consistent with the SNFPA guidance. Therefore, specific SNFPA standards and guidelines are not included for consistency analysis in this section.

### **US ARMY CORPS OF ENGINEERS**

#### **Martis Creek Lake Master Plan**

The US Army Corps of Engineers' (USACE) Martis Creek Lake Master Plan (USACE 1977) is used to guide the administration and development of land and water within the Master Plan area (Exhibit 3-2 shows the limits of land managed by the USACE in Martis Valley). The Master Plan prescribes the policies, objectives, and programs for the continuation of conservation, enhancement, development, use, and management of land, water, and other resources within the Master Plan area. It identifies the resources of the Master Plan area and describes the manner in which public use needs and other uses of the land and water resources will be met. Facilities development, operation, and management are described and discussed. Segments 650-4 (Alternative 1, PEA

Alternative and Alternative 4, Proposed Alternative), 650-4A (Alternative 2, Modified Alternative), and 650-4B (Alternative 3, Road Focused Alternative [there is no difference between Alternatives 3 and 3A in this area]) pass through this USACE managed property. Project consistency with relevant guidance provided in the Master Plan is considered in Appendix G of this EIS/EIS/EIR.

The master plan includes several Engineering Regulations (ER) that have been rescinded, but one is still in effect; ER 1110-2-400 (published May 31, 1988) establishes policy and guidance for the design of recreation sites, areas, and facilities. The action alternatives do not include design of recreation facilities, and therefore, ER 1110-2-400 does not apply.

## **FEDERAL AVIATION ADMINISTRATION**

### **Federal Aviation Regulations Part 77**

The Federal Aviation Administration published Federal Aviation Regulations (FAR) Part 77, “Objections Affecting Navigable Airspace” in 1965. Subsequent Amendments 73-1 through 73-11 were incorporated into the edition published in March 1993. FAR Part 77 is codified under Subchapter C, Aircraft, of Title 14 of the Code of Federal Regulations. FAR Part 77 establishes standards for determining obstructions in navigable airspace; sets forth the requirements for notice to the Administrator of certain proposed construction or alteration; provides for aeronautical studies of obstructions to air navigation, to determine their effect on the safe and efficient use of airspace; provides for public hearings on the hazardous effect of proposed construction or alteration on air navigation; and provides for establishing antenna farm areas. FAR Part 77 standards and guidelines are incorporated into the Truckee Tahoe Airport Land Use Compatibility Plan (Foothill Airport Land Use Commission 2004), which is described below.

## **STATE**

Several state agencies have approval responsibility over the project, such as permitting (see Table 3-7 in Chapter 3, Project Alternatives), but do not have planning documents that guide land use development. Relevant regulations of agencies that do not have land use authority related to the project are discussed in other resource sections of this EIS/EIS/EIR, as applicable.

CPUC has sole and exclusive jurisdiction over the siting and design of the project and alternatives because it authorizes the construction, operation, and maintenance of investor-owned public utility facilities. Although such projects are exempt from local land use and zoning regulations and discretionary permitting (i.e., they would not require any land use approval that would involve a discretionary decision to be made by a local agency such as a planning commission, city council or county board of supervisors), General Order No. 131-D, Section XIV.B requires that in locating a project “the public utility shall consult with local agencies regarding land use matters.” The public utility is required to obtain any required non-discretionary local permits. This preemptive authority does not apply to special districts, other state, or federal agencies.

The following state agencies do have land use authority in portions of the project area.

## **CALIFORNIA STATE PARKS**

The California Department of Parks and Recreation, or California State Parks (State Parks), defines its mission as follows, “...to provide the health, inspiration, and education of the people of California by helping to preserve the state’s extraordinary biological diversity, protecting its most valued natural and cultural resources, and providing opportunities for high-quality recreational experiences based on those resources.” State Parks manages the California State Park System, including Burton Creek State Park, the Kings Beach State Recreation Area (SRA), the Tahoe SRA, Washoe Meadows State Park, Lake Valley SRA, Emerald Bay State Park, D.L. Bliss State Park, the Ward Creek Unit, and Ed Z’berg-Sugar Pine Point State Park in the Tahoe Region. Long-range

development and management of each state park is directed by a general plan, which provides broad policy and program guidance. Each California state park must have an approved general plan before any major park facilities can be developed. Several of the power line poles along the existing 625 Line are located within the southern boundary of Burton Creek State Park. The action alternatives would involve replacing the existing wood poles with taller steel poles within the existing alignment, installing new conductors, and expanding the width of the existing easement, as is required with taller poles. Relevant planning guidance from the Burton Creek State Park General Plan is summarized below.

### **Burton Creek State Park General Plan**

Burton Creek State Park is located adjacent to Tahoe City. The park has been in existence since 1978 when it was acquired by California State Parks. The purposes of the acquisition were to provide a large area of resource protection and outdoor recreation opportunities on the north side of the Lake Tahoe Basin. The Burton Creek State Park General Plan (State Parks 2005) was developed to lay the foundation for possible future campground development; to describe and address the immediate need to develop day use and access facilities; to implement planned interpretive programming; and to implement a Road and Trail Plan for the park. The Burton Creek State Park General Plan also addresses integration of the park with the surrounding USFS and California Tahoe Conservancy properties, and private property.

Segment 625-2 of the action alternatives runs adjacent to Burton Creek State Park. Several existing poles are located within the southern park boundary. As part of each of the action alternatives, the existing wooden poles would be replaced with steel poles. Two existing roads within the Burton Creek State Park boundaries are proposed for use as project access roads. One of these roads would require some improvements for project access, however, the applicant has agreed at the request of California State Parks to complete the construction with no new access and with limited impact to the existing right of way.

Project consistency with relevant policies in the Burton Creek State Park General Plan is considered in Appendix G of this EIS/EIS/EIR.

### **CALIFORNIA TAHOE CONSERVANCY**

The California Tahoe Conservancy's (Conservancy) mission is to preserve, protect, restore, enhance, and sustain the unique and significant natural resources and recreational opportunities of the Lake Tahoe Basin. Established by State law in 1984, the Conservancy's jurisdiction extends throughout the California side of the Lake Tahoe Region, as defined in California Government Code Section 66905. The Conservancy develops and implements projects to improve water quality, preserve Lake Tahoe's scenic beauty, provide recreational opportunities and public access, preserve wildlife habitat areas, and manage and restore lands to protect the natural environment. The Conservancy has the power to acquire, hold, and manage property in the Tahoe Region. Since 1984, the Conservancy has acquired more than 4,800 parcels of land, comprising more than 6,500 acres, for the purposes of protecting the natural environment and promoting public recreation and Lake access. The Conservancy manages and implements restoration and other projects on these lands. The Conservancy has also provided approximately 170 grants to local governments and non-profit organizations for erosion control, public recreation and access, land acquisition, and other projects. Since 1997, the Conservancy's programmatic efforts have been focused on California's commitment to the implementation of the Environmental Improvement Program (EIP) for the Tahoe Region and to address declining resource values at Lake Tahoe.

The Conservancy has adopted Special Use Guidelines (Conservancy 2011) to regulate special uses on their lands. "Special uses" involve the grant of a lease, license, or easement on Conservancy land to a public or private entity for a variety of uses. Such uses often include installation of utility lines. The Conservancy permits special uses on its lands consistent with its guidelines through the execution by both parties of one of three documents: a license, a lease, or an easement. The Conservancy has classified its special use requests into four distinct types of uses: Temporary Uses (duration of five days or less; use is granted pursuant to a lease or license agreement),

Short Term Uses (duration of more than five days but less than six months; use is granted pursuant to a lease or license agreement), Long Term Uses (duration of 6 months or more, but is not of a permanent nature; use is granted pursuant to a lease or license agreement), and Permanent Uses (use of Conservancy land is permanent; use is granted pursuant to an easement). The type of use will determine: (1) the application procedure for special use requestors, and (2) the nature of the legal document granting the right to use Conservancy property. That is, each type of use carries with it distinct requirements pertaining to use, insurance, indemnification, impairment, waivers, attorney fees, notices, etc. Specific requirements are outlined in the Special Use Guidelines document (Conservancy 2011).

While none of the action alternatives cross Conservancy-owned properties, Segments 625-2 and 625-10 run adjacent to Conservancy-owned properties. Additionally, the action alternatives would include new access ways and access roads with needed improvements on Conservancy-owned property located at the intersection of Segments 625-1 and 625-2. The applicant may be required to apply for a special use request for new access ways and improved access roads on Conservancy-owned properties and would coordinate directly with Conservancy staff on permitting needs.

## **TAHOE REGIONAL PLANNING AGENCY**

### **REGIONAL PLAN**

TRPA implements its authority to regulate growth and development in the Lake Tahoe Region through the Regional Plan. The Regional Plan includes Resolution 82-11, the Environmental Threshold Carrying Capacities (threshold standards), Goals and Policies, Code of Ordinances, community plans, plan area statements, and other guidance documents. Under the Regional Plan Update adopted in December 2012, local agencies may develop area plans that supersede community plans and areas, but none have yet been adopted.

### **Environmental Threshold Carrying Capacities**

TRPA has established Environmental Threshold Carrying Capacities (threshold standards) and indicators for nine resource areas: water quality, air quality, scenic resources, soil conservation, fish habitat, vegetation, wildlife habitat, noise, and recreation. TRPA threshold standards are minimum standards of environmental quality targets to be achieved in the Tahoe Region. Until December 2012, when TRPA adopted its Regional Plan Update, the attainment status of each TRPA threshold standard was evaluated every five years; with the Regional Plan Update, they will be evaluated every four years, along with the Regional Plan itself and Regional Transportation Plan. The latest TRPA Threshold Evaluation was completed in April 2012.

No threshold standard applies specifically to land use, and the adopted environmental threshold standards do not define the maximum populations, densities, permitted uses, and other land use criteria for the Region. However, the threshold standards do set performance criteria that may be influenced by land use planning considerations, including coverage, restoration-based incentives, and allocation considerations. Land use planning considerations proposed in this EIS/EIS/EIR that could affect environmental threshold standards are discussed in the relevant resource sections.

### **Goals and Policies**

The foundation of the Regional Plan, the Goals and Policies are statements of policy to guide decision making as it affects the Region's resources and environmental thresholds, and they are intended to provide opportunities for orderly growth and development consistent with those thresholds. The Goals and Policies are addressed in six major elements: land use, transportation, conservation, recreation, public services and facilities, and implementation. The Land Use Subelement of the Regional Plan addresses policies pertaining to growth and development of the Lake Tahoe Region. It is intended to direct the amount, type, and location of land uses and land coverage; balance land uses with the social, environmental, and economic wellbeing of the Region; and

coordinate regional land uses with land uses in surrounding areas. The project's consistency with relevant policies in the Regional Plan is addressed in Appendix D of this EIS/EIS/EIR.

### **Code of Ordinances**

The Code of Ordinances (Code) contains necessary provisions needed to implement the Regional Plan Goals and Policies. Adopted standards in the Code must be met by projects. The most recent Code of Ordinances (published October 24, 2012) was adopted by the TRPA Governing Board on December 12, 2012. Code standards applicable to specific resources (e.g., biological resources, hydrology and water quality, scenic, etc.) are described in those resource sections of this EIS/EIS/EIR. The following Code sections are relevant to the discussion of land use impacts for the project.

### **Permissible Uses**

Chapter 50, Allocation of Development, of the TRPA Code sets forth the requirements for regulating the rate and timing of growth within the region. TRPA regulates growth through the issuance of allocations of residential units, commercial floor area, tourist accommodation units, and public service facilities. Allocations are generally only required for primary uses, meaning that an allocation is only required for the main use for which the parcel is developed.

Primary uses are defined in Chapter 21, Permissible Uses, of the TRPA Code. All parcels have one or more permissible primary uses. Primary uses are defined as either "allowed" or "special." Plan area statements and community plans (described below) define which terms apply to a particular parcel. Examples of primary uses include public utility centers, transmission and receiving facilities, hotels and motels, eating and drinking places, and residences. Subsection 21.2.1 of the TRPA Code defines allowed uses as uses listed in the applicable plan area statement, community plan, redevelopment plan or specific plans that are appropriate uses for the specified area, and projects and activities pursuant to such uses may be permitted. By definition, allowed uses are assumed to be compatible with the direction of the Regional Plan and surrounding land uses. Special uses are uses that may be determined to be appropriate uses for the specified area, and projects and activities pursuant to such uses found to be appropriate may be permitted. To determine whether a special use is appropriate, TRPA must make the following findings (Subsection 21.2.2):

- (1) The project, to which the use pertains, is of such a nature, scale, density, intensity and type to be an appropriate use for the parcel on which, and surrounding area in which, it will be located;
- (2) The project, to which the use pertains, will not be injurious or disturbing to the health, safety, enjoyment of property, or general welfare of persons or property in the neighborhood, or general welfare of the region, and the applicant has taken reasonable steps to protect against any such injury and to protect the land, water and air resources of both the applicant's property and that of surrounding property owners; and
- (3) The project, to which the use pertain, will not change the character of the neighborhood, detrimentally affect or alter the purpose of the applicable planning area statement, community plan and specific or master plan, as the case may be.

Uses not listed in the applicable plan area statements and community plans as permissible uses are prohibited (Subsection 21.2.4 of the TRPA Code). Also, proposed special uses for which the findings in Subsection 21.2.2 (above) cannot be made are prohibited uses.

Uses that are legally existing (commenced before the effective date of the Regional Plan, July 1, 1987) that would be prohibited if new are defined as non-conforming uses and may be continued (Subsection 21.2.3 of the TRPA Code). Non-conforming uses cannot be expanded or intensified. Modifications to a non-conforming use may be permitted only when TRPA finds that the modifications do not increase the extent of non-conformity (Subsection 21.5.2.C of the TRPA Code).

Accessory uses are also defined in Chapter 21 of the TRPA Code. Accessory uses are defined as a use, building, or other facility customarily a part of any primary use; that is clearly incidental and secondary to the primary use; that does not change the character or the intensity of the primary use; and that does not operate independent of the primary use. Driveways are an example of an accessory use. Impact 4.2-1 addresses whether proposed uses associated with the action alternatives are Permissible Uses.

## Land Use Classification System

Land in the Tahoe Region is assigned to one of five classifications: Conservation, Recreation, Residential, Commercial and Public Service, and Tourist. The classifications are a gross summarization of major land uses that exist in the Region and are further defined by Plan Areas and corresponding Plan Area Statements (PASs).

## Plan Area Statements

The Tahoe Region is divided into Plan Areas, as shown on Exhibit 4.2-1, each of which has an adopted PAS which provides the planning blueprint for that area. PASs supplement and elaborate on the Placer County General Plan for the area they cover and provide a detailed guide for planning within discrete areas of the Region. Each Plan Area is assigned a single land use classification, and one of three management strategies: development with mitigation, redirection of development, or maximum regulation. Some Plan Areas are designated as Community Plan areas, receiving areas for transfer of development commodities, or areas targeted for scenic restoration and affordable housing provisions. Additionally, PASs identify planning considerations, special policies, maximum densities for residential and tourist accommodation uses, community noise equivalent levels, allowable and special uses, and the amount of additional recreation capacity permissible. All of the action alternatives include components that are within the following Plan Areas: Lower Truckee (003), 64-Acre Tract (174), Tahoe City (001A), Tahoe City Industrial (001B), Fairway Tract (002), Burton Creek (004), Watson Creek (013), Northstar (015), Martis Peak (019), Kingswood East (025), Woodvista (027), and Kings Beach Industrial (026). TRPA does not have traditional zoning designations for parcels located within its jurisdiction. Instead, each PAS designates a Land Use Classification (general plan designation) and a list of Permissible Uses (zoning).

## Community Plans

Currently, there are 16 Community Plan areas that have adopted plans. These plans supersede the PASs and are designed to be more responsive to the needs and opportunities of the respective communities. The original intent of the Community Plans was to concentrate commercial uses to reduce the negative effects of “strip” development and to provide incentives to renovate, revitalize, and remove blighted commercial development. With the adoption of the 2012 Regional Plan Update, community plans may be superseded by the adoption of future Area Plans (described below).

Community Plan areas are made up of one or more Plan Areas and contain commercial, tourist, and public service land uses. Community Plans describe a land use vision, development and coverage incentives, and environmental targets. Additionally, like PASs, Community Plans provide planning considerations, special policies, maximum densities for residential and tourist accommodation uses, community noise equivalent levels, allowable and special uses, among other planning guidance. The Community Plans applicable to the project area are: the Tahoe City Community Plan (TRPA and Placer County 1996a) and the Kings Beach Industrial Community Plan (TRPA and Placer County 1996b). The project’s consistency with relevant policies in these Community Plans is addressed in Appendix G of this EIS/EIS/EIR.

## Area Plans

The concept of Area Plans was introduced with the adoption of the Regional Plan Update in 2012, wherein public agencies may prepare plans consistent with the Regional Plan and utilize new allowances for streamlined permitting and increased intensity in specific community centers. Local jurisdictions are encouraged to engage local residents and businesses and, in coordination with TRPA staff, prepare coordinated plans for implementation of land use goals and policies. The Area Plans, which would also include development ordinances and zoning designations, would be required to be consistent with the Regional Plan; they would be

subject to an initial conformance evaluation and on-going implementation oversight by TRPA. PASs, Community Plans, and use-specific Master Plans remain in effect in the newly-adopted Regional Plan (2012) until superseded by an Area Plan that is developed in accordance with and found in conformance with the Regional Plan.

Placer County is in the early visioning process for separate Area Plans addressing four distinct areas in the Placer County portion of the Lake Tahoe Basin. The planning process is underway and several supporting planning documents have been published; however, it is not anticipated that any of these Area Plans would be adopted and in effect prior to a decision on the proposed project.

## **Environmental Improvement Program**

Launched in 1997, the Lake Tahoe EIP is a cooperative effort to preserve, restore and enhance the unique natural and human environment of the Lake Tahoe Region. The EIP program defines restoration needs for attaining environmental goals or thresholds and, through a substantial investment of resources, increases the pace at which the thresholds will be attained. Key to this strategy is reliance upon partnerships with all sectors of the community, including the private sector, local, state and federal government. The EIP identifies hundreds of specific projects and programs to be undertaken by more than 50 funding partners, including federal, state, and local agencies and the private sector. The projects focus on improving air, water, and scenic quality, forest health, fish and wildlife, and public access to the Lake and other recreation areas. The prime directive of the EIP is to move the Tahoe Region closer to environmental threshold standard attainment. The project's consistency with this directive is addressed in each of the resource sections for which a TRPA threshold standard has been established, including Section 4.4, Scenic Resources; Section 4.5, Geology, Soils, Land Capability and Coverage; Section 4.6, Hydrology and Water Quality; Section 4.7, Biological Resources; Section 4.8, Recreation; Section 4.13, Air Quality, Greenhouse Gas Emissions, and Climate Change; and Section 4.14, Noise.

## **LOCAL AGENCIES**

### **PLACER COUNTY**

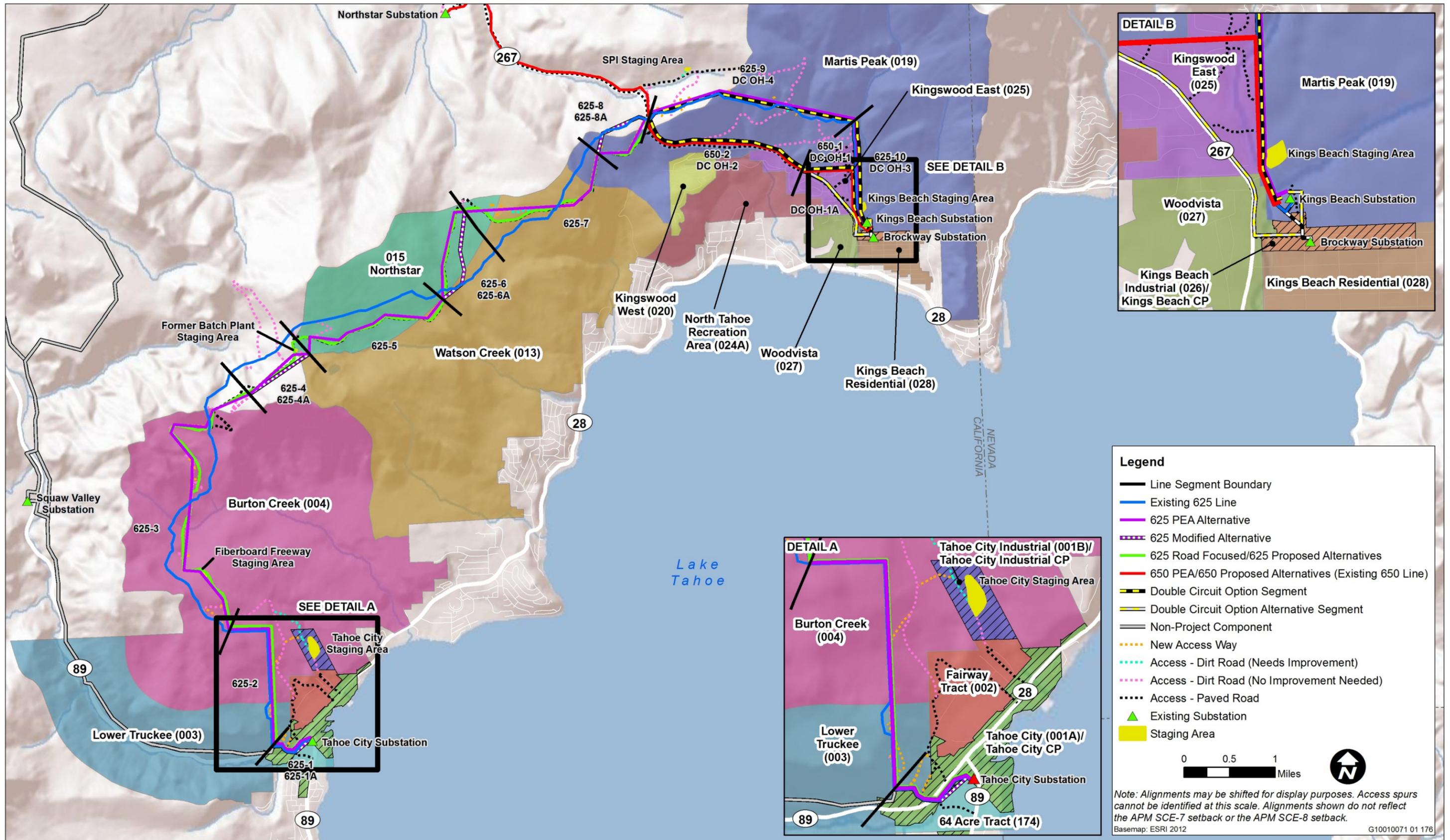
#### **Placer County General Plan**

The Placer County General Plan was adopted on August 16, 1994 (Placer County 1994). The General Plan provides an overall framework for development of the county and protection of its natural and cultural resources. The goals and policies contained in the Countywide General Plan are applicable throughout the County, except to the extent that County authority is preempted by cities within their corporate limits. The project's consistency with relevant policies in the General Plan is addressed in Appendix D of this EIS/EIS/EIR.

#### **Placer County Code**

The Placer County Code includes updates through Ordinance 5681-B and the October 2012 code supplement (available online: <<http://qcode.us/codes/placercounty/>>). Code standards applicable to specific resources (biological resources, water quality, etc.) are described and evaluated in those resource sections of this EIS/EIS/EIR. The following Code standards would be applicable to this project.

- ▲ 12.04.010 – Roads and Highways: Permit required (Digging along roads, etc.). It is unlawful for any person to dig, cut, open, excavate or maintain, or to cause to be dug, cut, opened, excavated or maintained, any ditch, cut, hole, drain, tunnel, or other opening, in, through, under, along, across or upon any county or public road, land, street, sidewalk, or highway in the county, without first procuring a permit from the department of public works.
- ▲ 12.04.020 – Roads and Highways: Permit required (Erection of poles along roads, etc.). It is unlawful for any person to erect or construct any pole line for any purpose over, across, along or upon any county or public road, land, street, sidewalk or highway in the county, without first obtaining a permit from the department of public works.



Source: Data received from TRPA and Tri Sage 2012; adapted by Ascent Environmental in 2012

Exhibit 4.2-1

- ▲ 12.04.120 – Roads and Highways: Private access roads. It is unlawful for any person to construct or maintain any private driveway or access road to a county highway without providing such facilities as may be necessary for drainage under such private driveway or access roads with the drainage way along such county highway or without first obtaining a permit from the department of public works.
- ▲ 13.36.070 – Underground Utilities: Other exceptions. This article and any resolution adopted pursuant to Section 13.36.040 shall, unless otherwise provided in such resolution, not apply to the following types of facilities: D. Poles, overhead wires and associated overhead structures used for the transmission of electric energy at nominal voltages in excess of thirty-four thousand five hundred (34,500) volts.

## NEVADA COUNTY

### Nevada County General Plan

The Nevada County General Plan was approved in 1996, and amended in 2008 and 2010 (Nevada County 2012). The General Plan guides the physical, economic, and environmental future of the County, and includes goals, objectives, policies, and implementation measures. The role of the General Plan is to provide the framework for the future physical growth of the County, and serve as the foundation for land use decisions. It expresses long term community development goals and embodies public policy related to the distribution of future land use. Because it embodies public policy, it is intended to be used by County decision makers to review new development in order to ensure that such development will contribute to achieving the vision for Nevada County which is inherent in the General Plan.

The action alternatives do not include any permanent improvements (e.g., power poles and lines, access ways, and substations) in unincorporated Nevada County. Several staging areas (i.e., Airport Staging Areas 1, 2, and 3) under consideration for use as part of the action alternatives are located within Nevada County and outside of the limits of the Town of Truckee. Because use of these staging areas would be temporary and would require limited site improvements (e.g., vegetation clearing, minor improvements to dirt access ways, and construction fencing), General Plan land use policies, which are intended to guide new development, would not be applicable. For these reasons, Nevada County regulations are not discussed further herein.

## TOWN OF TRUCKEE

### Town of Truckee General Plan

The 2025 General Plan represents the first update to the Town of Truckee's General Plan since the Town adopted its first General Plan in 1996, following its incorporation in 1993. The Town of Truckee 2025 General Plan was adopted by the Town Council on November 16, 2006 (Town of Truckee 2006). Segments 650-6 and 650-7 of the action alternatives are located within the limits of the General Plan area. The project's consistency with relevant policies in the General Plan is addressed in Appendix G of this EIS/EIS/EIR.

### Downtown Truckee Specific Plan

The purpose of the Downtown Truckee Specific Plan (1997) is to implement the Town of Truckee General Plan within the boundaries of the Downtown Study Area (Town of Truckee 1997). The Specific Plan sets forth the policies, projects, implementation plans, and regulations intended to ultimately achieve this directive. Segments 650-6 and 650-7 of the action alternatives are located within this area. The project's consistency with relevant policies in the Specific Plan is addressed in Appendix G of this EIS/EIS/EIR.

### Town of Truckee Development Code

The Town of Truckee Development Code carries out the policies of the Truckee General Plan by classifying and regulating the uses of land and structures within the Town of Truckee. The Development Code is adopted to protect and to promote the public health, safety, comfort, convenience, prosperity, and general welfare of residents, and businesses in the Town. Code standards applicable to specific resources (biological resources,

water quality, etc.) are described and evaluated in those resource sections of this EIS/EIS/EIR. The following Code standards are applicable to land use impacts pertaining to this project.

- ▲ 18.24.090 – Services and Utility Placement Design Guidelines. Service areas and public utilities should be located in a manner that does not interfere with the form of buildings or their landscape.
- ▲ 18.30.056A(1) – Structures within Easements. No structure shall be allowed within public utility easements, access/driveway easements, drainage easements or any other easement offered for dedication to the County of Nevada or the Town, except as follows: The structure serves the purpose of the easement. For example, an electrical transformer in a public utility easement.
- ▲ 18.58.114 – Electrical Utility Facilities. The standards shall apply to the following types of electrical facilities in compliance with State law (Government Code Sections 53091 and 53096 and Public Resources Code Section 12808.5): 1. Electrical distribution lines of 100,000 volts or greater; and 2. Electrical substations within an electrical transmission system which receives electricity at 100,000 volts or greater.

## OTHER RELEVANT PLANS

### TRUCKEE TAHOE AIRPORT LAND USE COMPATIBILITY PLAN

The Truckee Tahoe Airport Land Use Compatibility Plan (Foothill Airport Land Use Commission 2004) was developed to promote compatibility between the airport and surrounding land uses. The plan serves as a tool for use by the Truckee Tahoe Airport Land Use Commission (ALUC) (the ALUC currently with jurisdiction over the Truckee Tahoe Airport) in fulfilling its duty to review airport and adjacent land use development proposals. Additionally, the plan sets compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances and to land owners in their design of new development. The plan incorporates requirements and guidelines from FAR Part 77, described previously.

The influence area for the Truckee Tahoe Airport extends roughly 2.7 miles from the airport runways. This influence area encompasses lands within the Nevada County, Placer County, and the Town of Truckee. Additionally, portions of the airport influence area affect lands within the jurisdiction of the USFS, Tahoe National Forest and the USACE. Although the authority of the Truckee Tahoe ALUC does not extend to federal lands, policies in the Compatibility Plan address the importance of coordination on airport land use compatibility matters. The policies establish compatibility criteria for future land use development in the airport environs. The policies also define the types of actions to be submitted for ALUC review and the procedures that the ALUC will follow in making compatibility determinations. Segments 650-3, 650-4 (Alternative 1: PEA Alternative and Alternative 4: Proposed Alternative), 650-4A (Alternative 2: Modified Alternative), 650-4B (Alternative 3: Road Focused Alternative [there is no difference between Alternatives 3 and 3A in this area]), 650-6 and 650-7 pass through the ALUC Compatibility Zones B1, C, D, and E. The regulatory setting in Section 4.10, Hazards and Hazardous Materials, describes the height limits and other restrictions on uses within each of these capability zones. The project's consistency with relevant restrictions and policies from the Airport Land Use Compatibility Plan is addressed in Appendix G of this EIS/EIS/EIR.

### MARTIS VALLEY COMMUNITY PLAN

The Martis Valley consists of an area of land that is approximately 70 square miles near the Town of Truckee in the central Sierra Nevada. The Martis Valley is located in both Nevada and Placer Counties, encompassing approximately 44,800 total acres. Within Placer County, however, Martis Valley consists of approximately 25,570 acres, or roughly 57 percent of the total acreage of the Valley. Land use patterns consist of a wide range of urban and commercial areas, forest lands, public and private recreational areas and facilities, as well as areas designated for airport use.

The Martis Valley Community Plan (MVCP) (Placer County 2003) provides a detailed focus on a specific geographic area of the unincorporated County, the Martis Valley. Some of the goals, policies, and implementation measures contained in the MVCP repeat those contained in the Placer County General Plan that are important to the MVCP area. Others supplement and elaborate upon (but not supersede) those contained in the General Plan to address specific community concerns and issues. In some instances, the MVCP relies entirely upon the General Plan to address certain issues which are not unique to the MVCP area and which are more appropriately addressed in the broader context in the General Plan. The land use designations set forth in the land-use map for the MVCP are consistent with, and are designed to implement, the goals, policies, and programs set forth in the General Plan. Policies in the General Plan and the MVCP shall be construed in a manner that harmonizes and implements the policies set forth in both documents. If, in the context of a particular program or development proposal, a policy in the General Plan cannot be reconciled with a policy in the MVCP, then the policy in the General Plan shall govern. The project's consistency with relevant policies in the MVCP is addressed in Appendix G of this EIS/EIS/EIR.

## 4.2.2 EXISTING CONDITIONS/AFFECTED ENVIRONMENT

This section summarizes the existing land uses, designated land uses, and zoning designations of lands in the project area. Federal and state agencies with jurisdiction over the project do not have land use designations for lands under their oversight or management. For this reason, the maps only identify federal and state land boundaries. Any underlying land use designations are defined by local and regional jurisdictions and agencies.

Exhibit 4.2-2 depicts the jurisdictional land use boundaries of the Town of Truckee, Placer County, and TRPA. Maps detailing the land use designations for these jurisdictions are provided in Exhibits 4.2-3, 4.2-4, and 4.2-5.

## EXISTING LAND USES AND DESIGNATIONS

### EXISTING 625 LINE

#### Land Uses

The existing 625 Line is located entirely within the unincorporated area of northeastern Placer County and generally follows an existing, partially-paved road (the Fiberboard Freeway) that is utilized for recreational and forestry-related activities. Approximately 13.4 miles of the approximately 15-mile-long power line is located on land managed by the USFS. The remaining portion of the line is located on state-owned lands within Burton Creek State Park and privately-owned land (Sierra Pacific 2010). See Exhibit 3-2 in Chapter 3, Project Alternatives.

One terminus of the existing 625 Line is at the Kings Beach Substation (end of Segment 625-10), which is located within the Kings Beach Diesel Generation Station, and situated north of the intersection of Deer Street and Speckled Avenue in Kings Beach. The area surrounding the Kings Beach Substation is forested and contains dispersed recreation facilities. From the station, the line heads in a northerly direction, until the end of Segment 625-10. Single-family homes are located west of the line in this section, and forested NFS land to the east. At the start of Segment 625-9, the line turns west and spans SR 267 at approximate the start of Segment 625-8. This portion of the line is located within forested areas of the USFS, LTBMU. The area is undeveloped, except for dirt access roads and recreational trails (Sierra Pacific 2010).

From the intersection with SR 267, the existing 625 Line heads southwest and continues across NFS lands through Segments 625-6 and 625-5. The nearest development in these segments is the Northstar-at-Tahoe Resort, located north of the existing 625 Line. Segment 625-4 and a portion of Segment 625-3 pass through NFS lands managed by the Tahoe National Forest. The line then heads south through NFS lands managed by the USFS, LTBMU in Segment 625-3, and turns east in Segment 625-2, with a few power poles within the limits of the

southern boundary of Burton Creek State Park for approximately 0.5 mile. A portion of the line ROW encroaches into Burton Creek State Park and there are several poles within the park boundaries. From this location, the 625 Line turns to the south and continues through the NFS land. This entire portion of the existing 625 Line travels through forested USFS land that is undeveloped, except for dirt roads and recreational trails (Sierra Pacific 2010).

After spanning SR 89 and the Truckee River at the start of Segment 625-1, the line turns in a northeasterly direction and parallels the Truckee River until terminating at the Tahoe City Substation. This portion of the line is bordered by the Truckee River to the north and the USFS-owned 64 Acre Recreation Site, which is comprised of recreational trails, restrooms, picnic areas, public restrooms, and parking managed by the Tahoe City Public Utility District, to the south. The existing 625 Line terminates at the Tahoe City Substation located on the west side of SR 89, across from the Truckee River Outlet (Fanny Bridge). The area surrounding the power line and the Tahoe City Substation to the north and east is commercially developed with restaurants and tourism-related uses (Sierra Pacific 2010).

## Land Use Designations

The majority (approximately 80 percent) of the existing 625 Line is located within the regulatory jurisdiction of the TRPA, because of its location within the Lake Tahoe Basin. The remaining 20 percent of the power line is located in Placer County. Most of the land crossed by the existing 625 Line is designated as either Recreation or Conservation in the applicable TRPA PASs. Approximately 0.2 mile of the existing 625 Line near the Tahoe City Substation is within the Tahoe City Community Plan and is classified as Mixed Use. All of the applicable TRPA PAS classifications allow power lines under the provisions for a Special Use.

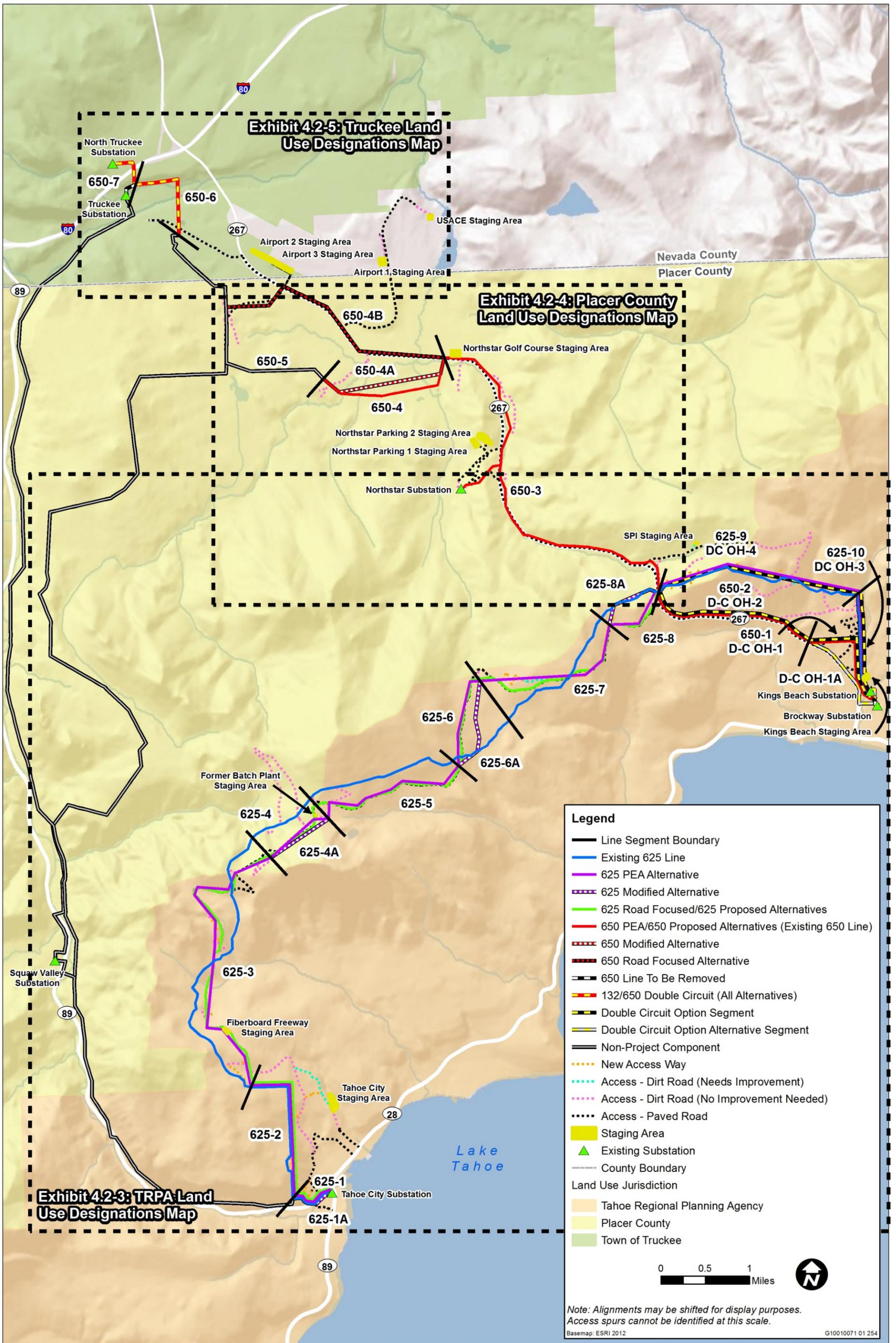
Two segments of the existing 625 Line – where the line spans SR 267 and just west of the Watson Creek Plan Area – are located within Placer County, but outside the boundary of the Lake Tahoe Basin, and thus outside of TRPA jurisdiction. The Placer County General Plan has designated the land use within these segments as Forest and Open Space along SR 267, and Agriculture/Timberland west of the Watson Creek Plan Area. These segments are zoned for Forestry (FOR), Timberland Production (TPZ), and Open Space (O). The allowed uses in the FOR, TPZ, and O zoning districts include growing and harvesting of timber and other forest products, agriculture and grazing, as well as public and commercial recreational uses. Power lines are listed as an allowed use in the FOR, TPZ, and O zoning districts.

## PROPOSED RELOCATED 625 LINE

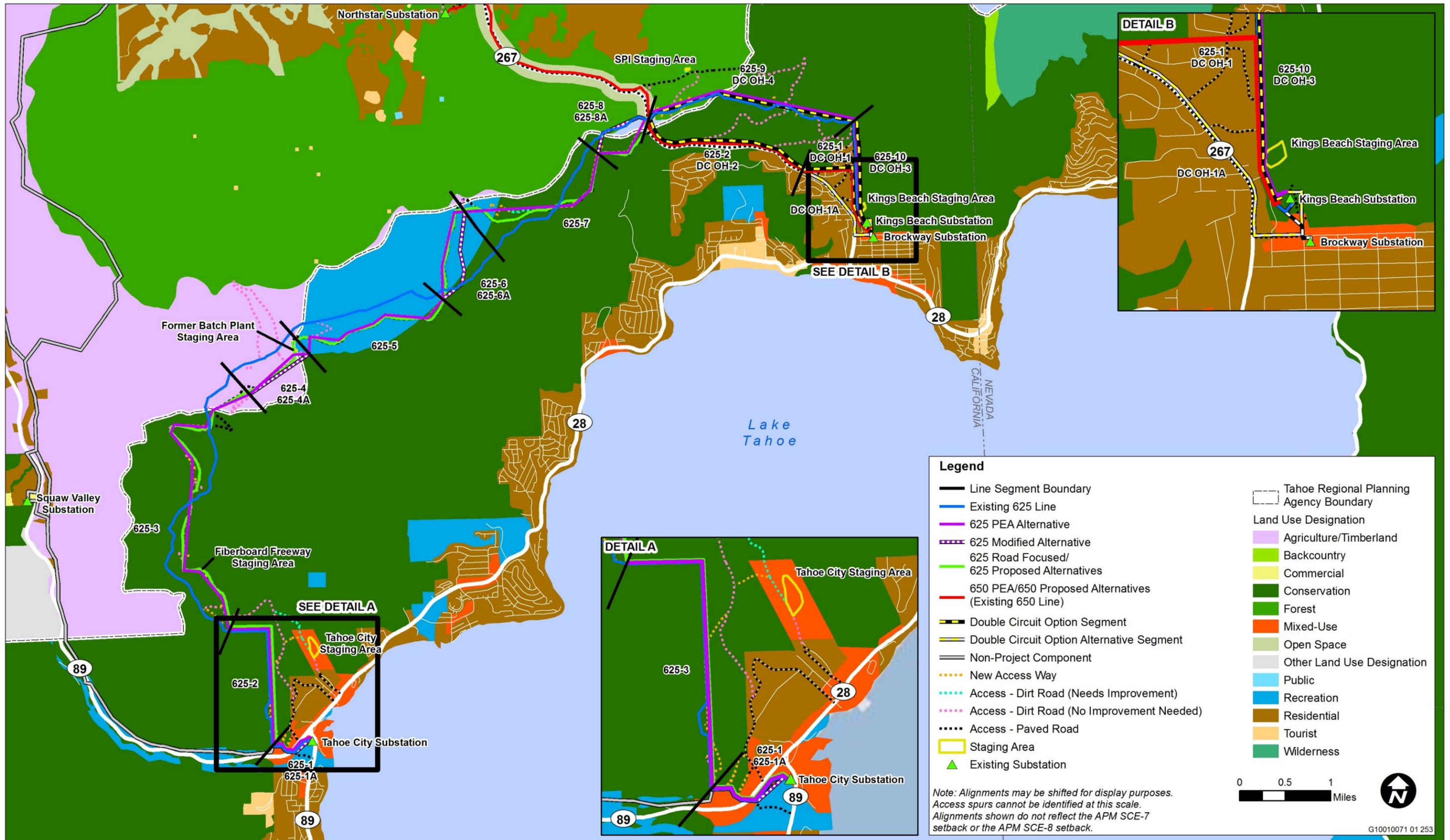
### Land Uses

The four action alternatives (Alternatives 1, 2, 3, and 4) all propose realigning the 625 Line to generally parallel the path of the existing 625 Line, except in Segments 625-9 and 625-10. Because the proposed relocated 625 Line would follow a similar alignment as the existing 625 Line in Segments 625-1 through 625-8 (albeit offset from its current alignment by up to 0.75 mile in some reaches [see Exhibit 4.2-1]), the same types of existing land uses are present (forest, conservation, and recreation). Single-family residences are located along the proposed 625 Line alignments in the same locations as the existing 625 Line (near both termini, where existing and proposed run coincident).

For Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), Segments 625-9 and 625-10 would generally follow the path of the existing 625 Line and would have the same types of existing land uses. For Alternative 2 (Modified Alternative) the difference is that in this case the line would be double circuited with the 650 Line in these segments. However, Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative) do not include Segments 625-10 and 625-9, as the 625 Line would be double circuited with the 650 Line on the existing 650 Line alignment that runs parallel to and east of SR 267 for this portion of the line. See the description for Segments 650-1 D-C OH-1/1A and 650-2 D-C OH-2, below.

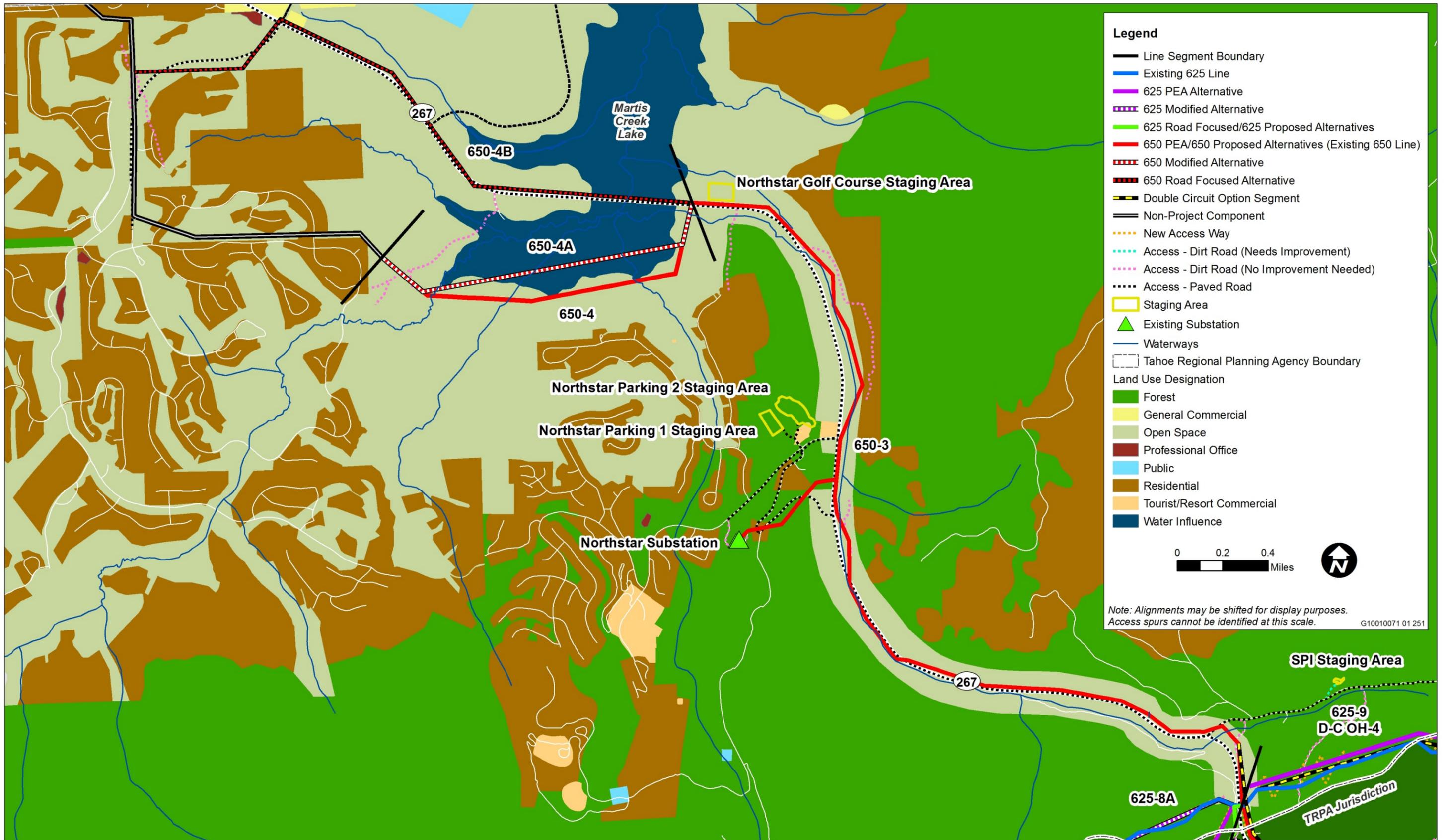


Source: Data received from Placer County, Tri Sage, and TRPA 2012; Adapted by Ascent Environmental in 2012



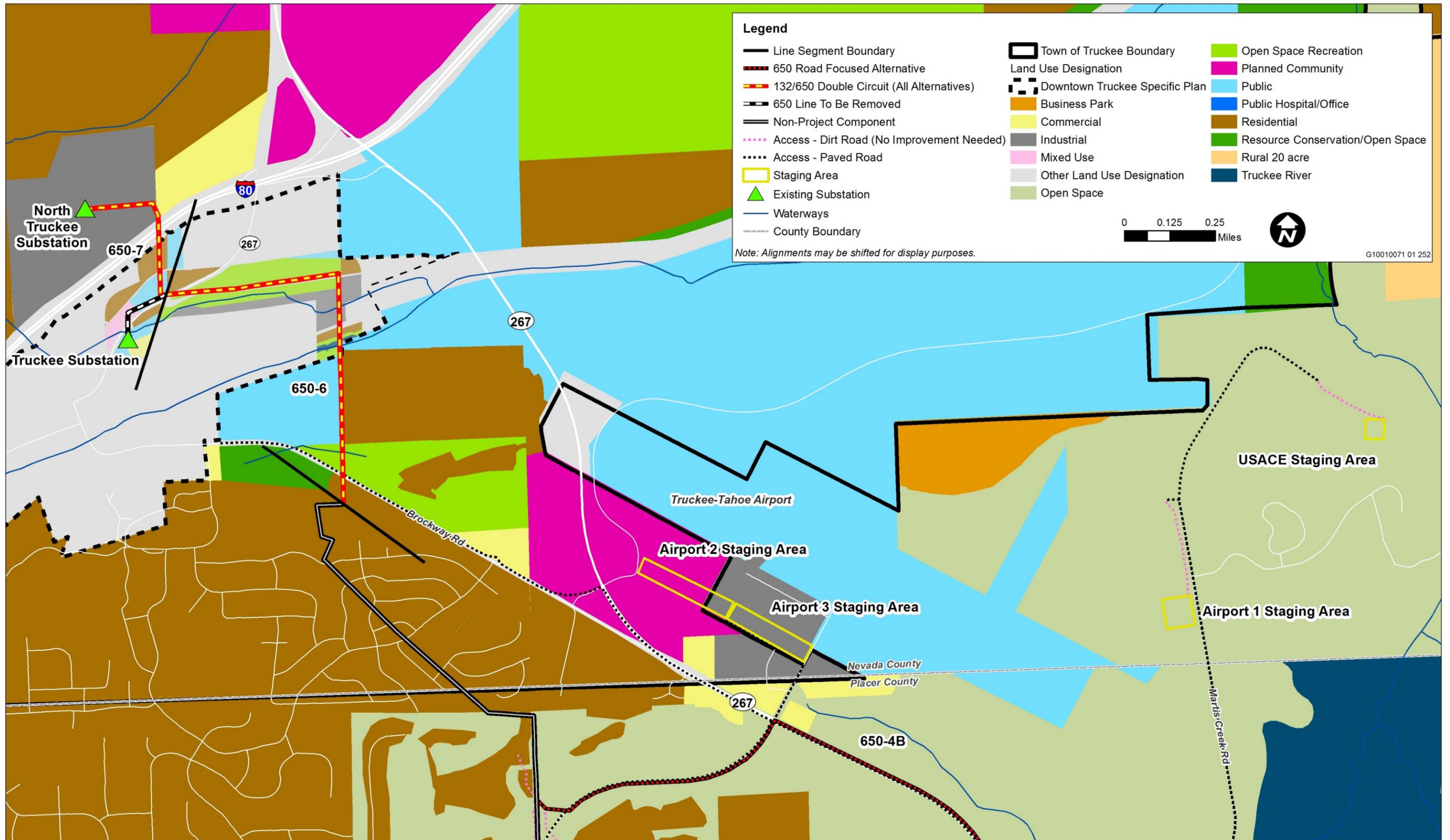
Source: Data received from TRPA and Tri Sage 2012; adapted by Ascent Environmental in 2012

Exhibit 4.2-3



Source: Data received from Placer County, TRPA, and Tri Sage 2012; adapted by Ascent Environmental in 2012

Exhibit 4.2-4



Source: Data received from Placer County and Tri Sage 2012; adapted by Ascent Environmental in 2012

Exhibit 4.2-5

## Land Use Designations

The action alternatives for the proposed relocated 625 Line are offset from the existing 625 Line in various segments. In Segments 625-1 and 625-2, the alternatives are the same as the existing 625 Line, and share the same land use designations and allowable uses. In Segments 625-3 through 625-8, the four action alternatives vary in location from the existing line, but all fall within the same TRPA land use designations and allowable uses (and Placer County Land Use Designations and Zoning for the portions outside TRPA jurisdiction). The proposed alternative alignments for the 625 Line would not cross any new Placer County land use designations and zoning or TRPA land use designations or Plan Areas that are not already crossed by the existing 625 Line alignment and discussed in the previous section.

## EXISTING 650 LINE

### Land Uses

The portion of the 650 Line to be upgraded begins at the end of Segment 650-4 and heads south then east through the USACE-managed Martis Creek Lake (see the discussion of the 132/650 Line Double-Circuit below for information on Segments 650-6 and 650-7). The line continues east then heads north, crossing SR 267 at the end of Segment 650-3. The line turns east, through an area generally known as the Martis Valley. Geographically, the area is primarily flat and lacks any significant development. The line then continues south and parallels SR 267 through Placer County for the remainder of Segment 650-3. The land surrounding SR 267 lacks significant commercial or residential development and is forested. The nearest housing or commercial development in Segment 650-3 is the Northstar-at-Tahoe Golf Course and Resort. In Segment 650-2, the line travels east, and passes through NFS land managed by the USFS, LTBMU before entering Kings Beach for the remainder of Segment 650-2 and all of Segment 650-1. In Segment 650-1, residential uses are clustered near the power line. The terminus of the existing 650 Line is at the Brockway Substation. The area around the Brockway Substation is located within a mixed industrial/commercial neighborhood, and is surrounded by single-family residences to the east, west, and south (Sierra Pacific 2010).

### Land Use Designations

The 650 Line traverses areas where land use is dictated by both Placer County and TRPA. From the end of Segment 650-4 to the end of Segment 650-2 (just past the Brockway Summit), the line is located within Placer County and is within the Martis Valley Community Plan Area. The general plan designation, as described in the community plan, is Open Space, which allows for low-intensity public and commercial recreational uses, as well as necessary public utility facilities.

From Brockway Summit to the terminus of the line at the Brockway Substation, the TRPA regulates land use in the Martis Peak Plan Area, the Kingswood East Plan Area, and the Kings Beach Industrial Community Plan Area. The TRPA Martis Peak PAS designates the land use as Conservation and the Kingswood East PAS designates the land use as Residential. The permitted uses include summer homes, and recreational uses such as campgrounds, snowmobile courses, and hiking trails. Power lines are allowed under the provisions for a Special Use (see Impact 4.2-1).

Additionally, Segments 650-3 and 650-4 pass through the Truckee Tahoe Airport Influence Area Boundary. The existing line passes through Compatibility Zones C, D, and E.

## PROPOSED 650 LINE

### Land Uses

Alternative 1 (PEA Alternative) and Alternative 4 (Proposed Alternative) would generally follow the path of the existing 650 Line along the entire alignment, and therefore would have the same types of existing land uses as described for the existing 650 Line, above. Alternatives 2 (Modified Alternative) and Alternative 3 (Road Focused

Alternative) would follow the same alignment as the existing 650 Line in Segment 650-3, and therefore the same types of existing land uses are located within that segment.

Alternative 2 (Modified Alternative) would deviate from the path of the existing 650 Line in Segments 650-1, 650-2, and 650-4A. In Segments 650-1 and 650-2, the line would be double-circuited with the 625 Line Segments 625-10 D-C OH-3 and 625-9 D-C OH-4. Existing land uses are described above for the Existing 625 Line. The area surrounding the Kings Beach Substation is forested and contains dispersed recreation facilities. As the line leaves the station, it heads in a northerly direction, until the end of Segment 625-10 D-C OH-3. Along this section, there are single-family homes located west of the line, and forested NFS land to the east. At the start of Segment 625-9 D-C OH-4, the line turns west and spans SR 267 at approximate the start of Segment 625-8. In Segment 650-4A, the line would be located approximately 0.25 mile to the north of the existing 650 Line, and generally would include the same types of land uses.

Alternative 3 (Road Focused Alternative) would deviate from the path of the existing 650 Line in Segments 650-1 and 650-4B. Two options are included for Segment 650-1. One option routes the 650 Line along the existing 650 Line pathway, but would double-circuit it with the 625 Line, as Segment 650-1 D-C OH-1. Land uses for this option would be the same in this segment as for the existing 650 Line. The second option would route the 650 Line along SR 267, as Segment 650-1 D-C OH-1A (Alternative). The land uses along SR 267 in this area are similar to the existing 650 Line with single-family residences located along SR 267 and Speckled Avenue. In Segment 650-4B, the line is located approximately 0.5 mile to the north of the existing 650 Line, and joins the existing line in Segment 650-5 further north, passing closer to the Truckee Tahoe Airport.

## Land Use Designations

Alternative 1 (PEA Alternative) would follow the general path of the existing 650 Line, entirely, and therefore would have the same types of land use designations as described for the existing 650 Line, above. Alternative 2 (Modified Alternative), Alternative 3 (Road Focused Alternative), and Alternative 4 (Proposed Alternative) would follow the same alignment as the existing 650 Line in Segment 650-3, and therefore the land use designations are the same.

Alternative 2 (Modified Alternative) would deviate from the path of the existing 650 Line in Segments 650-1, 650-2, and 650-4A. Under this alternative, Segments 650-1 and 650-2 would be double-circuited with 625 Line Segments 625-9 and 625-10 and would have the same land use designations as described for those segments above. In Segment 650-4A, the line would pass through land that is designated as Water Influence and Open Space. Additionally, Segments 650-3 and 650-4A would pass through the Truckee Tahoe Airport Influence Area Boundary, Compatibility Zones C, D, and E.

Alternative 3 (Road Focused Alternative) and Alternative 4 (Proposed Alternative) would deviate from the path of the existing 650 Line in Segment 650-1. Two options are included for Segment 650-1. One option would route the 650 Line along the existing 650 Line pathway, but in a double circuit with the 625 Line, as Segment 650-1 D-C OH-1. Land use designations in this segment are the same as for the existing 650 Line. The second option would route the 650 Line along SR 267, as Segment 650-1 D-C OH-1A. The TRPA land use designation in this segment is Residential. Under Alternative 3 (Road Focused Alternative), the line in Segment 650-4B would pass through land that is designated by Placer County as Water Influence and Open Space. Additionally, Segments 650-3 and 650-4B of Alternative 3 pass through the Truckee Tahoe Airport Influence Area Boundary, Compatibility Zones B1, C, D, and E.

## 132/650 LINE DOUBLE-CIRCUIT

### Land Uses

The segment of the existing 132 Line (Segment 650-7) that would be upgraded to accommodate a double circuit with the 650 Line, and the stretch that is already double-circuited but would be upgraded to accommodate a 120

kV capacity 650 Line (Segment 650-6), are located within the Town of Truckee. The 132 Line originates at the North Truckee Substation. The line runs east along Pioneer Trail Road and then turns south, crossing I-80. In this area, the line is surrounded by medium-density commercial and industrial developments, such as tire shops, repair businesses, and general office uses. The line then turns east and travels parallel to Glenshire Drive. This area contains many undeveloped parcels, as well as low-intensity industrial uses and materials storage yards. The 132/650 Line then turns south and crosses the Truckee River. The alignment continues along the easternmost edge of the Truckee River Regional Park, which includes ball fields, an amphitheater, a skate park, and rodeo grounds, among other recreation opportunities. Adjacent to this portion of the line on the west side of the ROW are residential uses (multi-family units). The line continues south through private open space to its termination at the intersection of Marc Trail and Chris Course at the northwest corner of the Village Green Mobile Home Park. In this area, the line spans the rear of a hotel parking lot then travels parallel to the backyards of five units at Village Green Mobile Home Park. Vacant land is located to the west of the line in this area (Sierra Pacific 2010).

## Land Use Designations

The 132/650 Line is entirely within the Town of Truckee and land uses are dictated by the Town of Truckee General Plan. Portions of the alignment, as it travels along Glenshire Drive and near downtown Truckee (Segments 650-7 and 650-6), are also located within the Downtown Specific Plan Area. From the beginning of the line at the North Truckee Substation to Glenshire Drive, the area is comprised of commercial and industrial uses consistent with the general plan designation of Industrial (I). As the alignment travels south, the land is General Plan-designated Residential and Public. The line travels east along Glenshire Drive and then south, crossing the Truckee River. This area is designated as Open Space Recreation, Industrial, Public (Truckee River Regional Park), and Residential. The line continues south crossing Brockway Road then continues to the termination of the line. The line passes through parcels that are designated Residential in the General Plan.

Additionally, Segments 650-6 and 650-7 pass through the Truckee Tahoe Airport Influence Area Boundary, Compatibility Zones C and D.

## NORTHSTAR TAP/FOLD

### Land Uses

The Northstar Tap/Fold begins at the Northstar Substation, located at the end of Stable Road in the Northstar-at-Tahoe Resort area. This 0.5-mile-long section of line generally traverses forested areas adjacent to an existing dirt road. There is limited commercial development located to the north. In addition, a horse stable and riding ring are crossed by the existing Northstar Tap near the line's terminus at the Northstar Substation (Sierra Pacific 2010).

### Land Use Designations

Land use along the Northstar Fold is located in Placer County. The parcels traversed by the line are designated Forest, Residential, and Open Space.

## BROCKWAY SUBSTATION

### Land Uses

The Brockway Substation is located in Kings Beach at the intersection of Speckled Avenue and Deer Street. This substation is the current terminus of the existing 650 Line. The substation is located in a mixed-use neighborhood, with an industrial use located to the east of the substation and single-family residences located to the north, west, and south (Sierra Pacific 2010).

### Land Use Designations

Land use in and around the Brockway Substation is regulated by TRPA and guided by the Kings Beach Industrial Community Plan, which sets forth land use designations and permissible uses. Land uses in this area are

designated as Commercial/Public Service. Power lines and substations are allowed under the Special Use provisions of the Kings Beach Industrial Community Plan (see Impact 4.2-1).

## **NORTHSTAR SUBSTATION**

### **Land Uses**

The Northstar Substation is located on Northstar Drive in Placer County. This substation is the current termination point for the Northstar Tap, which would be upgraded to a fold as part of the project. The substation is surrounded by forested area to the north, south, and west. A riding stable (Northstar Stables) is located to the northeast of the substation. Approximately 25 single-family residences are located 450 feet west of the Northstar Substation (Sierra Pacific 2010).

### **Land Use Designations**

Land use around the substation is designated by the Placer County General Plan as Forest and has a zoning designation is FOR-B-X-160. The FOR zoning classification designates the area as Forest and the B-X is a combining district designation that defines the minimum buildable lot size, in this case 160 acres. Allowed uses in the FOR-B-X zoning district include forestry and timber-related uses, grazing, and recreation. Power lines and public utility facilities are allowed uses.

## **SQUAW VALLEY SUBSTATION**

### **Land Uses**

The Squaw Valley Substation is located at the intersection of Squaw Valley Road and SR 89. A small, commercial center is located to the east of the site, Squaw Valley Academy is located to the southwest, and forested land is located to the northwest and north (Sierra Pacific 2010).

### **Land Use Designations**

Land use surrounding the substation is designated Conservation Preserve and zoned Forest Recreation by the Placer County General Plan. Allowed uses include public utility structures.

## **TAHOE CITY SUBSTATION**

### **Land Uses**

The Tahoe City Substation is located near the intersection of Westlake Boulevard/SR 89 and Tahoe Tavern Road. This substation is the current termination point for the existing 625 Line. The Bridgetender restaurant is located to the north of the Tahoe City Substation and forested, undeveloped parcels are located to the south. The Truckee River and the 64 Acre Recreation Site is located to the west and commercial and tourism-related uses are located to the east.

### **Land Use Designations**

The substation site is within the jurisdiction of the TRPA and is subject to the land use regulations of the Tahoe City Community Plan. The Community Plan divides the greater Tahoe City area into five Special Areas that are characterized by their location and level and type of development. The Tahoe City Substation site is classified as Commercial/Public Service and is located in Special Area 3. Power lines and substations are allowed under the Special Use provisions of the Community Plan (see Impact 4.2-1).

## TRUCKEE SUBSTATION AND NORTH TRUCKEE SUBSTATION

### Land Uses

The Truckee Substation serves as one terminus of the 650 Line. The substation is located near the intersection of Donner Pass Road and Church Street in the Town of Truckee. The Truckee Substation site is relatively flat and is surrounded by Trout Creek to the north, Truckee Tahoe Lumber to the east, Union Pacific Railroad land to the south, and historic residences to the west.

The North Truckee Substation is located on Pioneer Trail Road, just south of Comstock Drive, and would serve as a terminus of the 650 Line upon completion of the project. The substation is surrounded by commercial and industrial uses to the south and east. A cement manufacturing plant is located to the north and undeveloped forested parcels are located to the west (Sierra Pacific 2010).

### Land Use Designations

The Truckee Substation is designated as Public by the Town of Truckee General Plan and is zoned Public Facilities (PF). Auxiliary uses required to meet the needs of the town, such as public parks and other facilities, schools, and government offices, are allowed. Electric utility facilities are allowed with a Use Permit.

The North Truckee Substation is located within the Town of Truckee. The Town of Truckee General Plan designates the land as Industrial and the zoning as Manufacturing/Industrial (M). Allowed uses include processing, distribution, and storage facilities. Electric utility facilities are allowed in the M zoning district with a Use Permit.

## KINGS BEACH SUBSTATION

### Land Uses

The Kings Beach Substation is located inside the Kings Beach Diesel Generation Facility property, just north of the intersection of Speckled Avenue and Deer Street in Kings Beach. The substation is accessed via a private road north of Deer Street and is entirely surrounded by undeveloped and forested parcels (Sierra Pacific 2010).

### Land Use Designations

The Kings Beach Substation is located on an approximately 20-acre parcel within TRPA jurisdiction. The site is located partially within the Kings Beach Industrial Community Plan, and partially within the Martis Peak Plan Area. The existing substation and diesel generating facility are located within the Martis Peak Plan Area. The land use classification for the site as designated in the Martis Peak PAS is Conservation and the list of permissible uses per the PAS includes camping, off-road vehicle uses, public services, timber harvesting, and summer homes. Power lines are allowed under the Special Use provisions of the PAS. However, "Public Utility Center," the use definition that includes substations, is not an allowable use as defined in the PAS. See Impact 4.2-1 for a discussion of this issue.

## STAGING AREAS

To support construction, the applicant has identified 12 possible staging areas. These staging areas are depicted on Figures 4.2-2 through 4.2-5 and are described further in the following paragraphs. The same staging areas are being considered for each action alternative, and all of the staging areas evaluated may not be required. The Northstar Golf Course and SPI staging areas would only be used if an agreement can be reached with the landowner. Additionally, only one of the Airport 1, Airport 2, Airport 3, and USACE staging areas would be used, if an agreement can be reached with a landowner. All four are evaluated because it is unclear at this time which, if any, might ultimately become available.

## Tahoe City

The proposed Tahoe City Staging Area is located approximately 1 mile north of the Tahoe City Substation and is accessed by an existing dirt access road from Jackpine Street in Tahoe City. This staging area would be used as a helicopter landing zone and for material storage and staging. This approximately 600-foot by 250-foot area is previously disturbed and covered with gravel. The primary vegetation type of the surrounding area is mixed conifer woodland. The site was used as a staging area and helicopter landing zone for the recent 629 Line upgrade (line extending along SR 89 from Squaw Valley to Tahoe City). Use of the site for staging would require installation of temporary fencing, but no other improvements would be required to prepare this staging area for use. The site is located in the Tahoe City Industrial Plan Area. The applicable PAS classifies the land as Commercial/Public Service and permissible uses include storage yards, warehousing, building materials and hardware storage, and industrial services.

## Fiberboard Freeway

The proposed Fiberboard Freeway Staging Area is located approximately 200 feet east of the proposed rerouted 625 Line alignment near Segment 625-3 and is accessed from the Fiberboard Freeway. This staging area would be used to store and stage material and equipment, and for vegetation removal related to the project. This approximately 200-foot by 100-foot area is previously disturbed but has some vegetative cover.

The staging area is located on lands where the allowed uses are designated by TRPA within the Burton Creek Plan Area. The staging area is designated Conservation, which allows for a range of low to moderate uses, including timber harvesting, wildlife management, grazing of livestock, and recreation. A staging area is an allowed use by the TRPA provided it is temporary, would not contribute to stormwater pollution, and would not contribute to visual impacts.

## Former Batch Plant

The proposed Former Batch Plant Staging Area is located just off the Fiberboard Freeway near Segment 625-4. This staging area would be used to store and stage material and equipment, and may also be used for logging activities related to the project. This approximately 120-foot by 80-foot area is previously disturbed and supports little natural vegetation. This staging area is located within the jurisdiction of the TRPA and the land use designation and allowed uses are described in the Northstar PAS. The site is designated Recreation, and utility facilities, timber management, and accessory structures are allowed uses. A staging area is an allowed use by the TRPA, provided the staging area is temporary in nature, is constructed with the proper BMPs to avoid increased stormwater pollution, and has no visual impacts.

## Kings Beach

The Kings Beach Staging Area is located just north of the Kings Beach Substation and is accessed using an existing dirt access road located at the end of Canterbury Drive. This location was formerly used as a landfill and as a result, has a previously disturbed area that measures approximately 300 feet by 300 feet. This staging area is located within the jurisdiction of the TRPA and the land use designation and allowed uses are described in the Martis Peak PAS. The Martis Peak PAS designates the land as Conservation and the list of permissible uses include camping, off-road vehicle uses, public services, timber harvesting, and summer homes. A staging area is allowed by the TRPA provided the staging area is temporary in nature, is constructed with the proper BMPs to avoid increased stormwater pollution, and has no visual impacts.

## SPI

The Southern Pacific Industries (SPI) Staging Area would be used for material and equipment storage, as well as equipment staging. Most of this site has been previously disturbed. Use of the 0.6 acre site would require vegetation clearing, improvement to an existing dirt access road and new access way, and installation of temporary construction fencing. The staging area would be located north of Segment 625-9/DC OH-4 and east of 650-3 on land designated Forest in the Martis Valley Community Plan and zoned Forestry by Placer County.

### **Northstar Parking 1**

The 3.5 acre Northstar Parking 1 staging area would be located in Northstar-at-Tahoe's paved Castle Peak Park and Ride lot off of Northstar Drive on land designated Forest in the Martis Valley Community Plan and zoned Forestry by Placer County.

### **Northstar Parking 2**

The Northstar Parking 2 staging area would also be located in Northstar-at-Tahoe's Castle Peak Park and Ride lot, east of the Northstar Parking 1 staging area on land designated Forest in the Martis Valley Community Plan and zoned Forestry by Placer County.

### **Northstar Golf Course**

The Northstar Golf Course Staging Area is located just north of SR 267 and the Northstar Golf Course, and is accessed by a dirt road located approximately 1.4 miles southeast of Martis Creek Road. This approximately 300-foot by 300-foot staging area would be used to store materials and stage equipment. The site is located within Placer County and is owned by the Truckee Tahoe Airport District. The site is General Plan-designated Open Space and is zoned O. Allowed uses include storage as an accessory use.

### **Airport 1**

This approximately 4 acre staging area would be located on airport property in Nevada County, immediately west of Martis Creek Road. Nevada County has designated this area as Open Space. Low intensity land uses consistent with the purpose of providing protected open space are permitted in this district. This staging area would be used as a helicopter landing zone and for material storage and equipment staging.

### **Airport 2**

The Airport 2 Staging Area would be located on undeveloped property northeast of Segment 650-4 and SR 267. The staging area would be south of the airport and parallel to the runway. This approximately 8 acre staging area would be used as a helicopter landing zone and for material storage and equipment staging. The Airport 2 Staging Area would be partially located on land designated Planned Community in the Town of Truckee, and partially on land designated Industrial by Nevada County. Staging areas are consistent with Nevada County's Industrial districts.

### **Airport 3**

The Airport 3 Staging Area would be located on undeveloped airport property in Nevada County. Nevada County has designated the area as Industrial. This staging area would be used as a helicopter landing zone and for material storage and equipment staging. Staging areas are consistent with Nevada County's Industrial districts.

### **USACE**

The USACE staging area would be located on less than 2 acres of land designated as Open Space in Nevada County. Low intensity land uses consistent with the purpose of providing protected open space are permitted in this district. The entire site has been previously disturbed. This staging area would be used as a helicopter landing zone and for material storage and equipment staging.

## 4.2.3 ENVIRONMENTAL CONSEQUENCES AND RECOMMENDED MITIGATION MEASURES

### SIGNIFICANCE CRITERIA

#### TRPA CRITERIA

The “Land Use” criteria from the TRPA Initial Environmental Checklist (IEC) were used to define the land use topics for evaluation. As described in Section 4.1.1, the purpose of the TRPA IEC is primarily to determine if an EIS is required and to help define the topics to be evaluated in greater detail. While many of the IEC checklist questions are conducive for use as significance criteria (that is, they include a defined standard, qualitative or quantitative), many are not, such as those for land use. The checklist asks whether the project would result in the following conditions.

- ▲ Include uses which are not listed as permissible uses in the applicable Plan Area Statements and adopted Community Plans?
- ▲ Expand or intensify an existing non-conforming use?
- ▲ Propose uses inconsistent with applicable goals and policies of the TRPA Regional Plan, and applicable Plan Area Statements and Community Plans?

The analysis of these issues herein identifies whether these conditions of plan compliance or non-compliance would occur under the action alternatives, but also assesses whether and to what degree the alternatives would result in incompatible land uses or land use conflicts.

#### NEPA CRITERIA

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the TRPA and CEQA criteria used for this analysis.

#### CEQA CRITERIA

In accordance with Appendix G of the State CEQA Guidelines, an alternative was determined to result in a significant impact related to land use if it would:

- ▲ physically divide an established community;
- ▲ conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- ▲ conflict with any applicable habitat conservation or natural community conservation plan.

### ISSUES DISMISSED FROM FURTHER EVALUATION

To physically divide an established community, a project must introduce or expand an element that creates a hindrance to safe and efficient movement throughout the community. An example of a type of project that could physically divide an established community is a new highway or railroad that passes through a community. These types of projects may hinder safe pedestrian and bicycle crossings and create a real or perceived

disconnection in the community. Utility lines are not inherently divisive features, as they are either located overhead or below ground, and do not hinder travel in a community. Additionally, these features are predominant in developed areas. Proposed access ways that would accommodate access to the power poles for inspection and maintenance purposes would be located in forested areas and would not divide an established community (Exhibits 3-4a, 3-4b, 3-4c, and 3-4d). The proposed substation improvements would occur within the boundaries of existing facilities, and as such, these improvements would not create a hindrance to safe and efficient movement through any community affected by the project. Because the project components associated with all of the action alternatives are not of the nature that would divide an established community or restrict safe and efficient movement, this significance criterion is not addressed further in this section.

As discussed in Section 4.7, Biological Resources, none of the action alternatives would be constructed within an area covered under an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state conservation plan. Therefore, project implementation would not conflict with the provisions of an adopted conservation plan and this issue is not evaluated further.

## METHODS AND ASSUMPTIONS

The land use analysis involved a review of various federal, state, city, county, and regional land use plans, policies, and regulations. Land use and policy information from Placer County, TRPA, and Town of Truckee official websites was reviewed. The land use analysis also included a review of applicable general plan maps covering the project area. Land use-related Geographic Information System (GIS) data was obtained from the Placer County Planning Department, TRPA, and the Town of Truckee, and was used to verify jurisdictional information collected. A review of USACE, USFS, and California State Parks plans was performed to confirm jurisdictional boundaries and identify applicable management practices and standards.

## ALTERNATIVE 1 – PEA ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.2-1 (Alt.1)</b>	<p><b>Introduce uses not listed as permissible in the PAS or Community Plan, expand or intensify an existing non-conforming use such that substantial land use conflicts or incompatibility would occur.</b> All components of Alternative 1 (PEA Alternative) are listed as permissible in the applicable PASs and Community Plans, except the existing distribution underbuild on the 625 Line within the Lower Truckee (003) PAS and the proposed upgrade of the Kings Beach Substation in the Martis Peak (019) PAS. The existing distribution underbuild in the Lower Truckee (003) PAS is a non-conforming use, but the relocation of the underbuild to the upgraded power poles would neither expand nor intensify this use, because the distribution underbuild would simply be moved to the new poles—the capacity, conductor, and related infrastructure would not be altered. The proposed amendment to the Martis Peak (019) PAS would add “Public Utility Center” to the list of permissible uses, would accommodate the expanded substation in the most appropriate location (in the location of the existing substation and more distant from the residential area than would otherwise be allowed), and would allow the decommissioning of the Brockway Substation. The proposed access ways would be accessory to the power lines.</p>
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Alternative 1 (PEA Alternative) includes uses that are listed as both “allowable” and “special” by TRPA Code. The findings in Subsection 21.2.1 of the TRPA Code can be made for those project components defined as special uses in the applicable PAS/Community Plan. Therefore, because Alternative 1 (PEA Alternative) components would be permissible with the adoption of the amendment to the Martis Peak (019) PAS and necessary special use findings could be made, Alternative 1 (PEA Alternative) would not expand or intensify an existing non-conforming use. This would be a **less-than-significant** impact.

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All components of Alternative 1 (PEA Alternative) are listed as permissible in the applicable PASs and Community Plans, except the existing distribution underbuild on the 625 Line within the Lower Truckee (003) PAS and the proposed upgrade of the Kings Beach Substation in the Martis Peak (019) PAS to allow the decommissioning of the Brockway Substation. The regulations that govern permissible uses are contained in Chapter 21 of the TRPA Code and summarized above in Section 4.2.1, Regulatory Setting.

Each of the project components falls within a permissible use category defined in Table 21.4-A, List of Primary Uses and Definitions, in Chapter 21 of the TRPA Code. The project components and their respective primary use category are listed in Table 4.2-1 below. Note that access ways are defined as accessory uses, as described below, and as such are not listed in Table 4.2-1.

Project Component	Chapter 21 Primary Use Category
Substation	Public Utility Center
Power Line	Pipelines and Power Transmission
Underbuild (Distribution or Communications Lines)	Transmission and Receiving

Components of Alternative 1 (PEA Alternative) are located within nine PASs and two Community Plans. Each PAS is assigned one of five land use classifications: conservation, recreation, residential, commercial and public service, and tourist accommodation. Each land use classification specifies categories of permissible uses and identifies them as either an “Allowable” (A) or “Special” (S) use. Any use not listed is considered either prohibited or non-conforming. Table 4.2-2 lists the applicable PASs and Community Plans and identifies whether the relevant primary use categories for the project are permissible, as well as whether they are allowable or special uses. The existing substations and proposed substation improvements within the Lake Tahoe Basin are limited to parcels within the Kings Beach Industrial Community Plan (Brockway Substation); Martis Peak (019) PAS (Kings Beach Substation); and the Tahoe City Community Plan (Tahoe City Substation). As such, Table 4.2-2 only identifies permissible uses for Public Utility Centers in these planning documents.

Plan Area Statement/ Community Plan		Land Use Classification <sup>1</sup>	Primary Use Categories		
			Public Utility Center	Pipelines and Power Transmission	Transmission and Receiving Facilities
N/A	Tahoe City Community Plan (Special Area #3)	Commercial/Public Service	S	S	S
174	64 Acre Tract	Recreation	S	S	S
003	Lower Truckee	Recreation	S	S	N/A <sup>2</sup>
004	Burton Creek	Conservation	N/A	S	S
001B	Tahoe City Industrial	Commercial/Public Service	A	S	S
015	North Star	Recreation	N/A	S	S
013	Watson Creek	Conservation	N/A	S	S
019	Martis Peak	Conservation	N/A <sup>2</sup>	S	S
025	Kingswood East	Residential	S	S	S
027	Woodvista	Residential	S	S	S
N/A	Kings Beach Industrial Community Plan	Commercial/Public Service	S	A	A

Abbreviations: A = Allowable, S = Special, N/A = Not Applicable/Prohibited Use  
<sup>1</sup> Each PAS is assigned one of five land use classifications: conservation, recreation, residential, commercial and public service, and tourist. Classification descriptions are contained in Section 11.6.2 of the TRPA Code.  
<sup>2</sup> The Kings Beach Substation and the underbuild on the existing 625 Line are legally existing non-conforming uses.  
 Source: TRPA and Placer County 1996a, 1996b; TRPA 2012.

Table 4.2-2 shows that the proposed uses that are permissible are classified as either allowable or special uses with the exception of the upgrade of the Kings Beach Substation in the Martis Peak (019) Plan Area and the underbuild on the existing 625 Line in the Lower Truckee (003) Plan Area. As defined in Subsection 21.2.1 of the Code, allowed uses are appropriate for the specified area, may be permitted, and assumed to be compatible with the direction of the Regional Plan and surrounding land uses. Special uses, however, require that the findings under Subsection 21.2.2 of the Code be made by TRPA. The proposed uses subject to special use findings are not new uses, but rather upgrades to existing uses. As described in Chapter 3, Project Alternatives, the findings supporting these special uses are incorporated into a separate Findings document for consideration by the TRPA Governing Board and are summarized as follows.

- ▲ *Adding public utility centers as a permissible use in PAS 019 would make the existing substation located on the diesel generator property a conforming use, and would allow transfer of the functions currently provided by the Brockway Substation in the Kings Beach Industrial Community Plan to this property, thereby allowing its decommissioning.*
- ▲ *Reconstruction of the substation would result in the consolidation of electrical facilities within one secure compound area, out of view from the general public.*
- ▲ *The proposed PAS amendment is consistent with the goals of the Land Use and other elements of the TRPA Goals and Policies Plan which does not contain any specific restrictions on placement of public utility centers in conservation plan areas, such as PAS 019. A similar public utility center facility (a substation) exists in PAS 095 (Trout/Cold Creek) located on the south shore of Lake Tahoe near the old Meyers landfill site. PAS 095 is also a Conservation Plan Area, and Public Utility Centers are listed as a special use in PAS 095.*
- ▲ *Based on the Initial Environmental Checklist prepared for the plan area statement amendment, there are no significant environmental impacts associated with the new land use, and no impacts that would exceed environmental threshold carrying capacities.*
- ▲ *Adding a new public service land use to the Plan Area would not diminish the standards for air and water quality because the amendment only affects an electrical distribution facility where water quality and air quality standards are currently applicable. There are no additional impacts to air or water quality associated with the proposed amendment, and all future projects will be required to meet appropriate air and water quality development standards.*
- ▲ *The proposed PAS amendment would not affect the ability of the Regional Plan to achieve and maintain the thresholds, as documented in the Initial Environmental Checklist and this EIS/EIS/EIR.*
- ▲ *The proposed amendment would be limited to developed, private property, which contains existing regional-serving electrical facilities within a secure, fenced compound. Most of the area affected by the amendment is high capability land and the proposed plan area amendment would prohibit new or expanded public utility center facilities on low capability land. The affected property is immediately adjacent to the Kings Beach Industrial Community Plan Area and is not isolated from other development. For security and public safety reasons, the affected property is closed to the public and is not suitable for recreation, non-intensive agricultural, or resource management uses for this reason.*
- ▲ *The proposed PAS amendment would add a new public service use (public utility centers) to a Conservation Plan Area and would not expand an urban boundary.*
- ▲ *The proposed amendment corrects an error that occurred at the time of adoption, specifically; the adopted PAS does not identify the existing, extensive, and essential regional electrical distribution system that exists within the boundaries of the Plan Area.*
- ▲ *The amendment is a public health and safety measure and there is no reasonable alternative to plan area amendment because: 1) it would consolidate electrical facilities onto one property, reducing the potential for trespass and vandalism; 2) the electrical compound would be much less visible to the public and less of a potentially attractive hazard; and 3) the construction of an expanded Kings Beach Substation within the boundaries of the Kings Beach Industrial Community Plan (and therefore in close proximity to nearby*

*residences) is unreasonable because a superior, more secure site is available that would consolidate electrical facilities onto one secure property, thereby improving efficiency.*

## **KINGS BEACH SUBSTATION**

### **Martis Peak (019) Plan Area Statement Amendment**

As described in Chapter 3, Project Alternatives, the proposed amendment to the Martis Peak (019) PAS would add “Public Utility Center” to the list of permissible uses and would allow construction of the expanded substation in the same location as the existing substation, which is approximately 430 feet north of the existing fence line and approximately 480 feet from the nearest residence (Exhibit 4.2-6). The substation rebuild would include 120 kV switches, two 120 kV/14.4 kV transformers, and 14.4 kV switchgear, plus the four relocated 14.4 kV distribution feeders which are currently above ground and would be placed underground, as described in Chapter 3, Project Alternatives. The proposed substation rebuild, with these elements, would allow removal of the existing equipment at the Brockway Substation, located within the residential neighborhood between Speckled Avenue and Cutthroat Avenue, just east of Deer Street. The determination of future site use has not yet been determined, but ownership would remain with CalPeco.

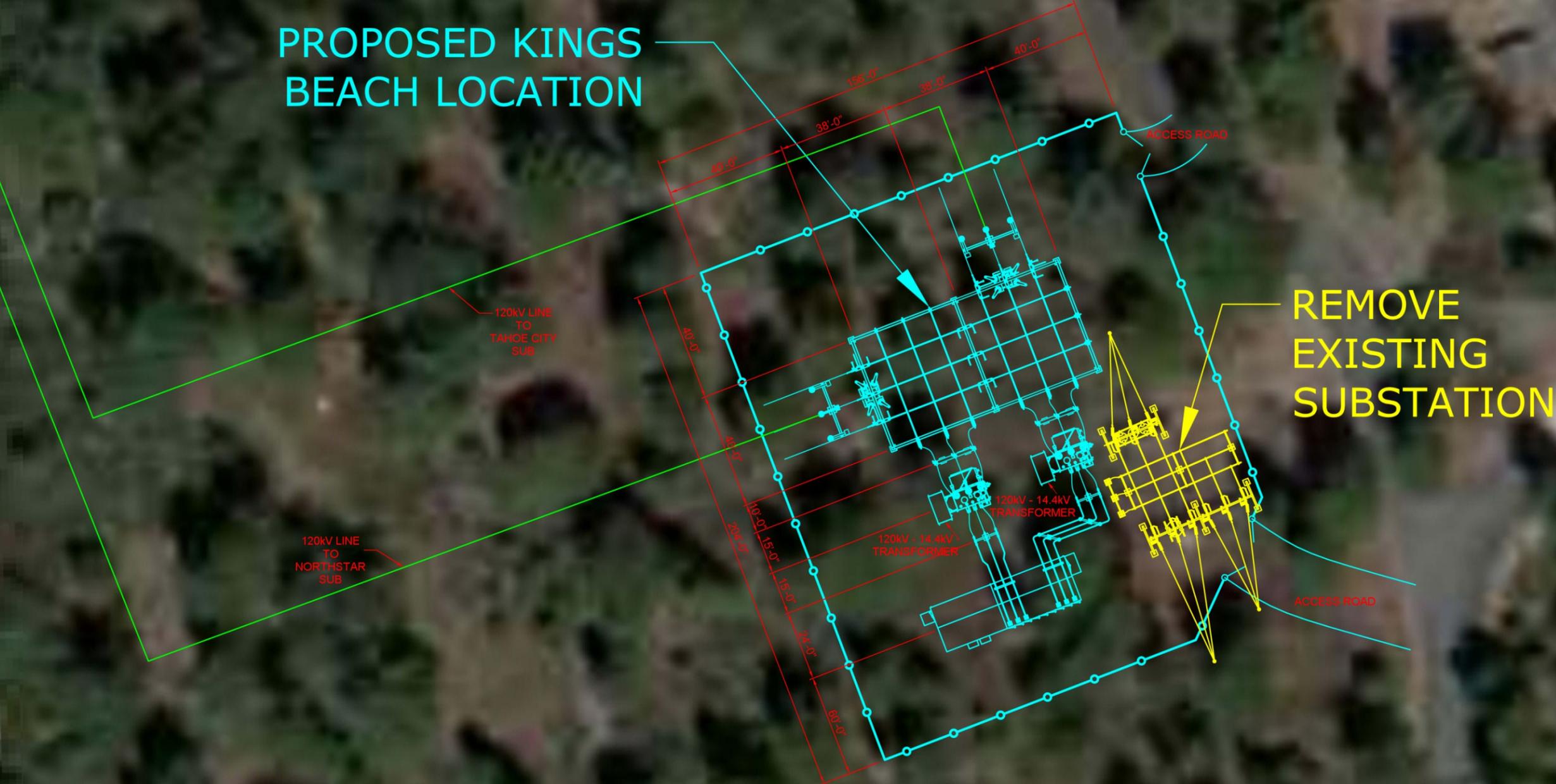
Absent the PAS amendment, the proposed Kings Beach substation improvements could be considered an upgrade and intensification of a legally existing non-conforming use, because of the increase in coverage at the site associated with the proposed improvements (see Section 4.5, Geology, Soils, Land Capability and Coverage). With the PAS amendment, proposed improvements at the Kings Beach Substation site would be consistent with the listed permissible uses. TRPA Governing Board adoption of the proposed PAS amendment requires TRPA to make the findings under Subsection 11.8.4.B of the TRPA Code.

### **Otherwise Permissible Kings Beach Substation Options**

As described in Chapter 3, Project Alternatives, the findings necessary to support a proposed PAS amendment include a finding that there are no reasonable alternatives. Consistent with this requirement, two alternative configurations for the Kings Beach Substation that would not require amendment of the Martis Peak (019) PAS were considered. These two alternatives would involve locating the Kings Beach Substation within the Kings Beach Industrial Community Plan Area, where “Public Utility Center”—the use category that includes substations—is a permissible use under the special use provisions of the Community Plan. The Kings Beach Industrial Community Plan Area is generally bounded by the northern boundary of the block of parcels north of Speckled Avenue, Cutthroat Avenue to the south, Secline Street to the west, and a few parcels of Coon Street to the east. It includes the southernmost portion of the Kings Beach Substation area, within the fence line at the northern terminus of Deer Street.

Under the first option, Option 1, the Kings Beach Substation facilities would be located in the Kings Beach Industrial Community Plan and a new access way would be located in the Martis Peak Plan Area. The substation rebuild, including the 120 kV switches, two 120 kV/14.4 kV transformers, and 14.4 kV switchgear would be constructed on parcel 090-041-006 (Exhibit 4.2-7). This parcel is owned by CalPeco and is within the Kings Beach Industrial Community Plan Area. The parcel would require alteration and expansion of the access roads to allow adequate access to the facility. With this option, the Brockway Substation would be decommissioned. To accommodate this, the footprint of the substation would be larger to accommodate the distribution functions that would be redirected from Brockway. Because of parcel size limitations and the addition of the functions currently served by Brockway, the substation layout would require the needed access way improvements to be outside the parcel, within the Martis Peak Plan Area (on parcel 090-090-029) and subject to the Martis Peak PAS. Although the new access road might be permissible as an accessory use, the Martis Peak PAS does not otherwise permit the construction of new roads.

# PROPOSED KINGS BEACH LOCATION



X10010071 01 014

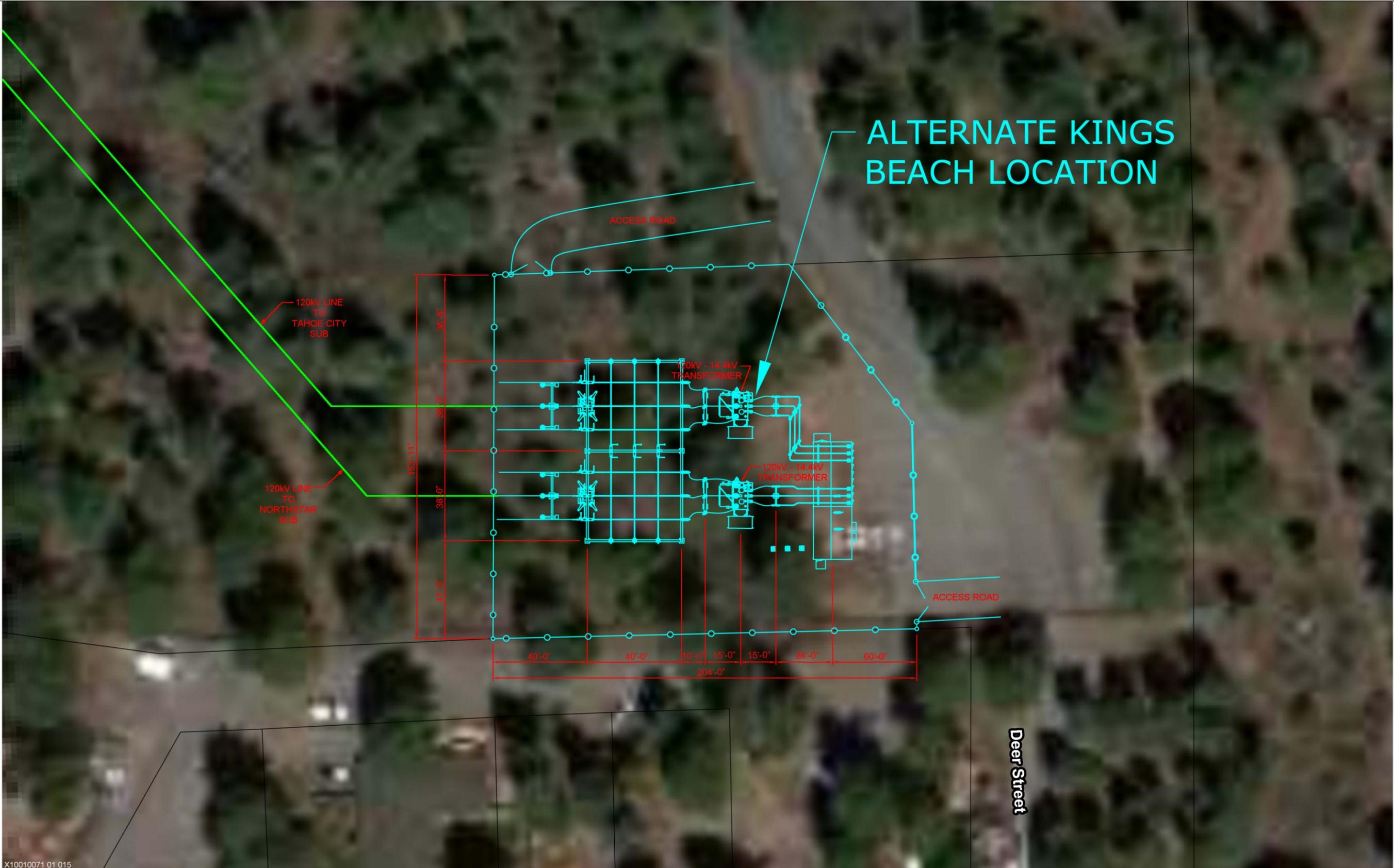
Source: adapted by Ascent Environmental 2013

Exhibit 4.2-6

Kings Beach Substation - Proposed Configuration



# ALTERNATE KINGS BEACH LOCATION



X10010071 01 015

Source: adapted by Ascent Environmental 2013

Exhibit 4.2-7

Kings Beach Substation - Option 1



This configuration would physically move the substation approximately 300 feet to the south (relative to the proposed option), and closer to the residences located south of the substation, approximately 50 feet from the nearest residence at the closest approach. The facility would be located just inside the fence line of the CalPeco property, and would be much more visually prominent from the end of Deer Street and parcels south, including residential properties, than from rebuild in its existing location. In addition, locating the substation closer to the neighborhood may render the corona noise (the low frequency hum and occasional cracking sound) audible to surrounding businesses and residences. Finally, as described in Chapter 3, Project Alternatives, CalPeco must locate certain equipment towards the interior of the property for the purposes of magnetic field reduction. Parcel number 090-041-006 is not large and even an interior location of certain equipment will result in the equipment being only 50 feet from the nearest residence.

A second option, Option 2, also involves constructing the substation on parcel 090-041-006, but would not have an access road through the Martis Peak Plan Area (Exhibit 4.2-8). Instead, the access way would be completely within the same parcel, within the Kings Beach Industrial Community Plan Area. With this configuration, there would not be sufficient space for the additional equipment that would be required to allow for the decommissioning of the Brockway Substation, as under the first option. Under this option, the Kings Beach Substation would include the 120 kV switches and one 120/60 kV transformer, but the parcel would not accommodate the 14.4 kV switchgear. As such, the Brockway Substation would need to remain operational in its current location to accommodate this function. The purpose of this option is to address the TRPA plan area statement compliance which, for full compliance would require all modifications to occur within the Kings Beach Industrial Plan area.

In addition, the existing distribution feeders would remain in their current overhead state. The existing 60 kV overhead line from the Kings Beach facility to Brockway Substation would remain primarily in its existing route but would need to have a new termination into the relocated substation site.

The same issues with regard to scenic prominence, noise, and inability to implement magnetic field reduction measures described for Option 1 would apply to Option 2, and the benefit of decommissioning of the Brockway Substation could not be realized. For these reasons, the rebuild of the Kings Beach Substation in its current location, and the amendment to the Martis Peak (019) PAS that would be required to accommodate it, is the proposed option included with the action alternatives.

## **DISTRIBUTION UNDERBUILD**

The Lower Truckee PAS does not list Transmission and Receiving facilities, which include the distribution underbuild component of the project, as a permissible use. Because the power line and underbuild were constructed before the effective date of the Regional Plan, the underbuild is permissible as a legally existing, non-conforming use (Section 21.5.1 of the TRPA Code). Section 21.5.2 of the TRPA Code states that an existing non-conforming use may not be expanded or intensified beyond the existing use on the effective date of the Regional Plan, however modifications to an existing non-conforming use may be permitted when they do not increase the extent of non-conformity as determined by TRPA. In accordance with Section 21.5.2, the relocation of the underbuild to the upgraded power poles would neither expand nor intensify this use, because the distribution underbuild would simply be moved to the new poles—the capacity, conductor, and related infrastructure would not be altered.

Access ways are considered an accessory to the power lines and substations. TRPA defines an accessory use as a “use, building or other facility customarily part of a primary use that is clearly incidental and secondary to the primary use, that does not change the character or the intensity of the primary use, and does not operate independently of the primary use” (Section 90.2 of the TRPA Code). Accessory uses are regulated in accordance with the primary use upon which they are dependent (Section 21.3 of the TRPA Code). Power lines cannot be operated and maintained without designated access roads. In addition, access ways do not change the character or intensity of the power lines and do not serve a purpose outside of access to the power lines for inspection and maintenance purposes. As such, access ways meet the TRPA definition of accessory use and the primary

uses are categorized as an Allowable or Special Use in all PASs and Community Plans (as described above) intersected by Alternative 1 (PEA Alternative) (see Table 4.2-2). Table 3-3 in Chapter 3, Project Alternatives, presents the extent of new or improved access ways for each alternative.

Because the proposed uses are permissible within all of the relevant PASs and Community Plans, or would be with adoption of the proposed Martis Peak (019) PAS amendment, the project would not expand or intensify a non-conforming use, and the special use findings under Subsection 21.2.2 can be made, this would be a **less-than-significant** impact.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.2-2 (Alt.1)</b>	<b>Consistency with land use plans, policies, and regulations.</b> Construction, operation, and maintenance of the project have the potential to result in conflicts with some of the policies or regulations adopted by relevant state, regional (i.e., TRPA), and federal agencies with jurisdiction over the project. However, Applicant Proposed Measures (APMs) (see Chapter 3, Project Alternatives) are included as part of the project. Appendix G of this document contains an analysis of the consistency of the project with all applicable policies adopted for the purpose of avoiding or mitigating an environmental effect, and references specific APMs, impact analyses, and mitigation measures that would preclude any policy conflicts, and reduce plan consistency impacts to <b>less-than-significant</b> levels.
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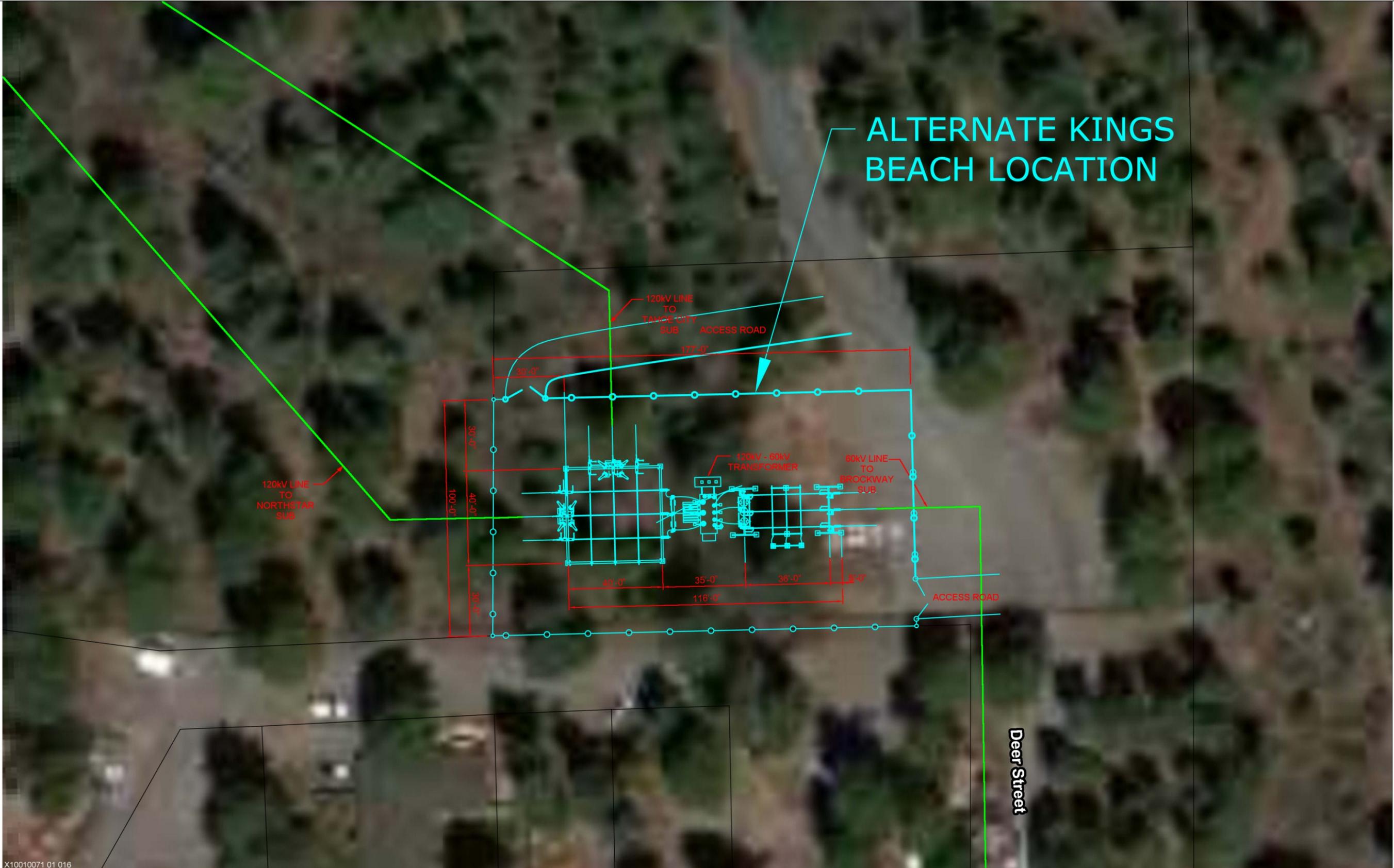
Agencies with jurisdiction over lands in the project area include the USFS (Tahoe National Forest and LTBMU), the USACE, TRPA, the California Department of Parks and Recreation, Nevada County, Placer County, and the Town of Truckee. Under Alternative 1 (PEA Alternative), the majority of the proposed upgrades to the 625 and 650 Lines would occur within an established utility corridor in which an existing 60 kV power line is currently located. The rerouted segments of the 625 Line west of SR 267 and straightened and setback segments east of SR 267 are limited to portions of the power line located on NFS land. As such, Alternative 1 (PEA Alternative) would not result in any changes in land use or zoning designations in Nevada County, Placer County, or the Town of Truckee. Similarly, the upgrades to that portion of the 625 Line that crosses Burton Creek State Park would involve reconstruction of the power line within the existing, expanded, easement.

Plans identified in Section 4.2.1, Regulatory Setting, include policies to protect people and the environment from project-related impacts. The table contained in Appendix G of this EIS/EIS/EIR discusses the project's consistency with specific goals, policies and objectives contained in these plans.

Projects that involve the siting and design of investor-owned public utility facilities (such as Alternative 1) are not subject to local land use plans, policies or regulations, because CPUC has sole and exclusive jurisdiction over these types of actions consistent with General Order No. 131-D. Consequently, Alternative 1 (PEA Alternative) would not conflict with any applicable local land use plan, policy, or regulation and as discussed above would not alter land uses regulated by local agencies.

Although the project would be exempt from local land use and zoning regulations and discretionary permitting, local agencies have been consulted regarding land use matters potentially affected by the project. The discussion of the project's consistency with local plans, policies, and regulations included in Appendix G is for informational purposes only.

# ALTERNATE KINGS BEACH LOCATION



X10010071 01 016

Source: adapted by Ascent Environmental 2013

Exhibit 4.2-8

Kings Beach Substation - Option 2



The General Order No. 131-D exemption from local agency regulation does not apply to relevant state, regional, and federal agencies with regulatory jurisdiction over the project. Relevant state, regional (i.e., TRPA), and federal plans and policies are discussed in Section 4.2.1, and Appendix G of this EIS/EIS/EIR summarizes project consistency with these regulations.

To reduce or avoid adverse environmental effects of the project, APMs (see Chapter 3, Project Alternatives) have been incorporated into the project as proposed project features. Further, for significant or potentially significant construction or operational impacts (that could also result in policy consistency conflicts), mitigation measures have been included in the applicable resource sections to reduce impacts (and policy conflicts) to less-than-significant levels.

With integration of all APMs into the project design and all mitigation measures identified in Sections 4.3, Forestry Resources through 4.14, Noise of this EIS/EIS/EIR, Alternative 1 (PEA Alternative) would not conflict with applicable state, regional, and federal plans and policies. Because the project would not conflict with relevant state, regional, and federal plans and policies, the impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 2 – MODIFIED ALTERNATIVE

### DIRECT AND INDIRECT EFFECTS

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<b>IMPACT 4.2-1 (Alt.2)</b>	<b>Introduce uses not listed as permissible in the PAS or Community Plan, expand or intensify an existing non-conforming use such that substantial land use conflicts or incompatibility would occur.</b> This impact would be the same as Alternative 1 (PEA Alternative). Like Alternative 1 (PEA Alternative), Alternative 2 (Modified Alternative) components would be permissible with the adoption of the amendment to the Martis Peak (019) PAS, and necessary special use findings could be made, and as such Alternative 2 (Modified Alternative) would not expand or intensify a non-conforming use. For these reasons, this impact would be <b>less than significant</b> .
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The impact and impact conclusion would be the same as that described for Alternative 1 (PEA Alternative) because the project components, their use categories, and the relevant PASs and Community Plans would all be the same. The rationale for making the special use findings would also be the same for Alternative 2 (Modified Alternative). This impact would be **less than significant**. Refer to the full discussion under Impact 4.2-1 (Alt. 1), above.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.2-2 (Alt.2)</b>	<b>Consistency with land plans, policies, and regulations.</b> Construction, operation, and maintenance of the project have the potential to result in conflicts with some of the policies or regulations adopted by relevant state, regional (i.e., TRPA), and federal agencies with jurisdiction over the project. However, APMs (see Chapter 3, Project Alternatives) are included as part of the project. Appendix G of this document contains an analysis of the consistency of the project with all applicable policies adopted for the purpose of avoiding or mitigating an environmental effect, and references specific APMs, impact analyses, and mitigation measures that would preclude any policy conflicts, and reduce plan consistency impacts to <b>less-than-significant</b> levels.
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The impact and impact conclusion for Alternative 2 (Modified Alternative) would be the same as that described for Alternative 1 (PEA Alternative), because the project components would all be the same. Applicable APMs and mitigation measures for this alternative would be different, in some cases, than those identified for Alternative 1 (PEA Alternative), based on variability of physical impacts for the power line alignments associated with this alternative. However, the APMs and mitigation measures identified in this EIS/EIS/EIR would address any potential conflicts with applicable state, regional, and federal plans and policies (Appendix G). Therefore, this impact would be **less than significant**. Refer to the full discussion under Impact 4.2-1 (Alt. 1), above.

### MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 3 – ROAD FOCUSED ALTERNATIVE

### DIRECT AND INDIRECT EFFECTS

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<b>IMPACT 4.2-1 (Alt.3)</b>	<b>Introduce uses not listed as permissible in the PAS or Community Plan, expand or intensify an existing non-conforming use such that substantial land use conflicts or incompatibility would occur.</b> This impact would be the same as Alternative 1 (PEA Alternative). Like Alternative 1 (PEA Alternative), Alternative 3 (Road Focused Alternative) components would be permissible with the adoption of the amendment to the Martis Peak (019) PAS and necessary special use findings could be made, and as such Alternative 3 would not expand or intensify a non-conforming use. For these reasons, this impact would be <b>less than significant</b> .
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The impact and impact conclusion would be the same as that described for Alternative 1 (PEA Alternative), because the project components, their use categories, and the relevant PASs and Community Plans would all be the same. The rationale for making the special use findings would also be the same for Alternative 3 (Road Focused Alternative). This impact would be **less than significant**. Please refer to the full discussion under Impact 4.2-1 (Alt. 1).

### MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.2-2 (Alt.3)</b>	<b>Consistency with land use plans, policies, and regulations.</b> Construction, operation, and maintenance of the project have the potential to result in conflicts with some of the policies or regulations adopted by state, regional (i.e., TRPA), and federal agencies with regulatory jurisdiction over the project. However, APMs (see Chapter 3, Project Alternatives) are included as part of the project. Appendix G of this document contains an analysis of the consistency of the project with all applicable policies adopted for the purpose of avoiding or mitigating an environmental effect, and references specific APMs, impact analyses, and mitigation measures that would preclude any policy conflicts, and reduce plan consistency impacts to <b>less-than-significant</b> levels.
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The impact and impact conclusion would be the same for Alternative 3 (Road Focused Alternative) as that described for Alternative 1 (PEA Alternative), because the project components would all be the same. Applicable APMs and mitigation measures for this alternative would be different, in some cases, than those identified for Alternative 1 (PEA Alternative), based on variability of physical impacts for the power line alignments associated with this alternative. However, the APMs and mitigation measures identified in this EIS/EIS/EIR would address any potential conflicts with applicable state, regional, and federal plans and policies (Appendix G). Therefore, this impact would be **less than significant**. Refer to the full discussion under Impact 4.2-1(Alt. 1), above.

### MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 4 – PROPOSED ALTERNATIVE

### DIRECT AND INDIRECT EFFECTS

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<b>IMPACT 4.2-1 (Alt.4)</b>	<b>Introduce uses not listed as permissible in the PAS or Community Plan, expand or intensify an existing non-conforming use such that substantial land use conflicts or incompatibility would occur.</b> This impact would be the same as Alternative 1 (PEA Alternative). Like Alternative 1 (PEA Alternative), Alternative 4 (Proposed Alternative) components would be permissible with the adoption of the amendment to the Martis Peak (019) PAS and necessary special use findings could be made, and as such Alternative 4 (Proposed Alternative) would not expand or intensify a non-conforming use. For these reasons, this impact would be <b>less than significant</b> .
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The impact and impact conclusion would be the same as that described for Alternative 1 (PEA Alternative), because the project components, their use categories, and the relevant PASs and Community Plans would all be the same. The rationale for making the special use findings would also be the same for Alternative 4 (Proposed Alternative). This impact would be **less than significant**. Please refer to the full discussion under Impact 4.2-1 (Alt. 1).

### MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.2-2 (Alt.4)</b>	<b>Consistency with land use plans, policies, and regulations.</b> Construction, operation, and maintenance of the project have the potential to result in conflicts with some of the policies or regulations adopted by state, regional (i.e., TRPA), and federal agencies with regulatory jurisdiction over the project. However, APMs (see Chapter 3, Project Alternatives) are included as part of the project. Appendix G of this document contains an analysis of the consistency of the project with all applicable policies adopted for the purpose of avoiding or mitigating an environmental effect, and references specific APMs, impact analyses, and mitigation measures that would preclude any policy conflicts, and reduce plan consistency impacts to <b>less-than-significant</b> levels.
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The impact and impact conclusion would be the same for Alternative 4 (Proposed Alternative) as that described for Alternative 1 (PEA Alternative), because the project components would all be the same. Applicable APMs and mitigation measures for this alternative would be different, in some cases, than those identified for Alternative 1 (PEA Alternative), based on variability of physical impacts for the power line alignments associated with this alternative. However, the APMs and mitigation measures identified in this EIS/EIS/EIR would address any potential conflicts with applicable state, regional, and federal plans and policies (Appendix G). Therefore, this impact would be **less than significant**. Refer to the full discussion under Impact 4.2-1(Alt. 1), above.

### MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 5 – NO ACTION/NO PROJECT ALTERNATIVE

### DIRECT AND INDIRECT EFFECTS

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<b>IMPACT 4.2-1 (Alt.5)</b>	<b>Introduce uses not listed as permissible in the PAS or Community Plan, expand or intensify an existing non-conforming use such that substantial land use conflicts or incompatibility would occur.</b> Under Alternative 5 (No Action/No Project Alternative) existing conditions within the project area would be projected into the future. No changes to the existing power facilities, access ways, or substations would occur. Therefore, <b>no impact</b> would occur.
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Under Alternative 5 (No Action/No Project Alternative), the existing power line facilities for the 625 and 650 Lines would remain in place. Existing conditions would be projected into the future. Therefore, because there would be no changes in use, **no impact** would occur.

### MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.2-2 (Alt.5)</b>	<b>Consistency with land use plans, policies, and regulations.</b> Under Alternative 5 (No Action/No Project Alternative) existing conditions within the project area would be projected into the future. No changes to the existing power facilities, access ways, or substations would occur. Therefore, because there would be no changes in use and no actions would occur that could result in conflicts with policies or regulations adopted by agencies with jurisdiction over local and regional land use, <b>no impact</b> would occur.
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Under Alternative 5 (No Action/No Project Alternative), the existing power line facilities for the 625 and 650 Lines would remain in place. Existing conditions would be projected into the future. Therefore, because

there would be no changes in use and no actions would occur that could result in conflicts with policies or regulations adopted by state, regional, and federal agencies with jurisdiction over the project, **no impact** would occur.

## MITIGATION MEASURES

*No mitigation measures are required.*

## CUMULATIVE IMPACTS

With the possible exception of precedent-setting actions such as amendment of the TRPA Code or other policy documents, impacts involving land use plans or policies and zoning generally would not combine to result in cumulative impacts. The determination of significance for impacts related to land use, as considered in Appendix G of the State CEQA Guidelines, is whether a project would conflict with any applicable land use plan or policy adopted for the purpose of reducing or avoiding environmental impacts. Such a conflict is site specific; it is addressed on a project-by-project basis.

The Tahoe City Transit Center is located immediately adjacent to the 625 Line and the Tahoe City Substation, in the Truckee River Corridor in North Lake Tahoe. CalPeco intends to use a portion of the Tahoe City Transit Center parcel to temporarily place transformers during construction on the 625 Line and at the Tahoe City Substation. As identified in Chapter 3, Project Alternatives, to ensure that the temporary transformers would not interfere with operation of the Tahoe City Transit Center, CalPeco will coordinate with the USFS and Placer County well in advance of construction to obtain permission to use the parcel. CalPeco would work to site the temporary transformers in undeveloped areas or in area designated for parking and restrict the public from this area. As a result, no significant conflicts are expected to occur.

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## 4.3 FORESTRY RESOURCES

This section describes existing forestry resources in the project area, presents applicable government regulations related to forest/tree removal and power line vegetation management, identifies forest zoning designations and uses in the project area, and presents an analysis of potential project impacts under each project alternative. This section focusses on the potential loss or conversion of forest land, and potential rezoning or zoning conflicts related to forest land, timberland, and timberland production zones.

The ability of forest land to support other uses and the effects that the proposed project might have on these uses are addressed in other sections of this EIS/EIS/EIR. Aesthetic resources are addressed in Section 4.4, Scenic Resources. The project's consistency with US Forest Service (USFS) guidelines and Tahoe Regional Planning Agency (TRPA) and local agency goals and policies is presented in Section 4.2, Land Use. Forest-related habitat, wildlife, ecosystem, and land management impacts are evaluated in Section 4.7, Biological Resources. Issues related to recreation are addressed in Section 4.8, Recreation.

### 4.3.1 REGULATORY SETTING

The following provides an overview of laws and regulations related to forestry resources that could apply to the proposed project and are related to the loss or conversion of forest land and potential rezoning or zoning conflicts related to forest land, timberland, and timberland production zones.

#### FEDERAL

##### UNITED STATES FOREST SERVICE

The project components are predominantly located on National Forest System (NFS) lands managed by the USFS; these lands are located in the Tahoe National Forest and in the Lake Tahoe Basin Management Unit (LTBMU). The management of NFS lands in each of these forests is guided by a separate Land and Resources Management Plan (Forest Plan). The current plans are summarized below.

##### Lake Tahoe Basin Management Unit - Land and Resource Management Plan

The LTBMU manages more than 75 percent of lands within the Tahoe Region, including lands located within the project study area. Land management is guided by the LTBMU Forest Plan (USFS 1988), as amended by the Sierra Nevada Forest Plan Amendment (SNFPA) (USFS 2004), described below. The Forest Plan sets the framework for how the resources of the national forest lands are managed. The plan translates national laws, policies, and regulations into guidance for activities that occur on the NFS lands. The Forest Plan addresses multiple uses and benefits of forest land.

The project's consistency with the Forest Plan is considered in the National Forest Management Act (NFMA) Forest Plan Consistency Checklist, a planning tool developed and used by LTBMU staff, included in Appendix G of this EIS/EIS/EIR. As described in the NFMA checklist, incorporated by reference here, the project alternatives would be consistent with the relevant Forest Plan directives. Therefore, specific Forest Plan directives are not considered further for consistency analysis in this section.

##### Tahoe National Forest—Land and Resource Management Plan

The USFS Tahoe National Forest Land and Resource Management Plan (USFS 1990), as amended, provides guidance as to the management of the Tahoe National Forest. Its goals are to ensure the wise use and protection of Tahoe National Forest resources, fulfill legislative requirements, and address local, regional, and national issues.

The Tahoe National Forest Plan (USFS 1990) provides direction for managing the Tahoe National Forest, which includes a portion of the proposed project. Specifically, Chapter V, Management Direction, presents both forest-wide and area-specific management direction for the Tahoe National Forest. The forest-wide management direction consists of forest goals and desired future conditions, objectives, and forest-wide standards and guidelines. Specific management direction for each of the 106 management areas includes: management emphasis for the area, selected standards and guidelines, and compatible available management practices. The Tahoe National Forest's Forest Plan is amended by the Sierra Nevada Forest Plan Amendment (USFS 2004), described below. The proposed project's consistency with the Tahoe National Forest Forest Plan is considered in a matrix similar to the NFMA checklist described above for the LTBMU (but with relevant standards and guidelines only) and is included in Appendix G of this EIS/EIS/EIR. As described in the Tahoe National Forest NMFA checklist, incorporated by reference here, the project alternatives would be consistent with the Tahoe National Forest standards, guidelines, and management practices. Therefore, specific Tahoe National Forest standards, guidelines, and management practices are not considered further for consistency analysis in this section.

### **Sierra Nevada Forest Plan Amendment**

The SNFPA (USFS 2004) amends the Forest Plans for the 11 National Forests that fall within the Sierra Nevada, including the LTBMU Forest Plan and the Tahoe National Forest Plan, described above. The SNFPA Final Supplemental EIS and Record of Decision describe the amendments to the Sierra Nevada Forest Plan developed to improve protection of old forests, wildlife habitats, watersheds, and communities in the Sierra Nevada and Modoc Plateau. The proposed project's consistency with specific guidance provided in the SNFPA is considered in the NFMA Forest Plan Consistency Checklist included as Appendix G of this EIS/EIS/EIR. As described in the NFMA checklist, incorporated by reference here, the project alternatives would be consistent with the SNFPA guidance. Therefore, specific SNFPA standards and guidelines are not considered further for consistency analysis in this section.

### **FEDERAL ENERGY REGULATORY COMMISSION**

The Federal Energy Regulatory Commission requires utilities to adopt and maintain minimum clearance standards between vegetation and power lines. These clearances vary depending on voltage. In most cases, the minimum clearances required in state regulations are greater than the federal requirement. In California, the state has adopted General Order 95 rather than the North American Electric Reliability Corporation Standards as the electric safety standard for the state. The Federal Energy Regulatory Commission is not discussed further in this section, as compliance with state requirements will ensure that the federal requirements are met.

## **STATE**

### **CALIFORNIA FIRE CODE**

The California Fire Code (CFC) is contained within Title 24, Chapter 9 of the California Code of Regulations (CCR). Based on the International Fire Code, the CFC is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. Similar to the International Fire Code, the CFC and the California Building Code use a hazards classification system to determine the appropriate measures to incorporate to protect life and property.

Title 14 CCR Sections 1250-1258, Fire Prevention Standards for Electric Utilities, provides specific exemptions from electric pole and tower firebreak and electric conductor clearance standards, and it specifies when and where standards apply. Section 1254 of Title 14 presents guidelines for minimum clearance requirements around poles or towers on which a switch, fuse, transformer or lightning arrester is attached.

## **CALIFORNIA PUBLIC UTILITIES COMMISSION GENERAL ORDER 95: RULES FOR OVERHEAD TRANSMISSION LINE CONSTRUCTION**

General Order 95, adopted in 1941 and updated in January 2012, is the key standard governing the design, construction, operation, and maintenance of overhead electric lines in California. It includes safety standards for overhead electric lines, including minimum distances for conductor spacing and minimum conductor ground clearance, standards for calculating maximum sag, electric line inspection requirements, and vegetation clearance requirements.

Rule 31.2, Inspection of Lines, requires that lines be inspected frequently and thoroughly to ensure they are in good condition, and that lines temporarily out of service be inspected and maintained as to not create a hazard.

Rule 35 of General Order 95 (Tree Trimming) defines minimum vegetation clearance around power lines and applies to all facilities at all times of the year. For the project area, Rule 35 guidelines, at the time of trimming, require the following:

- ▲ 4 feet radial clearances for any conductor of a line operating at 2,400 volts or more, but less than 72,000 volts;
- ▲ 6 feet radial clearances for any conductor of a line operating at 72,000 volts or more, but less than 110,000 volts;
- ▲ 10 feet radial clearances for any conductor of a line operating at 110,000 volts or more, but less than 300,000 volts; and
- ▲ 15 feet radial clearances for any conductor of a line operating at 300,000 volts or more.

## **CALIFORNIA PUBLIC RESOURCES CODE**

The California Public Resources Code provides a definition for forest land which is applicable to the proposed project.

- ▲ Section 12220(g) defines forest land as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.
- ▲ Section 4526 defines timberland as land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees.

The California Public Resources Code also contains regulations associated with power line vegetation management.

- ▲ Public Resources Code 4292 states a that a minimum firebreak of 10 feet (measured horizontally) shall be maintained in all directions from the outer circumference of any pole which supports a switch, transformer, lightning arrester, line junction, or end or corner pole. Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows.
  - /// At ground level - remove flammable materials, including but not limited to, ground litter, duff and dead or desiccated vegetation that will allow fire to spread.
  - /// From 0 - 2.4 m (0-8 feet) above ground level remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 2.4 m (8 feet).
  - /// From 2.4 m (8 feet) to horizontal plane of highest point of conductor attachment remove dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety.

- ▲ Public Resources Code 4293 establishes the minimum vegetation clearance distances (between vegetation and energized conductors) required for overhead transmission line construction and identifies requirements for hazard tree removal where trees may contact the line from the side or may fall on the line. Minimum clearances are discussed as follows.
  - A minimum radial clearance of 4 feet shall be established for any conductor of a line operating at 2,400 or more volts but less than 72,000 volts.
  - A minimum radial clearance of 6 feet shall be established for any conductor of a line operating at 72,000 or more volts but less than 110,000 volts.
  - A minimum radial clearance of 10 feet shall be established for any conductor of a line operating at 110,000 or more volts.

## **CALIFORNIA GOVERNMENT CODE**

California Government Code definitions applicable to the proposed project include the following.

- ▲ Section 51104(g) defines “timberland production zone” (TPZ) to mean an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. Compatible uses are defined under Section 51104(h) and include the construction and maintenance of electric transmission facilities.
- ▲ Section 51112 identifies situations which would warrant a decision that a parcel is not devoted to and used for growing and harvesting timber or for growing and harvesting timber and compatible uses.
- ▲ Section 51113 allows the opportunity for a landowner to petition that his or her land be zoned timberland production.

## **CALIFORNIA TIMBERLAND PRODUCTIVITY ACT OF 1982**

The California Timberland Productivity Act of 1982 (California Government Code - Section 51100-51104) identifies the benefits of the state’s timberlands and acknowledges the threat of timberland loss via land use conversions. The law identifies policies intended to preserve timberland, including maintaining an optimum amount of timberland, discouraging premature conversion, discouraging expansion of urban land uses into timberlands, and encouraging investments in timberland. The law establishes TPZ on all qualifying timberland, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. The law also provides that timber operations conducted in a manner consistent with forest practice rules (Z’Berg-Nejedly Forest Practices Act of 1973) shall not be or become restricted or prohibited due to any land use in or around the locality of those operations.

## **Z’BERG-WARREN-KEENE-COLLIER FOREST TAXATION REFORM ACT OF 1976**

According to the Z’berg-Warren-Keene-Collier Forest Taxation Reform Act (California Government Code - Section 51110-51119.5: Article 2), enacted in 1976, counties must provide for the zoning of land used for growing and harvesting timber as TPZs. A TPZ is a 10-year restriction on the use of land, and replaced the use of agricultural preserves (Williamson Act contracts) on timberland. Land use under a TPZ is restricted to growing and harvesting timber, and to compatible uses approved by the county. In return, taxation of timberland under a TPZ is based only on such restrictions in use.

## **Z’BERG-NEJEDLY FOREST PRACTICE ACT OF 1973**

The Z’Berg-Nejedly Forest Practice Act (FPA) of 1973 (California Public Resources Code - Section 4511-4517) established the state Board of Forestry and Fire Protection, whose mandate is to protect and enhance the state’s unique forest and wildland resources. This mandate is carried out through enforcement of the California

Forest Practice Rules (FPR) (Title 14, CCR, Chapters 4, 4.5 and 10). The California Department of Forestry and Fire Protection enforces the laws that regulate logging on non-federal lands in California. Additional rules enacted by the State Board of Forestry and Fire Protection are also enforced to protect forest and wildland resources.

The FPA is intended to create and maintain an effective and comprehensive system of regulation and use of all timberlands so as to ensure that the productivity of timberlands is restored, enhanced, and maintained and that the goal of maximum sustained production of high-quality timber products is achieved while giving consideration to values relating to sequestration of carbon dioxide (CO<sub>2</sub>), recreation, watershed, wildlife, range and forage, fisheries, regional economic vitality, employment, and aesthetic enjoyment. The FPA requires that a Timber Harvest Plan (THP) be prepared by a Registered Professional Forester for timber harvest on non-federal lands in the state.

THPs are prepared for timber operations and must be consistent with applicable laws and regulations, including, but not limited to, the California Environmental Quality Act (CEQA). The California Public Resources Code (Section 21080.5) provides that a regulatory program of a state agency shall be certified by the Secretary for Resources as being exempt from the requirements for preparing EIRs, Negative Declarations, and Initial Studies if the Secretary finds that the program meets the criteria contained in that code section. The regulation of timber harvesting by the California Department of Forestry and Fire Protection has been certified by the Secretary for Resources as meeting such requirements. Consequently, THPs serve as a functional equivalent of an EIR and include feasible mitigation measures and an evaluation of alternatives which would lessen or avoid adverse environmental impacts. The FPA also provides clarification for activities occurring within the jurisdiction of TRPA. Under the FPA, TRPA shall have the right to adopt rules and regulations which are stricter than those included in the FPA and may include matters relating to soil erosion control, protection of stream character and water quality, flood control, stand density control, reforestation methods, mass soil movements, submission of timber harvesting plans, location and grade of roads and skid trails, excavation and fill requirements, slash and debris disposal, haul routes and schedules, hours and dates of logging, and performance bond requirements.

However, the California Code of Regulations Title 14 Section 1104.1(c) exempts clearing of trees from timberland by a private or public utility from the requirement to file for a THP or a Timberland Conversion Permit (TCP) (needed to convert harvested forest land to another use) for construction of electric rights-of-way. Therefore project-related tree removal on non-federal land outside of the Lake Tahoe Basin would not require preparation of a THP or TCP. If wood products removed from the ROW would be sold, a Utility Right of Way Exemption would be required by CAL FIRE. Timber operations occurring in the Lake Tahoe Basin (pursuant to Title 14, CCR, Section 1038) are exempt from THP preparation and submission requirements and from the completion report and stocking report requirements of the FPA; however, such operations must have a valid Tahoe Basin Tree Removal Permit (as defined by the TRPA) or shall be conducted under a valid TRPA Memorandum of Understanding, when such a permit is required by TRPA. Such operations are also subject to specific restrictions as identified in the FPRs. Additionally, the FPRs identify agency-specific exemptions from the provisions of the FPA (PRC Section 4511 et. seq.). According to the FPRs, timber operations on land managed by the California Department of Parks and Recreation (e.g., Burton Creek State Park) are exempt from the provisions of the FPRs, provided that the timber operations have undergone all required CEQA evaluation required pursuant to PRC Division 13 commencing with Section 21000. While various exemptions may apply to the proposed project, all timber operations on non-federal lands shall comply with all other applicable provisions of the FPA, regulations of the Board of Forestry and Fire Protection, and currently effective provisions of county general plans, zoning ordinances and any implementing ordinances.

## **TAHOE REGIONAL PLANNING AGENCY**

TRPA implements its authority to regulate growth and development in the Lake Tahoe Region through the Regional Plan. The Regional Plan includes Resolution 82-11, the Environmental Threshold Carrying Capacities (threshold standards), Goals and Policies, Code of Ordinances, Plan Area Statements (PASs), and other guidance

documents. TRPA plans and policies related to forest resources are from a habitat perspective instead of a timber resource perspective. As indicated above, this section focusses on issues related strictly to the loss or conversion of forest land and zoning of forest land, timberland, and TPZ as described in CEQA, and not the biological resources aspects of forest habitat. Therefore, further description of TRPA forest-related policies and regulations and analysis of how the project may affect forest resources from a TRPA regulatory perspective is provided in Section 4.7, Biological Resources, of this document.

However, zoning conflicts and potential rezoning related to forest land are considered in this section. TRPA does not have traditional zoning designations for parcels located within its jurisdiction. Instead, PASs designate a Land Use Classification (general plan designation) and a list of Permissible Uses (zoning). The TRPA Regional Plan area is divided into PASs for community areas, as shown on Exhibit 4.2-1 in Section 4.2, Land Use. All of the action alternatives include components that are within the following PASs: Lower Truckee (003), 64-Acre Tract (174), Tahoe City (001A), Tahoe City Industrial (001B), Fairway Tract (002), Burton Creek (004), Watson Creek (013), Northstar (015), Martis Peak (019), Kingswood East (025), Woodvista (027), and Kings Beach Industrial (026).

All project components are listed as permissible in the applicable PASs, with the exception of the existing distribution underbuild on the 625 Line within the Lower Truckee (003) PAS and the proposed upgrade of the Kings Beach Substation in the Martis Peak (019) PAS. The focus of forest land zoning in California is preservation of timberland devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and transferring existing non-conforming distribution underbuild to new poles in the Lower Truckee (003) PAS or the addition of the Kings Beach Substation as an allowable use in the Martis Peak (019) PAS would not lessen the capability to manage for forest resources in each PAS, nor would it affect the distribution of forest land in each PAS or in the region. Section 4.2, Land Use, of this EIS/EIS/EIR further discusses zoning and PASs.

As noted, timber operations occurring in the Lake Tahoe Region (pursuant to Title 14, CCR, Section 1038) are exempt from THP preparation and submission requirements and from the completion report and stocking report requirements of the FPA; however, such operations must have a valid Tahoe Basin Tree Removal Permit (as defined by the TRPA) or shall be conducted under a valid TRPA Memorandum of Understanding, when such a permit is required by TRPA. Such operations are also subject to specific restrictions as identified in the FPRs.

## LOCAL AGENCIES

Policies and ordinances of local agencies applicable to the proposed project are described in this section.

### PLACER COUNTY

#### Zoning Code

There are four zoning districts within the Placer County Zoning Ordinance that relate to Forestry Resources: Forestry (FOR); Forestry, combining minimum building site size of 160 acres (FOR-B-X-160 AC. MIN.); Residential Forest combining a minimum building site size of 10 acres (RF-B-X 10 AC. MIN.), and TPZ (Placer County 1995).

The FOR zone is intended to designate portions of the mountainous areas of Placer County where the primary land uses will relate to the growing and harvesting of timber and other forest products, together with public and commercial recreational uses (Placer County 1995). No land use permit approval is required for transmission lines in FOR zones because they typically involve no or minimal construction activities, are accessory to some other land use that will be the primary use of a site (which will require a land use permit), or are otherwise entirely consistent with the purposes of the particular zone (Placer County 1995).

The FOR-B-X-160 AC. MIN. zone is intended to combine FOR zoning with a minimum Building Site of 160 acres. The purpose of the building site (-B) combining district is to provide for different parcel sizes in new subdivisions

than would otherwise be required by an applicable zone district, based upon special characteristics of the site or area to which the combining district is applied, including but not limited to sensitive environmental characteristics, limited resource capacities, and community character.

The RF-B-X 10 AC. MIN. zone is intended to provide opportunities for rural residential living with a minimum building site size of 10 acres, in the forested, mountainous or foothill areas of Placer County. The purpose of the building site (-B) combining district is to provide for different parcel sizes in new subdivisions than would otherwise be required by an applicable zone district, based upon special characteristics of the site or area to which the combining district is applied, including but not limited to sensitive environmental characteristics, limited resource capacities, and community character.

The TPZ is intended to be an exclusive area for the growing and harvesting of timber and those uses that are an integral part of a timber management operation. The zone is established in conformance with the Z'Berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976 (California Government Code Section 51100 et seq.). No land use permit approval is required for transmission lines in TPZ zones because they typically involve no or minimal construction activities, are accessory to some other land use that will be the primary use of a site (which will require a land use permit), or are otherwise entirely consistent with the purposes of the particular zone (Placer County 1995).

## NEVADA COUNTY

All proposed project facilities that could convert forest land within Nevada County occur within the boundaries of the Town of Truckee; therefore, regulations associated with tree removal in the Town of Truckee are discussed below.

## TOWN OF TRUCKEE

The Town of Truckee Development Code (Section 18.30.155) allows for tree removal for construction purposes; however, tree preservation is also identified as a goal. This section of the Development Code also includes development standards intended to ensure the retention of trees to the maximum extent feasible and identifies tree removal permit requirements. This section also identifies activities which are exempt from tree removal permit requirements, which includes activities associated with tree pruning or removal for safety reasons, as mandated by the California Public Utilities Commission (CPUC) (General Order 35) and PRC 4293. Additional exempt activities include removal of trees by private utilities, as necessary to perform maintenance, repairs, modifications, and/or to construct infrastructure.

### 4.3.2 EXISTING CONDITIONS/AFFECTED ENVIRONMENT

The forest land study area includes the permanent 40-foot power line right-of-way (ROW) for single-circuit segments, the temporary 65-foot power line ROW (inclusive of the permanent ROW) for single-circuit segments, the permanent 65-foot power line ROW for double-circuit segments, new roads, staging areas, stringing/ pulling sites, substations, the alignment setback prescribed by APM SCE-7, and all other project-related facilities plus a hazard tree border zone for the project alternatives. The hazard tree border zone includes the area within 150 feet of a power line center line and was included in the forest land study area to analyze the impacts associated with hazard tree removal. The 150 foot width of the hazard tree border zone was agreed to by the lead agencies as a reasonable area where a vast majority of hazardous tree removal would occur. The permanent 40-foot ROW, new roads, and substations would require permanent tree removal, while the temporary ROW (12.5 feet on either side of the permanent 40-foot ROW for single-circuit segments), staging areas, and stringing/pulling sites would be abandoned following construction and would be allowed to re-grow trees. Tree removal in the hazard tree border zone would be restricted to individual trees which have the potential for falling into the

constructed line; whereas, all trees within permanent and temporary impact areas would be removed. Hazard tree removal would occur concurrently with ROW tree removal.

## FOREST LAND

For the purposes of this analysis, forest land, as discussed in greater detail above in the description of state regulations, is defined as land that can support 10 percent native tree cover of any species that allows for management of timber, aesthetics, fish and wildlife, recreation, and other public benefits (PRC Section 12220(g)). Large portions of the project footprint for the action alternatives are located within land that meets the PRC 12220(g) definition. Forest types in the forest land study area typically have greater than 10 percent cover by native trees. For the purposes of this EIS/EIS/EIR, all forest types in the forest land study area are considered to be forest land. The following summarizes each of the forest types found in the proposed project area, and is summarized from Section 4.7, Biological Resources. Exhibits provided in Appendix K, Vegetation Maps, of this EIS/EIS/EIR display the distribution of forest land in the project area. These existing coniferous forest types could experience temporary or permanent effects from implementation of the action alternatives.

### Jeffrey Pine Forest

Jeffrey pine (*Pinus jeffreyi*) is the dominant tree species in this community type. In the study area, lodgepole pine is also present in small numbers. Canopy cover is typically less dense than in other forest communities as Jeffrey pine tends to be more scattered throughout the community. This generally allows for the understory of the Jeffrey pine forest to contain plants requiring drier, sunnier conditions than in other conifer communities. These understory plants include big sagebrush (*Artemisia tridentate*), bitterbrush (*Purshia tridentate*), green (or sticky leaved) rabbitbrush (*Chrysothamnus viscidiflorus*), and rubber rabbitbrush (*Ericameria nauseosa*). This forest community type is present in the study area primarily along Segments 650-3, 650-4B, and 650-6 (see Exhibits in Appendix H, Supplemental Forestry and Vegetation Management Report).

### Jeffrey Pine-White Fir Forest

Jeffrey pine-white fir forest is similar to mixed conifer forest, but with shorter trees, and dominated by Jeffrey pine and white fir. The understory of this community tends to be open with scattered montane chaparral species, and smaller trees. Common understory species observed included pinemat manzanita (*Arctostaphylos nevadensis*), white-veined wintergreen (*Pyrola picta*), Pacific monardella (*Monardella odoratissima*), and rock cress species (*Boechera* spp.). Approximately 95 acres of Jeffrey pine-white fir forest occurs within the project area, mainly along the 625 Line and Segments 650-1 and 650-2.

### Red Fir Forest

Red fir forest is a community typically dominated by even-aged, monotypic stands of mature red fir (*Abies magnifica*). In the study area, scattered western white pine and sugar pine are also present. The understory is much more open than the Sierran mixed conifer forest, with the primary understory shrub species being pinemat manzanita. This is the most abundant community in the study area and is primarily present at the higher elevations along the existing and new 625 Lines. As with the majority of conifer forest habitat in the study area, most of the red fir forest habitat is comprised of mature, even-aged stands of trees due to past logging in the area.

### White Fir-Red Fir Forest

White fir-red fir forest is similar to red fir forest, but with white fir (*Abies concolor*) and red fir codominant throughout, with occasional occurrences of incense cedar (*Calocedrus decurrens*) and Jeffrey pine. The understory is also similar to the description of red fir forest, with the primary understory shrub species being pinemat manzanita. Within the study area, this community occurs primarily along Segments 625-8 through 625-10, 650-1, and 650-2.

## Sierran Mixed Conifer Forest

Sierran mixed conifer forest is dense forest dominated by a mix of white fir, red fir, Jeffrey pine, sugar pine, and incense cedar. Historic burning and logging have created wide variability in stand structure and composition in this community. Canopy cover varies from nearly 100 percent to more sparse cover, with some open areas. The understory consists of a variety shrubs, grasses, and forbs, including mahala mat (*Ceanothus prostrates*), mountain whitethorn (*Ceanothus cordulatus*), pinemat manzanita, greenleaf manzanita (*Arctostaphylos patula*), bush chinquapin (*Chrysolepis sempervirens*), and huckleberry oak (*Quercus vacciniifolia*). Mixed conifer forest is the second most widespread vegetation community in the study area, extending from Kings Beach north to the Brockway Summit area along the existing and new 625 Lines and the 650 Line and between Brockway Summit and Tahoe City along the existing and new 625 Lines. At higher elevations, the vegetation community transitions from Sierran mixed conifer forest to red fir forest.

## TIMBERLAND

Timberland, a subset of forest land, is defined by PRC Section 4526 and consists of non-federal land that is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products. Based on this definition and the species composition of forest land in the study area, all non-federal land classified as forest habitat is considered to be timberland for the purposes of this EIS/EIS/EIR.

## TIMBERLAND PRODUCTION ZONE

Timberland Production Zone is defined as an area which has been zoned as such and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, which include construction and maintenance of electric transmission facilities (California Government Code Section 51104(g)). Of the timberland in the study area, only a small portion is currently zoned as TPZ by Placer County, which includes portions of the existing 625 Line and portions of alternative alignments along the Northstar Tap, east and west of Brockway Summit, and a small area situated between Mt. Pluto and Mt. Watson.

## STREAM ENVIRONMENT ZONES

Stream Environment Zones (SEZ) are unique to the Tahoe Basin and include perennial, intermittent, and ephemeral streams and drainages, as well as marshes and meadows. Defined by TRPA, these areas generally include riparian or hydric vegetation, alluvial/hydric soils, and the presence of surface water or near-surface groundwater at least part of the year. SEZs make up a small portion of the land area within the Tahoe Basin (approximately 5 percent), but provide important wildlife habitat and help to reduce sediment and nutrient runoff (California Tahoe Conservancy 2013). Based on the ecological importance of SEZs in the Lake Tahoe Basin, an evaluation of forest land within these zones was conducted as some SEZs or portions thereof could be subject to temporary or permanent effects from implementation of the project alternatives.

## 4.3.3 ENVIRONMENTAL CONSEQUENCES AND RECOMMENDED MITIGATION MEASURES

### SIGNIFICANCE CRITERIA

#### TRPA CRITERIA

TRPA criteria related to vegetation, including forest habitat and tree removal, are assessed in Section 4.7, Biological Resources, of this EIS/EIS/EIR.

## NEPA CRITERIA

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the CEQA criteria used for this analysis.

## CEQA CRITERIA

In order to determine whether impacts to forest resources, including timberland, are significant environmental effects, Appendix G of the State CEQA Guidelines asks whether a project would do any of the following:

- ▲ conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC section 12220(g)), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));
- ▲ result in the loss of forest land or conversion of forest land to non-forest use; or
- ▲ involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to a non-forest use.

This section evaluates impacts to forest land and timberland specific to these potential impact mechanisms. The ability of forest land to support other uses and the effects that the proposed project might have on these uses are addressed in other sections of this EIS/EIS/EIR. Aesthetic resources are addressed in Section 4.4, Scenic Resources. The project's consistency with USFS guidelines and TRPA and local agency goals and policies is presented in Section 4.2, Land Use. Forest-related habitat, wildlife, ecosystem, and land management impacts are evaluated in Section 4.7, Biological Resources. Issues related to recreation are addressed in Section 4.8, Recreation.

## ISSUES NOT DISCUSSED FURTHER

As discussed above in Section 4.3.1, Regulatory Setting, all project components are listed as permissible in the applicable TRPA PASs, with the exception of the existing distribution underbuild on the 625 Line within the Lower Truckee (003) PAS and the proposed upgrade of the Kings Beach Substation in the Martis Peak (019) PAS. The focus of forest land zoning in California is preservation of timberland devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. Transferring existing non-conforming distribution underbuild to new poles in the Lower Truckee (003) PAS or the addition of the Kings Beach Substation as an allowable use in the Martis Peak (019) PAS would not lessen the capability to manage for forest resources in each PAS, nor would it affect the distribution of forest land in each PAS or in the region. Therefore, project consistency/inconsistency with PAS requirements are not considered further as a potential mechanisms to generate conflicts with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. The issue of project consistency with PAS requirements is addressed in detail in Section 4.2, Land Use.

## METHODS AND ASSUMPTIONS

As discussed, the forest land study area includes a unique assessment area which incorporates the 40-foot (or 65-foot) permanent ROW, temporary ROW, new roads, staging areas, stringing/pulling sites, and substations, plus a hazard tree border zone for the action alternatives. The following discussion summarizes the methods used in compiling and analyzing forest land data, outlines any assumptions made in data processing and impact analysis, and summarizes the results of the analysis conducted for all alternatives. For the purposes of this

analysis, permanent impacts are those associated with tree removal for the permanent 40-foot (or 65-foot) ROW, new access roads, and substations while temporary impacts are those associated with tree removal for the temporary ROW (12.5 feet in either side of the permanent 40-foot ROW for single-circuit segments), staging areas, and stringing/pulling sites. Tree removal within the hazard tree border zone is accounted for in the tree quantity, tree volume, and sequestered carbon totals presented herein, but not included in the forest land impact acreage as it is assumed that this area would be subject to selective hazard tree removal only. In addition to the summarized information presented below, a detailed spreadsheet outlining impacts, by alternative and line segment, is presented in Appendix H (FCO 2013).

For Alternative 5 (No Action/No Project Alternative), actions would be limited to existing operations and maintenance and completion of existing deferred vegetation management within the existing 625 and 650 Line ROWs. Vegetation management within the existing ROWs would be in compliance with existing regulations (CPUC General Order 95) and approved plans and permits and access would be gained via existing easements and rights-of-way. Therefore, as vegetation management for the existing system is currently approved and required, vegetation removal for Alternative 5 (No Action/No Project Alternative) is not considered to be an impact.

## FOREST LAND

In order to evaluate the effect of each alternative on forest land, an analysis of the following data sets was conducted by FCO (2013).

- ▲ USFS Pacific Southwest Region (R5) Vegetation Inventory Data.
- ▲ Forest type stratification data derived from USFS R5 CALVEG data set.
- ▲ CalPeco 132 Line 2009 hazard tree data.

As field-verified inventory data for the forest land study area does not exist, a geographic information system (GIS)-based evaluation of the aforementioned data sets was conducted by FCO (2013) to estimate forest land acreage, tree quantity, overall tree volume, merchantable tree volume, and sequestered carbon totals. Effects on these forest resource parameters from the alignment setback along SR 267 prescribed by APM SCE-7 were added separately to the results of the original evaluation (see Table F-1 in the Foreword to this final EIS/EIS/EIR). The USFS R5 is responsible for producing comprehensive spatial and tabular databases for existing vegetation, which were analyzed for the forest land study area. The methodology used to generate this data captures vegetation characteristics using automated, systematic procedures that efficiently and cost-effectively map large areas of the state with minimal bias and is supplemented with onsite field visits, when appropriate. Map attributes consist of vegetation types using the CALVEG classification system and forest structural characteristics such as tree and shrub canopy cover and tree stem diameters.

Prior to analyzing the action alternative's impacts to forest land, FCO created a GIS-based forest land data set by merging the USFS R5 CALVEG forest type stratification data for all project areas with USFS R5 vegetation inventory data for inside and outside of the Tahoe Basin. This data set was also augmented with CalPeco's 132 Line (120-kilovolt power line) hazard tree data from 2009. Hazard tree volumes from this data set were geographically linked to the forest type in which they were located and then averages applied to the same CALVEG forest types found in the hazard tree border zone. Additionally, the intersection of other pertinent spatial information, such as SEZ areas and landowner classification, was incorporated and allowed for the forest land data set to be sorted for attribute-specific queries (FCO 2013).

As described above, the impact analysis was performed using a GIS overlay of project impact areas intersected with a custom base layer delineated by forest type with rates of vegetation extrapolated from USFS and CalPeco data. The best available and widely used stratification for the project area is the vegetation delineation from the EVEG/CALVEG GIS data files from Region 5 of the USFS. The delineation of the vegetation within the Tahoe Basin is based on a raster or grid image with 15-foot resolution and delineation outside of the Tahoe Basin is based

on a raster or grid image with 98.4-foot (30 meters) resolution. These data sets are provided by the USFS with a scale description of 1:24,000 and 1:100,000, respectively. The forest impact analysis conducted for this EIS/EIS/EIR includes data presented at a much finer scale, including some classifications as narrow as 12.5 feet (temporary ROW areas). Therefore, assumptions from the extrapolation of the data are necessary and the base layer is too coarse to provide reliable absolute numbers. However, the use of this dataset for a comparative analysis presented in this EIS/EIS/EIR may still be considered valid because the analysis has been conducted with a uniform methodology and all assumptions are consistent between alternatives (FCO 2013).

Data included in the resulting GIS-based forest land data set forms the basis for evaluating project and alternative-related forest land impacts for this EIS/EIS/EIR and includes the following.

- ▲ **Forest Land Impact Area:** this characteristic includes the acreage of forest land that contains trees greater than or equal to 1 inch diameter at breast height (dbh) and includes both permanent and temporary disturbance areas.
- ▲ **Tree Quantity:** this characteristic includes the total number of trees greater than or equal to 1-inch dbh and includes hazard trees within the hazard tree border zone.
- ▲ **Tree Volume:** this characteristic includes the total cubic foot volume of all trees greater than or equal to 1-inch dbh and includes the volume of hazard trees within the hazard tree border zone. Additionally, merchantable volume was calculated and includes the total cubic foot volume of all conifer trees greater than or equal to 9-inches dbh and excludes the volume of hazard trees within the hazard tree border zone as no hazard trees are assumed to be merchantable. While some hazard trees may in fact be merchantable, the potential number and volume of merchantable trees is unknown. Therefore, this assumption presents the most conservative estimate for evaluating potential sequestered carbon to be released by timber removal.

The following sections present a summary of the forest land characteristics evaluated for the forest land study area and include analysis results for all alternatives (FCO 2013). As noted, a detailed spreadsheet outlining impacts, by alternative and line segment, is presented in Appendix H, Supplemental Forestry and Vegetation Management Report (FCO 2013). As stated above, effects on forest resource from the alignment setback along SR 267 prescribed by APM SCE-7 were added separately to the results of the original FCO analysis.

## Forest Land Impact Area

Forest land considered to be subject to permanent impacts includes areas that contain trees that are at least 1 inch dbh and that occur within the permanent 40-foot ROW (or permanent 65-foot ROW for double-circuit segments), new roadways, and substations. Forest land which would be subject to tree removal during construction but would be abandoned and allowed to regenerate (temporary impact areas) includes areas that contain trees greater than or equal to 1 inch dbh and that occur within the temporary ROW (12.5 feet on either side of the permanent 40-foot ROW for single-circuit segments), staging areas, and stringing/pulling sites. Temporary impact areas also include those areas where trees would be removed for stringing sites related to removal of the existing 625 Line. Areas already converted for existing roads, existing ROWs, or urban areas, and the hazard tree border zone are not included in the forest land impact totals presented herein. Table 4.3-1, Forest Land Conversion Acres for Project Alternatives, presents the estimated forest land impact area, by impact type and alternative associated with construction of the action alternatives and removal of the existing 625 Line.

<b>Alternative</b>	<b>Permanent Forest Land Impacts (Acres)</b>	<b>Temporary Forest Land Impacts (Acres)</b>
<b>Alternative 1 (PEA Alternative)</b>	<b>136.3</b>	<b>97.7</b>
Alternative Construction	136.3	87.8
Stringing Sites Associated with Removal of the Existing 625 Line	-	9.9

<b>Alternative</b>	<b>Permanent Forest Land Impacts (Acres)</b>	<b>Temporary Forest Land Impacts (Acres)</b>
<b>Alternative 2 (Modified Alternative)</b>	<b>128.2</b>	<b>86.4</b>
Alternative Construction	128.2	77.6
Stringing Sites Associated with Removal of the Existing 625 Line	-	8.8
<b>Alternative 3 (Road Focused Alternative)</b>	<b>100.5</b>	<b>92.2</b>
Alternative Construction	100.5	77.8
Stringing Sites Associated with Removal of the Existing 625 Line	-	14.4
<b>Alternative 4 (Proposed Project)</b>	<b>100.2</b>	<b>91.4</b>
Alternative Construction	100.2	77.0
Stringing Sites Associated with Removal of the Existing 625 Line	-	14.4
<b>Alternative 5 (No Action/No Project Alternative)</b>	<b>N/A</b>	<b>N/A</b>

## Tree Quantity

The estimated quantity of trees proposed to be removed by action alternatives includes hardwood and conifer trees greater than or equal to 1 inch dbh within forest land impact areas (both temporary and permanent) and includes an estimate of hazard trees within the 150-foot hazard tree border zone and those requiring removal for stringing sites related to the removal of the existing 625 Line. Table 4.3-2, Number of Trees to be Removed for Project Alternatives, presents an estimate of the number of trees greater than or equal to 1 inch dbh that would require removal, by impact type and alternative, both within the ROW and associated with removal of the existing 625 Line. It is possible that trees outside the forest land impact area could be accidentally damaged during tree removal in the impact area, such as by trees cut as part of the proposed project falling on trees outside the impact area. However, tree removal activities will be retained within the identified project disturbance corridor and all care will be taken by professional fellers to have trees fall in a direction that does not damage trees to be retained. Attempting to estimate the number of trees potentially damaged and removed by accidental events during project implementation would be speculative at this time, but would be expected to be minimal. This potential impact mechanism is not included in the tree removal calculations.

<b>Alternative</b>	<b>Total Number of Trees <math>\geq 1</math>" dbh to be Removed (Permanent and Temporary Impact Areas)</b>	<b>Number of Trees <math>\geq 1</math>" dbh to be Removed (Permanent Impact Areas)</b>	<b>Number of Trees <math>\geq 1</math>" dbh to be Removed (Temporary Impact Areas)</b>
<b>Alternative 1 (PEA Alternative)</b>	<b>59,603</b>	<b>33,997</b>	<b>25,606</b>
Alternative Construction	56,251	33,997	22,794
Stringing Sites Associated with Removal of the Existing 625 Line	2,812	-	2,812
<b>Alternative 2 (Modified Alternative)</b>	<b>56,795</b>	<b>34,347</b>	<b>22,448</b>
Alternative Construction	54,511	34,347	20,164
Stringing Sites Associated with Removal of the Existing 625 Line	2,284	-	2,284
<b>Alternative 3 (Road Focused Alternative)</b>	<b>49,051</b>	<b>25,764</b>	<b>23,287</b>

Alternative	Total Number of Trees $\geq 1$ " dbh to be Removed (Permanent and Temporary Impact Areas)	Number of Trees $\geq 1$ " dbh to be Removed (Permanent Impact Areas)	Number of Trees $\geq 1$ " dbh to be Removed (Temporary Impact Areas)
Alternative Construction	45,199	25,764	19,435
Stringing Sites Associated with Removal of the Existing 625 Line	3,852	-	3,852
<b>Alternative 4 (Proposed Alternative)</b>	<b>48,704</b>	<b>25,651</b>	<b>23,053</b>
Alternative Construction	44,852	25,651	19,201
Stringing Sites Associated with Removal of the Existing 625 Line	3,852	-	3,852
<b>Alternative 5 (No Action/No Project Alternative)</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

Note: An estimate of hazard trees to be removed is included in the Permanent Impact Area totals.

## Tree Volume

Forested areas were delineated by the stratification of the CALVEG layer and were assigned a volume per acre from the best available USFS inventory data linked by the attributes of forest type, crown size, and crown cover. Intersections of the land cover that contained the tree volumes on a per acre basis and the associated project areas created thousands of unique polygons, each with their own acreages. Project totals were estimated by multiplying the acreages of the unique polygons by the geographically-specific estimated tree volume/acre totals (FCO 2013).

The estimated cubic foot volume for all removed trees (permanent and temporary) was calculated and includes estimates for total volume and merchantable volume. The total cubic foot volume of trees includes all trees greater than or equal to 1 inch dbh, plus hazard trees within the hazard tree border zone and trees requiring removal for stringing sites related to the removal of the existing 625 Line, and is inclusive of merchantable volume (greater than or equal to 9 inches dbh). Merchantable volume includes conifer trees greater than or equal to 9 inches dbh, but excludes hazard trees, as hazard trees are assumed to be non-merchantable. To provide context for the cubic foot volume totals presented herein, in 2006 construction of the average residential unit in the United States and Canada used approximately 1,600 cubic feet of wood products (Adair and McKeever 2009). Table 4.3-3, Total Cubic Foot Volume to be Removed under the Project Alternatives, presents estimated cubic-foot volumes of all trees to be removed by alternative, both within the ROW and associated with removal of the existing 625 Line.

Alternative	Total Cubic Foot Volume of Trees $\geq 1$ " dbh to be Removed	Total Merchantable Timber Volume in Cubic Feet (Conifers $\geq 9$ " dbh)
<b>Alternative 1 (PEA Alternative)</b>	<b>839,868</b>	<b>577,293</b>
Alternative Construction	794,004	542,466
Stringing Sites Associated with Removal of the Existing 625 Line	45,864	34,827
<b>Alternative 2 (Modified Alternative)</b>	<b>809,253</b>	<b>554,361</b>
Alternative Construction	770,815	525,142
Stringing Sites Associated with Removal of the Existing 625 Line	38,438	29,219
<b>Alternative 3 (Road Focused Alternative)</b>	<b>692,795</b>	<b>472,884</b>
Alternative Construction	626,124	421,669

**Table 4.3-3 Total Cubic Foot Volume to be Removed under the Project Alternatives**

Alternative	Total Cubic Foot Volume of Trees ≥1" dbh to be Removed	Total Merchantable Timber Volume in Cubic Feet (Conifers ≥9" dbh)
Stringing Sites Associated with Removal of the Existing 625 Line	66,671	51,215
<b>Alternative 4 (Proposed Alternative)</b>	<b>690,699</b>	<b>471,643</b>
Alternative Construction	624,028	420,428
Stringing Sites Associated with Removal of the Existing 625 Line	66,671	51,215
<b>Alternative 5 (No Action/No Project Alternative)</b>	<b>N/A</b>	<b>N/A</b>

## STREAM ENVIRONMENT ZONES

As discussed, the SEZ designation is unique to the Lake Tahoe Basin, and includes riparian or hydric vegetation and provides important wildlife habitat and helps to reduce sediment and nutrient runoff. The estimated quantity of removed trees (greater than or equal to 1 inch dbh) and associated total tree volume (cubic feet) was calculated for forest land impact areas (permanent and temporary) in SEZs (FCO 2013). These totals exclude trees requiring removal for stringing sites related to the removal of the existing 625 Line as stringing sites will be placed to avoid SEZs. Table 4.3-4, Number of Trees and Cubic Foot Volume to be Removed in SEZs for the Project Alternatives, presents the estimated number of trees and associated cubic foot volume of trees to be removed in SEZs and includes hazard trees.

**Table 4.3-4 Number of Trees and Cubic Foot Volume to be Removed in SEZs for the Project Alternatives**

Alternative	Number of Trees ≥1" dbh to be Removed	Total Cubic Foot Volume of Trees ≥1" dbh to be Removed
Alternative 1 (PEA Alternative)	1,721	16,911
Alternative 2 (Modified Alternative)	1,696	16,471
Alternative 3 (Road Focused Alternative)	1,543	14,770
Alternative 4 (Proposed Alternative)	1,542	14,758
Alternative 5 (No Action/No Project Alternative)	N/A	N/A

## SEQUESTERED CARBON

In addition to the forest land characteristics described above, an evaluation of impacts to sequestered carbon was conducted for this EIS/EIS/EIR utilizing the data developed by FCO (2013). This analysis is important to the understanding of the net change in greenhouse gas (GHG) emissions associated with the project alternatives. Carbon sequestration is the process by which CO<sub>2</sub> is removed from the atmosphere and deposited into a carbon reservoir (e.g., vegetation). Trees and vegetation take in CO<sub>2</sub> from the atmosphere during photosynthesis, break down the CO<sub>2</sub>, store the carbon within plant parts, and release the oxygen back into the atmosphere. The removal of vegetation from forest land would be required as a result of the proposed project, thereby removing stored carbon from the project site and reducing future sequestration capability in permanent impact areas. Temporary impact areas and the abandoned portions of the existing 625 Line ROW would allow tree establishment and growth over time, which would store new carbon via normal growth.

As presented in Section 4.13, Air Quality and Climate Change, of this EIS/EIS/EIR, the California Emission Estimator Model (CalEEMod) was used to calculate potential CO<sub>2</sub> emissions associated with the proposed project. CalEEMod calculates potential CO<sub>2</sub> releases associated with the vegetation removal activities of land use change and assumes that the sequestered carbon is released as CO<sub>2</sub> after removal of the vegetation. By default,

CalEEMod utilizes data and formulas based on the Intergovernmental Panel on Climate Change (IPCC) reports, which are based on global studies rather than local data sets. However, project-specific values were developed from the cubic foot tree volume totals included in the forest land data set discussed herein. For this analysis, it is assumed that sequestered carbon from all non-merchantable volume would be returned to the atmosphere as CO<sub>2</sub>. This assumption presents a worst-case evaluation, as the release of sequestered carbon to the atmosphere as CO<sub>2</sub> would likely occur over a long period of time via the natural decomposition process. The analysis of sequestered carbon loss presented in this section does not include CO<sub>2</sub> emissions estimates associated with vegetation clearing or removal activities, the transport of merchantable trees offsite, or the disposal process. GHG emissions generated from such activities are included in the analysis presented in Section 4.13, Air Quality and Climate Change, of this EIS/EIS/EIR.

### Custom Carbon Content Factors

CalEEMod calculates project-related GHG emissions resulting from land conversion and, by default, uses five general IPCC land use classifications (forest land [scrub], forest land [trees], cropland, grassland, and wetlands) for assigning default carbon content values (in units of metric tons CO<sub>2</sub>/acre). Calculation of the one-time loss of sequestered carbon in CalEEMod is the product of the converted acreage value and the carbon content value for each land use type. Rather than utilize the general IPCC carbon content values, the forest land data set data developed by FCO for this project (2013) was analyzed for the action alternatives to calculate the total carbon volume in metric tons of CO<sub>2</sub> equivalent (MTCO<sub>2</sub>e) included in trees to be removed. The method for calculating the loss of sequestered carbon is presented below.

### Loss of Sequestered Carbon

A development that removes vegetation results in potential release of sequestered carbon to the atmosphere as CO<sub>2</sub>, which would not have been released had there been no vegetation removal. In CalEEMod, the amount of sequestered carbon which would be lost to the atmosphere is based on the conversion acreage of forest land and the carbon content per acre value. For this analysis, more detailed USFS forest land data was utilized to calculate the loss of sequestered carbon resulting from the proposed project. Specifically, total removed cubic foot tree volume (greater than or equal to 1 inch dbh) data generated by FCO (2013) formed the basis for the carbon-related calculations included in this EIS/EIS/EIR. The calculations conducted for this EIS/EIS/EIR are consistent with those presented in the Climate Action Reserve (CAR) Forest Project Protocol, v3.3 (CAR 2012a, 2012b).

The total cubic foot volume of trees to be removed (which includes trees in permanent and temporary impact areas plus hazard trees in the hazard tree border zone) includes merchantable tree volume. This analysis assumes that merchantable wood would be utilized as forest products thereby retaining sequestered carbon in wood products and reducing the amount of sequestered carbon assumed to be released to the atmosphere as CO<sub>2</sub>. Merchantable volume includes all removed conifer trees greater than or equal to 9 inches dbh, but excludes hazard trees, which are assumed to be non-merchantable. Additionally, this analysis assumes that 70 percent of merchantable wood volume would be converted to forest products (James, Krumland, and Eckert 2007), with the remaining 30 percent becoming waste. Therefore, the net tree volume expected to release its stored carbon to the atmosphere as CO<sub>2</sub> includes the total cubic foot tree volume (greater than or equal to 1 inch dbh) removed less 70 percent of the volume of merchantable trees (greater than or equal to 9 inches dbh, excluding hazard trees). The following equation summarizes the determination of net tree volume:

$$\text{Net Tree Volume (ft}^3\text{)} = \text{Total Tree Volume (ft}^3\text{)} - (\text{Merchantable Tree Volume (ft}^3\text{)} * 0.70)$$

After accounting for the tree volume to be converted to forest products, biomass was calculated from the net tree volume expected to release its stored carbon to the atmosphere as CO<sub>2</sub>. As the USFS inventory data used for this analysis does not indicate species distributions, the net cubic foot volume was converted to biomass using the carbon/wood density factor for white fir, which is presumed to be the dominant species across the project area (FCO 2013). The source of the carbon/wood density factor is the Regional Biomass Equations provided by CAR (2012a). The following equation was used in calculating biomass (CAR 2012b):

$$\text{Biomass (tons)} = (\text{Net Volume [ft}^3\text{]} * 23.09 [\text{carbon/wood density factor}]) / 2,000$$

Finally, the conversion formulae presented in the CAR Quantification Guidance document (CAR 2012b) were used to convert the calculated biomass total to a MTCO<sub>2e</sub> value. The following equation was used in calculating MTCO<sub>2e</sub>:

$$\text{MTCO}_2\text{e} = ((\text{Biomass (tons)} * 0.50) * 3.67) * 0.90718474$$

Table 4.3-5, Total Sequestered Carbon to be Released by Timber Removal for the Project Alternatives, presents the total sequestered carbon expected to be released to the atmosphere as CO<sub>2</sub> from the one time activity of timber removal, by alternative.

<b>Alternative</b>	<b>Total MTCO<sub>2e</sub> Released</b>
Alternative 1 (PEA Alternative)	8,375
Alternative 2 (Modified Alternative)	8,095
Alternative 3 (Road Focused Alternative)	6,953
Alternative 4 (Proposed Alternative)	6,929
Alternative 5 (No Action/No Project Alternative)	N/A

### Loss of Carbon Sequestration Potential

The loss of carbon sequestration potential is an assessment of the amount of carbon which would have been sequestered by trees had they not been removed by a project alternative. Sequestration rates vary across the landscape, and are affected by forest type, forest structure, stand age, location, disturbance regimes, management history, soil conditions, and climate, amongst others. As specific carbon sequestration rates for forest land in the project area are not currently available, an analysis of sequestration potential loss by project alternative was conducted by comparing the amount of carbon currently sequestered in trees within the project area with an estimated future carbon content value assumed at a time when the forest habitat reaches a higher level of maturity. The current carbon content values used in this analysis are those calculated by FCO (2013) for permanently impacted forest land areas and hazard trees in the hazard tree border zone because those trees would not be removed if the project alternatives were not implemented. The values for carbon sequestered in permanent impact areas and hazard trees are presented in the data tables included in Appendix H.

The future carbon content value was calculated by multiplying the acreage of permanently-impacted forest land (as presented in Table 4.3-1) by the Common Practice carbon content value for the Sierra Mixed Conifer forest type (146.1 MTCO<sub>2</sub>/acre), as presented by the California Air Resources Board (ARB) (ARB n.d.). The product of this calculation represents a potential future condition which the forest land areas may meet without implementation of a project alternative. Note that the 146.1 MTCO<sub>2</sub>/acre ARB estimate of future forest carbon content is the same value used below in the discussion of Future Carbon Sequestration as an estimate of forest carbon content that might ultimately develop in the abandoned 625 Line. The current carbon content value was then subtracted from the estimated future carbon content value, as it was below the Common Practice value, to determine the loss of carbon sequestration potential for each project alternative. This analysis compares current carbon storage with an estimated future average and is based on the best available information for forest carbon content, as presented by the California ARB. Table 4.3-6, Loss of Carbon Sequestration Potential in Permanent Impact Areas and Hazard Tree Border Zone for the Project Alternatives, presents the loss of carbon sequestration potential totals, by project alternative.

Alternative	Permanent Forest Land Impacts (Acres)	Common Practice MTCO <sub>2e</sub> Content (per acre)	Calculated Common Practice MTCO <sub>2e</sub> Content in Permanent Impact Areas	Removed MTCO <sub>2e</sub> in Permanent Impact Areas and Hazard Trees	Lost MTCO <sub>2e</sub> Sequestration Potential
Alternative 1 (PEA Alternative)	136.3	146.1	19,913	9,387	10,526
Alternative 2 (Modified Alternative)	128.2	146.1	18,730	9,589	9,141
Alternative 3 (Road Focused Alternative)	100.5	146.1	14,683	7,092	7,591
Alternative 4 (Proposed Alternative)	100.2	146.1	14,639	7,082	7,557
Alternative 5 (No Action/No Project Alternative)	N/A	N/A	N/A	N/A	N/A

### Potential Future Carbon Sequestration

To account for potential future carbon sequestration within portions of the existing 625 Line ROW which would be abandoned under the project alternatives, and within temporarily-impacted forest land, the forest land areas were multiplied by the average per acre carbon content value for the Sierra Mixed Conifer forest type (146.1 MTCO<sub>2e</sub>/acre), as presented by the California ARB (ARB n.d.). The abandoned forest land area excludes any areas which may be impacted by a project alternative. Additionally, this abandonment acreage estimation includes only abandoned forest land areas which are assumed to be suitable for growing trees and excludes non-compatible areas (e.g., rock outcrops and existing roads) (FCO 2013). Temporarily-impacted areas include only those designated as forest land and also exclude non-compatible areas. Native conifer re-establishment and growth within the abandoned ROW would be expected to occur naturally once vegetation management activities are discontinued in the ROW. Within temporarily-impacted areas, revegetation efforts would be implemented as a part of APM BIO-36 and other applicable APMs and mitigation measures. Potential future sequestration would be expected to occur over a period of approximately 100 years and it is assumed that re-growth will be similar to adjacent forest land. This time frame is based on the estimated age of forest land in the region, which is assumed to date back to Comstock-era logging activity which occurred in the region between 1860 and 1920 (Lindström 2000, Taylor et al. 2012). Table 4.3-7, Potential Future Carbon Sequestration for the Project Alternatives, presents the potential future carbon sequestration totals, by alternative.

Alternative	Acreage of Forest Land in Abandoned ROW	MTCO <sub>2e</sub> Sequestered Over Time in Abandoned ROW	Acreage of Forest Land in Temporary Impact Areas	MTCO <sub>2e</sub> Sequestered Over Time in Temporary Impact Areas
Alternative 1 (PEA Alternative)	22.8	3,331	97.7	14,274
Alternative 2 (Modified Alternative)	21.2	3,097	86.4	12,623
Alternative 3 (Road Focused Alternative)	26.6	3,886	92.2	13,470
Alternative 4 (Proposed Alternative)	26.7	3,901	91.4	13,353
Alternative 5 (No Action/No Project Alternative)	N/A	N/A	N/A	N/A

## ALTERNATIVE 1 - PEA ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.3-1 (Alt.1)</b>	<b>Conflict with or cause rezoning of forest land, timberland, or TPZ.</b> Implementation of Alternative 1 (PEA Alternative) would not result in a conflict with existing Placer County forest land/timberland-related zoning or cause rezoning of forest land, timberland, or TPZ located in the project footprint (i.e., FOR, FOR-B-X-160 AC. MIN., RF-B-X 10 AC. MIN., and TPZ). Electric lines are allowed without land use permit approval under the Placer Zoning Ordinance on FOR, RF, and TPZ lands. Therefore, there would be <b>no impact</b> .
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Much of the project site is on federal land (USFS, US Army Corps of Engineers) that does not contain zoning designations relevant to the CEQA significance criteria addressing rezoning of forest land, timberland, or TPZ. This zoning criteria relates to zoning by local jurisdictions (e.g., Placer County). Portions of Alternative 1 (PEA Alternative) would occur on land currently zoned by Placer County for forestry or timber-related purposes (i.e., FOR, FOR-B-X-160 AC. MIN., RF-B-X 10 AC. MIN., and TPZ). Pursuant to CPUC General Order 131, local zoning designations do not apply as Placer County would not have discretionary permitting authority over the project as they are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. Therefore, this information is provided for informational purposes only (see Section 4.1, Introduction, for further discussion of CPUC General Order 131). This Alternative includes no proposal to alter existing zoning designations and does not require rezoning to accommodate project activities. No land use permit approval is required for electrical lines on land zoned by Placer County as FOR, FOR-B-X-160 AC. MIN., RF-B-X 10 AC. MIN., and TPZ, because they typically: 1) involve no or minimal construction activities; 2) are accessory to some other land use that would be the primary use of a site (which would require a land use permit); or 3) are otherwise entirely consistent with the purposes of the particular zone (Placer County 1995). Therefore, implementation of Alternative 1 (PEA Alternative) would not conflict with existing zoning or cause rezoning of land under the jurisdiction of Placer County currently zoned for forestry, timberland, or TPZ. There would be **no impact**.

### MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-2 (Alt.1)</b>	<b>Conversion of forest land to non-forest uses or loss of forest land.</b> Implementation of Alternative 1 (PEA Alternative) would result in the removal of approximately 59,603 trees in up to 219.8 acres of forest land plus hazard tree border zones as part of project construction and long-term vegetation management in the power line ROW and in new access ways. Permanent tree removal would occur within the 40-foot wide power line ROW, along new access ways, at substation locations, and selectively within the hazard tree border zone and includes removal of approximately 33,995 trees within roughly 136.3 acres of forest land (excluding the hazard tree border zone). Tree removal in temporary impact areas would occur within the temporary construction ROW (12.5 feet in either side of the permanent 40-foot ROW), staging areas, and stringing/pulling sites and includes removal of approximately 25,606 trees within roughly 97.7 acres of forest land. Implementation of Alternative 1 (PEA Alternative) would also result in the one-time release of approximately 8,375 MTCO <sub>2e</sub> currently sequestered in forest land. Potential future sequestration of approximately 10,526 MTCO <sub>2e</sub> over time would also be lost. Considering forest regeneration on up to 22.8 acres of land currently maintained in the existing 625 Line ROW would result in an overall permanent forest land impact of 113.5 acres associated with Alternative 1 (PEA Alternative). The 22.8 acres of forest land regeneration in the existing 625 Line ROW
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would sequester approximately 3,330 MTCO<sub>2</sub>e over time and re-growth within temporarily-impacted areas would sequester approximately 14,274 MTCO<sub>2</sub>e over time. Tree removal would not result in substantial changes to adjacent stand structure or regional forest land composition or distribution. Forest land would not be lost or converted to a non-forest use as project-related activities are compatible uses with forest land zoning designations in the project area. With integration of APMs BIO-1, 21, 23, 26, 28, 36, and 37 into project design and implementation of Mitigation Measures 4.7-4 and 4.7-5, effects on forest land would be further minimized. Therefore, this impact would be considered **less than significant**.

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As identified previously, forest land is defined in PRC Section 12220(g) as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. For the purposes of this analysis, forest communities identified above in the description of Existing Conditions/Affected Environment are assumed to fall within the definition of forest land. Within the Alternative 1 (PEA Alternative) forest land study area, approximately 136.3 acres of forest land would be permanently impacted for construction of ROWs, access ways, and substations. Selective tree removal would also be conducted in the hazard tree border zone, which includes the area within 150-feet of the power line center line. Tree removal in temporary impact areas would occur within the temporary ROW (12.5 feet in either side of the permanent 40-foot ROW), staging areas, and stringing/pulling sites. Tree removal within permanent and temporary impact areas and the hazard tree border zone would total approximately 59,603 trees (including approximately 1,721 trees in SEZ areas), which include roughly 839,868 cubic feet of wood volume (including approximately 16,911 cubic feet in SEZ areas). Impacts specific to late seral/old-growth trees are discussed in Section 4.7, Biological Resources, of this document. Tree removal would also result in the one-time release of approximately 8,375 MTCO<sub>2</sub>e. Potential future sequestration of approximately 10,526 MTCO<sub>2</sub>e over time would also be lost. Considering forest regeneration on up to 22.8 acres of forest land currently maintained in the existing 625 Line ROW, project implementation would result in an overall permanent forest land impact of approximately 113.5 acres associated with Alternative 1 (PEA Alternative) (136.3 acres permanent impact minus 22.8 acres of regeneration in the abandoned 625 Line ROW). The 22.8 acres of forest land regeneration in the existing 625 Line ROW would sequester approximately 3,331 MTCO<sub>2</sub>e over time and re-growth within temporarily-impacted areas would sequester approximately 14,274 MTCO<sub>2</sub>e over time. Carbon sequestration within the abandoned 625 Line ROW is expected to reach the totals presented herein over a period of approximately 100 years, based on the timeframe of Comstock-era logging activity in the region between 1860 and 1920 (Lindström 2000, Taylor et al. 2012).

Although trees would be removed from a relatively large total area, this would not constitute a permanent conversion of forest land to a non-forest use. As discussed previously, forest land and timberland zoning (Placer County) identifies power lines as a compatible use within land currently zoned for forestry or timber-related purposes. Permanent tree removal would primarily occur within the narrow power line ROW and access ways, which is not expected to result in substantial changes to adjacent stand structure or regional forest land composition or distribution. Also, as outlined in APM BIO-37, the permanent loss of trees would be offset, in part, by abandonment of the existing 625 Line ROW, which would be allowed to regenerate, and temporary disturbance areas would be revegetated with native vegetation and locally collected native plants and seeds (Mitigation Measure 4.7-5 [Alt. 1]).

As described in Section 4.7, Biological Resources, APMs BIO-1, 21, 23, 26, 28, 36, and 37 have been incorporated into the project design to minimize, avoid, and reduce potential adverse effects from tree removal and loss of common vegetation communities, including forest land. These APMs are listed below and all APMs are described in Section 3.7, Applicant Proposed Measures.

- ▲ **APM BIO-1:** Prior to construction, all CalPeco, contractor, and subcontractor project personnel will receive training from qualified resource specialists regarding the appropriate work practices necessary to effectively

implement the APMs and to comply with the applicable environmental laws and regulations, including appropriate wildlife avoidance measures, impact minimization procedures, the importance of sensitive resources, and the purpose and methods for protecting such resources. Among other topics, the training will also include a discussion of Best Management Practices (BMPs) to reduce the potential for erosion and sedimentation during construction. Additionally, CalPeco and designated environmental monitors for project construction will coordinate with the applicable public land owners/managers on communication, documentation and reporting, and data submittal protocols.

- ▲ **APM BIO-21:** Qualified environmental monitors will be present with each crew during all vegetation-removal activities to help ensure that impacts to biological resources are minimized to the extent possible. For all other construction activities, monitors will be allowed to cover up to 5 miles of the project area at once to allow multiple crews to work in close proximity to each other at the same time. Environmental monitors will have the authority to stop work or direct work in order to help ensure the protection of resources and compliance with all permits.
- ▲ **APM BIO-23:** Topsoil, where present, will be salvaged in areas that will be graded or excavated. Topsoil will be segregated, stockpiled separately from subsoil, and covered. These soil stockpiles, as well as any others created by the proposed project, shall have the proper erosion control measures applied until they are removed. The topsoil will then be replaced to the approximate location of its removal after project construction has been completed to facilitate revegetation of disturbed areas. Topsoil will not be salvaged from areas infested with invasive plants.
- ▲ **APM BIO-26:** Work areas will be clearly marked with fencing, staking, flagging, or another appropriate material. All project personnel and equipment will be confined to delineated work areas. In the event that work must occur outside of the work area, approval from lead and other agencies with jurisdiction over the property will be obtained prior to the commencement of activities.
- ▲ **APM BIO-28:** CalPeco will minimize vegetation and tree removal to only the areas necessary for construction, with particular attention given to minimizing effects on riparian areas and preserving trees greater than 30 inches diameter at breast height (dbh).
- ▲ **APM BIO-36:** Prior to construction, CalPeco will develop a Restoration Plan that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. The plan will be consistent with, and implement related commitments and requirements included in the EIS/EIS/EIR project description, other APMs, mitigation measures, and agency permit requirements. The Restoration Plan will address loosening of any compacted soil, restoration of surface residue, and reseedling. If existing unpaved roads require modification to temporarily allow passage of construction equipment during the construction period, these roads will be returned to their original footprint after construction is complete. On NFS lands, restoration activities will be designed and implemented to meet invasive plant management guidelines and Visual Quality Objectives (VQO) for the area. Areas temporarily disturbed by cut and fill activities will be re-graded to blend with the natural topography. On public land, CalPeco will coordinate with the land management agency to determine an appropriate seed mix or tree planting plan as well as other elements of the plan applicable to lands managed by the agency. On private land, CalPeco will coordinate with the landowner and/or provide the landowner with a suggested seed mix based on consultation with the agency of jurisdiction. The plan will include approved seed mixes, application rates, application methods, methods to record pre-disturbance conditions, success criteria for vegetation growth, monitoring and reporting protocols, and remedial measures if success criteria are not met. If broadcast seeding is determined to be the most feasible application method, seeding rates will be doubled relative to the standard seeding rate and the seeding method rationale will be explained. The plan will also include long-term erosion and sediment control measures, slope stabilization measures, criteria to determine the success of these measures, remedial actions if success criteria are not met, and monitoring and reporting procedures. As part of normal equipment inspections during operation an evaluation of access ways will be conducted to confirm that use has not resulted in compaction that will result in “coverage” per TRPA standards.

- ▲ **APM BIO-37:** Decommissioning the existing 625 Line ROW and allowing natural regeneration of coniferous forest and other native vegetation types will assist in offsetting or reducing the permanent loss of trees and other vegetation along the new 625 Line ROW. Prior to the removal of poles and conductor, a qualified biologist or soil scientist will identify areas of the abandoned ROW that contain unnaturally compacted soil (resulting from unauthorized public use, development of user-created trails, or other factors) that could limit the natural reestablishment of vegetation and assess whether local treatments will be needed to facilitate native vegetation recruitment and development. CalPeco will consult with the applicable land owner/manager to verify that areas identified for treatments are appropriate (e.g., not part of a system road, authorized trail network, or other desired use) and secure approval for restoration. Restoration of these sites will be overseen by a qualified biologist and will likely consist of a combination of the following.

  - /// Barricade existing access points and post appropriate signage to discourage use. Also incorporate into restoration actions minimizing the visibility of potential access points from intersecting roadways.
  - /// Loosen compacted soil to a depth of 6 to 8 inches.
  - /// Incorporate logs, boulders, mulch and other materials into the disturbed area to discourage use.
  - /// Apply appropriate erosion control Best Management Practices (e.g., installation of check dams, mulch, log and/or rock stabilization) in areas where evidence of sheet, rill, or gully erosion exists.
  - /// Seed with a certified weed-free seed mix, approved by the applicable land owner/manager, containing native, site-appropriate species.
  - /// Apply 1 to 2 inches of locally obtained mulch such as pine needles, wood chips, or tub grindings.
  - /// Monitor for new invasive plant invasions and expansion of existing weed populations following treatments, and implement weed control measures where needed. Post-treatment monitoring for invasive plants will be conducted annually for up to three years, similar to the frequency and duration specified for USFS land in the USFS Invasive Plant Risk Assessment prepared for the project.
  - /// Conduct post-treatment monitoring and reporting every two years for up to 10 years, to evaluate success of restoration treatments. The details of the monitoring and reporting program, including identification and implementation of potential adaptive management actions based on monitoring results, will be developed jointly by CalPeco, TRPA, and the land owner/manager.

Effects on forest resources would be further minimized with implementation of Mitigation Measure 4.7-4 (Alt. 1), which includes a pre-construction focused tree survey for the selected alternative, development of necessary timber harvest plans, and securing of all necessary permits.

Overall, implementation of Alternative 1 (PEA Alternative) would not substantially reduce the size, continuity, or integrity of forest land in the project area or interrupt the natural processes that support forest land. Therefore, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-3 (Alt.1)</b>	<p><b>Change in existing environment that could result in conversion of forest land to non-forest use.</b> Project activities are compatible with Placer County zoning and do not result in zoning changes that could promote growth. Although the proposed project responds to growth planned/authorized by others, it does not itself promote development that could result in forest land conversion. Implementation of Alternative 1 (PEA Alternative) would not involve additional changes in the existing environment which, due to their location or nature, could temporarily or permanently result in conversion of forest land to a non-forest use. Therefore, implementation of Alternative 1 (PEA Alternative) would result in <b>no impact</b>.</p>
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Project activities are compatible with Placer County zoning and there would be no changes in zoning that would allow or promote conversion of forest land to another use. Additionally, as described in the discussion of growth-inducing impacts in Chapter 5, Other NEPA-, TRPA-, and CEQA-Mandated Sections, the project does not promote additional development that could convert forest land to another use. Growth in the project area is planned and regulated by the regional plans, general plans, zoning regulations, and other regulations of TRPA, Placer County, Nevada County, and the Town of Truckee. Utilities and service providers in the Lake Tahoe Basin and the Truckee and North Tahoe regions plan and upgrade their facilities based on growth projections provided by the local government agencies. The provision of electrical service responds to growth authorized by other entities and does not itself promote growth. The intent of the project is to increase reliability of the system and to allow re-routes of power and continued service to customers when part of the system is out of service. Alternative 1 (PEA Alternative) would not involve additional changes in the existing environment which, due to their location or nature, could temporarily or permanently result in conversion of forest land to a non-forest use. Therefore, implementation of Alternative 1 (PEA Alternative) would result in **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 2 – MODIFIED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.3-1 (Alt.2)</b>	<b>Conflict with or cause rezoning of forest land, timberland, or TPZ.</b> Implementation of Alternative 2 (Modified Alternative) would not result in a conflict with existing Placer County forest land/timberland related zoning or cause rezoning of forest land, timberland, or TPZ located in the project footprint (i.e., FOR, FOR-B-X-160 AC. MIN., RF-B-X 10 AC. MIN., and TPZ). Power lines are allowed without land use permit approval under the Placer Zoning Ordinance on FOR, RF, and TPZ lands. Therefore, there would be <b>no impact</b> .
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This impact would be the same as Impact 4.11-1, (Alt.1) described above for Alternative 1 (PEA Alternative). For the same reasons described for Alternative 1 (PEA Alternative), there would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-2 (Alt.2)</b>	<b>Conversion of forest land to non-forest uses or loss of forest land.</b> Implementation of Alternative 2 (Modified Alternative) would result in the removal of approximately 56,795 trees in up to 214.6 acres of forest land plus hazard tree border zones as part of project construction and long-term vegetation management in the power line ROW and in new access ways. Permanent tree removal would occur within the 40-foot wide power line ROW (and the 65-foot ROW in double-circuit segments), along new access ways, at substations, and selectively within the hazard tree border zone and includes removal of approximately 34,345 trees within roughly 128.2 acres of forest land (excluding the hazard tree border zone). Tree removal in temporary impact areas would occur within the temporary ROW (12.5 feet in either side of the permanent 40-foot ROW in single-circuit segments), staging areas, and stringing/pulling sites and includes removal of approximately 22,450 trees within roughly 86.4 acres of forest land. Implementation of Alternative 2 (Modified Alternative) would also result in the one-time release of 8,095 MTCO <sub>2e</sub> currently sequestered in forest land. Potential future sequestration of approximately 9,141 MTCO <sub>2e</sub> over time would also be
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lost. Considering forest regeneration on up to 21.2 acres of forest land currently maintained in the existing 625 Line ROW would result in an overall permanent forest land impact of 107.0 acres associated with Alternative 2 (Modified Alternative). The 21.2 acres of forest land regeneration in the existing 625 Line ROW would sequester approximately 3,095 MTCO<sub>2e</sub> over time and re-growth within temporarily-impacted areas would sequester approximately 12,625 MTCO<sub>2e</sub> over time. Tree removal would not result in substantial changes to adjacent stand structure or regional forest land composition or distribution. Forest land would not be lost or converted to a non-forest use as project-related activities are compatible uses with forest land zoning designations in the project area. With integration of APMs BIO-1, 21, 23, 26, 28, 36, and 37 into project design and implementation of Mitigation Measures 4.7-4 and 4.7-5, effects on forest land would be further minimized. Therefore, this impact would be considered **less than significant**.

This impact would be similar to Impact 4.11-2 (Alt.1) described above for Alternative 1 (PEA Alternative) except for the quantity, volume, and acreage of tree removal and one-time MTCO<sub>2e</sub> released. Implementation of Alternative 2 (Modified Alternative) would result in approximately 128.2 acres of forest land being permanently impacted for construction of ROWs, access ways, and substations. Permanent tree removal, selective tree removal in the hazard tree border zone, and tree removal in temporary impact areas would total approximately 56,795 trees (including roughly 1,695 trees in SEZ areas), which includes roughly 809,255 cubic feet of wood volume (including approximately 16,470 cubic feet in SEZ areas). Tree removal would also result in the one-time release of approximately 8,095 MTCO<sub>2e</sub>. Potential future sequestration of approximately 9,141 MTCO<sub>2e</sub> over time would also be lost. Considering forest regeneration on up to 21.2 acres of forest land currently maintained in the existing 625 Line ROW would result in an overall permanent forest land impact of 107.0 acres associated with Alternative 2 (Modified Alternative) (128.2 acres of permanent impact minus 21.2 acres of regeneration in the abandoned 625 Line ROW). The 21.2 acres of forest land regeneration in the existing 625 Line ROW would sequester approximately 3,095 MTCO<sub>2e</sub> over time and re-growth within temporarily-impacted areas would sequester approximately 12,625 MTCO<sub>2e</sub> over time. For the same reasons described for Alternative 1 (PEA Alternative) (e.g., integration of APMs into the project design and implementation of mitigation measures), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

<b>IMPACT 4.3-3 (Alt.2)</b>	<b>Change in existing environment that could result in conversion of forest land to non-forest land.</b> Project activities are compatible with Placer County zoning and do not result in zoning changes that could promote growth. Although the proposed project responds to growth planned/authorized by others, it does not itself promote development that could result in forest land conversion. Implementation of Alternative 2 (Modified Alternative) would not involve additional changes in the existing environment which, due to their location or nature, could temporarily or permanently result in conversion of forest land to a non-forest use. Therefore, implementation of Alternative 2 (Modified Alternative) would result in <b>no impact</b> .
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This impact would be the same as Impact 4.11-3 (Alt.1) described above for Alternative 1 (PEA Alternative). For the same reasons described for PEA Alternative (Alternative 1), there would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 3 – ROAD FOCUSED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.3-1 (Alt.3)</b>	<b>Conflict with or cause rezoning of forest land, timberland, or TPZ.</b> Implementation of Alternative 3 (Road Focused Alternative) would not result in a conflict with existing Placer County forest land/timberland related zoning or cause rezoning of forest land, timberland, or TPZ located in the project footprint (i.e., FOR, FOR-B-X-160 AC. MIN., RF-B-X 10 AC. MIN., and TPZ). Power lines are allowed without land use permit approval under the Placer Zoning Ordinance on FOR, RF, and TPZ lands. Therefore, there would be <b>no impact</b> .
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This impact would be the same as Impact 4.11-1 (Alt.1) described above for Alternative 1 (PEA Alternative). For the same reasons described for Alternative 1 (PEA Alternative), there would be **no impact**.

### MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-2 (Alt.3)</b>	<b>Conversion of forest land to non-forest uses or loss of forest land.</b> Implementation of Alternative 3 (Road Focused Alternative) would result in the removal of approximately 49,051 trees in up to 185.5 acres of forest land plus hazard tree border zones as part of project construction and long-term vegetation management in the power line ROW and in new access ways. Permanent tree removal would occur within the 40-foot wide power line ROW (and the 65-foot ROW for double-circuit segments), along new access ways, at substation locations, and selectively within the hazard tree border zone and includes removal of approximately 25,765 trees within roughly 100.5 acres of forest land (excluding the hazard tree border zone). Tree removal within temporary impact areas would occur within the temporary ROW (12.5 feet in either side of the permanent 40-foot ROW in single-circuit segments), staging areas, and stringing/pulling sites and includes removal of approximately 23,287 trees within roughly 92.2 acres of forest land. Implementation of Alternative 3 (Road Focused Alternative) would also result in the one-time release of approximately 6,953 MTCO <sub>2e</sub> currently sequestered in forest land. Potential future sequestration of approximately 7,591 MTCO <sub>2e</sub> over time would also be lost. Considering forest regeneration on up to 26.6 acres of land currently maintained in the existing 625 Line ROW would result in an overall permanent forest land impact of approximately 66.5 acres associated with Alternative 3 (Road Focused Alternative). The 26.6 acres of forest land regeneration in the existing 625 Line ROW would sequester approximately 3,886 MTCO <sub>2e</sub> over time and re-growth within temporarily-impacted areas would sequester approximately 13,470 MTCO <sub>2e</sub> over time. Tree removal would not result in substantial changes to adjacent stand structure or regional forest land composition or distribution. Forest land would not be lost or converted to a non-forest use as project-related activities are compatible uses with forest land zoning designations in the project area. With integration of APMs BIO-1, 21, 23, 26, 28, 36, and 37 and Mitigation Measures 4.7-4 and 4.7-5, effects on forest land would be further minimized. Therefore, this impact would be considered <b>less than significant</b> .
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This impact would be the same as Impact 4.11-2 (Alt.1) described above for Alternative 1 (PEA Alternative) except for the quantity, volume, and acreage of tree removal and one-time MTCO<sub>2e</sub> released. Implementation of Alternative 3 (Road Focused Alternative) would result in approximately 100.5 acres of forest land being permanently impacted for construction of ROWs, access ways, and substations. Permanent tree removal, selective tree removal in the hazard tree border zone, and tree removal in temporary impact areas would total approximately 49,051 trees (including approximately 1,543 trees in SEZ areas), which include roughly 692,795

cubic feet of wood volume (including approximately 14,770 cubic feet in SEZ areas). Tree removal would also result in the one-time release of approximately 6,953 MTCO<sub>2</sub>e. Potential future sequestration of approximately 7,591 MTCO<sub>2</sub>e over time would also be lost. Considering forest regeneration on up to 26.6 acres of forest land currently maintained in the existing 625 Line ROW would result in an overall permanent forest land impact of 66.5 acres associated with Alternative 3 (Road Focused Alternative) (100.5 acres of permanent impact minus 26.6 acres of regeneration in the abandoned 625 Line ROW). The 26.6 acres of forest land regeneration in the existing 625 Line ROW would sequester approximately 3,886 MTCO<sub>2</sub>e over time and re-growth within temporarily-impacted areas would sequester approximately 13,470 MTCO<sub>2</sub>e over time. For the same reasons described for Alternative 1 (PEA Alternative), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-3 (Alt.3)</b>	<b>Change in existing environment that could result in conversion of forest land to non-forest land.</b> Project activities are compatible with Placer County zoning and do not result in zoning changes that could promote growth. Although the proposed project responds to growth planned/authorized by others, it does not itself promote development that could result in forest land conversion. Implementation of Alternative 3 (Road Focused Alternative) would not involve additional changes in the existing environment which, due to their location or nature, could temporarily or permanently result in conversion of forest land to a non-forest use. Therefore, implementation of Alternative 3 (Road Focused Alternative) would result in <b>no impact</b> .
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This impact would be the same as Impact 4.11-3 (Alt.1), described above for Alternative 1 (PEA Alternative). For the same reasons described for Alternative 1 (PEA Alternative), there would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 4 – PROPOSED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.3-1 (Alt.4)</b>	<b>Conflict with or cause rezoning of forest land, timberland, or TPZ.</b> Implementation of Alternative 4 (Proposed Alternative) would not result in a conflict with existing Placer County forest land/timberland-related zoning or cause rezoning of forest land, timberland, or TPZ located in the project footprint (i.e., FOR, FOR-B-X-160 AC. MIN., RF-B-X 10 AC. MIN., and TPZ). Power lines are allowed without land use permit approval under the Placer Zoning Ordinance on FOR, RF, and TPZ lands. Therefore, there would be <b>no impact</b> .
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This impact would be the same as Impact 4.11-1 (Alt.1), described above for Alternative 1 (PEA Alternative). For the same reasons described for Alternative 1 (PEA Alternative), there would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-2 (Alt.4)</b>	<p><b>Conversion of forest land to non-forest uses or loss of forest land.</b> Implementation of Alternative 4 (Proposed Alternative) would result in the removal of approximately 48,704 trees in up to 184.4 acres of forest land plus hazard tree border zones as part of project construction and long-term vegetation management in the power line ROW and in new access ways. Permanent tree removal would occur within the 40-foot wide power line ROW (and a 65-foot ROW for double-circuit segments), along new access ways, at substation locations, and selectively within the hazard tree border zone and includes removal of approximately 25,650 trees within roughly 100.2 acres of forest land (excluding the hazard tree border zone). Tree removal in temporary impact areas would occur within the temporary ROW (12.5 feet in either side of the permanent 40-foot ROW in single-circuit segments), staging areas, and stringing/pulling sites and includes removal of approximately 23,053 trees within roughly 91.4 acres of forest land. Implementation of Alternative 4 (Proposed Alternative) would also result in the one-time release of approximately 6,929 MTCO<sub>2e</sub> currently sequestered in forest land. Potential future sequestration of approximately 7,557 MTCO<sub>2e</sub> over time would also be lost. Considering forest regeneration on up to 26.7 acres of land currently maintained in the existing 625 Line ROW would result in an overall permanent forest land impact of 66.1 acres associated with Alternative 4 (Proposed Alternative). The 26.7 acres of forest land regeneration in the existing 625 Line ROW would sequester approximately 3,901 MTCO<sub>2e</sub> over time and re-growth within temporarily-impacted areas would sequester approximately 13,353 MTCO<sub>2e</sub> over time. Tree removal would not result in substantial changes to adjacent stand structure or regional forest land composition or distribution. Forest land would not be lost or converted to a non-forest use as project-related activities are compatible uses with forest land zoning designations in the project area. With integration of APMs BIO-01, 21, 23, 26, 28, 37 into project design and implementation of Mitigation Measures 4.7-4 and 4.7-5, effects on forest land would be further minimized. Therefore, this impact would be considered <b>less than significant</b>.</p>
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This impact would be the same as Impact 4.11-2 (Alt.1) described above for Alternative 1 (PEA Alternative) except for the quantity, volume, and acreage of tree removal and one-time MTCO<sub>2e</sub> released. Implementation of Alternative 4 (Proposed Alternative) would result in approximately 100.2 acres of forest land being permanently impacted for construction of ROWs, access ways, and substations. Permanent tree removal, selective tree removal in the hazard tree border zone, and tree removal in temporary impact areas would total approximately 48,704 trees (including roughly 1,542 trees in SEZ areas), which include approximately 690,699 cubic feet of wood volume (including roughly 14,758 cubic feet in SEZ areas). Tree removal would also result in the one-time release of approximately 6,929 MTCO<sub>2e</sub>. Potential future sequestration of approximately 7,557 MTCO<sub>2e</sub> over time would also be lost. Considering forest regeneration on up to 26.7 acres of forest land currently maintained in the existing 625 Line ROW would result in an overall permanent forest land impact of 66.1 acres associated with Alternative 4 (Proposed Alternative) (100.2 acres of permanent impact minus 26.7 acres of regeneration in the abandoned 625 Line ROW). The 26.7 acres of forest land regeneration in the existing 625 Line ROW would sequester approximately 3,901 MTCO<sub>2e</sub> over time and re-growth within temporarily-impacted areas would sequester approximately 13,353 MTCO<sub>2e</sub> over time. For the same reasons described for Alternative 1 (PEA Alternative), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-3 (Alt.4)</b>	<b>Change in existing environment that could result in conversion of forest land to non-forest land.</b> Project activities are compatible with Placer County zoning and do not result in zoning changes that could promote growth. Although the proposed project responds to growth planned/authorized by others, it does not itself promote development that could result in forest land conversion. Implementation of Alternative 4 (Proposed Alternative) would not involve additional changes in the existing environment which, due to their location or nature, could temporarily or permanently result in conversion of forest land to a non-forest use. Therefore, implementation of Alternative 4 (Proposed Alternative) would result in <b>no impact</b> .
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This impact would be the same as Impact 4.11-3 (Alt.1) described for Alternative 1 (PEA Alternative). For the same reasons described for Alternative 1 (PEA Alternative), there would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 5 – NO ACTION/NO PROJECT ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.3-1 (Alt.5)</b>	<b>Conflict with or cause rezoning of forest land, timberland, or TPZ.</b> Implementation of Alternative 5 (No Action/No Project Alternative) would not have the potential to result in conflicts with existing zoning or cause rezoning of forest land, timberland, or TPZ because existing facilities would not be changed and new facilities would not be constructed. <b>No impact</b> would occur.
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Under Alternative 5 (No Action/No Project Alternative), the project would not be implemented and no new or upgraded power lines or related facilities would be constructed, no new or improved access ways would be built, and no expansion of the existing ROW would occur. Actions associated with this alternative would be limited to existing operations and maintenance and completion of deferred ROW maintenance, which would be in compliance with existing regulations (CPUC General Order 95) and approved plans and permits. Maintenance access would be gained via existing easements and rights-of-way. No conflicts with existing zoning would occur and no rezoning of forest land, timberland, or TPZ would occur. Therefore, this alternative would have **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-2 (Alt.5)</b>	<b>Conversion of forest land to non-forest uses or loss of forest land.</b> Implementation of Alternative 5 (No Action/No Project Alternative) would not result in the conversion of forest land to non-forest uses as no new power lines, access roadways, or related facilities would be constructed. Ongoing vegetation management within the existing ROW would continue under existing regulations and previously-approved management plans and permits. <b>No impact</b> would occur.
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Under Alternative 5 (No Action/No Project Alternative), the project would not be implemented and no new or upgraded power lines or related facilities would be constructed, no new ROW or access roadways would be built, and no expansion of the existing ROW would occur. Actions associated with this alternative would be

limited to existing operations and maintenance and completion of deferred ROW maintenance, which would include removal of trees in the existing ROW. While tree removal would occur, it would be conducted in compliance with existing regulations (CPUC General Order 95) and approved plans and permits. Maintenance access would be gained via existing easements and rights-of-way. No conversion or loss of forest land would occur; therefore, this alternative would have **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.3-3 (Alt.5)</b>	<b>Change in existing environment that could result in conversion of forest land to non-forest use.</b> No new power lines, access roadways, or related facilities would be constructed under Alternative 5 (No Action/No Project Alternative) and vegetation management within the existing ROW would continue under existing regulations and previously-approved management plans and permits. Alternative 5 (No Action/No Project Alternative) does not include any features that would indirectly result in the conversion of forest lands. <b>No impact</b> would occur.
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Under Alternative 5 (No Action/No Project Alternative), the project would not be implemented and no new or upgraded power lines or related facilities would be constructed, no new or improved access ways would be built, and no expansion of the existing ROW would occur. Actions associated with this alternative would be limited to existing operations and maintenance and completion of deferred ROW maintenance, which would be in compliance with existing regulations (CPUC General Order 95) and approved plans and permits. Maintenance access would be gained via existing easements and rights-of-way. Alternative 5 (No Action/No Project Alternative) does not include any features that would indirectly result in the conversion of forest lands. Therefore, this alternative would have **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## CUMULATIVE IMPACTS

The action alternatives result in no impact related to conflicts with or causing rezoning of forest land, timberland, or TPZ and changes in the existing environmental that could result in conversion of forest land to a non-forest use. Therefore, the action alternatives could not contribute to any cumulative impact related to these issues. The following analysis focusses on the conversion of forest land to non-forest uses and loss of forest land from implementation of the action alternatives.

The geographic scope for analyzing the cumulative effects on forest land consists of the Truckee-Tahoe Region. As discussed above, the action alternatives would result in temporary forest land impacts (i.e., trees removed during construction but trees allowed to regrow) on 86.4 to 97.9 acres of forest land and permanent forest land impacts (i.e., the permanent conversion of forest land to another use or trees removed and not allowed to grow back due to ROW vegetation management) on 128.2 to 92.8 acres of forest land habitats (see Table 4.3-1, Forest Land Conversion Acres for Project Alternatives). However, when considering the restoration of forest habitat resulting from the abandonment of the existing 625 Line ROW, the action alternatives result in a net reduction in forested habitat of 66.1 to 107 acres. Although trees would be removed from a relatively large total area, this does not necessarily constitute a permanent conversion of forest land to a non-forest use. The presence of the project does not preclude the ongoing growth of trees in the power line right-of-way and access ways, as evidenced by the need for ongoing vegetation management. If the project were moved to a new location at a

later date, trees would return to the vacated right-of-way. This return of trees to an abandoned right-of-way is expected to occur as a result of the proposed project where the existing 625 Line is removed and vegetation management ceases in the former right-of-way.

Trees removed as part of the action alternatives are only a small proportion of the amount of forest land present in the Truckee-Tahoe region (i.e., less than 1 percent). Further, tree removal would primarily occur within the narrow electric line ROW and access ways, which would not result in substantial changes in stand structure or composition or in the distribution of forest land in the project area overall. After installation of the proposed project, the forest would continue to function, providing timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. As described in Section 4.7, Biological Resources, APMs-BIO-1, 21, 23, 26, 28, 36, and 37 and Mitigation Measure 4.7-4, the permanent and temporary removal of trees would be minimized to the extent feasible, forest land habitat would be restored to pre-project conditions in temporary construction areas, and the applicant compensates for unavoidable losses. Therefore, implementation of any of the action alternatives would not substantially reduce the size, continuity, or integrity of forest land in the project area or interrupt the natural processes that support forest land.

Conversion of forest land to non-forest uses has occurred in the project region as a result of habitat conversions, residential and commercial development, utility and infrastructure development, and other compounding factors, such as lack of regeneration and pressures from invasive species. Thus, there is an existing significant cumulative impact associated with loss of forest land. However, for the reasons stated above, the tree removal and the prevention of tree growth in vegetation management corridors associated with the action alternatives would not result in a cumulatively considerable incremental contribution to this significant cumulative impact.

## 4.4 SCENIC RESOURCES

This section describes laws, ordinances, regulations and policies applicable to scenic resources, and existing conditions regarding scenic quality. Potential short-term and long-term scenic impacts that could result from project construction and operation are discussed and mitigation measures are recommended as necessary to reduce potentially significant adverse effects.

### 4.4.1 REGULATORY SETTING

A variety of laws, regulations, plans, and policies related to scenic quality and scenic resource management are administered by federal and state agencies, the Tahoe Regional Planning Agency (TRPA), and local agencies. Those that apply to the proposed project are discussed below.

The proposed project is located within and near overlapping jurisdictions that have policies pertaining to scenic resources. More than half of the project components are located on National Forest System (NFS) lands in the Lake Tahoe Basin Management Unit (LTBMU) and the Tahoe National Forest and much of the project area is within the jurisdiction of TRPA. The project is located in Placer and Nevada counties. Various communities and local planning jurisdictions also have policies that address visual quality in the project area.

#### FEDERAL

The National Forest Management Act requires the development of long-range land and resource management plans for NFS. The LTBMU Land and Resource Management Plan (LRMP) was approved in 1988 as required by the act (USFS 1988). It has been amended several times, including the Sierra Nevada Forest Plan Amendment (2004). The LRMP provides guidance for all natural resource management activities within LTBMU managed lands. The Tahoe National Forest has a LRMP that specifically addresses management of Tahoe National Forest lands outside the LTBMU (USFS 2005). The National Forest Management Act requires all projects and activities on NFS lands to be consistent with the LRMP.

The applicable LRMPs direct forest management activities to consider scenic resources identified through the Visual Management System (VMS), which provides an overall framework for the inventory, analysis, and management of the visual environment (USFS 1974). Under the VMS, the US Forest Service (USFS) has established management goals referred to as Visual Quality Objectives (VQOs) to describe the level of visible modification resulting from proposed land use activities that are considered acceptable in a given area. The five VQOs, in order of scenic quality and levels of afforded protection, include *Preservation* (i.e., the highest degree of scenic quality), *Retention* (i.e., appearing unaltered), *Partial Retention* (i.e., appearing slightly altered), *Modification* (i.e., moderately altered), and *Maximum Modification* (i.e., heavily altered) (USFS 2001).

The VQO levels applicable to lands within the project area are:

- ▲ **Retention (R)** – The Retention (R) VQO provides for management activities that are not visually evident. Under Retention, activities may only repeat form, line, color, and texture that are frequently found in the characteristic landscape. Changes in qualities of size, amount, intensity, direction, and pattern should not be evident.
- ▲ **Partial Retention (PR)** – Under the Partial Retention (PR) VQO, management activities are to remain visually subordinate to the characteristic landscape. Activities may repeat form, line, color, and texture common to the characteristic landscape but changes in qualities of size, amount, intensity, direction, and pattern remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, and

texture that are found infrequently or not at all in the characteristic landscape, but they should remain visually subordinate to the visual strength of the characteristic landscape.

- ▲ **Modification (M)** – Under the modification (M) VQO, management activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alterations must borrow from naturally established form, line, color, and texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type (USFS 1974).

A map of the project area with VQO designations shown for NFS land managed by the USFS is presented in Exhibit 4.4-1. As shown, the primary VQO for NFS land affected by the project is Partial Retention. The project also crosses some NFS land with a VQO designation of Retention, as well as a limited area designated as Modification. Portions of the project are on lands within the jurisdictional boundaries of TRPA, which oversees land development in the Lake Tahoe Region; these portions of the project were evaluated using TRPA visual resources management criteria and guidelines, where applicable (discussed below).

## STATE

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. There are no officially designated State Scenic Highways within the project viewshed. However, State Route (SR) 28 and SR 89 in Placer County and Interstate 80 (I-80) in both Placer and Nevada counties are eligible for designation as state scenic highways. Portions of the 650 Line and the 625 Line cross or are visible from these roadways.

## TAHOE REGIONAL PLANNING AGENCY

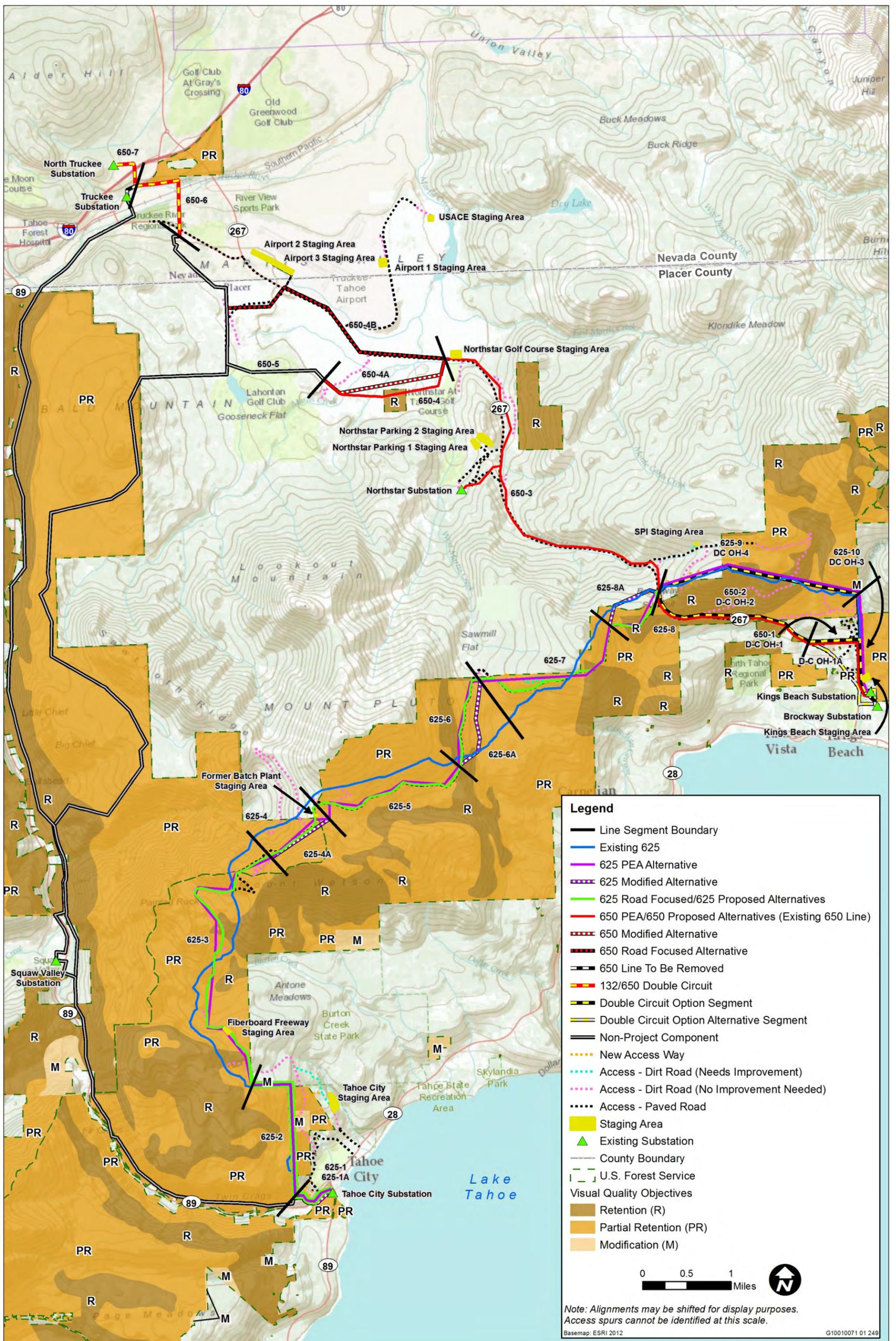
### REGIONAL PLAN

TRPA implements its authority to regulate growth and development in the Lake Tahoe Region through the Regional Plan. The Regional Plan includes Resolution 82-11, the Environmental Threshold Carrying Capacities (threshold standards), Goals and Policies, Code of Ordinances, and other guidance documents.

### ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES

TRPA adopted environmental threshold carrying capacities in August 1982 for the purpose of maintaining and improving the various resources of the Lake Tahoe Region. Scenic quality is an exceptional attribute of the Region, and specific threshold carrying capacities were developed to protect and improve the scenic resources of the area. TRPA threshold standards require maintenance of threshold rating values for roadway and shoreline travel routes, individually mapped scenic resources, recreation area scenic resources, and compatibility with the natural environment. According to Policy ME-1.1 of the Regional Plan, TRPA shall prepare evaluation reports every four years to evaluate the status and trend of threshold standard attainment (TRPA 2012a). The TRPA thresholds were most recently evaluated in 2011.

Following is a description of the TRPA threshold indicators for scenic resources that are relevant to the project alternatives. The methods for inventory and evaluation of travel routes and scenic resources are parallel with those employed by the USFS, and are standard practice within the LTBMU.



Source: Adapted by Ascent Environmental in 2012

Exhibit 4.4-1

Visual Quality Objectives within NFS Lands



## Travel Route Ratings

The TRPA travel route rating threshold tracks long-term, cumulative changes to views of the landscape from state and federal highways in urban, transitional, and natural landscapes in the region. The threshold also tracks changes to views from the surface of Lake Tahoe looking toward the shore. Major roadways within the Lake Tahoe Region have been divided into 53 segments called “Roadway Travel Units” based on their landscape characteristics. Lake Tahoe’s shoreline is similarly divided into an additional 33 segments called “Shoreline Travel Units.” The project would neither directly affect nor be visible from any of the Shoreline Travel Units because of screening by trees and man-made structures; therefore, Shoreline Travel Units are not discussed further.

The following six criteria are rated to determine the travel route rating threshold score for each Roadway Travel Unit:

1. Human-made features along roadways and shoreline;
2. Physical distractions to driving along roadways;
3. Roadway characteristics;
4. Views of the lake from roadways;
5. General landscape views from roadways and shoreline; and,
6. Variety of scenery from roadways and shoreline.

The travel route rating is a unit-less, numerical rating (composite score) consisting of the sum of the ratings of the six different aspects of the landscape within each travel unit. To secure threshold attainment, travel route ratings must meet or exceed the threshold standard. To do this, the composite score of those roadway travel routes with a 1982 score of 15.5 or greater must be maintained at 1982 levels, and the composite score of all roadway travel routes with a 1982 score of 15 or lower, must improve until the minimum score of 15.5 is reached. Elements of the proposed project would be visible from the following Roadway Travel Units (Exhibit 4.4-2): Unit 14 – Tahoe Tavern, Unit 15 – Tahoe City, Unit 41 – Brockway Summit, and Unit 42 – Outlet to Lower Truckee River. As of 2011, Units 14, 15, and 41 currently meet or exceed the scenic threshold standard and Unit 42 does not (TRPA 2012c).

## Scenic Quality Ratings

The purpose of this TRPA scenic quality threshold is to maintain or enhance views of individual, existing scenic resources. The scenic resources in the Region include certain views of the natural landscape and distinctive natural features that were identified, mapped, described, and evaluated as part of the 1982 Scenic Resource Evaluation (TRPA 1982). Scenic resources include:

- ▲ foreground, middle-ground, and background views of the natural landscape from roadways;
- ▲ certain views to Lake Tahoe from roadways;
- ▲ certain views of Lake Tahoe and the natural landscape from roadway entry points into the region;
- ▲ unique landscape features, such as streams, beaches, and rock formations that add interest and variety, as seen from roadways;
- ▲ certain views of the shoreline, the water’s edge, and the foreground as seen from the lake;
- ▲ certain views of the backdrop landscape, including the skyline, as seen from the lake; and
- ▲ visual features on or near the shore that are of particular visual interest as seen from the lake (TRPA 1982).

Numerical scenic quality ratings are derived for each mapped scenic resource using four visual indicators as subcomponents: unity, vividness, variety, and intactness. As defined by TRPA, unity is the degree to which the visual resources of a scene join together to form a single, coherent, harmonious unit. Vividness is a measure of contrasting elements, such as color, line, and shape, marked differences seen as related, or repetition of similarities. It is sometimes referred to as distinctiveness. Variety is numerous or different parts seen together

and can be referred to as richness. Intactness describes the degree to which a landscape retains its natural condition, or the degree to which modifications emphasize or enhance the natural condition of the landscape (TRPA 2007).

Each of these four indicators is rated on a scale from zero (absent) to three (high). The ratings for all four indicators are summed to yield the scenic quality rating (composite score) for a particular resource. To secure threshold attainment, the current rating of each scenic resource must meet or exceed the threshold standard, which is equal to the rating reported in the 1982 Lake Tahoe Basin Scenic Resource Inventory. As of 2011, the scenic resources that could be affected by the proposed project, as listed below, were in attainment of the threshold standard for scenic quality (TRPA 2012c).

- ▲ Within Roadway Travel Unit 14 – Tahoe Tavern: Scenic Resource 14-1, views of the natural landscape from the road (SR 89) and Scenic Resource 14-2, a visual feature that includes a meadow area across from the Tahoe Tavern.
- ▲ Within Roadway Travel Unit 15 – Tahoe City: Scenic Resource 15-6, visual features that include views down the Truckee River and surrounding areas from Fanny Bridge.
- ▲ Within Roadway Travel Unit 41 – Brockway Summit: Scenic Resource 41-1, entry point views looking south from SR 267 that include the highway corridor with Lake Tahoe seen in the distance.
- ▲ Within Roadway Travel Unit 42 – Outlet to the Truckee River: Scenic Resource 42-6, views of natural landscape from SR 89 that include the river (TRPA 1982).

The locations of these scenic resources are shown in Exhibit 4.4-2.

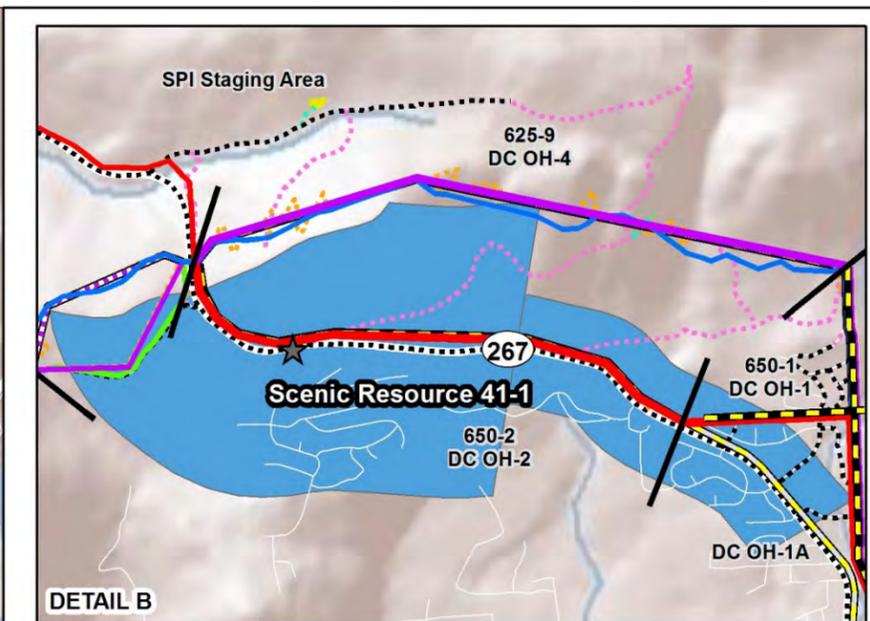
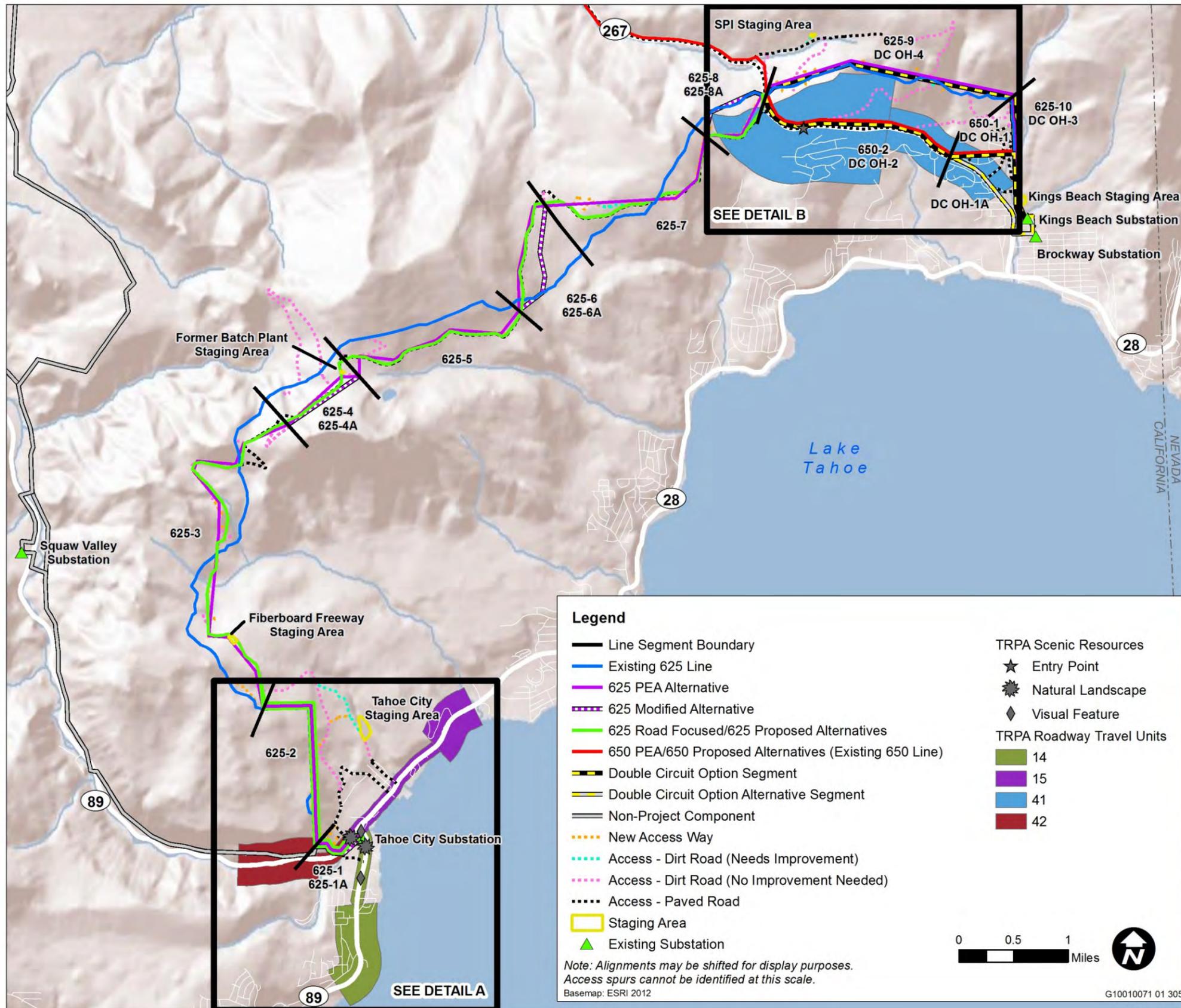
### **Public Recreation Areas and Bike Trails Ratings**

The TRPA public recreation area scenic quality threshold applies to 37 specific public recreation areas, including certain beaches, campgrounds, ski areas, and 11 segments of Class I and Class II bicycle trails listed in the Lake Tahoe Scenic Resource Evaluation, II. Recreation Areas (TRPA 1993). Public recreation areas with views of scenic resources are valuable because they are major public gathering places, hold high scenic values, and are places where people are static (compared to people on the travel routes) and, therefore, have more time to focus their attention on the views and scenic resources. Scenic resources visible from public recreation areas include:

- ▲ views of the lake and the surrounding natural landscape from within the recreation area,
- ▲ views of distinctive natural features that are within the recreation area, and
- ▲ views of human-made features in or adjacent to the recreation area that influence the viewing experience.

Scenic quality threshold ratings for scenic resources associated with public recreation areas and bike trails are derived in the same manner described above for scenic resources within Roadway Travel Units, using the same visual indicators of unity, vividness, variety, and intactness.

TRPA's inventory of public recreation areas and bike trails was developed in 1993. Since then, new public recreation areas and bike trails have been developed but are not yet included in the inventory. The 64-Acre Recreation Site in Tahoe City that now serves as a recreation area and the Truckee River Bike Trail that passes through the 64-Acre Recreation Site and alongside the Truckee River are among these facilities. Elements of the proposed project would be visible from these facilities and the analysis of scenic impacts considers these views.



Source: Adapted by Ascent Environmental in 2012

Exhibit 4.4-2

## COMMUNITY DESIGN

The TRPA community design threshold is a policy statement that applies to the built environment and is intended to ensure that design elements of buildings are compatible with the natural, scenic, and recreational values of the Region. The community design threshold is implemented through the community plan process, wherein design standards and guidelines are developed to meet the needs and desires of individual communities, and through the site planning process, wherein the design principles of the TRPA Code are implemented as part of individual development projects, and are reviewed and approved by TRPA and local governments. None of the project alternatives would result in construction of buildings.

## GOALS AND POLICIES

The Regional Plan includes two elements relevant to scenic resources, the Conservation Element, Scenic Sub-element and the Land Use Element, Community Design Sub-element (TRPA 2012a). Scenic Goal SR-1 is to “maintain and restore the scenic qualities of the natural appearing landscape.” In support of this goal, Policy SR-1.1 states that, “all proposed development shall examine impacts to the identified landscape views from roadways, bike paths, public recreation areas, and Lake Tahoe.”

## CODE OF ORDINANCES

The following chapters of the TRPA Code of Ordinances contain aesthetic standards that are relevant to the project (TRPA 2012b).

### Design Standards

Chapter 36, “Design Standards,” of the TRPA Code contains design standards, including standards for site design, building design, landscaping, and lighting. The TRPA Design Review Guidelines provide a summary of the Code requirements and guidelines or suggestions for attainment of the standards (TRPA 1989a).

### Scenic Standards

Chapter 36 of the TRPA Code also contains design standards pertaining to scenic quality. These standards establish a process for analyzing projects for scenic quality and outlines when visual simulations and other documents are required. They also require a security deposit equal to the cost of scenic mitigation measures for projects visible from nonattainment areas, and a five-year review for continued presence and maintenance.

Chapter 66 of the TRPA Code contains scenic quality standards, provides scenic highway corridor design standards, and establishes scenic quality review processes. Specifically, Subsections 66.1.4 and 66.1.5 of the TRPA Code describes scenic quality standards for projects in view from roadway and shoreline travel units, and public recreation areas and bicycle trails. Subsection 66.2 specifies that major roadways and all federal and state highways within the Lake Tahoe Region are designated as scenic highways. Scenic highway corridor design standards in Subsection 66.2 apply to projects visible from 300 feet, 1,000 feet, and 0.5 mile from urban corridors, transition corridors, and natural corridors, respectively. The proposed project is within the scenic highway corridors of SR 89, SR 28, and SR 267. These corridors are coincident with the boundaries of the Roadway Travel Units shown in Exhibit 4.4-2.

### Height

Chapter 37 of the TRPA Code contains standards pertaining to height. Specifically, Subsection 37.6 establishes height standards for structures other than buildings. Subsection 37.6.1 states that no structure, other than a building, shall have a height greater than 26 feet. Subsection 37.6.2 states that this maximum height may be increased for certain structures, including utility poles, up to the minimum necessary to feasibly implement the project if certain findings are made. The required findings include that the function of the structure requires a

greater maximum height than otherwise allowed, and the additional height is the minimum necessary to implement the project and there are no feasible alternatives that would require less additional height.

## **TRPA SCENIC QUALITY IMPROVEMENT PROGRAM/ENVIRONMENTAL IMPROVEMENT PROGRAM**

The TRPA Scenic Quality Improvement Program (SQIP) (TRPA 1989b) was adopted to provide a program for implementing physical improvements to the built environment in the Tahoe Region. It is intended to contribute to the attainment of scenic thresholds and serves as an implementation guide. The program is an overall action plan to specifically improve the scenic quality of roadway and shoreline travel routes that do not meet the scenic thresholds.

The Environmental Improvement Program (EIP) adopted in 1998 incorporates elements of the SQIP. The EIP includes a list of specific projects throughout the Tahoe Basin that are deemed necessary to help attain and maintain scenic thresholds (TRPA 1998).

## **LOCAL AGENCIES**

### **Placer County Design Standards and Guidelines for the Lake Tahoe Region Including Community Plan Areas**

The Placer County Design Standards and Guidelines include guidelines for minimizing the visual impact of utility lines within scenic highway corridors (Placer County 1994). These corridors include SRs 28, 89, and 267. The standards relevant to utilities, such as required undergrounding, are applicable only to electrical lines that operate at 32 kilovolts or less. Otherwise, the standards primarily address signage, parking, site and building design, architecture, and landscaping for residential, commercial, light industrial, public service and recreational development.

### **Placer County General Plan**

The Placer County General Plan (Placer County 1994b) contains a number of policies related to scenic resources. Scenic Routes are specified in Community Plans, including the Martis Valley Community Plan and Tahoe City Community Plan (each discussed below).

### **Town of Truckee 2025 General Plan**

The Town of Truckee 2025 General Plan (2006) contains provisions regarding scenic resources and utility undergrounding in its Community Character Element. I-80 is listed as a scenic corridor. Scenic views include views to Mount Rose, Castle Peak, Donner Summit, Mount Judah, Tinker's Knob, Donner Lake, and views up and down the Truckee River. Brockway Road from the Truckee River to SR 267 is considered a key corridor with a gateway to Truckee at SR 267. The Community Character and Land Use Elements of the Town of Truckee 2025 General Plan (2006) contain policies regarding aesthetic resources.

### **Martis Valley Community Plan**

Martis Valley is an approximately 70-square-mile area that lies within Placer and Nevada counties, as well as within the Town of Truckee incorporated limits. This area is generally located to the east of Truckee and north of Northstar. The northern portion of the 650 Line passes through this area. A number of policies contained within the Martis Valley Community Plan (2003) are relevant to visual resources. In particular, Section IV, Community Design, provides directions for preserving high visual quality of the area. Section VI, Public Facilities and Services also contains provisions for undergrounding utilities.

### **Tahoe City Community Plan**

The Tahoe City Community Plan (1994) contains goals and objectives for urban design and development, traffic and parking, public service facilities, commercial development, and recreation. The objectives of the plan are implemented through enforceable policies. The plan also describes a vision for the future of Tahoe City and

identifies various projects in the immediate Tahoe City area that are intended to improve scenic quality. It identifies opportunities for scenic improvements along SR 89 at the entrance to Tahoe City through relocating or screening existing non-compatible uses including public service facilities.

## 4.4.2 EXISTING CONDITIONS/AFFECTED ENVIRONMENT

This section describes the existing visual environment as it relates to the proposed project, including a description of the scenic resources study area, an associated visibility analysis, identification of potentially affected viewer groups, and a description of scenic quality and visual exposure conditions generally, and for representative viewpoints.

### CONCEPTS RELATED TO SCENIC RESOURCES

Scenic or visual resources are generally defined as both the natural and built features of the landscape that contribute to the experience and appreciation of the environment by the general public. Depending on the extent to which a project would adversely alter the perceived visual character and quality of the environment, a visual or scenic impact may occur. Familiarity with the following terms and concepts will aid the reader in understanding the content of this chapter. These terms and definitions are not specific to any one visual resource assessment methodology (i.e., neither TRPA nor USFS), but instead are general in nature such that the setting can be described in a manner that allows for adequate assessment of visual impacts under either framework. These concepts are routinely used by the California Public Utilities Commission (CPUC) in visual impact assessment of projects throughout California for which it serves as lead agency under the California Environmental Quality Act (CEQA).

**Visual Quality** is defined as the overall visual impression or attractiveness of an area as determined by the particular landscape characteristics, including landforms, rock forms, water features, and vegetation patterns. The attributes of line, form, and color combine in various ways to create landscape characteristics whose variety, vividness, coherence, uniqueness, harmony, and pattern contribute to the overall visual quality of an area. For the purposes of this EIS/EIS/EIR, visual quality is defined according to three levels:

- ▲ *Indistinctive, or industrial*: generally lacking in natural or cultural visual resource amenities typical of the region
- ▲ *Representative*: typical or characteristic of the region's natural and cultural visual amenities
- ▲ *Distinctive*: unique or exemplary of the region's natural or cultural scenic amenities

It is important to note that the visual quality of a particular scene or viewpoint is judged within the context of the general visual character of an area.

**Viewer Exposure** addresses the variables that affect viewing conditions from potentially sensitive areas. Viewer exposure considers the following factors:

- ▲ Landscape visibility – the ability to see the landscape
- ▲ Viewing distance – the proximity of viewers to the proposed project
- ▲ Viewing angle – whether the proposed project would be viewed from above (superior), below (inferior), or from a level (normal) line of sight
- ▲ Extent of visibility – whether the line of sight is open and panoramic to the project area or restricted by terrain, vegetation and/or structures
- ▲ Duration of view – the elapsed time the project area would be visible to a particular viewer

**Viewer Types and Degree of Use** pertain to the types of use (i.e., public viewers including recreationist and motorist) and amounts of use (i.e., number of recreational users or motorists) that various land uses receive.

**Visual Sensitivity** is the overall measure of the susceptibility of an existing landscape to adverse visual changes. People in different visual settings, typically characterized by different land uses in the vicinity of a project, have varying degrees of sensitivity to changes in visual conditions, often depending on the overall visual characteristics of the place. In areas of more distinctive visual quality, such as designated scenic highways, designated scenic roads, parks, and recreation and natural areas, visual sensitivity is characteristically more pronounced. In areas of more indistinctive or representative visual quality, sensitivity to change tends to be less pronounced. This analysis of visual sensitivity is based on the combined factors of visual quality, viewer types and numbers of viewers, and visual exposure to the project. Visual sensitivity is described as high, moderate, or low, depending on these factors.

**Scenic Vista:** A scenic vista is generally considered to be a location from which the public can experience unique and exemplary high-quality views—typically from elevated vantage points that offer panoramic views of great breadth and depth.

## REGIONAL LANDSCAPE SETTING

The proposed project is located in the Lake Tahoe Region, which is centered on Lake Tahoe, and straddles the northern edge of the California-Nevada state border. It is a mountainous area located in the Sierra Nevada, west of the Carson Range. Approximately three-quarters of the land in the region is publicly owned, and the majority of the land is managed by the USFS. Lake Tahoe is world renowned for its crystal clear water and picturesque setting. The lake is approximately 12 miles wide and 22 miles long, with about 75 miles of shoreline. The surface elevation of Lake Tahoe is approximately 6,000 feet above sea level, with surrounding peaks rising to almost 11,000 feet above sea level. Near the project area, Mount Watson rises to 8,424 feet and Mount Pluto rises to 8,617 feet.

The dominant vegetation is softwood forest stands (conifers) which, at near distances, provide strong vertical lines, locally interspersed with open meadows. Although the dark coniferous forests contribute to a stable framework for the area's visual character, seasonal changes introduce a dramatic variation to this landscape character. During winter, snow cover accentuates areas that are not forested, which can create a strong visual contrast in areas of timber harvesting, ski slopes, roadways, transmission rights-of-way (ROWs), and other places where the unforested ground is visible. Development is mostly clustered around the shoreline of Lake Tahoe and in a few level or moderately sloping areas. The region experiences a peak population with summer vacationers; however, it is also popular as a winter tourist destination for skiing and snow-related sports.

## STUDY AREA VIEWSHED AND VISIBILITY

For the purpose of describing the visual setting and analyzing project impacts, the study area is defined as the project's viewshed, that area of land, water, and other environmental elements that are visible to the human eye from a fixed vantage point, and more specifically, the portion of its viewshed from which the public could perceive changes in the landscape caused by the proposed project. Any other location or viewer group not exposed to visual effects of the project (i.e., outside the study area) is not relevant to this section. Geographic Information System (GIS) tools are a highly effective means of establishing a project's viewshed, especially for the purposes of determining from which areas the project *would not* be visible. However, standard GIS viewshed tools typically consider only observer points relative to surrounding topography, which is most effectively used in landscapes without intervening vegetation or structures, such as dry deserts or pasturelands, but will vastly overestimate the real viewshed of projects in developed and/or forested landscapes, such as the project area.

Because the proposed project consists of several linear overhead power lines, its viewshed is actually represented by a cumulative viewshed, consisting of many poles along several linear routes. The total viewshed

of the project is represented by combining each pole's individual viewshed into one spatial dataset that represents the number of individual poles visible from any fixed vantage point. Exhibit 4.4-3 shows the project's potential viewshed, as calculated from a 10-meter resolution digital elevation model (DEM) and confined to a 4-mile buffer around all proposed facilities, facility upgrades/modifications, and temporary work areas. Four miles is defined by the USFS as the boundary between the middleground and background zone (USFS 1995). A 4-mile buffer was used because proposed poles, conductors, and tree removal, even if theoretically visible from farther away based on terrain, would be indistinguishable from other background elements due to the small apparent size, angle of view, and viewing context. Exhibit 4.4-3 also shows the boundary between USFS-defined distance zones, which are 300 feet (immediate foreground/foreground), 0.5 mile (foreground/middleground), and 4 miles (middleground/background).

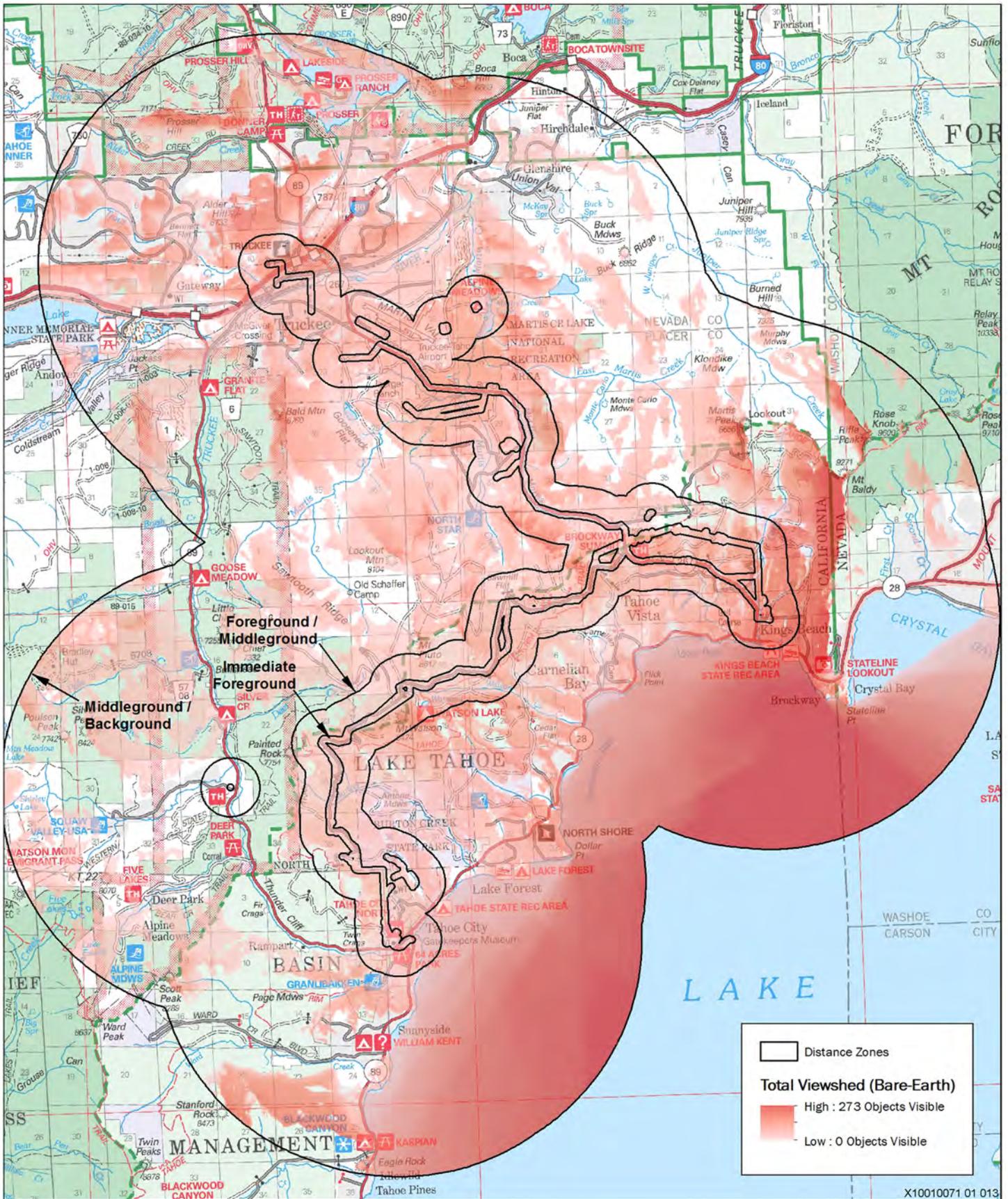
As indicated above, because the landscape is forested, the viewshed shown in Exhibit 4.4-3 vastly overestimates the current condition of the project viewshed. A small portion of the proposed project consisting of the area surrounding Segments 625-7, 625-8a, 625-9, 650-2 and 650-3 was isolated to demonstrate the effect of a confined landscape on the vegetated viewshed. A "confined" landscape is characterized by trees or other features that limit a viewer's field of vision, such that only foreground views of the landscape are available. Using an ultra-high resolution (0.5-meter) Light Detection and Ranging (LiDAR) dataset of this area—which contains both a bare-earth DEM and a "highest hit" DEM—trees and fine-scale landscape elements (such as cuts and fills) could be incorporated into viewshed calculations. A small area was chosen due to the high computational demands of ultra-high resolution data. This area in particular was chosen because it is at the intersection of several travel corridors with high recreational and scenic value including the Fiberboard Freeway, the Tahoe Rim Trail, and SR 267. As shown in Exhibit 4.4-4, the viewshed of the existing power lines in this area is confined to areas within or immediately adjacent to the ROW, primarily because of the density and height of existing trees. The height of the tree canopy consistently exceeds the height of the power poles. The Tahoe Rim Trail, though it is in close proximity to the power lines, is outside the viewshed of the lines except briefly as it crosses Mt. Watson Road and SR 267.

Vantage points within the middleground distance zone (i.e., 0.5 to 4 miles from the proposed project) would require a very specific set of circumstances to occur for the proposed project to be visible. From this distance, the color/texture contrast in the landscape caused by vegetation clearing would be more noticeable than the poles and the conductors themselves, particularly during the winter. Because of the height and density of trees in the landscape, cleared ROWs tend to be easily hidden from view, especially if viewed at an oblique or inferior angle. The project would only be visible to observers within this distance zone if: 1) the immediate foreground is clear of obstructions (e.g., a meadow, a field, or a large parking lot), 2) the line of sight is otherwise uninterrupted, and 3) the power line ROW is aligned in the same direction as the viewer's line of sight. Otherwise, the power line is likely to remain hidden from view; if it crosses perpendicular or obliquely to the viewer's line of sight, the height of trees on either side of the cleared ROW would mask the gap, even in steeply sloped areas.

For the reasons stated above, the "study area" shall refer to the immediate foreground of all proposed project components, and certain locations in the distant foreground and middleground distance zone that meet the viewing conditions described above.

## **VISUAL CHARACTER AND QUALITY OF THE STUDY AREA**

The visual character of study area can be generally described in terms of three distinct visual contexts: developed communities, undeveloped portions of the Lake Tahoe Basin, and the Martis Valley. In terms of visual environments described in the SQIP design review guidelines, developed communities are inclusive of "urban areas" and "urban transition areas" whereas undeveloped portions of the Lake Tahoe Basin are equivalent to rural areas. The following pages contain photographs illustrating the visual character and quality of each portion of the project area. Exhibit 4.4-5 shows the location and direction of view for each photo, and Exhibits 4.4-6A through 4.4-6L include the images themselves.



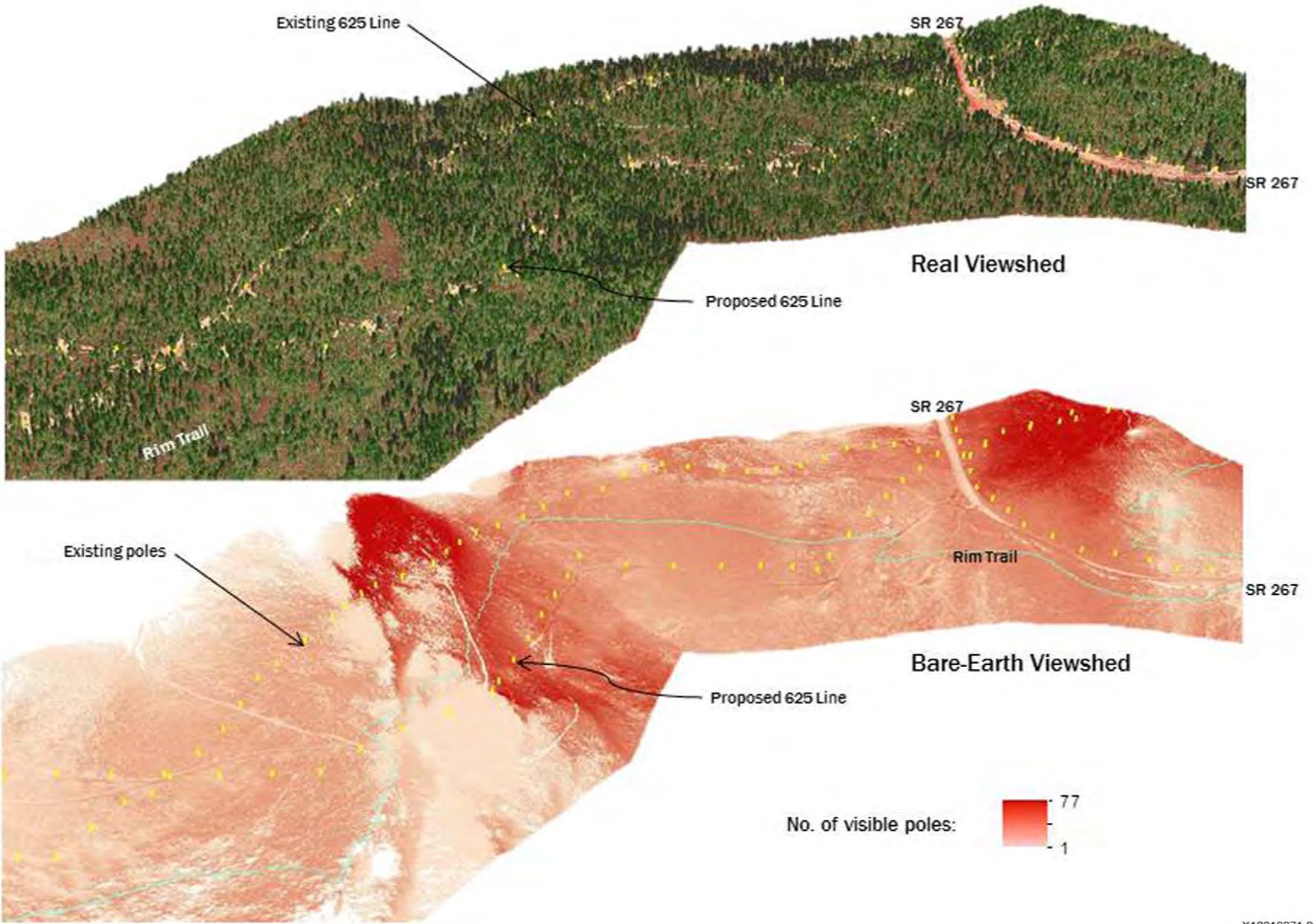
Source: data received from Dudek in 2013

Exhibit 4.4-3

Potential Viewshed and Distance Buffers



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Source: data received from Dudek in 2013

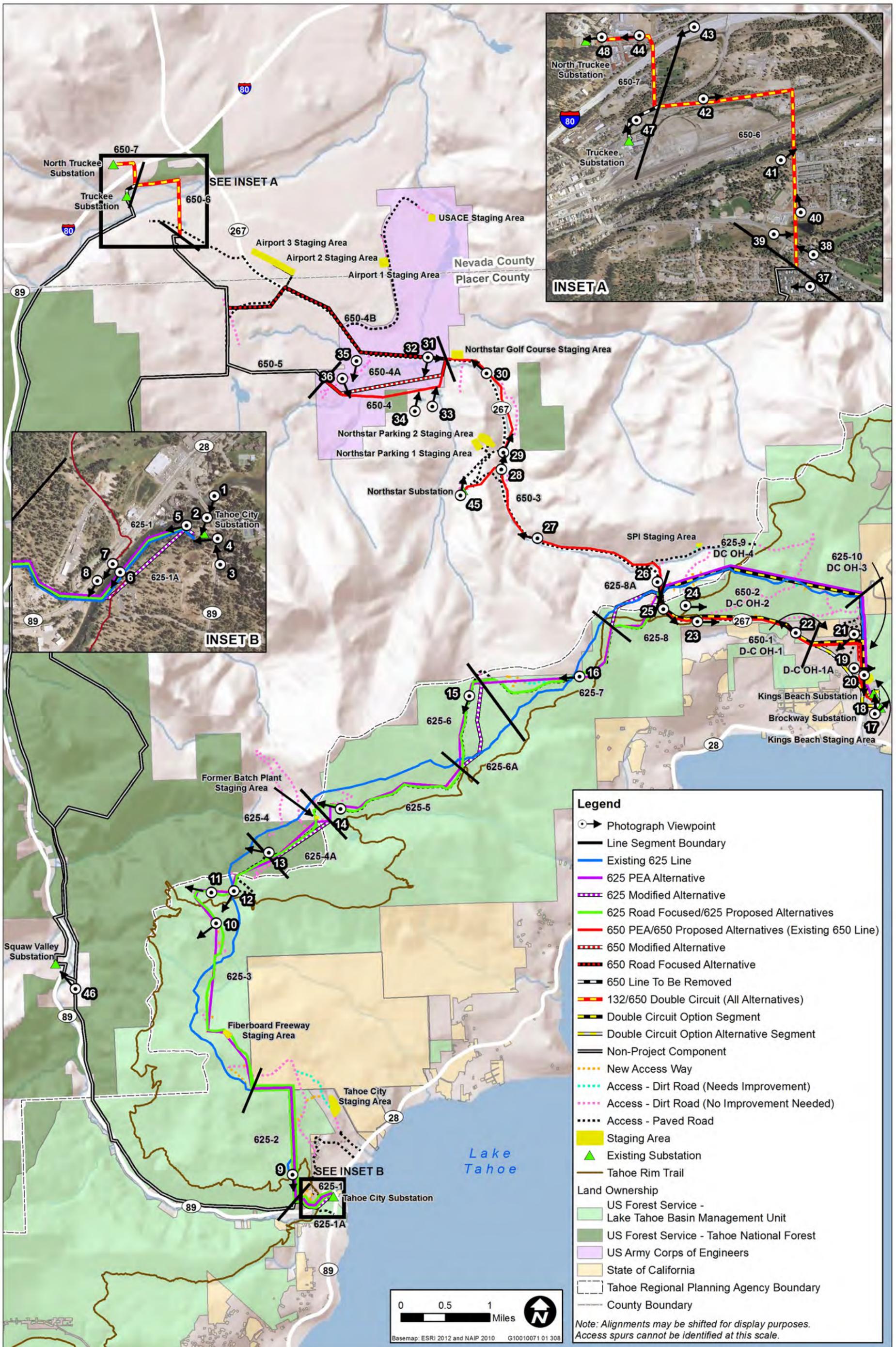
Exhibit 4.4-4

Real Viewshed and Bare-Earth Viewshed of Existing Poles

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Source: Adapted by Ascent Environmental in 2012

Exhibit 4.4-5

Photograph Locations





Photograph 1: Lakeside Trail at the Truckee River outlet looking south



Photograph 2: State Route 89 at the Truckee River Outlet, Tahoe State Recreation Area, looking south



Photograph 3: State Route 89 (West Lake Boulevard) looking north



Photograph 4: State Route 89 (West Lake Boulevard) looking west

Source: Sierra Pacific 2010

**Exhibit 4.4-6A**

**Views in the Project Area**



Photograph 5: Truckee River Bike Trail looking west



Photograph 6: Pedestrian bridge over the Truckee River looking southwest



Photograph 7: Recreation trail at the pedestrian bridge looking southwest

Source: Sierra Pacific 2010



Photograph 8: State Route 89 west of Fairway Drive looking southwest

**Exhibit 4.4-6B**

**Views in the Project Area**



Photograph 9: View from the Tahoe Rim Trail looking south



Photograph 10: View from the Tahoe Rim Trail looking southwest



Photograph 11: Fiberboard Freeway west of Mount Watson looking west



Photograph 12: Fiberboard Freeway looking south

Source: Sierra Pacific 2010

**Exhibit 4.4-6C**

**Views in the Project Area**



Photograph 13: Fiberboard Freeway looking west



Photograph 14: Fiberboard Freeway north of Mount Watson looking west



Photograph 15: Fiberboard Freeway looking south



Photograph 16: Fiberboard Freeway west of State Route 267 looking west

Source: Sierra Pacific 2010

**Exhibit 4.4-6D**

**Views in the Project Area**



Photograph 17: Brockway Substation entry on Cut Throat Ave looking northeast



Photograph 18: Deer Street near Cut Throat Avenue looking north



Photograph 19: Cambridge Drive looking east



Photograph 20: Trail behind Cambridge Drive looking south

Source: Sierra Pacific 2010

**Exhibit 4.4-6E**

**Views in the Project Area**



Photograph 21: Bristol Circle at Commonwealth Drive looking southwest



Photograph 22: State Route 267 near Kings Beach looking northwest



Photograph 23: State Route 267 near the Tahoe Rim Trail looking east

Source: Sierra Pacific 2010



Photograph 24: Tahoe Rim Trail near State Route 267 looking east

**Exhibit 4.4-6F**

**Views in the Project Area**



Photograph 25: State Route 267 near Brockway Summit looking southeast



Photograph 26: State Route 267 looking south towards the existing 625 Line crossing



Photograph 27: State Route 267 looking northwest



Photograph 28: State Route 267 south of Northstar Drive looking north

Source: Sierra Pacific 2010

**Exhibit 4.4-6G**

**Views in the Project Area**



Photograph 29: State Route 267 near Northstar Drive looking north



Photograph 30: State Route 267 in Martis Valley looking northwest



Photograph 31: State Route 267 in Martis Valley looking east

Source: Sierra Pacific 2010



Photograph 32: State Route 267 in Martis Valley looking south

**Exhibit 4.4-6H**

**Views in the Project Area**



Photograph 33: Northstar-at-Tahoe Golf Course looking north



Photograph 34: Basque Drive looking north



Photograph 35: Martis Creek Trailhead looking south



Photograph 36: Martis Creek Trail looking south

Source: Sierra Pacific 2010

**Exhibit 4.4-6I**

**Views in the Project Area**



Photograph 37: Star Pine Road looking west



Photograph 38: Brockway Road looking northwest



Photograph 39: Brockway Road looking east



Photograph 40: Estates Drive at Riverview Drive looking north

Source: Sierra Pacific 2010

**Exhibit 4.4-6J**

**Views in the Project Area**



Photograph 41: Truckee River Legacy Trail looking northeast



Photograph 42: Glenshire Drive looking east



Photograph 43: Interstate 80 westbound near Donner Pass Road looking west

Source: Sierra Pacific 2010



Photograph 44 : Pioneer Trail Road looking west towards North Truckee Substation

**Exhibit 4.4-6K**

**Views in the Project Area**



Photograph 45: Northstar Substation looking north



Photograph 46: Squaw Valley Substation from Squaw Valley Road at State Route 89



Photograph 47: Donner Pass Road looking southwest towards the Truckee Substation

Source: Sierra Pacific 2010



Photograph 48: North Truckee Substation from Pioneer Trail Road looking west

Exhibit 4.4-6L

Views in the Project Area

## DEVELOPED COMMUNITIES

Sections of the study area, including proposed power line Sections 625-1, 625-10, 650-1, 650-6 and 650-7, are located in the communities of Tahoe City, Kings Beach, and Truckee. These areas have a mix of developments, including low-density residential housing; commercial, retail, and tourism-related establishments; and public utility infrastructure including overhead electric lines. On the fringes of these communities is typically an urban transition zone between intensely developed areas and a fully natural-appearing landscape characterized by sporadic occurrence of driveways, rural homes on large lots, and electrical distribution lines within a predominantly forested context.

### Tahoe City

Photographs 1 through 8 (Exhibits 4.4-6A and 4.4-6B) show the general areas surrounding the proposed upgrade to the 625 Line (Segment 625-1) in Tahoe City. In this area, particularly in and around the “Y” (i.e., the intersection of SR 89 and SR 28), the visual character was described in the 1982 Lake Tahoe Basin Scenic Resource Inventory as cluttered, but has improved in recent years (TRPA 2011). Developments are nestled among pine trees, and the Truckee River is a scenic amenity that contributes positively to views. However, as seen from SR 89 and SR 28, commercial development, parking areas, utility lines, and signage are prominent enough to distract from what might otherwise be a scenic view of the Truckee River and the surrounding environment. This general visual character is reflected in TRPA’s rating of the area as being in non-attainment of scenic thresholds for Roadway Travel Unit 42. The public experiences partially screened views of the Tahoe City Substation (shown in Photographs 1 through 4), which is on the west side of SR 89 just south of the Truckee River. Recreational amenities, including pedestrian and bike paths, the Truckee River, and a pedestrian bridge (shown in Photographs 5 through 8) provide access to scenic and recreational opportunities, but the quality of views in these areas are somewhat compromised by the presence of structures, utility poles, and conductors.

Overall, the visual quality in the portion of the study area in Tahoe City can be considered representative to locally indistinct, depending on location, view direction, and other viewing circumstances. Despite the presence of the Truckee River, high quality views from public travel routes are not available in views directed towards the site of the proposed substation upgrade.

### Kings Beach

Photographs 17 through 21 (Exhibits 4.4-6E and 4.4-6F) show the general areas surrounding the proposed upgrade to the 625 Line (Sections 625-10 and 650-1) on the outskirts of Kings Beach. The Kings Beach Substation is at the northern edge of the community of Kings Beach in a forested area that has residential and industrial land uses to the south and is surrounded by forest on the other three sides. This substation is setback from public transportation routes, as shown in Photograph 17 (Exhibit 4.4-6E). The general area can be described as an urban transition zone; it has a predominantly natural appearance and a thick density of trees with occasional signs of development, such as parked vehicle, driveways, utility poles, street signs, small graded areas, and houses and structures fully to partially screened by trees.

Overall, the visual quality of these sections of the study area is considered representative of an urban transition zone. The affected portion of SR 267 (Roadway Travel Unit 41) is in attainment of threshold standards for scenic quality and travel route ratings.

### Truckee

Photographs 37 through 44 (Exhibits 4.4-6J and 4.4-6K) show the general areas surrounding the proposed upgrade to the 650 Line (Segments 650-6 and 650-7) within and adjacent to the Town of Truckee. For the same reasons discussed above for Kings Beach, the visual quality of these sections of the study area is considered representative of an urban transition zone.

## UNDEVELOPED PORTIONS OF THE LAKE TAHOE BASIN

Most of the proposed power line upgrades would occur within undeveloped portions of the Lake Tahoe Basin, in mountainous terrain of fir, pine, and cedar forest areas. The forest cover is mostly dense; openings and patches of meadow are relatively rare and infrequent as compared to areas of the High Sierra along the Pacific Crest west of Lake Tahoe. Within the study area, the density of trees and height of the canopy varies, but is sufficiently widespread and ever-present that unencumbered long-distance views and scenic vistas are only available from wide graded areas on moderate to steep slopes (such as portions of SR 267 that descend into the Basin and cleared utility ROWs). Along the Fiberboard Freeway, there are a few localized areas where users are afforded long-range views of the landscape; these include high-elevation, steeply-sloped areas along the side slopes of Mount Pluto and Mount Watson. The visual character of the study area in undeveloped portions of the Tahoe Basin is therefore of a confined natural forest, but in a few specific locations, can be punctuated by high quality vistas.

The study area is also characterized by a number of forest roads, as well as recreational routes including the Tahoe Rim Trail and other trails used by the public for dispersed recreation. USFS roads crossing the study area include FS Road 73 (Fiberboard Freeway), 16N46, 16N50, 16N73E, 16N74, 16N95, 16N63, 16N93, 16N92, 16N52, and 16N56. Photographs 9 through 16 (Exhibits 4.4-6C and 4.4-6D) illustrate portions of the study area along the 625 Line between the northern edge of Tahoe City and Brockway Summit along SR 267. The Fiberboard Freeway, a paved road along most of its length, extends westward into the area from SR 267 and provides public access to Mount Watson, Watson Lake, and surrounding areas. Power lines, including the existing 625 Line, cross the Fiberboard Freeway in a number of locations. Although not a dominant element of the landscape character, power poles and conductors, where they “skyline” (i.e., protrude above the horizon) in certain locations (as shown in Photographs 9, 12, and 16), can adversely affect view quality. Otherwise, the vertical form of the poles and their dark brown color mimic the color and form of tree trunks and minimize the apparent visual contrast. For the majority of the public routes in this area, existing power line ROWs are only visible in the immediate foreground where they cross existing roads and trails.

Photographs 22 through 29 (Exhibits 4.4-6F and 4.4-6G) show the portion of the study area along SR 267 in the general area of proposed upgrades to the 625 and 650 Lines in Segments 650-2, 650-3, 625-8 and 625-9. The width of the highway corridor provides openings in the forest sufficient in size to afford viewers with partial middleground and background views of hillsides and the Lake Tahoe Basin. Similar to the context photographs along the Fiberboard Freeway, power lines locally and briefly detract from views where they skyline or cross the highway corridor.

Overall, the visual quality of these sections of the study area is considered representative of the rural/undeveloped portions of the Lake Tahoe Basin. Unique and distinctive aesthetic elements within the study area, such as Lake Watson and scenic vistas from the Tahoe Rim Trail do not contain views of the 625/650 power line corridors.

## MARTIS VALLEY

The portion of the proposed project located outside of the Lake Tahoe Basin is within the Martis Valley, which extends north from Lake Tahoe. Martis Valley is bisected by Martis Creek, which flows north to the Truckee River. The northern portions of SR 267 and SR 89 meet I-80 in the northern portion of the valley in the Town of Truckee. Aside from the Town of Truckee itself, the primary developments in the valley include the Truckee Tahoe Airport and several golf courses, as well as electrical and transportation infrastructure. However, as seen from public roadways, the Martis Valley primarily appears in a natural condition, and is sufficiently flat and unobstructed to provide long views of surrounding mountains and forests.

Photographs 31 through 36 (Exhibits 4.4-6H and 4.4-6I) show the portion of the study area within Martis Valley, including Section 650-4 of the 650 Line. The visual character of the valley stands in contrast to the Tahoe Basin by virtue of its grassland and open meadow habitat and largely unobstructed views of the surrounding mountains. Views from travel routes in the area include foreground, middleground, and background elements, with a wide variety of landscape elements of visual interest, including foreground open sage and grassland and background forested mountains. The existing 650 Line crosses SR 267 and leaves the highway heading west where it skirts the edge of the Northstar Golf Course and passes near a small residential area. It continues westward along the southern edge of Martis Valley where the forested slopes of Lookout Mountain rise from south edge of the valley floor. The slopes form a backdrop of trees to views of the power line from the Martis Creek Lake area and the network of trails in the valley.

Overall, the visual quality of these sections of the study area is considered representative to distinctive, depending on location, view direction and other viewing circumstances. The open grassland habitat provides view opportunities that are relatively rare and unique in the context of the predominantly forested environment of the Sierra Nevada.

## **VIEWER TYPES AND EXPOSURES**

The primary types of potentially affected viewer groups in the project area include roadway motorists and recreationists. These groups may overlap at times, but for purposes of this analysis, they are described separately. The approach to evaluating viewer types and exposure presented here is routinely used by CPUC in visual impact assessment of its projects.

### **MOTORISTS**

Motorists represent the largest of the affected viewer groups. Included in this group are motorists traveling on regional roadways, such as SRs 28, 89, and 267, and I-80. Motorists include a variety of roadway travelers, both local and regional travelers familiar with the visual setting, and travelers less familiar with the visual setting that use the roadways more infrequently. These less frequent travelers might, for example, utilize these roadways to reach vacation destinations such as Lake Tahoe or ski resorts, or use the roads in the course of their work. These motorists include commuters, drivers of commercial trucks, and drivers of emergency vehicles. Depending upon the road and travel direction, views of the study area could range from a few seconds to 20 minutes or more. The average annual daily traffic on I-80 ranges from 27,000 to 32,000 vehicles. On SR 89 at the SR 28 junction the average annual daily traffic is 10,900 vehicles, and on SR 267 the average annual daily traffic ranges from 8,400 to 12,600 vehicles, depending on location.

### **VISITORS AND RECREATIONISTS**

The second viewer group includes recreational users of the Lake Tahoe area. The LTBMU is a very popular recreation forest with winter sports opportunities that include downhill ski areas and extensive snowmobile and cross-country ski trails found throughout the National Forest. In the summer, an extensive array of hiking, off-highway vehicle (OHV), equestrian, and mountain biking trails provide access to the lakes, rivers, and mountain areas. Developed recreation sites within the LTBMU include campgrounds, boat ramps, picnic areas, and nature trails. None of the power line segments are visible from campsites in the LTBMU, including the Watson Lake Campground. Additional information about the recreational resources in the project area can be found in Section 4.8, Recreation. This section focuses on recreation resources from which portions of the proposed project could be visible. Although the total duration of views of the 625/650 Line ROWs for the dispersed recreation group of users tends to be brief, the expectation of a natural landscape setting raises visual sensitivity to moderate to high levels. Expectations and visual sensitivities of developed recreation users can be even greater.

Recreational trails and facilities from which the proposed project could be visible include the following.

- ▲ **Martis Creek Lake**, in the northern portion of the project area, is managed by the US Army Corps of Engineers (USACE) and provides recreation activities including camping, hiking, ranger programs, boating, fishing, and day use. On the west side of SR 267, the Martis Creek Wildlife Area offers a 4.3-mile hiking and biking trail that loops around the valley.
- ▲ **Burton Creek State Park** contains more than 2,000 acres of forest and meadowland. Facilities consist of a network of dirt roads and trails, two small dams, two water tanks, and a few signs. The roads into Burton Creek State Park are gated and only California State Parks and emergency vehicles are allowed on the roads in the park. The roads and trails are used by hikers and bikers during the summer, and cross-country skiers and snowshoe hikers in the winter. The proposed project would be largely out of view from these areas except for a short segment of the 625 Line that would graze the southwest portion of the park.
- ▲ **The Tahoe Rim Trail**, shown in Exhibit 4.4-5, is a 165-mile, single-track, multi-use trail encircling Lake Tahoe and is congressionally designated as a National Recreation Trail. Throughout the project vicinity, the trail is located on LTBMU lands and is open to hikers, equestrians, and mountain bikers. Winter use by cross-country skiers and snowshoers is also popular. There is a trailhead in Tahoe City near the Community Center on Fairway Drive. From that location, the trail ascends to overlook the Truckee River Canyon, and then extends north and east past Watson Lake more than 20 miles to the trailhead on SR 267, 0.5-mile south of Brockway Summit. Along this segment, the trail generally parallels the existing and proposed 625 Line alignments, crossing under the existing 625 Line twice (see Exhibit 4.8-5). Trail users can cross SR 267 and beneath the existing 650 Line to a trailhead on the east side of the highway. From there, the trail continues northeastward, crosses beneath the existing 625 Line again, and continues toward Martis Peak. As shown in Exhibit 4.4-4, trail users are exposed to views of the power lines only briefly because the viewshed of the existing line is highly localized due to the screening effect of the forest.
- ▲ **The Fiberboard Freeway**, a network of LTBMU service roads (including FS Roads 16N46, 16N50, 16N73E, 16N74, 16N95, 16N63, 16N93, 16N92, 16N52, and 16N56), and Fire Road 6, on the Tahoe National Forest provide access to numerous opportunities for dispersed recreation. In the winter, this includes snowmobiling, snowshoeing and cross country skiing; in the summer this includes OHV, cyclists, joggers and/or hikers.
- ▲ **Truckee River Regional Park** is located just south of Downtown Truckee on SR 267. The 62-acre park's recreation facilities include: ball fields; picnic areas; a rodeo arena; a nature trail; tennis, volleyball and basketball courts; amphitheater; tot lot; skateboard park; disc golf course; and playground equipment. Segment 650-6 is adjacent to the eastern border of the park (TDRDP 2012).
- ▲ **Northstar Resort Golf Course** is an 18-hole course that incorporates the mountainous landscapes of Tahoe with the open meadow of Martis Valley into two 9-hole settings (Vail 2012). A portion of Segment 650-4 would cross a northern portion of the property.
- ▲ **64-Acre Recreation Site** is located near the southern terminus of the existing 625 Line (Segment 625-1) in Tahoe City. The alignment runs adjacent to the south side of the Truckee River (between 0 to 10 feet from the top of the bank) for approximately 0.2 mile. This portion of the line is adjacent to the 64-Acre Recreation Site, which provides picnic facilities, hiking and biking trails, and a rafting ramp for access to the Truckee River. The 64-Acre Recreation Site and the Truckee River Bike Trail that passes through the site and alongside the Truckee River are among these facilities. Elements of the proposed project would be visible from this park and trail.

- ▲ **Gatekeeper’s Museum and Lake Tahoe Dam** are located in an area immediately east of SR 89 atop and south of the Truckee River. The dam has a restaurant that affords diners views of Lake Tahoe and the Truckee River. The museum is visited by over 10,000 visitors annually and contains an eclectic collection of Tahoe history, including photographic collections, oral histories and transcription, newspapers, court ledgers, maps and written materials, letters, clothing, artifacts, and furniture. Visitors may have partial views of the Tahoe City Substation across SR 89 and portions of the existing 625 Line along the south bank of the Truckee River. The exposure to project facilities is similar to the views shown referenced in Exhibit 4.4-5.
- ▲ **River Rafting** operations occur on the Truckee River downstream of the dam with several commercial rafting operations in the vicinity. The rafts depart from piers and ramps that project out into the river in this area.
- ▲ **Kings Beach Snowmobile** activities occur on approximately 100 miles of recreational trail in the project area. The trail transects several segments of the 625 Line routes. Lake Tahoe Snowmobile Tours, Inc. and Full Throttle are two snowmobile rental /tour businesses that operate out of Kings Beach and utilize this trail.

**VISUAL SENSITIVITY**

The process for selecting key viewpoints for simulation purposes is addressed in Section 4.4.3, Environmental Consequences and Mitigation Measures. However, key viewpoints are referenced here to describe the existing scenic setting, affected viewers, and to evaluate the visual sensitivity of each viewpoint. These viewpoints, as discussed in detail below, represent: 1) sensitive or protected views including public open space and recreation trails, residential areas, and designated scenic roadways or vista points; 2) views that represent the visual experience of a relatively large number of affected viewers; and 3) views that portray a representative range of viewing conditions along the project corridor.

Table 4.4-1 summarizes the viewer groups, visual exposure, and scenic quality represented by 16 viewpoints. These factors are routinely used by CPUC in visual impact assessment of its projects. CPUC visual impact assessment methodology considers visual sensitivity as a composite measurement of the overall susceptibility of an area or viewer group to adverse visual or aesthetic impacts given the combined factors of landscape visual quality, viewer types, and exposure conditions which are considered together to determine an overall visual sensitivity for each viewpoint. The viewpoints listed in Table 4.4-1 are shown in the “existing” photographs in Exhibits 4.4-8 through 4.4-23 and Exhibit 4.4-25.

Key Viewpoint No. / Name	Viewer Group(s)	View Exposure	Visual Quality	Visual Sensitivity
VP 1, Tahoe City Substation	Motorists and Pedestrians	Partially blocked by building, enclosed view framed by trees, viewers experience passing view	Indistinctive to Representative	Low to Moderate
VP 2, Tahoe City Substation	Motorists and Pedestrians	Nearly fully screened by trees, viewers experience brief passing views	Indistinctive to Representative	Low to Moderate
VP 3, Truckee River Corridor	Pedestrians and Cyclists, Tahoe Rim Trail Users	Unencumbered view includes slight skylining of existing pole. Viewers experience passing, and brief stationary views of the river corridor	Distinctive	High
VP 4, Segment 650-3	Motorists	Wide panoramic view unencumbered by foreground elements. Viewers experience moderate duration views on drives between Truckee and mountains. Skylined power poles and conductors detract from views.	Representative.	Moderate

<b>Table 4.4-1 Viewer Types, Visual Exposures, and Visual Quality</b>				
<b>Key Viewpoint No. / Name</b>	<b>Viewer Group(s)</b>	<b>View Exposure</b>	<b>Visual Quality</b>	<b>Visual Sensitivity</b>
VP 5, Martis Creek Trail	Motorists	Scenery includes foreground, middleground and background landscape elements. Views are wide and unencumbered. Viewers experience moderate duration views on drives between Truckee and mountains.	Representative	Moderate
VP 6, SR 267, Segment 650-2	Motorists, Cyclists	Scenery includes foreground, middleground and background landscape elements. View is partially enclosed by trees, but provides scenic elements of interest. View duration is brief to slightly extended. Existing power poles/ conductors detract slightly from quality of view.	Distinctive.	Moderate to High
VP 7, SR 267, Segment 650-2	Motorists, Cyclists	Scenery includes foreground, middleground and background landscape elements. Partial distant views of Lake Tahoe. Power lines are fully exposed in the view and extend slightly above horizon line. View duration is brief to slightly extended.	Distinctive	Moderate to High
VP 8, SR 89, Segment 625-1	Motorists, Cyclists, and Pedestrians	View enclosed by trees that includes foreground, middleground and background elements. Power poles partially exposed and crossing conductors slightly visible. View duration is brief to slightly extended.	Representative	Moderate
VP 9, Tahoe Rim Trailhead, Segment 625-9	Hikers (summer), Snowshoers and Snowmobilers (winter)	View enclosed by trees and includes distant hills in the background. Existing poles are prominent and protrude strongly above the skyline. Potential for stationary view due to kiosk and exposed viewshed.	Representative	Moderate to High
VP 10, Fiberboard Freeway, Segment 625-3	Motorists, OHV users and Cyclists (summer), Snowmobilers (winter)	View is enclosed by trees; middleground is only partially visible. Large areas of bare ground slightly detract from the quality of the view. Utility ROW views are brief in passing.	Representative	Moderate
VP 11, Fiberboard Freeway, Segment 625-5	Motorists, OHV users and Cyclists (summer), Snowmobilers (winter)	View is surrounded by trees, and limited to foreground elements. Paved and dirt roads are visual elements that are co-dominant with natural features. Utility ROW views are brief in passing.	Representative	Moderate
VP 12, Fiberboard Freeway, Segment 625-7	Motorists, OHV users and Cyclists (summer), Snowmobilers (winter)	Immediate foreground dominated by a stand of trees. Background only slightly visible through road ROW.	Representative	Moderate
VP 13, 64-Acre Recreation Site, Segment 625-1A	Pedestrians and Cyclists	Highly used recreation site. Immediate foreground dominated by a stand of trees. Foreground/background hidden from view.	Distinctive	Moderate to High
VP 14, Fiberboard Freeway, Segment 625-4A	Motorists, OHV users and Cyclists (summer), Snowmobilers (winter)	View fully enclosed by trees. View duration is brief and in passing.	Representative	Moderate

<b>Key Viewpoint No. / Name</b>	<b>Viewer Group(s)</b>	<b>View Exposure</b>	<b>Visual Quality</b>	<b>Visual Sensitivity</b>
VP 15, SR 267, Segment 650-2 D-C OH-2	Motorists and Cyclists	Scenery includes foreground, middleground and background landscape elements. Partial distant views of Lake Tahoe. Power lines are fully exposed in the view and extend slightly above horizon line. View duration is brief to slightly extended.	Distinctive	Moderate to High

### 4.4.3 ENVIRONMENTAL CONSEQUENCES AND RECOMMENDED MITIGATION MEASURES

#### SIGNIFICANCE CRITERIA

Because the proposed project falls under multiple jurisdictions and would require decisions or approvals from multiple agencies, namely the TRPA, USFS and CPUC, a number of significance criteria apply. The purpose and intent of the various measures are frequently overlapping and the same discussions and analyses can be used to address the requirements of multiple agencies. Following the listing of individual criteria is a discussion of the overall approach to assessing the significance of scenic resource impacts of the proposed project.

#### TRPA CRITERIA

The “Light and Glare” and “Scenic Resources/Community Design” criteria from the TRPA Initial Environmental Checklist were used to evaluate the scenic resources impacts of the alternatives. The checklist inquires as to whether the proposed project would result in any of the following conditions.

- ▲ Be visible from any state or federal highway, Pioneer Trail or from Lake Tahoe?
- ▲ Be visible from any public recreation area or TRPA designated bicycle trail?
- ▲ Block or modify an existing view of Lake Tahoe or other scenic vista seen from a public road or other public area?
- ▲ Be inconsistent with the height and design standards required by applicable ordinances or Community Plans?
- ▲ Be inconsistent with the TRPA SQIP or Design Review Guidelines?
- ▲ Include new or modified sources of exterior lighting?
- ▲ Create new illumination which is more substantial than other lighting, if any, within the surrounding area?
- ▲ Cause light from exterior sources to be cast off-site or onto public lands?
- ▲ Create new sources of glare through the siting of improvements or the use of reflective materials?

TRPA maintains applicable threshold standards for scenic resources in its threshold carrying capacities. For the purposes of this analysis, a significant scenic resource impact would result if implementation of the proposed project would result in one or more of the following:

- ▲ a decrease in Roadway travel route ratings below the minimum required for threshold attainment;
- ▲ a decrease in Scenic Quality Ratings;
- ▲ a decrease in Public Recreation Areas and Bike Trails Ratings; or
- ▲ violation of the adopted Community Design threshold by failing to comply with site planning or design principles contained in the TRPA Code.

## NEPA CRITERIA

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Context means that the significance of the action must be considered in terms of the region as whole, affected interests, and the specific locality. Intensity refers to the severity of an effect. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. A decrease in scores or ratings assigned to landscape units in scenic resources inventories conducted by either USFS or TRPA would constitute an adverse impact.

VQOs under the USFS framework commit lands to specific levels of visual quality, which becomes part of the overall land management plans adopted for each Forest. The USFS visual management system was designed to: 1) inventory visual resources and provide the basis for ascribing visual resource management objectives to lands under agency management, and 2) to determine whether a proposed action or its alternatives would meet those management objectives. While visual management objectives (identified on Exhibit 4.4-1 and discussed in the regulatory setting) will frequently reflect the baseline visual inventory of the landscape, that is not always the case, and VQOs do not in and of themselves offer a NEPA-compliant framework for identifying the intensity of impacts on visual resources or the significance of those impacts. Specifically, the degree of visual change that constitutes a significant impact is not defined and no criteria or standards for significance are offered. However, because conformance or non-conformance with VQOs relate to the project's consistency with plans and policies, these are addressed separately (under Impact 4.4-3 below).

## CEQA CRITERIA

Based on Appendix G of the State CEQA Guidelines, an alternative would have a significant impact on scenic resources if implementation of the alternative would do any of the following:

- ▲ have a substantial adverse effect on a scenic vista;
- ▲ substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- ▲ substantially degrade the existing visual character or quality of the site and its surroundings; or
- ▲ create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

## OVERALL APPROACH

Given that the analysis of scenic resources in the EIS/EIS/EIR must be consistent with multiple criteria and measures, as identified above, scenic impact statements were organized in a manner that allows a coherent discussion of visual impacts while considering all relevant criteria and measures. Because the proposed project would not be visible from an officially designated state scenic highway, the second criteria listed in Appendix G of the State CEQA Guidelines (i.e., substantial damage to scenic resources [...] within a state scenic highway) is not applicable and is not discussed further.

## METHODS AND ASSUMPTIONS

Potential project-related impacts to scenic resources were analyzed by determining the nature and extent of anticipated changes to the existing visual environment that would result from construction and operation of the proposed project and comparing those anticipated changes to the criteria of significance described above. The analysis involved field reviews of the project area plus reviews of project data, including maps and drawings provided by the applicant, aerial and ground-level photographs of the project area, planning documents, and the preparation of computer-based visual simulations. Specific project data included the Proponent's Environmental

Assessment (Sierra Pacific 2010), power line pole designs and configurations, pole heights and locations, substation plans and elevation drawings, and proposed construction methods and long term maintenance practices.

## SELECTION OF SIMULATION VIEWPOINTS

The purpose of visual simulations is to document the project-related change that would be visible from representative sensitive viewpoints or viewing locations. The visual simulations provide an analytical tool for developing a technically sound assessment of visual impacts. The simulations also facilitate clear and objective communication of visual impacts.

Field observations and review of photography, technical data, and plans and policies pertaining to visual resources management were used as a basis for selecting simulation viewpoints. Selection of the simulation viewpoints was determined in consultation with the applicant, USFS, and TRPA. The following criteria were used to select key viewpoints:

- ▲ sensitive or protected views including public open space and recreation trails, residential areas, and designated scenic roadways or vista points;
- ▲ views that represent the visual experience of a relatively large number of affected viewers; and
- ▲ views that portray a representative range of viewing conditions along the project corridor (i.e., varied viewing distance and landscape character).

In addition, key viewpoints were limited to publically accessible ground level viewing locations that represent what the public actually sees. Therefore, oblique aerial or "birdseye" views were not considered appropriate for visual impact assessment purposes.

## PROJECT SIMULATIONS

A set of 20 visual simulations were produced to illustrate before and after visual conditions in the project area. The simulations illustrate the location, scale, and appearance of the project as seen from representative public viewpoints. With the exception of Viewpoints 7 and 15, the visual simulation photographs were taken using a digital single lens reflex camera with a 50-millimeter equivalent lens which represents a horizontal view angle of 40 degrees. A 28-millimeter equivalent lens representing a 65-degree horizontal view angle was employed to shoot the Viewpoints 7 and 15 simulation photographs to portray a wider angle view of the project that includes elements in the surrounding landscape context.

The visual simulations were generated using an objective analytical and computer modeling process. Briefly, GIS data of existing conditions and digital aerial photographs provided the basis for developing an initial digital model. A three-dimensional model of the proposed power poles and substation structures and equipment was developed using engineering design data and GIS project data supplied by the applicant. The three-dimensional computer model of the proposed project components was combined with the digital site model to produce a complete computer model of the project. A set of computer-generated perspective plots were then produced to represent the selected viewpoints.

For each of the simulation viewpoints, viewer eye level was assumed to be 5 feet above grade. Computer wireframe perspective plots were overlain on photographs to verify scale and viewpoint location. Digital visual simulation images were then produced based on computer renderings of the three-dimensional model combined with digital versions of the selected site photographs.

The location of each simulation is shown in Exhibit 4.4-7. The existing views and corresponding computer-based visual simulations are presented in Exhibits 4.4-8 through 4.4-23 and Exhibit 4.4-25.

## IMPACT DETERMINATION

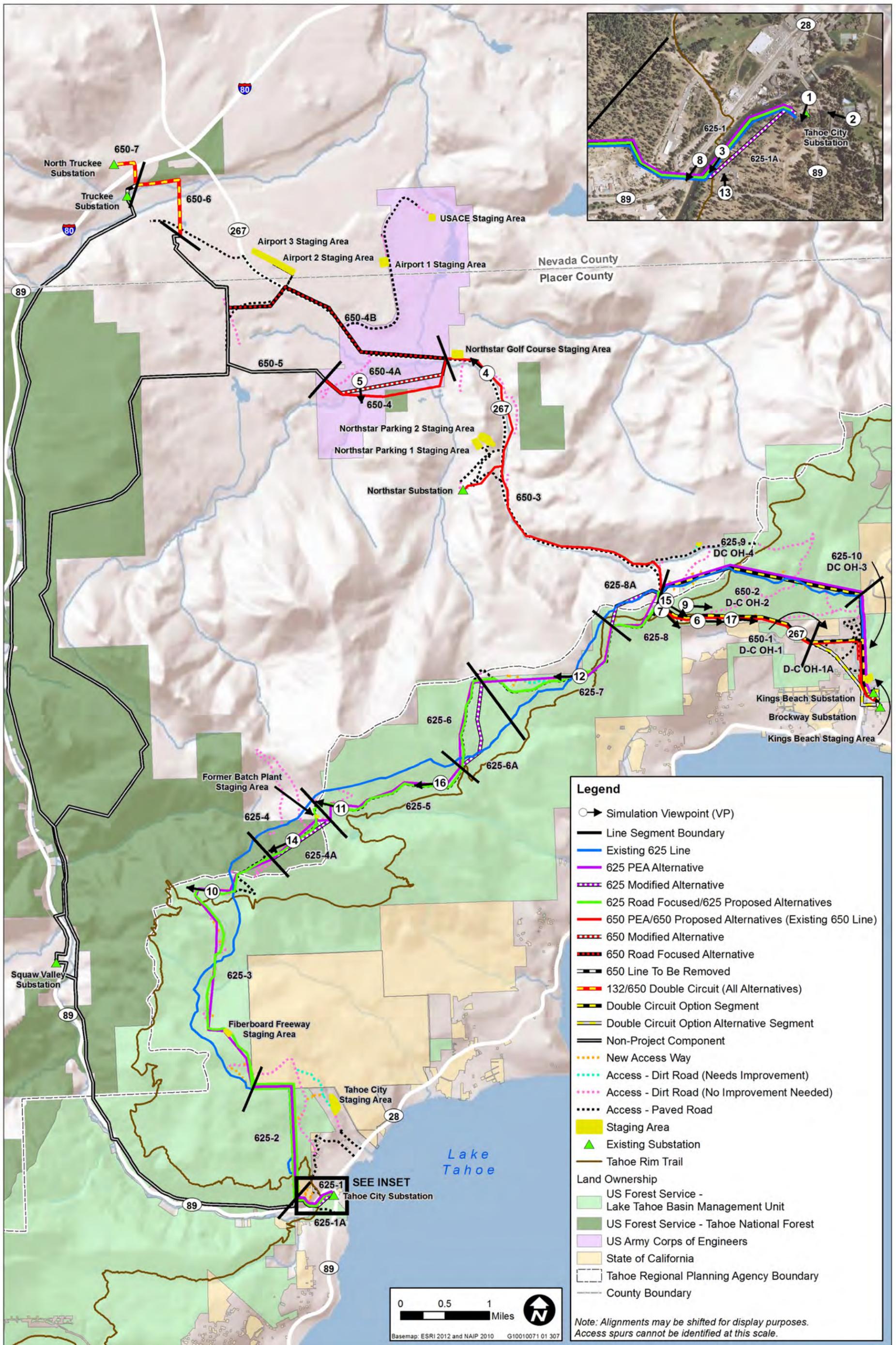
The significance and intensity of impacts to visual resources is determined using the TRPA, NEPA, and CEQA significance criteria listed above and in Table 4.4-2. The table provides guidelines to assist in evaluating effects of the project on the visual character or quality of an area, and is based on the visual sensitivity of key viewpoints and the degree of overall visual change introduced by the project within the view. The key factors in determining the overall visual change are visual contrast, dominance, and view blockage. This approach is routinely used by CPUC in visual impact assessment of its projects. Specifically, an adverse visual impact may occur when: 1) an action perceptibly and substantially changes, in an adverse way, the existing physical features of the landscape that are characteristic of the region or locale; 2) an action introduces new features to the physical landscape that are perceptibly uncharacteristic of the region or locale, or become visually dominant from common viewpoints; or 3) an action blocks or totally obscures aesthetic features of the landscape. The degree of visual impact depends on how noticeable the adverse change is and the related visual sensitivity.

Visual Contrast / Visual Change	Visual Sensitivity			
	High	Moderate	Low	None / Seldom Seen
<b>Low</b>	Potentially Significant / Moderate	Less than Significant / Minor	Less than Significant / Minor	Less than Significant / Negligible
<b>Moderate</b>	Significant / Major	Potentially Significant / Moderate	Less than Significant / Minor	Less than Significant / Negligible
<b>High</b>	Significant / Major	Significant / Moderate	Potentially Significant / Moderate	Less than Significant / Minor

Note: Scenic impact levels are provided for both CEQA (significant/less than significant) and NEPA (negligible, minor, moderate and major). The significance and intensity of impacts are judged from a static or linear key viewpoint, and may be modified based on site-specific circumstances including context and duration (both of which are required considerations under NEPA).

In addition, Applicant Proposed Measures (APMs) are incorporated into the project to minimize impacts to scenic resources. Impact conclusions are determined considering the attenuating effect of the following APMs.

- ▲ **APM SCE-1:** The following measures will be implemented during construction:
  - /// Construction activities will be kept as clean and inconspicuous as practical.
  - /// Construction storage and staging will be screened, where practical, with opaque fencing from close-range residential views and public viewing areas.
  - /// Slash treatment will be chipping, mastication, or lop and scatter as determined by the applicable land owner/manager.
  - /// When "cut-tree" marks are utilized, marks will be placed on back sides of trees or away from views of the travelling public.
  - /// Within the immediate to middle-distance foreground (300 feet), log skidding trails will be re-graded, to the degree possible, back to their original, natural contour and rehabilitated with vegetation.
  - /// Non-affected timber and ground vegetation will be protected during harvesting and slash treatment.
  - /// Trees and vegetation within the "clear zone" that do not pose a risk to power lines will be preserved.
  - /// Visual diversity of the ground surface will be maintained through irregular scatter of limbs, seeding, and other means as practicable.
  - /// Barriers/boulders/downed logs will be placed in strategic locations to discourage the establishment of user-created trails. Implement restoration of temporary access ways in a manner that minimizes visibility from intersecting roads.
  - /// Cut stumps will be 6-inch maximum height measured from the uphill side.



Source: Data adapted by Ascent Environmental 2013

Exhibit 4.4-7

Photo Simulation Viewpoint Locations



- ▲ **APM SCE-2:** Self-weathering dark brown steel poles (CorTen), or equivalent, will be used for the power lines to reduce potential visual contrast.
- ▲ **APM SCE-3:** Non-specular conductors will be used for the power lines to reduce the potential for new sources of glare. Non-specular conductor has been either mechanically or chemically treated to reduce reflectivity and has a smooth matte finish which blends more naturally with the environment.
- ▲ **APM SCE-4:** A non-reflective finish will be used for substation equipment at all substations to reduce the potential for new sources of glare.
- ▲ **APM SCE-5:** Screening through landscaping and non-vegetative means will be installed at the Tahoe City Substation to the degree that the rebuilt substation will not be obvious to the casual observer, and will account for public views of the substation from all sides. Plant material will be appropriate to the local landscape setting and will be consistent with CalPeco's technical requirements for landscaping in proximity to substation and transmission facilities. More specifically, the following will be implemented:
  - // With the property owner's permission, native conifer trees will be planted outside of the perimeter fence along the southwest and southeast sides of the substation site. Tree planting will replace existing trees that will be removed and will provide additional screening and landscape backdrop with respect to views from SR 89.
  - // With the property owner's permission, on the southeast side of the substation, a mixture of trees and tall shrubs will be planted along the recreational trail adjacent to SR 89 to provide additional screening.
  - // With the property owner's permission, at the western corner of the substation site, a mixture of shrubs will be planted outside of the perimeter fence in order to screen views from the recreation trail.
- ▲ **APM SCE-6:** Poles proposed in the vicinity of the highly visible clearing adjacent to Mount Watson Road will be placed so as to span the clearing or otherwise minimize their visibility from the Fiberboard Freeway.
- ▲ **APM SCE-7:** In cases where replacement poles for the 650 Line are adjacent to SR 267 and will be visible in unobstructed foreground public views from the roadway, poles will be carefully sited to eliminate or substantially reduce their visibility from the highway within the Tahoe Basin as compared to the existing 650 Line without causing new visual impacts from tree removal or construction of access ways that will be required to erect and maintain the line. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.
- ▲ **APM SCE-8:** In cases where replacement poles for the 625 Line are adjacent to the Truckee River and will be visible in unobstructed foreground public views along the river or adjacent trails, poles will be carefully sited to minimize their visibility. The westernmost pole on the south bank of the Truckee River where the power line crosses the river will be placed far enough from the river so as to be substantially unseen from the pedestrian bridge. The remaining poles along the south bank of the river will be located southward, outside the river corridor and behind the trees that line the riverbank such that visibility of the power line is minimized as viewed from SR 89, the Truckee River, and the pedestrian bridge. Any revised alignment or pole placement will be reviewed and approved by applicable land owners, agencies, and utilities.
- ▲ **APM SCE-9:** In consultation with the USFS and to reduce potential project visibility, selective, site-specific conifer tree planting will be considered in limited areas along the new 625 Line route where relatively unobstructed foreground views of new structures are seen from Mount Watson Road. Placement of new trees will not conflict with project operations or safety requirements.

## ALTERNATIVE 1 - PEA ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.4-1 (Alt.1)</b>	<p><b>Cause inconsistency with adopted plans.</b> The Tahoe City Community Plan (1994) suggests relocation of the Tahoe City Substation to a specific site known as “the Chimneys” as a means of removing it from public view and thereby improving scenic quality. This action is also defined as Scenic Program Project #135 in the SQIP. Alternative 1 (PEA Alternative) proposes to rebuild the Tahoe City Substation in its current location and screen the facility from public view. The Roadway Travel Unit was not in attainment of scenic thresholds at the time substation relocation was recommended and it is now in attainment and has been since 2006. Because the Roadway Travel Unit is currently in attainment of scenic thresholds, the project would not result in substantially greater visibility of the Tahoe City Substation, and because the recommended relocation to a specific site (which is no longer available) was encouraged and not mandatory to achieve scenic objectives, the rebuild of the Tahoe City Substation on its existing site would not be inconsistent with the Tahoe City Community Plan or SQIP. This impact would be <b>less than significant</b>.</p>
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To achieve the project’s intended operating capability, it is necessary to rebuild the Tahoe City electrical substation as part of the proposed project. The substation is situated in its original location just west of SR 89 and south of the Truckee River in Tahoe City, behind the Bridgetender Tavern and Grill. The substation is in view from SR 89 and nearby public use areas, including the adjacent portion of the 64-Acre Recreation Site, bike trails, picnic tables, and Fanny Bridge, but is partially screened from view by trees and buildings.

Exhibit 4.4-8 shows the Tahoe City Substation as viewed from SR 89 looking south. Exhibit 4.4-9 shows the Tahoe City Substation as viewed from SR 89 near the Gatekeeper’s Museum property (which is behind the viewer), looking west. In both simulations, the new substation retains similar form and lines characteristic of an industrial site, but with a different finish and layout. The vertical lines are slightly higher and the forms slightly wider and more discernible, but spatial extent of the transformers appears concentrated within a smaller portion of the view. The texture and color contrast remains similar to slightly greater than the existing structures. Note that these images do not show proposed screening that would be installed in conjunction with the Tahoe City Substation rebuild. In the first viewpoint (Exhibit 4.4-8), fewer structures are visible behind the Bridgetender, and the tree removal associated with the Tahoe City Substation upgrade opens up the view to include trees in the middleground and a greater portion of the sky. The scenic quality of the first view is improved because less of the Tahoe City Substation is apparent, and the tree removal introduces a greater degree of variety and depth into the scene. The visual effect from the second viewpoint (Exhibit 4.4-8) is similar to the first, except that the tree removal renders the Tahoe City Substation site more conspicuous. However, the increase in exposure is balanced by the positive effect of opening up views of middleground views and mountainous horizon line.

As compared to the existing Tahoe City Substation, the rebuilt substation would introduce a moderate degree of visual change. As discussed in the setting, these views have low to moderate sensitivity because they would be briefly experienced by high numbers of motorists and pedestrians.

The 1994 Tahoe City Community Plan recommends the substation be relocated to an area known as the Chimneys (which has since been developed) where it would be unseen by the public. Subsequently, TRPA’s 2001 EIP, which contains the SQIP, identified Scenic Program Project #135 which similarly called for relocating the substation to the Chimneys area. In both cases, the goal was to improve scenic quality by removing the substation from public view. It should be noted that the specific roadway travel unit (Roadway Travel Unit 14 – Tahoe Tavern) was out of attainment of scenic threshold standards at the time the substation relocation project was recommended in the Tahoe City Community Plan (1994) and included in the EIP (2001). The unit came into attainment in 2006 and has remained in attainment (TRPA 2007 and TRPA 2011).



Existing View



Simulated View

Source: Environmental Vision 2012

**Exhibit 4.4-8**

**Tahoe City Substation, VP 1, All Action Alternatives**



Existing View



Simulated View

Source: Power 2012

Exhibit 4.4-9

Tahoe City Substation, VP 2, All Action Alternatives

Alternative 1 (PEA Alternative) proposes to rebuild the substation in its original location. Rebuilding the substation at its current location would be inconsistent with the 1994 Tahoe City Community Plan recommendation and SQIP Scenic Program Project #135 to relocate the facility if the rebuilt substation would be in public view. In addition, the TRPA regulations prohibit any decrease in the travel route rating as seen from roadway travel units. Because the rebuilt Tahoe City Substation would increase in mass and height, with color and texture contrasts that conflict with the surrounding environment, it could, without screening, adversely affect the travel route rating associated with the roadway travel unit.

The goal of eliminating or minimizing views of the Tahoe City Substation from public use areas expressed in the Tahoe City Community Plan and by Scenic Program Project #135 of the SQIP can be accomplished without relocating the substation through sufficient screening of appropriate types and placement. APM SCE-4 specifies use of a non-reflective finish on substation structures to reduce the potential for new sources of glare. In addition, APM SCE-5 describes screening (both through landscape and non-vegetative methods) that the applicant has integrated into project design, which will include native conifer trees and native shrubs to be planted outside of the perimeter fence along the southwest and southeast sides of the rebuilt Tahoe City Substation site, such that the presence of the substation would not be obvious to the casual observer. Tree planting would provide additional screening and landscape backdrop with respect to views from SR 89 and nearby public use areas. With the permission of the owner of the property on the southeast side of the rebuilt Tahoe City Substation, a mixture of trees and tall shrubs would be planted along the recreational trail adjacent to SR 89. The placement of trees to screen the project from view would preclude any decrease in the travel route rating and would result in improved aesthetic conditions.

The APMs that have been integrated into the project design would be sufficient to reduce visual impacts associated with the rebuilt Tahoe City Substation and would render the suggestion to move the substation unnecessary. Because Roadway Travel Unit 14 – Tahoe Tavern has been in attainment since 2006, the site to which the recommended relocation of the substation was to occur has since been developed, the visual change would be minor to moderate (see Table 4.4-2, Matrix for Determining Scenic Impact Significance/Intensity, for the guidelines used to evaluate the scenic effects of the project), and sufficient screening would be implemented to minimize visibility of the rebuilt substation, impacts associated with potential inconsistency with adopted plans described above would be **less than significant**. APMs would achieve the same objective as the plans for minimizing public views of the facility.

## Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT</b>	<b>Create views of rebuilt power lines or other project components from sensitive locations.</b>
<b>4.4-2</b>	The existing 625 and 650 Lines would be rebuilt in the alignment and configuration proposed under Alternative 1 (PEA Alternative) using larger poles that would be more conspicuous than the existing line in views from certain public recreation areas, bike trails, and scenic roadway corridors. Increased visibility of the rebuilt lines could fail to meet management targets for scenic quality established by lead agencies. However, because implementation of proposed APMs would minimize scenic effects during construction through specific screening and management practices; require use of specific materials, colors, and textures for project elements; and modify power pole and line placement such that views from sensitive locations and scenic resources are eliminated or minimized, potential scenic impacts would be reduced to <b>less-than-significant</b> levels.
<b>(Alt.1)</b>	

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## MIDDLEGROUND/BACKGROUND DISTANCES

As described in the setting and shown in Exhibit 4.4-4, the existing poles are minimally visible in the middleground and background views. When viewed at greater distances within the larger landscape context, the poles visually blend with the surrounding trees in terms of line, form, and color. With the proposed project, vantage points within the middleground distance zone (i.e., 0.5 to 4 miles from the proposed project) would require a very specific set of circumstances to occur for the proposed project to be visible. The project would only be visible to observers within middleground/background distances if: 1) the immediate foreground is clear of obstructions (e.g., a meadow or field), 2) the line of sight is otherwise uninterrupted, and 3) the power line ROW is aligned in the same direction as the viewer's line of sight. In these circumstances, the color/texture contrast in the landscape caused by vegetation clearing would be more noticeable than the poles and the conductors themselves, particularly during the winter. While these viewing conditions are rare and would occur only briefly along a travel route, it is possible that portions of Alternative 1 (PEA Alternative) would be visible from distant locations such as portions of the Tahoe Rim Trail farther removed from the proposed power lines. In addition, public roadways crossing Martis Valley would provide middleground and background views of the rebuilt 650 Line.

However, the incremental visual change caused by Alternative 1 (PEA Alternative) would be very limited from middleground/background distance zones because: 1) such views would not be available from many locations, and if visible, the duration of visibility would be brief; 2) the greater distance reduces the apparent size/dominance of the action; 3) vegetation clearings would be generally coincident with existing ROWs in the landscape; and 4) the visual context would attract viewer attention toward other, more attractive landscape features. The degree of apparent visual change would be low.

Based on public comments received on the Draft EIS/EIS/EIR, an additional evaluation of views of the project area from the surface of Lake Tahoe was conducted. The results of this evaluation, including photographs of the project area taken from a boat on Lake Tahoe, are provided in response to Comment 24-2 in Appendix P. The conclusion of the evaluation is that from many locations on Lake Tahoe, the proposed project would not be visible to boaters or others on the lake; and, where the project is visible, it would be from relatively distant viewpoints and visible elements would generally be within the existing power line alignment. Under these circumstances, the project would not result in a substantial degradation of the existing visual character or quality of views from Lake Tahoe or otherwise exceed applicable significance criteria provided above.

Overall, the impact of Alternative 1 (PEA Alternative) from middleground/background distances would be **less than significant** (see Table 4.4-2, Matrix for Determining Scenic Impact Significance/Intensity, for the guidelines used to evaluate the scenic effects of the project).

## VISUAL EFFECTS SPECIFIC TO THE CONSTRUCTION PHASE

Visual disturbances associated with construction activity would include the presence of vehicles, heavy equipment, and workers. Site preparation and grading during the initial construction phase would also cause visual disturbance through the removal of existing vegetation and the creation of a visual contrast with the surrounding area. Multiple staging areas would be required in order to store, stage, and distribute construction equipment and materials as part of project implementation. However, the staging areas would primarily be located in areas that have been previously disturbed, thereby minimizing the degree of long-term visual change that would occur as a result of site preparation of the staging areas. In addition, the visual impacts of staging areas and use of temporary ROWs for construction activity along the 625/650 Line would be temporary. Overall, the construction phase is expected to take approximately 14 months within a five-year construction period; however, construction activity at any one place along the 625/650 Line would be substantially shorter in duration. As specific segments of Alternative 1 (PEA Alternative) are completed, construction activities and staging areas would move to the next segment or location. The annual construction season in the Lake Tahoe Region is from May 1 through October 15, and may be extended with TRPA approval. The construction season outside the Lake Tahoe Basin is generally the same, weather permitting. Work crews and equipment would be

visible to the public during logging, removal of other vegetation, and grading of new access ways. They would also be visible in the area when installing the new poles and stringing the lines.

A total of 12 sites for use as staging areas have been identified, which would vary in size from 0.2 acre to 9.1 acres. The staging areas are common to all project alternatives. Temporary chain-link fencing would be installed around the perimeter of the staging areas. Staging areas would be used during construction of the project and then removed. Only one of the 12 staging areas, referred to as the Northstar Golf Course, would be in public view from a heavily used sensitive location. It is located off the east side of SR 267 just north of where SR 267 passes the Northstar Golf Course, and is accessed by a dirt road located approximately 1.4 miles southeast of Martis Creek Road. It would be visible to the public from SR 267. Several other proposed staging areas, such as the Old Batch Plant, the Fiberboard Freeway, the Northstar parking lot, USACE staging area, and the Truckee Tahoe Airport staging areas, would be visible from public travel routes. Except for the Truckee Tahoe Airport and USACE staging areas, views of these facilities would be limited to the immediate area because of the surrounding forest cover. The other staging areas would be in locations that would not be visible from major roads, trails, or other sensitive areas because of the screening effect of the forest. None of the proposed staging areas would be located on or near the Tahoe Rim Trail.

Staging areas that would be visible to motorists or cyclists along paved or unpaved routes, including SR 267 and the Fiberboard Freeway, would only be visible briefly (i.e., a matter of seconds) along the route, and would not substantially affect the quality of the scenic or recreational experience. Because the proposed staging areas are already disturbed and do not appear in their pristine natural condition, the sensitivity to visual change would be low and the visual impact incremental in nature. Nevertheless, during the construction phase, staging areas would have the appearance of a construction site, and could have substantial, albeit brief, visual effects as roadway users pass the site. In accordance with APM SCE-1, the applicant has committed to keeping construction activities as clean and inconspicuous as possible. In addition, APM SCE-1 will require construction storage and staging to be screened with opaque fencing from close-range residential views and public viewing areas, where practical. With incorporation of these measures into project design, the effect of staging areas on scenic resources would be minimized by substantially reducing the intensity of visual effects. The visual effects of vegetation clearing and limited tree removal necessary to prepare certain staging areas for use would have localized, long-lasting visual impacts by increasing the level of visual contrast that currently exists in the landscape. However, as described, the effect would be attenuated through APM SCE-1, minor in intensity, and would be visible only briefly as users of the Fiberboard Freeway and SR 267 pass the staging areas. Finally, the presence of work crews and equipment along the ROW necessary to log trees, remove other vegetation, grade new access ways, and to replace and relocate poles and conductors would be visually distracting, but temporary.

## **LONG-TERM EFFECTS FROM SENSITIVE LOCATIONS**

Long-term impacts are assessed using the key viewpoints identified as representative of the visual experience for a large number of public viewers and from sensitive and/or high-quality viewing locations (such as scenic highways). Existing visual conditions are described in Section 4.4.2, Existing Conditions/Affected Environment, and this discussion describes the magnitude and severity of visual changes that would occur so as to assess the significance and intensity of the impact in accordance with Table 4.4-2, Matrix for Determining Scenic Impact Significance/Intensity. It also addresses, for applicable viewpoints, whether features of Alternative 1 (PEA Alternative) would meet applicable USFS VQOs or result in a reduction in TRPA scenic threshold ratings.

### **Truckee River and SR 89**

Under Alternative 1 (PEA Alternative), Segment 625-1 of the 625 Line would be replaced in its existing alignment, extending along the south bank of the Truckee River from the Tahoe City Substation before crossing the river and SR 89. The existing line within the river corridor is visible from the river itself and from the Truckee River Bike Trail. Exhibit 4.4-10 presents a southwesterly (downstream) view of the Truckee River from the pedestrian and cyclist overpass across the river. From this viewpoint, the new power line pole appears substantially wider and protrudes higher above the horizon line than the existing pole and surrounding trees. In this view, the scale and dominance



Existing View



Simulated View

Source: Sierra Pacific 2010

Exhibit 4.4-10

Truckee River Corridor, VP 3, Alt.1, Alt. 3, and Alt. 4, Segment 625-1

of the proposed 625 Line is out of character with existing visual features, as compared to the existing pole which is more compatible with the surroundings and visual environment. Although the proposed pole would replace the existing pole in the same location, the incremental increase in width and height is sufficient in magnitude to be noticeable and potentially negatively perceived by a casual observer. While users of the overpass would only briefly be exposed to the view, the pole in the viewpoint and additional replacement poles along the south side of the Truckee River would also be visible to pedestrians along SR 89, rafters on the Truckee River, and to some users of the 64-Acre Recreation Site. Because the volume of visitors and recreationists would be high and because SR 89 is designated by TRPA as a scenic highway (Roadway Travel Unit 42 – Outlet to Lower Truckee River) in non-attainment of the scenic threshold standard, the visual sensitivity of the viewpoint is high. The power line upgrade along Segment 625-1 in the location of the existing line along the river could result in an adverse scenic effect and a decrease in the travel route rating of Roadway Travel Unit 42.

APM SCE-8 will require carefully siting replacement poles along the 625 Line to minimize their visibility from the Truckee River and the adjacent 64-Acre Recreation Site. In cases where replacement poles for the 625 Line would be adjacent to the Truckee River and would be visible in the public's unobstructed foreground views along the river or adjacent bike trails, poles will be carefully sited to minimize their visibility. The photo simulation of the location at which the 625 Line crosses SR 89, the bike trail, and Truckee River as seen from the highway and bike trail (Exhibit 4.4-15) shows that incorporation of this measure into project design would be effective in reducing views of the line from this particular viewpoint. Conversely, the photo simulation of the view of the river corridor from the pedestrian and bike trail bridge over the Truckee River (Exhibit 4.4-10) illustrates that, unless continued careful siting occurs for all the poles along the Truckee River to the Tahoe City Substation, the rebuilt line would be substantially more conspicuous within the river corridor.

Implementation of APM SCE-8 would locate the new power line behind the existing line of trees on the south bank of the Truckee River, outside the river corridor such that visibility of the power line is minimized as viewed from SR 89, the Truckee River, and the pedestrian bridge. (Note: with this APM, the alignment of the 625 Line in Segment 625-1 would be the same as Alternative 2 [Modified Alternative], assessed below.) As detailed in APM SCE-8, the westernmost pole on the south bank of the Truckee River where the power line crosses the river will be placed far enough from the river so as to be substantially unseen from the pedestrian bridge. This measure would enhance the view for a large number of sensitive viewers by removing the existing line along the river's edge, and placing the new line out of direct view from SR 89, Truckee River, Truckee River Bike Trail (on the north side of the river), and the pedestrian bridge. The more southerly location would not avoid adverse impacts altogether, however. This alignment would parallel a paved path used by cyclists, pedestrians, and through-hikers on the Tahoe Rim Trail and would cross the access way to the bicycle/pedestrian bridge that crosses the river and raft launch site immediately east of the bridge. In the context of a recreational area with a mix of natural (trees, river) and urban (roadways, bridges, structures, parking areas) features, this alignment introduces a strong degree of visual change in the immediate vicinity.

APM SCE-8 will improve existing views from SR 89 and its associated TRPA travel route rating by moving the power line from the view corridor of the scenic highway to behind the line of trees on the south bank of the Truckee River. This would render the line visible to users of the 64-Acre Recreation Site, and when viewed in the immediate foreground the new poles would be visually dominant features. When viewed at greater distances within the larger landscape context, however, the poles would visually blend with the surrounding trees in terms of line, form, and color. APM SCE 8 would result in an overall decrease in the number of affected viewers and would avoid impacts to the scenic highway corridor, Truckee River, and Truckee River Bike Trail on the north side of the river. Because this measure would reduce the amount of man-made structure visible from TRPA Roadway Travel Unit 42 (SR 89), the impact would be less than significant (i.e., the composite score would not decrease) and may be beneficial (i.e., the composite score may increase).

## SR 267

Segments 650-2 and 650-3 of the 650 Line are routed along the east side of SR 267 for about 6 miles from approximately 750 feet north of Stewart Way in Kings Beach northward over Brockway Summit and continuing on to Martis Valley where the line crosses SR 267 and heads westward away from the highway. The existing line is clearly visible along most of the route on the side of the road within these two segments. Segment 650-2 is within TRPA Roadway Travel Unit 41 – Brockway Summit. This Roadway Travel Unit is in attainment of scenic threshold standards; however, should the project result in a decrease in threshold ratings to a level below that inventoried and documented in 1982, the impact would be considered significant with respect to TRPA thresholds. Segment 650-3 is outside the Tahoe Basin and therefore not within a TRPA Roadway Travel Unit. However, this portion of SR 267 is identified as a scenic corridor in the Placer County General Plan.

The existing 625 and 650 Lines are on poles that average 52 feet in height. New poles that would be used to rebuild the lines would be steel instead of wood. They would be, on average, approximately 7 to 12 feet taller than the existing wood poles, a height increase of between 13 and 23 percent, and would have a dark brown, rust-like color. Most of the new poles would be 15 to 19 inches in diameter at the base, which is 2 to 3 inches larger than the existing wood poles. Some new poles would be self-supporting and would be secured to a poured concrete foundation. The foundations would have diameters of 3 to 6 feet that would normally extend 6 to 12 inches above the ground surface but could extend as high as 2 feet. Self-supporting poles could have diameters of up to 4.5 feet at the base. In various locations, the existing poles not only support the power line but also electrical distribution and communication lines. (See Exhibit 3-6, Locations of Existing Distribution and Communication Underbuild, in Chapter 3, Project Alternatives). Under Alternative 1 (PEA Alternative), all lines on existing poles, including distribution and communication underbuild, would be transferred to the new, larger poles and the existing poles would be removed, with the exception of a small portion of Segment 650-7 in the Town of Truckee between the Truckee Substation and the 132/650 double-circuit (see Exhibit 3-7).

### ***Martis Valley***

Along Segment 650-3 outside the Tahoe Basin, the larger poles would be more conspicuous than the existing poles, but would otherwise have a similar appearance and character. They would not substantially disrupt views from the highway as compared to the existing 650 Line. Exhibit 4.4-11 provides an example of how the new line would appear in the context of the Martis Valley, looking northwest from SR 267 near the Northstar Golf Course. The height and diameter of the poles are noticeably greater, and extend to a greater height above the horizon line. However, in the viewing context of an open plain, with wide panoramic views readily available, the new poles along the north end of Line Segment 650-3 and along Line Segment 650-4 represent a minor to moderate incremental change, as compared to existing conditions.

In all cases the new line will utilize non-specular conductors (see APM SCE-3) and self-weathering, dark brown poles, or equivalent (see APM SCE-2) which would be less conspicuous than the existing conductors and poles. From SR 267, the 650 Line diverges from the highway and extends west across Martis Valley. Segment 650-4 in this area is generally about 900 feet south of Martis Creek. A public trail leads from a gravel parking area off of SR 267. The trail generally follows the creek in this area, on its north side. The existing line is visible to the south from the trail. Exhibit 4.4-12 shows the change in view with the upgraded power line along the existing alignment from a point along the Martis Creek Trail approximately 600 feet north of alignment. In this exhibit, the difference between the existing power line and the proposed power line is nearly indiscernible, primarily because the distance of the line from the trail decreases its prominence, and decreases its potential to protrude above the horizon line. After project implementation, the line would be 600 to 1,000 feet farther from SR 267 and visual changes would be less discernable.

For viewpoints from within or toward the Martis Valley, the degree of visual change associated with the upgrade of the 650 Line would be low and the visual sensitivity would be moderate. As such, the visual impact would be less than significant (see Table 4.4-2, Matrix for Determining Scenic Impact Significance/Intensity, for the guidelines used to evaluate the scenic effects of the project). A small parcel of land within Martis Valley,



Existing View



Simulated View

Simulated View Source: Sierra Pacific 2010

**Exhibit 4.4-11**

**SR 267, VP 4, All Action Alternatives, Segment 650-3**



Existing View



Simulated View

Source: Sierra Pacific 2010

Exhibit 4.4-12

Martis Creek Trail, VP 5, Alt.1and Alt. 4, Segment 650-4

immediately east of the Northstar Golf Course and 0.5-mile south of SR 267 is administered by the USFS and has a VQO of Retention, which requires that management activities repeat the form, line, color, and texture frequently found in the characteristic landscape. The new power line would repeat visual elements of form and line of the existing power line, but would differ only slightly in color and texture. However, as seen from SR 267 (Viewpoint 5), Segment 650-4 would remain consistent with the Retention VQO because the visual changes would not be apparent for travelers on the roadway.

### ***Brockway Summit to Kings Beach***

The larger power line poles would be more conspicuous than the existing poles, as described above. Inside the Tahoe Basin, they would be visible in Segments 650-1 and 650-2 from TRPA Roadway Travel Units, public bike trails, and the SR 267 scenic corridor. The section of SR 267 that descends into the Tahoe Basin from Brockway Summit is a particularly sensitive view corridor, as it affords travelers views of Lake Tahoe and the surrounding landscape. It also serves as a gateway to Lake Tahoe and offers a first impression for visitors to the region.

The existing 650 Line is located on the eastern and northern side of the road, whereas the views of Lake Tahoe are in primarily in the southerly direction. The existing power poles, which skyline in certain areas, can detract from the viewing experience. The new poles, which would be thicker and taller, have the potential to exacerbate this visual effect and could result in a decrease in the travel route rating for TRPA Roadway Travel Unit 41, which would violate the adopted Scenic Quality Threshold Ratings. This is because the presence of manmade features is one of the scoring factors used in the composite score, and Segment 650-2 would be more conspicuous to travelers on SR 267 because of the increased height and width of the poles.

Potential impacts to the scenic quality rating of Roadway Travel Unit 41 due to the increased presence of power poles would be avoided or minimized through implementation of APM SCE-7, which states that replacement poles for the 650 Line will be sited to eliminate or substantially reduce their visibility from the highway within the Tahoe Basin from Brockway Summit southward, as compared to the existing 650 Line, without causing new significant visual impacts from tree removal or construction of access ways that would be required to erect and maintain the line. In this area, the 650 Line would be moved eastward, away from SR 267, so as to be among the fringe of trees east of the highway (see Exhibit 4.4-24, 650 Setback Alignment of APM SCE-7). This would result in beneficial scenic effects by further opening up views of the Tahoe Basin for travelers on SR 267. The realigned portion of the 650 Line would be unseen or minimally visible from the highway. As shown in Exhibit 4.4-13, Segment 650-2 would, from this viewpoint (Viewpoint 6), be moved behind the line of trees such that it would be wholly hidden from view, or nearly so. Exhibit 4.4-13A depicts existing and simulated post-project conditions from the same location, but with communications underbuild remaining on existing, but topped, poles. (See the discussions of underbuild in Chapter 3, Project Alternatives.)

Exhibit 4.4-13B depicts the existing and post-project view of another portion of Segment 650-2 (Viewpoint 7) with communications underbuild remaining on existing, topped, poles. Exhibit 4.4-14, in contrast, depicts the existing and post-project view of the same location (Viewpoint 7, but a slightly different perspective) if the new power line is not set farther back; it would not be hidden behind the tree line and would result in greater visibility of man-made structure in the roadway travel unit.

Also within Segment 650-2, but farther south toward Kings Beach and Lake Tahoe (Viewpoint 17), Exhibit 4.4-14A depicts existing and post-project conditions along SR 267, but in a location that shows a straighter segment of roadway, and thus a greater number of poles along the route. As shown, the setback of the power line, in conjunction with the existing, topped poles supporting the communications underbuild, would result in a reduced volume of man-made structures within the roadway unit.



Existing View



Simulated View: Setback in Accordance with APM SCE-7, with Relocated Underbuild

Source: Sierra Pacific 2010

**Exhibit 4.4-13 SR 267, VP 6, Alts.1, 3, and 4, Segment 650-2 (Relocated Underbuild)**



Existing View



Simulated View: Setback in Accordance with APM SCE-7, with Underbuild Remaining on Existing Poles

Exhibit 4.4-13A

SR 267, VP 6, Alts. 1, 3, and 4, Segment 650-2 (Underbuild in Place)



Existing View



Simulated View: Setback in Accordance with APM SCE-7, with Underbuild Remaining on Existing Poles

Exhibit 4.4-13B

SR 267, VP 7, Alts. 1, 3, and 4, Segment 650-2 (Underbuild in Place)



Existing View



Simulated View: No Setback of Power Line or Underbuild

Exhibit 4.4-14

SR 267, VP 7, Alts. 1, 3, and 4, Segment 650-2 (No Setback)



Existing View



Simulated View: Setback in Accordance with APM SCE-7, with Underbuild Remaining on Existing Poles

Exhibit 4.4-14A

SR 267, VP 17, Alts. 1, 3, and 4, Segment 650-2 (Underbuild in Place)



Existing View



Simulated View

Source: Sierra Pacific 2010

Exhibit 4.4-15

SR 89, VP 8, All Action Alternatives, Segment 625-1

Implementation of APM SCE-7 would set the reconstructed power line back from SR 267 and among the trees and would minimize the scenic impact of the new line from viewpoints along the roadway. However, it would result in additional impacts of the same types described for other wooded portions of the project area (e.g., along the Fiberboard Freeway). Construction of the line in this reach would have greater ease of access than a mid-forest location by virtue of its alignment along SR 267, but construction would require tree removal, vegetation removal, clearing of rocks and boulders, and surface disturbance for creation of access ways. Impacts typical of such construction include emissions from construction vehicles (which would be required in any case), generation of fugitive dust in the vicinity of grading and surface disturbance, release of otherwise stored carbon dioxide (CO<sub>2</sub>, a greenhouse gas), temporary staging and stockpiling, noise from vehicles and heavy equipment in areas proximate to active construction, plant and wildlife habitat alteration, invasive plant risk, and soil erosion potential. Construction and operational activities that would occur in the setback area would be the same as those that would occur in other, similar portions of the project area, and would be subject to all of the APMs to which the applicant has committed to reduce impacts to scenic resources, air quality, biological resources, cultural resources, soils, hazards and hazardous materials, water quality, noise, recreation, utilities, and transportation. The expanded ROW needed for implementation of APM SCE-7 was surveyed for both cultural resources and biological resources, and no sensitive resources or resources of concern were found.

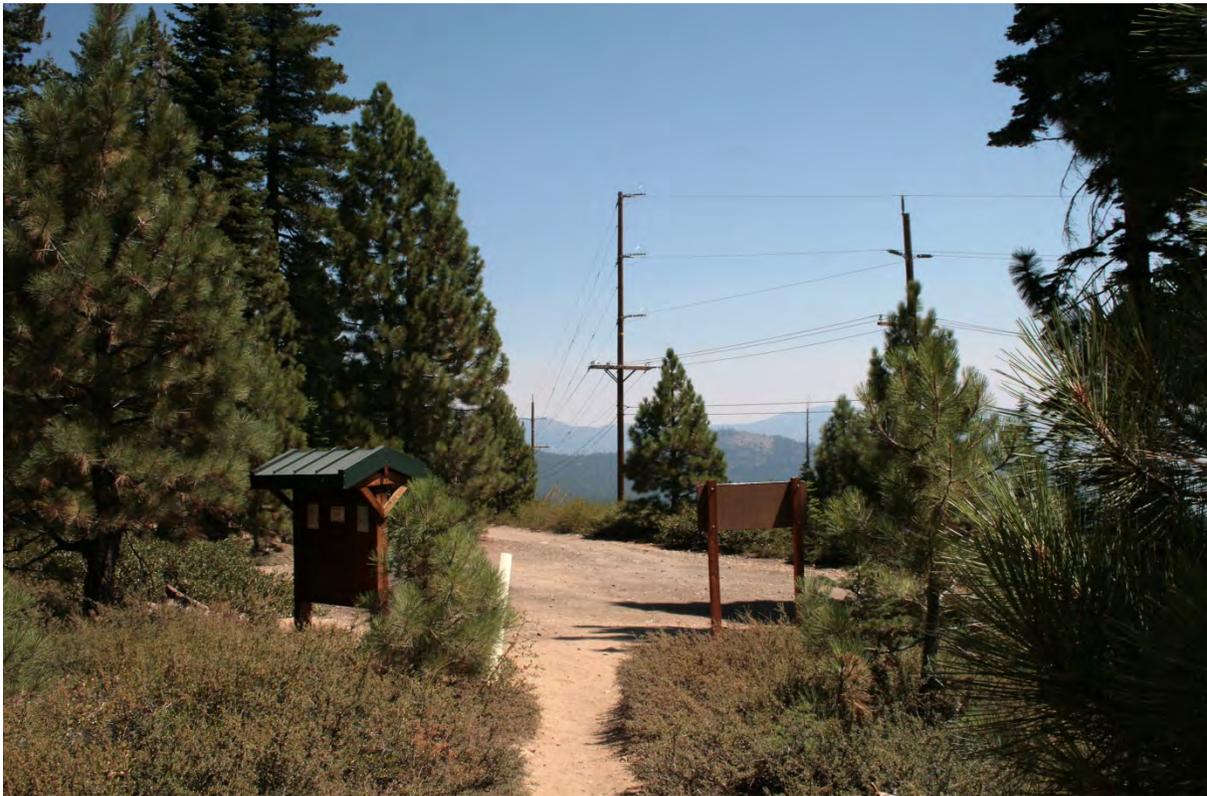
Construction of the power line along SR 267 without APM SCE-7 would result in permanent and temporary impacts to forest land, including tree removal, release of CO<sub>2</sub>, and loss of CO<sub>2</sub> sequestration potential. Implementation of the revised, or setback, alignment of APM SCE-7 would result in additional tree removal and associated effects. To quantify the increase in impacts to forestry resources, the acreage of forest land within the revised alignment was calculated and compared with the acreage of forest land within the relevant portions of the alignments analyzed in Section 4.3, Forestry Resources, of this EIS/EIS/EIR. Forest land acreage calculations for the revised alignment were conducted using the same data sets used in the analysis presented in Section 4.3, Forestry Resources. To quantify impacts associated with different forest land variables (e.g., number of trees, total cubic foot volume, total merchantable volume), the average per-acre value of each variable was calculated, by segment, using the segment analysis data included in Appendix H, Supplemental Forestry and Vegetation Management Report. These per-acre values were then multiplied by the affected forest land acreage. Impacts associated with carbon sequestration were derived using the calculated tree volume totals and the methods and formulas presented in Section 4.3, Forestry Resources. Implementation of APM SCE-7 would result in approximately 7.2 additional acres of forest land impacts and removal of approximately 1,600 additional trees greater than 1-inch in diameter at breast height (dbh). These and related tree removal effects are shown in Table 4.4-3. Because of its long-term effect and degree of physical change to the landscape, tree removal would be the most pronounced effect of APM SCE-7 implementation. Under Alternative 1 (PEA Alternative), the power line along SR 267 would be the single-circuit 650 Line, requiring a temporary 65-foot ROW for construction and a 40-foot permanent ROW. All disturbances outside of the permanent 40-foot wide ROW required for operation would be restored to their original condition following construction.

**Table 4.4-3 Forest Land\* Impact Comparison for APM SCE-7 for Alternative 1 (PEA Alternative)**

Impact Variable	Impact without Implementation of APM SCE-7	Impact with Implementation of APM SCE-7	Change in Forest Land Impact from Implementation of SCE-7	
			Difference	Percentage
Permanent Forest Land Impacts (Acres)	129.1	136.3	+7.2	5.6%
Temporary Forest Land Impacts (Acres)	97.9	97.9	N/C	0%
Total Number of Trees ≥1" dbh to be Removed (Permanent and Temporary Impact Areas)	58,000	59,601	+1,601	2.8%
Total Cubic Foot Volume of	863,600	839,421	+24,179	2.8%

<b>Table 4.4-3 Forest Land* Impact Comparison for APM SCE-7 for Alternative 1 (PEA Alternative)</b>				
Impact Variable	Impact without Implementation of APM SCE-7	Impact with Implementation of APM SCE-7	Change in Forest Land Impact from Implementation of SCE-7	
			Difference	Percentage
Trees ≥1" dbh to be Removed				
Total Merchantable Timber Volume in Cubic Feet (Conifers ≥9" dbh)	594,065	577,269	+16,796	2.8%
Total MTCO <sub>2</sub> e Released	8,128	8,366	+238	2.9%
Lost MTCO <sub>2</sub> e Sequestration Potential	8,913	9,502	+589	6.6%
MTCO <sub>2</sub> e Sequestered Over Time in Temporary Impact Areas	14,303	14,303	N/C	0%
* Forest Land, as described in Section 4.3, Forestry Resources, is defined as land that can support 10 percent native tree cover of any species that allows for management of timber, aesthetics, fish and wildlife, recreation, and other public benefits. Note: Access way construction to implement APM SCE-7 would be on lands cleared for other purposes (e.g., centerline access way would be within power line vegetation management corridor).				

Implementation of APM SCE-7 for Alternative 1 (PEA Alternative) would increase the acreage of permanent impacts to forest land, and would result in a 2.8 percent increase in the number and volume of trees that would be removed to accommodate construction of the alternative. These impacts would not substantially reduce the size, continuity, or integrity of the forest land in the area or interrupt the view from sensitive locations and scenic resources for the following reasons. Views from the surface of Lake Tahoe, for example, would be obscured by distance, and by trees that would remain between the SR 267 ROW and the power line setback alignment (see photos and text in response to Comment 24-2 in Appendix P). This condition would also be true of other vantage points. The setback alignment would only be visible from vantage points within the middleground and background distance zones under a specific set of circumstances. Because of the height and density of trees in the landscape, cleared ROWs are easily hidden from view, especially if the viewer's line of sight is not in line with the ROW and/or the view is from a similar or lower elevation than the ROW. The setback alignment would only be visible to observers within middleground and background distance zones if: 1) the viewer's immediate foreground is clear of obstructions (e.g., a meadow, field, or large parking lot), 2) the line of sight is otherwise uninterrupted (which it would not be in the case of the SR 267 setback because trees will remain on both sides of the power line ROW), and 3) the power line ROW alignment coincides with viewer's line of sight. Otherwise, the power line is likely to remain hidden from view; if it crosses perpendicularly or obliquely to the viewer's line of sight, the height of trees on either side of the cleared ROW would mask the gap, even in steeply sloped areas. This phenomenon is evident in other views of linear features within the Lake Tahoe Basin. For example, there are multiple roadways, USFS roads, off-highway vehicle trails, and linear utility alignments crossing through forests in the basin. However, most of these are not visible from middleground and background vantage points, particularly when they cut across a slope. For example, the Fiberboard Freeway is not visible from the surface of Lake Tahoe because it is constructed along the contour of the slope, generally perpendicular to the line of sight. When linear ROWs are clearly visible is typically when the ROW travels straight up and down a slope and is aligned with the viewer's line of sight, such as ski runs. Exhibit 4.4-16 depicts a view of Segment 650-2 from a trailhead for the Tahoe Rim Trail a short distance east of SR 267. From this location, two existing poles would be removed from view and replaced with a new pole that would be taller and thicker than the existing poles. However, from this important viewpoint, the new pole would appear similar in size and scale because it would be placed at a greater distance from the trailhead.



Existing View



Simulated View

Source: Sierra Pacific 2010

Exhibit 4.4-16

Tahoe Rim Trailhead, VP 9, Alt.1 and Alt. 4, Segment 625-9

Implementation of APM SCE-7 would prevent adverse scenic impacts from increased visual exposure of the power lines from sensitive locations because the rebuilt power lines would be less conspicuous than the existing lines. By reducing the amount of manmade features that would be in view from TRPA Roadway Travel Units, the potential for reductions in adopted TRPA Scenic Threshold Ratings would not only be avoided, the composite score of the Roadway Travel Unit would improve, resulting in a beneficial scenic effect. In addition, the USFS VQO for these locations is Retention, which requires that management activities repeat the form, line, color, and texture frequently found in the characteristic landscape. For these portions of the alignment, incorporation of APM SCE-7 into the project design would be effective in decreasing the degree of visual change to a low level. Given the high sensitivity of the location but low level of visual change, the impact on scenic resources would be **less than significant** (see Table 4.4-2, Matrix for Determining Scenic Impact Significance/Intensity, for the guidelines used to evaluate the scenic effects of the project).

## Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-3 (Alt.1)</b>	<b>Compliance with USFS Visual Quality Objectives.</b> Under Alternative 1 (PEA Alternative), the 625 Line would be constructed within a new alignment on NFS lands within a new ROW and these areas would require new access. The visual effect of the new cleared ROW, new access ways, and rebuilt power line would meet management goals for visual quality on NFS lands during construction and operation of the project. This impact would be <b>less than significant</b> .
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Most of the rebuilt 625 Line in the area between SR 89 and SR 267 would be within a new ROW under Alternative 1 (PEA Alternative) instead of within the existing 625 Line ROW. This would be true of power line Segments 625-3, 625-4, 625-5, 625-6, 625-7, 625-8, and 625-9. This is a forested area largely within the LTBMU, but with a small portion within the Tahoe National Forest. Key observation points include the Tahoe Rim Trail (see Exhibit 4.4-16), the Fiberboard Freeway, and Fire Road 6, which are linear in nature and thus offer viewing opportunities along their length. The Fiberboard Freeway is paved from SR 267 for a distance of about 7 miles to where it becomes a dirt road and continues over very steep terrain toward Tahoe City. The paved road is open to the public and used in all seasons for recreation. It serves as a primary access way for this part of the LTBMU. The route of the existing 625 Line was laid out with the goal of keeping the line out of public view as much as possible. The existing line is visible from only a few spots along these two linear viewpoints including three locations where it crosses the paved portion of the Fiberboard Freeway and two places where it crosses the Tahoe Rim Trail. Otherwise, the existing line is not in close proximity to either of these linear viewpoints. Fire Road 6 is a dirt road within the Tahoe National Forest near Sawtooth Ridge in the area north of the project. The existing 625 Line is minimally visible from this road.

Under Alternative 1 (PEA Alternative), the 625 Line would generally follow the Fiberboard Freeway. It would cross the road at six points and would cross the Tahoe Rim Trail in two locations. The new line would mostly be on the uphill side of the existing road. Poles would generally be placed 75 to 175 feet from the edge of the road but in some places would either be farther away or as close as 10 to 30 feet to the road. The length of segments that would be closest to the road would generally be about 1,200 linear feet or less. Where the line would be farther from the road, trees would be retained between the road and the rebuilt line. The distance between the Fiberboard Freeway and the ROW for the proposed 625 Line varies considerably because the Fiberboard Freeway more closely follows the topography of the landscape whereas the proposed 625 Line alignment contains long, straight segments, which are beneficial from a maintenance and reliability standpoint.

For Segments 625-3, 625-4, 625-5, 625-6, 625-7, 625-8, and 625-9, a new cleared ROW for the line would be created. New access ways and spurs from existing roads (see Chapter 3, Project Alternatives, subsection entitled "Access, Travel Ways, and Roads") would be created to allow construction and long-term maintenance of the line. Under Alternative 1 (PEA Alternative), a total of approximately 15 miles of new access way within the

power line ROW would be constructed and approximately 9.1 miles would be constructed outside the ROW. Also, a total of approximately 1.3 miles of existing roads would be improved to allow trucks to access the project site during construction. A comparison of the lengths of the existing and proposed 625 Line alignments in terms of the VQOs on USFS lands is shown in Table 4.4-4. Most of the proposed 625 Line under Alternative 1 (PEA Alternative) would be in a landscape with a VQO of Partial Retention (about 10.8 miles), and a smaller portion of the line would be in Retention (about 3 miles) and Modification (about 0.4 mile). Compared to the existing alignment, which would be abandoned and allowed to naturally revegetate, Alternative 1 (PEA Alternative) would reduce the length of the 625 Line that would be located in a landscape with a VQO of Retention.

	Visual Quality Objectives (miles of alignment)		
	Retention	Partial Retention	Modification
Existing Alignment	3.15	9.53	0.42
Alternative 1: PEA Alternative	2.95	10.75	0.44
Alternative 2: Modified Alternative	2.55	11.36	0.44
Alternative 3: Road Focused Alternative	1.07	9.64	0.47
Alternative 3A: Road Focused Alternative with Double Circuit Option	1.07	9.64	0.47
Alternative 4: Proposed Alternative	1.07	9.64	0.47

Once constructed, the new line and cleared ROW would be visible from the Fiberboard Freeway in some places but would be partially to completely screened from view in others. Exhibits 4.4-17 and 4.4-18 provide an example of the appearance of the new poles from locations close enough to the Fiberboard Freeway to be visible. Unlike the 650 Line, where new poles on NFS lands would generally be installed adjacent to existing poles (or within close proximity); existing access ways would be the predominant routes for construction, operations, and maintenance; and new project features would remain in areas with the same VQOs as existing power line elements; the 625 Line would be within a new ROW, often more than 1,000 feet from the existing alignment in locations with different visual conditions. The addition of the poles and conductors for the 625 Line would result in a minor to moderate visual change in the scene for Viewpoints 10 and 11. The vertical form and lines introduced by the poles would repeat the basic shape of the tree trunks, as typical tree heights exceed the proposed height of the new poles. In addition, non-specular conductors (see APM SCE-3) and self-weathering dark brown poles, or equivalent, (see APM SCE-2) would minimize the color and texture contrasts. However, the horizontal lines and shapes introduced by the conductors and pole cross-arms would be uncharacteristic of the visual elements found in the existing landscape. The visual contrast associated with the new line would be intermittently visible along the Fiberboard Freeway as a user travels along it.

The permanent 40-foot wide vegetation management corridor would require removal of trees that conflict with operation and maintenance of the line, although low-growing vegetation that would not conflict with the line or the associated 10-foot wide access ways would be preserved. During construction, the corridor would be wider—approximately 65 feet to allow for establishment of access ways and construction of the line. The wider, temporary ROW would allow for flexibility in establishing access ways so that they may be constructed in a manner that minimizes the number of trees that would need to be removed and that allows for passage and maneuver of heavy construction equipment necessary to install poles and string conductors. After construction, the ROW would be stabilized with low growing species. Trees would be allowed to colonize within the ROW, but would be trimmed or removed if: 1) they reach a sufficient height/size as to conflict with radial clearance requirements of bare line conductors (18 inches pursuant to CPUC General Order 95), 2) pose a hazard to the line (i.e., dead, dying, diseased, decaying, or bug-infested trees), or 3) encroach on permanent access ways. Because revegetation would be allowed to occur after construction, the visual effect of vegetation clearing would be most severe immediately following construction but would decrease over time.



Existing View



Simulated View

Source: Sierra Pacific 2010

Exhibit 4.4-17

Fiberboard Freeway, VP 10, Alt.1, Segment 625-3



Existing View



Simulated View

Source: *Environmental Vision 2012*

**Exhibit 4.4-18**

**Fiberboard Freeway, VP 11, Alt. 1, Segment 625-5**

The effect of vegetation management actions are depicted in the viewpoint simulations. As shown in Exhibit 4.4-17, little change would be visible in existing clearings that contain only grasses and low-growing shrubs. In this viewpoint, the line is sufficiently distant from the viewer that the effect of vegetation management would not be apparent. Exhibit 4.4-18 shows an example where vegetation clearing would be minimally visible; in this location, some tree removal is noticeable, resulting in a slightly less dense forest canopy and an increase in the amount of visible sky. In both simulations, however, the effect of ROW vegetation management is minimally apparent, and USFS VQOs would be met in both circumstances because the dominant landscape elements would be preserved.

Access ways and spur roads for long term maintenance of the line would be visible where they lead from the Fiberboard Freeway or would otherwise be in close proximity to the road, appearing as corridors where trees are removed but low growing vegetation is present. Exhibit 4.4-19 depicts such an example, which would likely be the most intense visual effect of Alternative 1 (PEA Alternative). In this viewpoint, the position and view direction of the observer renders visible a large portion of the cleared ROW corridor. In these situations (in which the ROW obliquely deviates from the road), travelers on Fiberboard Freeway would briefly be exposed to a linear ROW that does not repeat the basic landscape character elements to which travelers are accustomed. Because the density and height of trees along the new ROW would vary significantly, the permanent 40-foot wide corridor would not appear as a “hard” edge in the landscape; rather natural clearings would serve to roughen/undulate the tree line, and the 10-foot wide access ways, where present, would weave along the ROW, between poles, in a manner that would allow natural screening by low-growing vegetation and trees.

The prominence of the poles and conductors, and the presence of a swath of cleared land, would not be uncharacteristic of the existing landscape. Users of the Fiberboard Freeway would only briefly be exposed to this visual effect, albeit at fairly regular intervals. However, this visual effect is not uncharacteristic of the visual setting as a whole because a similar effect currently exists along the route. Users of the Fiberboard Freeway regularly pass openings in the forest caused by forest roads teeing off the main route, as well as at crossings of the existing 625 Line. As described, the vertical orientation and shape of new poles would reflect the line, form, and color of the trunks of trees throughout the forest; the conductors would be minimally obtrusive because the applicant has proposed use of non-specular conductors as described in APM SCE-3. Therefore, the elements that comprise the power line itself would meet the adopted VQOs. In addition, the ground disturbance associated with long term maintenance of the line (as evidenced in Exhibit 4.4-19), while visually apparent, would meet the VQOs because it would mimic the existing visual features of the forest, which already include cleared corridors caused by existing USFS roads and existing power lines. Under the VQO of Retention, activities must repeat form, line, color, and texture, which are frequently found in the characteristic landscape. Under the VQO of Partial Retention, activities are to remain visually subordinate to the characteristic landscape.

Segment 625-6 would cross an open patch of dry meadow inhabited by the native plant *Wyethia mollis*, a member of the sunflower family and commonly known as mule’s ears. The patch of meadow is about 400 feet wide and bisected by the Fiberboard Freeway. As viewed from the road, the meadow is a unique scenic feature within this otherwise forested setting and affords expansive unconfined views of forested hillsides. APM SCE-6 states that the meadow would be spanned by locating poles at either edge of the meadow thereby avoiding a potential adverse visual effect on the scenic feature. To address the larger scenic impact of the 625 Line, APM SCE-9 states that the applicant will, in consultation with the USFS and to reduce potential project visibility, consider selective, site-specific conifer tree planting in limited areas along the new 625 Line ROW where relatively unobstructed foreground views of new structures are seen from Mount Watson Road. New trees would not be placed where they conflict with project operations or safety requirements.



Existing View



Simulated View

Source: Sierra Pacific 2010

Exhibit 4.4-19

Fiberboard Freeway, VP 12, Alt. 1, Segment 625-7

In summary, although the visual effect of the Line 625 would be adverse, particularly immediately following line installation and prior to passive recolonization of trees and shrubbery, it would not be inconsistent with the existing landscape character as seen from the Fiberboard Freeway. In addition, the 625 Line alignment under Alternative 1 (PEA Alternative) crosses less land with a VQO of Retention as compared to the existing 625 Line which would be abandoned and passively restored. Integration of APM SCE-1, which outlines a series of best management practices that minimize the visual effects of linear construction within forest landscapes, as recommended by the LTBMU, would meet applicable VQOs and minimize visual effects. For these reasons, the impact would be **less than significant**.

## Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-4 (Alt.1)</b>	<b>Result in adverse effects with respect to lighting or glare.</b> The upgraded substations and conductors could introduce additional sources of lighting and glare that are more conspicuous than existing structures. Because substations would be rebuilt in the locations of existing substations (i.e., no new substations) and APMs would provide for: 1) use of non-specular conductor that is mechanically or chemically treated to reduce reflectivity, 2) use of non-reflective finishes on substation structures, and 3) screening of the rebuilt Tahoe City Substation through landscaping and other means, no substantial increase in lighting or glare is anticipated. This impact would be <b>less than significant</b> .
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The upgraded substations and conductors could introduce structural lighting and sources of glare that are more conspicuous than existing structures. APM SCE-3 states that in all cases the rebuilt power lines would utilize non-specular conductors. This would eliminate the potential for glare cast by the lines under certain lighting conditions. Such conditions occur temporarily, but on a daily basis.

Substations that would be upgraded as part of the project are on existing substation sites. Because of the differences in the design and finish of the transformers at the substation in Tahoe City, and because the structures would be new, there could be an increase in glare (see Exhibit 4.4-8). Integration of APM SCE-4 into project design, however, would reduce post-project glare through use of non-reflective finishes on substation structures. In addition, glare would continue to decrease over time as the metal structures weather. APM SCE-5 describes screening through landscaping and non-vegetative means that would also be integrated into project design, and which would include planting of native conifer trees outside the perimeter fence along the southwest and southeast sides of the Tahoe City Substation site. Depending on their size, these plantings could have an immediate beneficial effect with respect to glare attenuation, and would become more effective with vegetation growth. Any new security lighting would comply with local regulations regarding shielding and control of stray light. Placer County Design Standards and Guidelines require that light bulbs not be visible to the public (i.e., are shielded), that lighting for parking areas not spillover into adjacent areas, and that no lighting be used for the purpose of advertising or blink, flash or change in intensity. For other substation upgrades, only part of the facility would be upgraded, and increases in glare would be minimally apparent, if visible at all. No other project elements would create a new source of substantial light or glare. For these reasons, the potential for impacts due to substantial light or glare would be **less than significant**.

## Mitigation Measures

*No mitigation measures are required.*

## ALTERNATIVE 2 – MODIFIED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.4-1 (Alt.2)</b>	<b>Cause inconsistency with adopted plans.</b> The Tahoe City Community Plan (1994) and TRPA's EIP/SQIP (2001) recommend relocating the Tahoe City Substation as a means of removing it from public view and thereby improving scenic quality. Alternative 2 (Modified Alternative) proposes to rebuild the Tahoe City Substation in its current location and screen the facility from public view. For the same reasons described above in Alternative 1 (PEA Alternative), this action would not be inconsistent with the Tahoe City Community Plan or SQIP. This impact would be <b>less than significant</b> .
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Because this element of the proposed project is the same under Alternative 2 (Modified Alternative) as it is for Alternative 1 (PEA Alternative), the impact would be same as Impact 4.4-1 (Alt. 1). The 1994 Tahoe City Community Plan and the SQIP of TRPA's 2001 EIP recommend the Tahoe City Substation be relocated to remove the substation from public view and thereby improve scenic quality. Alternative 2 (Modified Alternative) proposes to rebuild the substation in its original location and screen the rebuilt substation from public view. Like Alternative 1 (PEA Alternative), the APMs that have been integrated into the project design (including APM SCE-5, Screening) would achieve the same objective as the plans for eliminating public views of the Tahoe City Substation. Therefore, this impact would be **less than significant**.

### Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-2 (Alt.2)</b>	<b>Create views of rebuilt power lines from sensitive locations.</b> The existing 625 and 650 Lines would be rebuilt in the alignment and configuration proposed under Alternative 2 (Modified Alternative) using larger poles that would be more conspicuous than the existing line in views from certain areas. However, the most sensitive viewing areas would be avoided by Alternative 2 (Modified Alternative). In addition, implementation of proposed APMs would minimize scenic effects during construction through specific screening and management practices; and require use of specific materials, colors, and textures for project elements. Scenic impacts would be <b>less than significant</b> .
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The most sensitive viewing areas affected by Alternative 1 (PEA Alternative) would be avoided by Alternative 2 (Modified Alternative). Even though the larger poles would be more conspicuous than the existing power line, they would meet management targets for scenic quality in areas where they would be seen. In Alternative 2 (Modified Alternative), Segment 625-1A of the 625 Line would be routed outside the Truckee River corridor but closer to or within the 64-Acre Recreation Site between the river crossing and the Tahoe City Substation instead of along the south bank of the river. (Segment 625-1A would avoid significant scenic effects that could occur to sensitive receptors traveling on SR 89 or recreating on the Truckee River.)

Removal of the existing power line along the river corridor in this area would enhance the scenic quality of this unique landscape feature. However, this segment of the line would then be visible from inside the 64-Acre Recreation Site, as shown in Exhibit 4.4-20. The setting inside the 64-Acre Recreation Site includes paved roads, asphalt parking lots, portable restrooms, trash receptacles, paved bike trails, and grassy areas among scattered pine and fir trees. The 64-Acre Recreation Site has an assigned VQO of Partial Retention.



Existing View



Simulated View

Source: POWER 2012

**Exhibit 4.4-20**

**64-Acre Recreation Site, VP 13, Alt. 2, Segment 625-1A**

As shown in Exhibit 4.4-20, Alternative 2 (Modified Alternative) would introduce poles and conductors that would require some tree removal. The poles would generally be shorter than the trees in the immediate area. The new alignment would parallel a paved path used by cyclists, pedestrians, and through-hikers on the Tahoe Rim Trail and would cross the access way to the bicycle/pedestrian bridge that crosses the river and the raft launch site immediately east of the bridge. In the context of a recreational area with a mix of natural (e.g., trees, river) and urban (e.g., roadways, bridges, structures, parking areas) features, Segment 625-1A introduces a strong degree of visual change in a setting with high visual sensitivity. Segment 625-1A under Alternative 2 (Modified Alternative) would provide a benefit to views from SR 89 and the associated TRPA travel route rating by moving the power line from the view corridor of the scenic highway to behind the line of trees on the south bank of the Truckee River. This would render the line visible to users of the 64-Acre Recreation Site, and when viewed in the immediate foreground the new poles would be visually dominant features. When viewed at greater distances within the larger landscape context, however, the poles would visually blend with the surrounding trees in terms of line, form, and color. As a result, Segment 625-1A would meet the adopted VQO of Partial Retention that applies to the 64-Acre Recreation Site. The impact of Line Segment 625-1A on scenic resources would be less than significant. (See Section 4.8, Recreation, for discussion of impacts relative to recreation experience at the 64-Acre Recreation Site.)

Segment 650-2 would not be routed along the east side of SR 267 as it is in Alternative 1 (PEA Alternative). Instead, it would be rebuilt as a double-circuit line with the 625 Line in essentially the same corridor as the existing 625 Line where it crosses SR 267 at Brockway Summit and heads eastward. The double-circuit line would require a 65-foot-wide permanent ROW, wider than the 40-foot permanent ROW required for single-circuit lines. The 650 Line would be removed from TRPA Roadway Travel Unit 41 – Brockway Summit. The existing poles in this area support distribution and communications lines as well as the power line. Once the power line has been removed and new line installed, the existing poles along the highway would be topped just above the distribution and communications lines and left in place, which would shorten the existing poles. Alternative 2 (Modified Alternative) would therefore result in a beneficial impact on the view corridor along SR 267 south and east of Brockway Summit. Line construction along the existing ROW would have similar effects described under Alternative 1 (PEA Alternative), but would affect fewer viewers and would be largely hidden by the forest canopy.

Segment 650-3 would be routed along the east side of SR 267 from Brockway Summit to Martis Valley, following the route as identified for Alternative 1 (PEA Alternative). Segment 650-3 is outside the Lake Tahoe Basin and therefore not within a TRPA Roadway Travel Unit, but within a county-identified scenic corridor. Segment 650-4A crosses SR 267 and heads in a westward direction staying south of Martis Creek. It would differ from Alternative 1 (PEA Alternative) in that the line would be moved northward toward the creek by up to about 350 feet. The existing line supports distribution lines as well as the power line. Both would be transferred to the new poles and the existing poles would be removed.

The existing 650 Line in this area is about 1,050 feet south of Martis Creek. A public trail leads from a gravel parking area off of SR 267. The trail generally follows the creek in this area, staying on its north side. The existing line is visible to the south from the trail. In Alternative 2 (Modified Alternative), Segment 650-4A would be aligned closer to the trail than the existing line. It would be about 750 feet south of the creek and the trail. See Exhibit 4.4-21. The poles of the rebuilt line appear larger in the simulation and the new line is perceptibly closer to the viewer. However, the taller poles and alignment of 650-4A do not change the character of the scene or substantially disrupt the existing view for the same reasons discussed under Alternative 1 (PEA Alternative).

Overall, implementation of Alternative 2 (Modified Alternative) would not result in a failure to meet management targets for scenic quality established by local agencies. This impact would be **less than significant**. As compared to Alternative 1 (PEA Alternative), Alternative 2 (Modified Alternative) would have visual impacts that are locally greater (such as along Martis Creek), and locally lesser (such as the view corridor from SR 89 west of Tahoe City and from SR 267 south of Brockway Summit).



Existing View



Simulated View

Source: POWER 2012

Exhibit 4.4-21

Martis Creek Trail, VP 5, Alt.2, Segment 650-4A

## Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-3 (Alt.2)</b>	<b>Compliance with USFS Visual Quality Objectives.</b> Under Alternative 2 (Modified Alternative), portions of the 625 Line would be constructed within a new alignment on NFS lands within a new ROW and these areas would require new access. The visual effect of the new cleared ROW, new access ways, and rebuilt power line would meet management goals for visual quality on NFS lands during construction and long term operation of the project. This impact would be <b>less than significant</b> .
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The impact of Alternative 2 (Modified Alternative) would be similar to that of Impact 4.4-3 (Alt. 1). The only differences between Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) on NFS lands between SR 89 and SR 267 involve Segments 625-4A, 625-6A and 625-8A. Segments 625-2, 625-3, 625-5, and 625-7 would be the same as Alternative 1 (PEA Alternative). Under Alternative 2 (Modified Alternative) the power line would be briefly visible from the Tahoe Rim Trail and more frequently visible along the Fiberboard Freeway. Similar to Segment 625-4 in Alternative 1 (PEA Alternative), Segment 625-4 A under Alternative 2 (Modified Alternative) would be on a north-facing slope outside the boundary of the Tahoe Basin and within the Tahoe National Forest. However, it would be located on the slope just above the Fiberboard Freeway rather than below it. This would reduce the visibility of the line from Fire Road 6 to the north and would preserve the scenic vistas to the north as seen from the Fiberboard Freeway (see Exhibit 4.4-22). Segment 625-6A would differ from Alternative 1 (PEA Alternative) in that it would deviate from the Fiberboard Freeway in the north-south direction for about 1 mile.

Segment 625-6A and its associated ROW would be hidden from view along the Fiberboard Freeway in this location. Segment 625-8A would differ from 625-8 under Alternative 1 (PEA Alternative) by following the alignment of the existing 625 Line from SR 267 heading westward for the first 0.5 mile before turning southward to meet the Fiberboard Freeway. In a manner similar to Segment 625-6A, this would make the line less apparent from the Fiberboard Freeway as compared to Alternative 1 (PEA Alternative).

As with Alternative 1 (PEA Alternative), a new cleared ROW for the line and new access ways to allow construction and long-term maintenance would be created. Under Alternative 2 (Modified Alternative), approximately 13.6 miles of new access way would be created within the power line ROW and approximately 7.8 miles of access ways and spurs would be constructed outside the ROW. Also, a total of approximately 1.3 miles of existing roads would be improved to allow trucks to use the roads during project construction. These totals are less than under Alternative 1 (PEA Alternative). Comparison of the lengths of the existing and proposed 625 Line under Alternative 2 (Modified Alternative) in terms of the VQOs on USFS lands through which they traverse is shown in Table 4.4-4. Most of the proposed 625 Line under Alternative 2 (Modified Alternative) would be in a landscape with a VQO of Partial Retention (about 11.4 miles), and a smaller portion of the line would be in Retention (about 2.6 miles) and Modification (about 0.4 mile). Compared to the existing 625 Line, which would be abandoned and allowed to naturally revegetate, Alternative 2 (Modified Alternative) would reduce the length of the line that would be located in a landscape with a VQO of Retention.

Although Alternative 2 (Modified Alternative) differs from Alternative 1 (PEA Alternative) in Segments 625-9 and 625-10 where the 625 and 650 Lines are double-circuited in these segments, the alignment generally follows the existing 625 Line alignment. New project features would remain in areas with the same VQOs as existing power line elements.



Existing View



Simulated View

Source: POWER 2012

**Exhibit 4.4-22**

**Fiberboard Freeway, VP 14, Alt. 2, Segment 625-4A**

The prominence of the poles and conductors, and the presence of a swath of cleared land, would not be uncharacteristic of the existing visual environment, a forest that already has numerous openings caused by existing power lines and USFS roads. The number of visible corridors of cleared land would be reduced under Alternative 2 (Modified Alternative) as compared to Alternative 1 (PEA Alternative). Like Alternative 1 (PEA Alternative), although the visual effect of the 625 Line would be adverse, particularly immediately following line installation (prior to passive recolonization of trees and shrubbery), it would not be inconsistent with the existing landscape character as seen from the Fiberboard Freeway. In addition, the 625 Line as proposed in Alternative 2 (Modified Alternative) would cross less land with a VQO of Retention as compared to the existing 625 Line, which would be abandoned and passively restored. Implementation of APM SCE-1, which outlines a series of best management practices that minimize the visual effects of linear construction within forest landscapes, as recommended by the LTBMU, would meet applicable VQOs and minimize visual effects. For these reasons, the impact would be **less than significant**.

### Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-4 (Alt.2)</b>	<b>Result in adverse effects with respect to lighting or glare.</b> The upgraded substations and line conductors could introduce structure lighting and glare that are more conspicuous than existing structures. Because substations would be rebuilt in the locations of existing substations (i.e., no new substations) and APMs would provide for: 1) use of non-specular conductor that is mechanically or chemically treated to reduce reflectivity, 2) use of non-reflective finishes on substation structures, and 3) screening of the rebuilt Tahoe City Substation through landscaping and other means, no substantial increase in lighting or glare is anticipated. This impact would be <b>less than significant</b> .
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Structures and substations that could potentially create glare or emit excessive lighting are the same as described under Alternative 1 (PEA Alternative). Therefore, for the same reasons discussed under Alternative 1 (PEA Alternative), Alternative 2 (Modified Alternative) would have a **less-than-significant** impact with respect to light or glare.

### Mitigation Measures

*No mitigation measures are required.*

## ALTERNATIVE 3 – ROAD FOCUSED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.4-1 (Alt.3)</b>	<b>Cause inconsistency with adopted plans.</b> The Tahoe City Community Plan (1994) and TRPA’s EIP/SQIP (2001) recommend relocating the Tahoe City Substation as a means of removing it from public view and thereby improving scenic quality. Alternative 3 (Road Focused Alternative) proposes to rebuild the Tahoe City Substation in its current location and screen the facility from public view. For the same reasons described above in Alternative 1 (PEA Alternative), this action would not be inconsistent with the Tahoe City Community Plan or SQIP. This impact would be <b>less than significant</b> .
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Because this element of the proposed project is the same under Alternative 3 (Road Focused Alternative) as it is for Alternative 1 (PEA Alternative), the impact would be same as Impact 4.4-1 (Alt. 1). The 1994 Tahoe City Community Plan and the SQIP of TRPA’s 2001 EIP recommend that the Tahoe City Substation be relocated to

remove the substation from public view and thereby improve scenic quality. Alternative 3 (Road Focused Alternative) proposes to rebuild the substation in its original location and screening the rebuilt substation from public view. Like Alternative 1 (PEA Alternative), the APMs that have been integrated into the project design (including APM SCE-5, Screening) would achieve the same objective as the plans for eliminating public views of the Tahoe City Substation. Therefore, the impact would be **less than significant**.

## Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-2 (Alt.3)</b>	<p><b>Create Views of rebuilt power lines from sensitive locations.</b> The existing 625 and 650 Lines would be rebuilt in the alignment and configuration proposed under Alternative 3 (Road Focused Alternative) using larger poles that would be more conspicuous than the existing line in views from certain public recreation areas, bike trails, and scenic roadway corridors. This is especially true in areas in which the lines would be built in a double circuit, which requires even larger poles. Increased visibility of the rebuilt lines could fail to meet management targets for scenic quality established by lead agencies. However, because implementation of proposed APMs would minimize scenic effects during construction through specific screening and management practices; require use of specific materials, colors, and textures for project elements; and modify power pole and line placement such that views from sensitive locations and scenic resources is eliminated or minimized, potential scenic impacts would be reduced to <b>less-than-significant</b> levels.</p>
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Under Alternative 3 (Road Focused Alternative), Segment 625-1 of the 625 Line would be the same as under Alternative 1 (PEA Alternative) and would have the same impacts. Implementation of APM SCE-8 would set the line back from the river corridor toward the south, as described above.

Segment 650-2/D-C OH-2 (double-circuited, overhead) of the 650 Line would have the same alignment as 650-2 under Alternative 1 (PEA Alternative), but would be constructed as a double-circuit configuration with the 625 Line added to the poles. The distribution and communication lines that are on the same poles as the existing 650 Line would not be immediately moved from those poles, but the poles would be topped so as to be no taller than necessary to accommodate the communication lines. Segment 650-1/D-C OH-1A would extend the 650 Line farther south than the existing line. It would remain along the shoulder of SR 267 for more than 1 mile instead of heading east away from the highway at about Stewart Way. Segment 650-1/D-C OH-1A (Alternative 3A) is an option that would utilize the alignment of the existing line (and of Alternative 1 [PEA Alternative]) from SR 267 to the Kings Beach Substation. In Martis Valley, Segment 650-4B would extend farther north along SR 267 than under Alternatives 1 (PEA Alternative) and Alternative 2 (Modified Alternative) by about 2 miles to Schaffer Mill Road where it would cross the highway and head westward along Schaffer Mill Road. The existing poles in Segment 650-4A would be topped just above the distribution lines and left in place.

Without the setback described in APM SCE-7, the double-circuit configuration of Segment 650-2/D-C OH-2 would make the line more conspicuous than the existing line within TRPA Roadway Travel Unit 41 – Brockway Summit because it would require larger poles, the poles would also carry other overhead utility lines, and the width of the permanent ROW would be 65 feet instead of 40 feet. As shown in Exhibit 4.4-23, the poles would be substantially taller, would extend farther above the horizon line, and would include additional horizontal cross arms, all of which would increase the visual contrast of the 650 Line with the surrounding setting. Alternative 3 (Road Focused Alternative), however, would benefit views to the south from SR 267, because existing poles on the south side of the road would be removed. This change is only minimally apparent in Exhibit 4.4-23, but would remove manmade features from views that draw the attention of southbound travelers on SR 267. The visual change would be incremental from the viewpoint in Exhibit 4.4-23; however, extending the line along SR



Existing View



Simulated View

Source: POWER 2012

Exhibit 4.4-23

SR 267, VP 15, Alt. 3 and Alt. 4, Segment 650-2 D-C OH-2

267 southward by 1 mile with Segment 650-1/D-C OH-1A would add the power line to this section of Roadway Travel Unit 41. Similarly, extending the 650 Line along SR 267 in Martis Valley for another 2 miles would place the power line in the immediate foreground of the highway where currently it is absent.

APM SCE-7 states that from Brockway Summit southward, replacement poles for the 650 Line (in this case, both the 650 and 625 Lines, as they would be double-circuited) will be sited to eliminate or substantially reduce their visibility from the highway within the Lake Tahoe Basin, as compared to the existing 650 Line, without causing new visual impacts from tree removal or construction of access ways that will be required to erect and maintain the line. In this area, therefore, the double-circuited line would be moved eastward, away from SR 267 so as to be among the fringe of trees east of the highway (see Exhibit 4.4-24, 650 Setback Alignment of APM SCE-7). As with Alternative 1 (PEA Alternative), this would result in beneficial scenic effects by further opening up views of the Tahoe Basin for travelers on SR 267. No significant adverse effects to more distant viewpoints from the APM SCE-7 setback would occur for the reasons described above for Alternative 1 (PEA Alternative). However, because Alternative 3A (Road Focused Alternative with Double Circuit Option) would continue the double-circuited line along SR 267 south of the point at which the existing 650 Line (and Alternative 3, Road Focused Alternative) turns east, all the way to Speckled Avenue, implementation of SCE-7 would be infeasible. Setback of the line in this location would not be possible because existing residential structures are within 75 feet of the highway within this segment. Without setback, a double-circuited line in this location would substantially increase the visibility of manmade structures throughout this stretch and would be unmitigable. For these reasons, Alternative 3A (Road Focused Alternative with Double Circuit Option) is considered infeasible.

As described above for Alternative 1 (PEA Alternative), because implementation of APM SCE-7 would set the reconstructed power line back from SR 267 and among the trees, it would result in additional impacts of the same types as described for other wooded portions of the project area (e.g., along the Fiberboard Freeway), including tree removal, vegetation removal, clearing of rocks and boulders, and surface disturbance for creation of access ways. Impacts typical of such construction include emissions from construction vehicles (which would be required in any case), generation of fugitive dust in the vicinity of grading and surface disturbance, release of otherwise stored CO<sub>2</sub>, temporary staging and stockpiling, noise from vehicles and heavy equipment in areas proximate to active construction, plant and wildlife habitat alteration, invasive plant risk, and soil erosion potential.

As described above for Alternative 1 (PEA Alternative), tree removal would be the most pronounced effect of APM SCE-7 implementation, and would be greater for Alternative 3 (Road Focused Alternative) because the line would be double-circuited, requiring a larger permanent ROW of 65 feet. Construction of the power line along SR 267 without APM SCE-7 would result in permanent and temporary impacts to forest land, including tree removal, release of CO<sub>2</sub>, and loss of CO<sub>2</sub> sequestration potential. Implementation of the revised, or setback, alignment of APM SCE-7 would result in additional tree removal and associated effects. Using the methodology described above under Alternative 1 (PEA Alternative), the increase in impacts to forestry resources was calculated. Implementation of APM SCE-7 for Alternative 3 (Road Focused Alternative) would result in approximately 7.4 additional acres of forest land impacts and removal of approximately 1,600 additional trees greater than 1-inch dbh. These, and related tree removal effects, are shown in Table 4.4-5. The numerical differences for implementation of APM SCE-7 for Alternative 3 (Road Focused Alternative) are similar to those for Alternative 1 (PEA Alternative) due to the similar 65-foot construction ROW needed for the setback alignment; however, this represents a proportionally greater impact for Alternative 3 (Road Focused Alternative). Permanent loss of trees would be greater for Alternative 3 (Road Focused Alternative) because the line requires a larger permanent ROW of 65 feet, compared to the temporary ROW (12.5 feet on either side of the permanent 40-foot ROW) that would be allowed to regenerate under Alternative 1 (PEA Alternative).

Construction and operational activities that would occur on the setback alignment would be the same as those that would occur in other, similar portions of the project area, and would be subject to all of the APMs to which the applicant has committed to reduce impacts to scenic resources, air quality, biological resources, cultural

resources, soils, hazards and hazardous materials, water quality, noise, recreation, utilities, and transportation. Implementation of APM SCE-7 as part of Alternative 3 (Road Focused Alternative) would increase the total number of trees greater than 1-inch diameter removed for the entire alternative by 3.4 percent compared to Alternative 3 (Road Focused Alternative) without APM SCE-7. The loss of this amount over the additional 7.4 acres of forest land impacted would not substantially reduce the size, continuity, or integrity of the forest land in the area or interrupt the view from sensitive locations and scenic resources.

**Table 4.4-5 Forest Land\* Impact Comparison for APM SCE-7 for Alternative 3 (Road-Focused Alternative)**

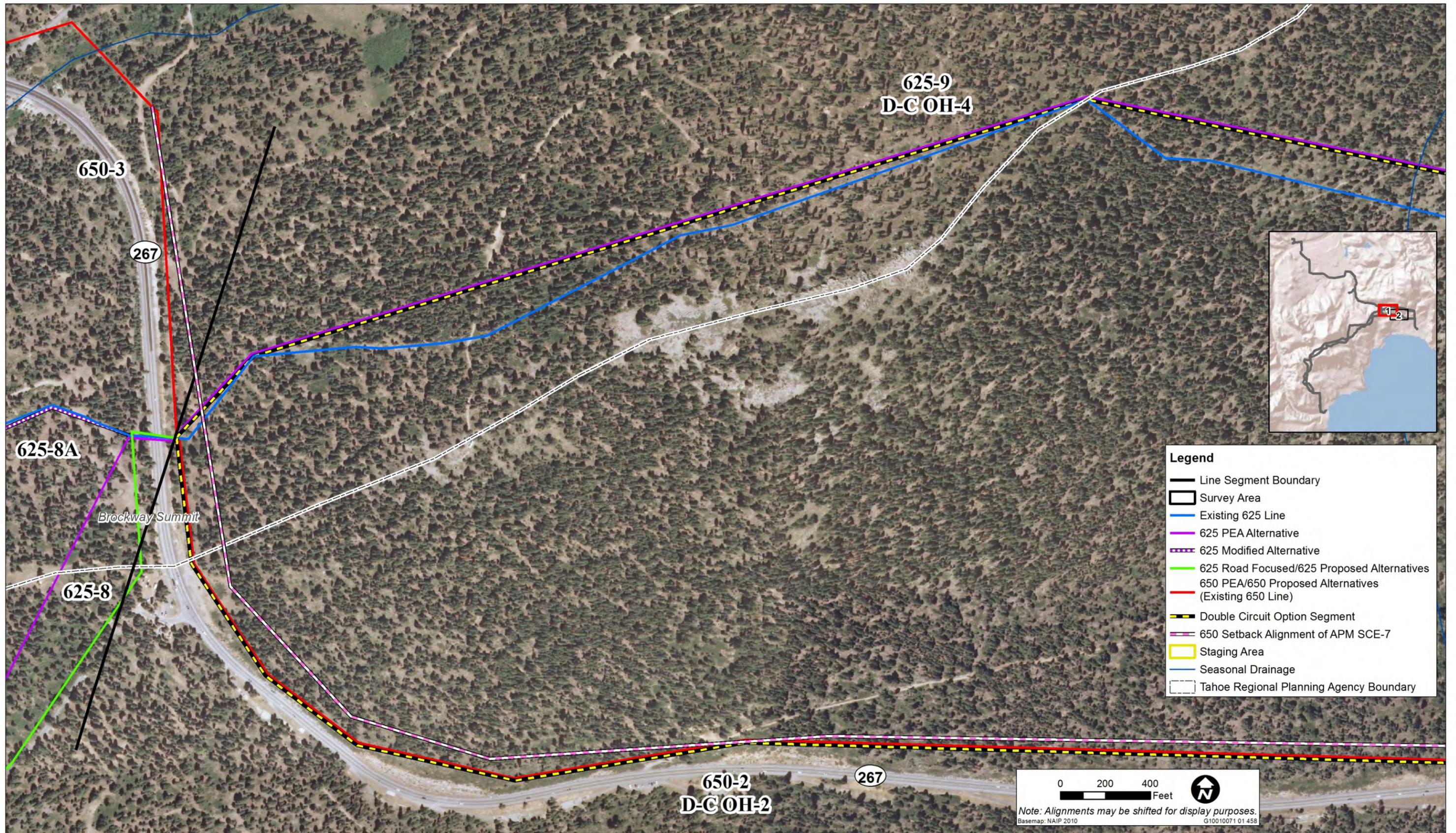
Impact Variable	Impact without Implementation of APM SCE-7	Impact with Implementation of APM SCE-7	Change in Forest Land Impact from Implementation of SCE-7	
			Difference	Percentage
Permanent Forest Land Impacts (Acres)	93.1	100.5	+7.4	7.9%
Temporary Forest Land Impacts (Acres)	92.4	92.2	-0.2	-0.2%
Total Number of Trees ≥1" dbh to be Removed (Permanent and Temporary Impact Areas)	47,448	49,051	+1,603	3.4%
Total Cubic Foot Volume of Trees ≥1" dbh to be Removed	668,169	692,795	+24,626	3.7%
Total Merchantable Timber Volume in Cubic Feet (Conifers ≥9" dbh)	456,064	472,884	+16,820	3.7%
Total MTCO <sub>2</sub> e Released	6,706	6,953	+247	3.7%
Lost MTCO <sub>2</sub> e Sequestration Potential	7,000	7,591	+591	8.4%
MTCO <sub>2</sub> e Sequestered Over Time in Temporary Impact Areas	13,500	13,471	-29	-0.2%

\* Forest Land, as described in Section 4.3, Forestry Resources, is defined as land that can support 10 percent native tree cover of any species that allows for management of timber, aesthetics, fish and wildlife, recreation, and other public benefits.  
 Note: Access way construction to implement APM SCE-7 would be on lands cleared for other purposes (e.g., centerline access way would be within power line vegetation management corridor).

Implementation of APM SCE-7 would prevent adverse scenic impacts from increased visual exposure of the power line from sensitive locations because the rebuilt power line would be less conspicuous than the existing lines. As with Alternative 1 (PEA Alternative), by reducing the amount of manmade features that would be in view from TRPA Roadway Travel Units, the potential for reductions in adopted TRPA Scenic Threshold Ratings would not only be avoided, the composite score of the Roadway Travel Unit would improve, resulting in a beneficial scenic effect. In addition, the USFS VQO for these locations is Retention, which requires that management activities repeat the form, line, color, and texture frequently found in the characteristic landscape. For these portions of Segment 650-2/D-C OH-2, incorporation of APM SCE-7 into the project design would be effective in decreasing the degree of visual change to a low level. Given the high sensitivity of the location but low level of visual change, the impact on scenic resources would be **less than significant** (see Table 4.4-2, Matrix for Determining Scenic Impact Significance/Intensity, for the guidelines used to evaluate the scenic effects of the project).

### Mitigation Measures

*No mitigation measures are required.*



Source: Data provided by TriSage in 2013; adapted by Ascent Environmental in 2013

Exhibit 4.4-24A

650 Setback Alignment of APM SCE-7 - Map 1 of 2



**Legend**

-  Line Segment Boundary
-  Survey Area
-  Existing 625 Line
-  650 PEA/650 Proposed Alternatives (Existing 650 Line)
-  Double Circuit Option Segment
-  650 Setback Alignment of APM SCE-7
-  Staging Area
-  Seasonal Drainage
-  Tahoe Regional Planning Agency Boundary

0 200 400 Feet 

*Note: Alignments may be shifted for display purposes.*  
 Basemap: NAIP 2010 G10010071 01 459



Source: Data provided by TriSage in 2013; adapted by Ascent Environmental in 2013



**IMPACT  
4.4-3  
(Alt.3)**

**Compliance with USFS VQOs.** In rebuilding the 625 Line under Alternative 3 (Road Focused Alternative), various power line segments would utilize a new alignment on NFS lands within a new ROW, and would require new access. However, under Alternative 3 (Road Focused Alternative), the alignment of the 625 Line on NSF lands west of SR 267 would essentially be along the shoulder of the Fiberboard Freeway and would thus require substantially fewer miles of new cleared ROW and new access ways relative to other action alternatives. The visual effect of the new cleared ROW, new access ways, and rebuilt power line would meet management goals for visual quality on NFS lands during construction and long term operation of the project. This impact would be **less than significant**.

Under Alternative 3 (Road Focused Alternative) most of the rebuilt 625 Line between SR 89 and SR 267 would be within a new ROW. This would be true of Segments 625-3, 625-4, 625-5, 625-6, 625-7, and 625-8. The route of the line under Alternative 3 (Road Focused Alternative) would stay along the Fiberboard Freeway through much of this area. Poles would generally be placed as close as 10 to 30 feet from the road. As shown in Exhibit 4.4-25, this would place poles and conductors in the immediate foreground view. The vertical form and lines introduced by the poles would repeat the basic shape of the tree trunks and the proposed poles would not typically exceed the height of mature trees. In addition, integration of non-specular conductors (see APM SCE-3) and self-weathering dark brown color poles, or equivalent (see APM SCE-2) into the project design would minimize the color and texture contrasts. However, the horizontal lines and shapes introduced by the conductors and pole cross-arms would be uncharacteristic of the visual elements found in the existing landscape.

In contrast to Alternative 1 (PEA Alternative), in which the Line 625 would intermittently be visible, the new line would be visible along much of the length of the Fiberboard Freeway, with the exception of places where the road makes sharper turns. In these instances, trees would be retained between the road and the rebuilt line. Otherwise, roadside trees would be cleared to accommodate the line. New access ways to allow construction and long-term maintenance of the line would be established where necessary. However, most access would occur from the existing Fiberboard Freeway. Under Alternative 3 (Road Focused Alternative), approximately 9.3 miles of new access way would be created within the power line ROW and approximately 2.2 miles of access way and spurs would be constructed outside the ROW. In addition, approximately 0.7 mile of existing road would need to be improved to accommodate truck traffic during construction. Alternative 3A (Road Focused Alternative with Double Circuit Option), which includes Segment 650-1/D-C OH-1A, would reduce the new access way within the ROW to 8.4 miles. Mileage for other access ways and spurs and road improvements would be the same. These mileage totals are less than under Alternatives 1 (PEA Alternative) and Alternative 2 (Modified Alternative).

While the total number of poles and the length of conductors that would be visible to travelers on the Fiberboard Freeway would increase substantially compared to Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative), the adverse visual effects of vegetation management would be less pronounced. This is because the new ROW would follow the existing roadway much more closely and there would be fewer locations from which travelers would experience gaps in the forest similar to the simulation shown in Exhibit 4.4-19. In addition, fewer access ways would need to tee off the road. As shown in Exhibit 4.4-25, the vegetation management associated with Alternative 3 (Road Focused Alternative) would also open up the viewshed, increasing the depth and variety of views and increasing the portion of visible sky. This would have a positive effect that would serve to partially counterbalance the negative effect of increase number of visible poles. In addition, the 625 Line would generally be constructed on the up-hill side of the Fiberboard Freeway. In those places where forest cover is thin or absent and where terrain is steep, view opportunities occur in the downhill direction, and viewer attention would generally be focused away from the 625 Line.



Existing View



Simulated View

Source: POWER 2012

**Exhibit 4.4-25**

**Fiberboard Freeway, VP 16, Alt. 3 and Alt. 4, Segment 625-5**

Comparison of the lengths of the existing and proposed 625 Line under Alternative 3 (Road Focused Alternative) in terms of the VQOs on USFS lands through which they traverse is shown in Table 4.4-4. Most of the proposed 625 Line under Alternative 3 (Road Focused Alternative) would be in a landscape with a VQO of Partial Retention (about 9.6 miles), and a smaller portion of the line would be in Retention (about 1 miles) and Modification (about 0.5 mile). Compared to the existing 625 Line alignment, which would be abandoned and allowed to naturally revegetate, Alternative 3 (Road Focused Alternative) would reduce the length of the 625 Line that would be located in a landscape with a VQO of Retention. This alternative is also preferable to Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) in terms of the length of power line that would cross forest land with a VQO of Retention.

Work crews and equipment would be visible to the public during logging, removal of other vegetation, and grading of new access ways. They would also be visible in the area when installing the new poles and stringing the lines. Once constructed, the new line and cleared ROW would be clearly visible from the Fiberboard Freeway. Access roads for long term maintenance of the line would be visible where they lead from the Fiberboard Freeway or would otherwise be in close proximity to the road.

Under Alternative 3 (Modified Alternative), like for Alternative 1 (PEA Alternative), the 650 Line would generally install new poles on NFS lands adjacent to existing poles (or within close proximity); existing access ways would be the predominant routes used for construction, operations, and maintenance; and new project features would remain in areas with the same VQOs as existing power line elements.

Like Alternative 1 (PEA Alternative), although the visual effect of the Line 625 would be adverse, particularly immediately following line installation (prior to passive recolonization of trees and shrubbery), it would not be inconsistent with the existing landscape character as seen from the Fiberboard Freeway. In addition, the 625 Line would cross less land with a VQO of Retention as compared to the existing 625 Line which would be abandoned and passively restored. Integration of APM SCE-1, which outlines a series of best management practices that minimize the visual effects of linear construction within forest landscapes, as recommended by the LTBMU, would meet applicable VQOs and minimize visual effects. For these reasons, the impact would be **less than significant**.

## Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-4 (Alt.3)</b>	<b>Result in adverse effects with respect to lighting or glare.</b> The upgraded substations and conductors could introduce structure lighting and glare that are more conspicuous than existing structures. Because substations would be rebuilt in the locations of existing substations (i.e., no new substations) and that APMs would provide for: 1) use of non-specular conductor that is mechanically or chemically treated to reduce reflectivity, 2) use of non-reflective finishes on substation structures, and 3) screening of the rebuilt Tahoe City Substation through landscaping and other means, no substantial increase in lighting or glare is anticipated. This impact would be <b>less than significant</b> .
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Structures and substations that could potentially create glare or emit excessive lighting are the same as described under Alternative 1 (PEA Alternative). Therefore, for the same reasons discussed under Alternative 1 (PEA Alternative), Alternative 3 (Road Focused Alternative) would have a **less-than-significant** impact with respect to light or glare.

## Mitigation Measures

*No mitigation measures are required.*

## ALTERNATIVE 4 – PROPOSED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.4-1 (Alt.4)</b>	<b>Cause inconsistency with adopted plans.</b> The Tahoe City Community Plan (1994) and TRPA’s EIP/SQIP (2001) recommend relocating the Tahoe City Substation as a means of removing it from public view and thereby improving scenic quality. Alternative 4 (Proposed Alternative) would rebuild the Tahoe City Substation in its current location and screen the facility from public view. For the same reasons described above in Alternative 1 (PEA Alternative), this action would not be inconsistent with the Tahoe City Community Plan or SQIP. This impact would be <b>less than significant</b> .
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Because this element of the proposed project is the same under Alternative 4 (Proposed Alternative) as it is for Alternative 1 (PEA Alternative), the impact would be same as Impact 4.4-1 (Alt. 1). The 1994 Tahoe City Community Plan and the SQIP of TRPA’s 2001 EIP recommend the Tahoe City Substation be relocated to remove the substation from public view and thereby improve scenic quality. Alternative 4 (Proposed Alternative) proposes to rebuild the substation in its original location and screen rebuilt substation from public view. Like Alternative 1 (PEA Alternative), the APMs that have been integrated into the project design (including APM SCE-5, Screening) would achieve the same objective as the plans for eliminating public views of the Tahoe City Substation. The impact to scenic resources due to inconsistency with adopted plans would be **less than significant**.

### Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-2 (Alt.4)</b>	<b>Create views of rebuilt power lines from sensitive locations.</b> The existing 625 and 650 Lines would be rebuilt in the alignment and configuration proposed under Alternative 4 (Proposed Alternative) using larger poles that would be more conspicuous than the existing line in views from certain public recreation areas, bike trails, and scenic roadway corridors. This is especially true in areas in which the lines would be built in a double circuit, which requires even larger poles. Increased visibility of the rebuilt lines could fail to meet management targets for scenic quality established by lead agencies. However, because implementation of proposed APMs would minimize scenic effects during construction through specific screening and management practices; require use of specific materials, colors, and textures for project elements; and modify power pole and line placement such that views from sensitive locations and scenic resources is eliminated or minimized, potential scenic impacts would be reduced to <b>less-than-significant</b> levels.
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Under Alternative 4 (Proposed Alternative), the 625 Line would be the same as Alternative 3 (Road Focused Alternative), described above. Segment 625-1 of the 625 Line would be the same as under Alternative 1 (PEA Alternative) and would have the same impacts. Implementation of APM SCE-8 would set the line back from the river corridor toward the south, also as described above.

Under Alternative 4 (Proposed Alternative), the new 650 Line would be the same as that described for Alternative 1 (PEA Alternative) from Brockway Summit to Truckee, and the same as Alternative 3 (Road Focused Alternative) from Brockway Summit to Kings Beach. As such, the alignment would follow the alignment of the existing 650 Line but with a double circuit from Brockway Summit to Kings Beach. Without the setback described in APM SCE-7, the new 650 Line would increase the visibility of man-made features along the SR 267 corridor from Brockway Summit to King Beach, which could adversely affect TRPA travel route ratings and the Scenic

Quality Ratings of TRPA scenic resources. This would involve increased height and mass of existing poles, a wider 65-foot permanent ROW associated with the double-circuit, and the placement of new poles along the highway corridor where the existing 650 Line deviates out of view. The visual impacts of Alternative 4 (Proposed Alternative) from scenic highways would be greater than Alternative 1 (PEA Alternative) and Alternative 2 (Modified Alternative) because power line segments would be concentrated along the scenic highway corridors, and thus have a greater potential to adversely affect views.

Like Alternative 3 (Road Focused Alternative), Alternative 4 (Proposed Alternative) would implement APM SCE-7, which states that from Brockway Summit southward, replacement poles for the 650 Line (in this case, both the 650 and 625 Lines, as they would be double-circuited) will be sited to eliminate or substantially reduce their visibility from the highway within the Lake Tahoe Basin, as compared to the existing 650 Line, without causing new visual impacts from tree removal or construction of access ways that will be required to erect and maintain the line (See Exhibit 4.4-24, 650 Setback Alignment of APM SCE-7). As with Alternative 3 (Road Focused Alternative), this would result in beneficial scenic effects by further opening up views of the Lake Tahoe Basin for travelers on SR 267. There would not be significant adverse effects to more distant viewpoints from the APM SCE-7 setback for the reasons described above for Alternative 1 (PEA Alternative). The setback alignment would only be visible from vantage points within the middleground and background distance zones under a specific set of circumstances. Because of the height and density of trees in the landscape, cleared ROWs are easily hidden from view, especially if the viewer's line of sight is not in line with the ROW and/or the view is from a similar or lower elevation than the ROW. The setback alignment would only be visible to observers within middleground and background distance zones if: 1) the viewer's immediate foreground is clear of obstructions (e.g., a meadow, field, or large parking lot), 2) the line of sight is otherwise uninterrupted (which it would not be in the case of the SR 267 setback because trees will remain on both sides of the power line ROW), and 3) the power line alignment coincides with the viewer's line of sight. Otherwise, the power line is likely to remain hidden from view; if it crosses perpendicular or obliquely to the viewer's line of sight, the height of trees on either side of the cleared ROW would mask the gap, even in steeply sloped areas.

As described above for Alternative 1 (PEA Alternative), because implementation of APM SCE-7 would set the reconstructed power line back from SR 267 and among the trees, it would result in additional impacts of the same types described for other wooded portions of the project area (e.g., along the Fiberboard Freeway), including tree removal, vegetation removal, clearing of rocks and boulders, and surface disturbance for creation of access ways. Impacts typical of such construction activities include emissions from construction vehicles (which would be required in any case), generation of fugitive dust in the vicinity of grading and surface disturbance, release of otherwise stored CO<sub>2</sub>, temporary staging and stockpiling, and noise from vehicles and heavy equipment in areas proximate to active construction, plant and wildlife habitat alteration, invasive plant risk, and soil erosion potential.

As described above for Alternative 1 (PEA Alternative), tree removal would be the most pronounced effect of APM SCE-7 implementation. Construction of the power line along SR 267 without APM SCE-7 would result in permanent and temporary impacts to forest land, including tree removal, release of CO<sub>2</sub>, and loss of CO<sub>2</sub> sequestration potential. Implementation of the revised, or setback, alignment of APM SCE-7 would result in additional tree removal and associated effects. Using the methodology described above under Alternative 1 (PEA Alternative), the change in impacts to forestry resources was calculated, as presented in Table 4.4-6, Forest Land Impact Comparison for APM SCE-7 for Alternative 4 (Proposed Alternative).

Implementation of APM SCE-7 for Alternative 4 (Proposed Alternative) would result in approximately 7.4 additional acres of forest land impacts and removal of approximately 1,603 additional trees greater than 1-inch dbh. The percentage of change in impacts that would result from implementation of APM SCE-7 for Alternative 4 (Proposed Alternative) are similar to those for Alternative 3 (Road Focused Alternative) due to the similar 65-foot construction ROW needed for the setback alignment. Tree removal would be greater for these alternatives because the 65-foot construction ROW would be a permanent impact area, whereas only 40 feet of the 65-foot

construction ROW would be permanent impact with implementation of Alternative 1 (PEA Alternative). Impacts in this area would be the same as those described above for Alternative 3 (Road Focused Alternative).

Impact Variable	Impact without Implementation of APM SCE-7	Impact with Implementation of APM SCE-7	Change in Forest Land Impact due to Implementation of SCE-7	
			Difference	Percentage
Permanent Forest Land Impacts (Acres)	92.8	100.2	+7.4	8.0%
Temporary Forest Land Impacts (Acres)	91.6	91.4	-0.2	-0.2%
Total Number of Trees ≥1" dbh to be Removed (Permanent and Temporary Impact Areas)	47,101	48,704	+1,603	3.4%
Total Cubic Foot Volume of Trees ≥1" dbh to be Removed	666,073	690,699	+24,626	3.7%
Total Merchantable Timber Volume in Cubic Feet (Conifers ≥9" dbh)	454,823	471,643	+16,820	3.7%
Total MTCO <sub>2</sub> e Released	6,682	6,929	+247	3.7%
Lost MTCO <sub>2</sub> e Sequestration Potential	6,966	7,557	+591	8.5%
MTCO <sub>2</sub> e Sequestered Over Time in Temporary Impact Areas	13,383	13,354	-29	-0.2%

\* Forest Land, as described in Section 4.3, Forestry Resources, is defined as land that can support 10 percent native tree cover of any species that allows for management of timber, aesthetics, fish and wildlife, recreation, and other public benefits.  
 Note: Access way construction to implement APM SCE-7 would be on lands cleared for other purposes (e.g., centerline access way would be within power line vegetation management corridor).

For the same reasons described under Alternative 1 (PEA Alternative), the segment of the 650 Line from Brockway Summit to Truckee would not substantially disrupt views from the highway as compared to the existing 650 Line. Impacts would be **less than significant**.

### Mitigation Measures

*No mitigation measures are required.*

**IMPACT 4.4-3 (Alt.4)** **Compliance with USFS VQOs.** In rebuilding the 625 Line under Alternative 4 (Proposed Alternative), various power line segments would utilize a new alignment on NFS lands within a new ROW, and would require new access. The alignment of the 625 Line on NSF lands west of SR 267 would essentially be along the shoulder of the Fiberboard Freeway and would thus require substantially fewer miles of new cleared ROW and new access ways relative to the other action alternatives. The visual effect of the new cleared ROW, new access ways, and rebuilt power line would meet management goals for visual quality on NFS lands during construction and long term operation of the project. This impact would be **less than significant**.

Under Alternative 4 (Proposed Alternative), the new 650 Line would be the same as that described for the Alternative 1 (PEA Alternative) from Brockway Summit to Truckee, and the same as Alternative 3 (Road Focused

Alternative) from Brockway Summit to Kings Beach. As such, the alignment would follow the existing 650 Line, but with a double circuit from Brockway Summit to Kings Beach. The 650 Line would generally have new poles on NFS lands installed adjacent to existing poles (or within close proximity); existing access ways would be the predominant routes used for construction, operations, and maintenance; and new project features would remain in areas with the same VQOs as existing power line elements. The upgraded 625 Line would be identical to the alignment proposed for Alternative 3 (Road Focused Alternative), except for Segment 625-1A, which would be the same as under Alternative 2 (Modified Alternative). For the reasons described above, the impact would be **less than significant**.

## Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-4 (Alt.4)</b>	<b>Result in adverse effects with respect to lighting or glare.</b> The upgraded substations and line conductors could introduce structure lighting and glare that are more conspicuous than existing structures. Because substations would be rebuilt in the locations of existing substations (i.e., no new substations) and APMs would provide for: 1) use of non-specular conductor that is mechanically or chemically treated to reduce reflectivity, 2) use of non-reflective finishes on substation structures, and 3) screening of the rebuilt Tahoe City Substation through landscaping and other means, no substantial increase in lighting or glare is anticipated. This impact would be <b>less than significant</b> .
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Structures and substations that could potentially create glare or emit excessive lighting are the same as described under Alternative 1 (PEA Alternative). Therefore, for the same reasons discussed under Alternative 1 (PEA Alternative), Alternative 4 (Proposed Alternative) would have a **less-than-significant** impact with respect to light or glare.

## Mitigation Measures

*No mitigation measures are required.*

## ALTERNATIVE 5 – NO ACTION/NO PROJECT ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.4-1 (Alt.5)</b>	<b>Inconsistency with adopted plans.</b> Under Alternative 5 (No Action/No Project Alternative), no change to the Tahoe City Substation would be made as part of the project and visibility of the facility from public viewpoints would continue to be what it is today. Any potential increases in visibility resulting from necessary deferred maintenance would be appropriately mitigated in accordance with TRPA permit requirements and this impact would be <b>less than significant</b> .
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The existing circumstance regarding the location of the substation and suggestion for its relocation by adopted plans would not be changed by this alternative. Adopted plans would still encourage relocating the substation as they have since 1994. Alternative 5 (No Action/No Project Alternative) would not provide an opportunity to address this issue since no physical changes to the substation facility itself would occur.

Under Alternative 5 (No Action/No Project Alternative), actions would include completion of deferred maintenance to comply with current standards for vegetation clearing. This would include removal of trees that presently are inside the fence surrounding the Tahoe City Substation. Some of these trees provide at least

partial screening of substation components, particularly for views from SR 89. Removal or trimming of trees inside the fence likely would increase the visual exposure of the substation. A permit from TRPA would be required to remove any trees. The permit process would take into account the likely visual consequences of removing the trees. Permit conditions would be imposed, as necessary, to address such effects; as a result Alternative 5 (No Action/No Project Alternative) would have a **less-than-significant** impact on scenic resources due to inconsistencies with adopted plans. A description of potential permit conditions is not necessary to maintain a conclusion of a less-than-significant effect because the permit would not be issued without a plan that either maintains or enhances the appearance of the substation site from the TRPA Roadway Travel Units.

## Mitigation Measures

*No mitigation measures are required.*

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<b>IMPACT 4.4-2 (Alt.5)</b>	<b>Create views of existing rebuilt power lines from sensitive locations.</b> Under Alternative 5 (No Action/No Project Alternative), there would be no changes to the North Lake Tahoe Transmission System. Under this alternative, project-related actions would be limited to operation and maintenance, including completion of deferred maintenance. This is not expected to create new views of the existing power lines. Therefore, this impact would be <b>less than significant</b> .
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Actions associated with this alternative would be limited to the operation and maintenance of the existing power lines and completion of deferred maintenance to comply with current standards for vegetation clearing and to meet annual inspection requirements. No details regarding specific locations of tree trimming or removal are known at this time. It is unlikely that actions associated with Alternative 5 (No Action/No Project Alternative) would create substantial new views of the existing power lines from sensitive locations. There would be no effect on adopted Scenic Threshold Ratings. This impact would be **less than significant**.

## Mitigation Measure

*No mitigation is required.*

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<b>IMPACT 4.4-3 (Alt.5)</b>	<b>Fail to meet USFS VQOs.</b> Under Alternative 5 (No Action/No Project Alternative), there would be no changes to the North Lake Tahoe Transmission System. Actions would be limited to operation and maintenance, including completion of deferred maintenance to raise the existing system to current standards. These actions would result in conditions that meet adopted VQOs. Therefore, this impact would be <b>less than significant</b> .
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Actions associated with this alternative would be limited to the operation and maintenance of the existing power lines and completion of deferred maintenance to comply with current standards for vegetation clearing and to meet annual inspection requirements. No details regarding specific locations of tree trimming or removal are known at this time. The existing 625 Line on NFS lands is located in areas that are largely unseen by the public. It is unlikely that Alternative 5 (No Action/No Project Alternative) would create substantial new views of the existing power lines from sensitive locations. Adopted VQOs would continue to be met. This impact would be **less than significant**.

## Mitigation Measure

*No mitigation measures are required.*

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<b>IMPACT</b> <b>4.4-4</b> <b>(Alt.5)</b>	<b>Result in adverse effects with respect to lighting or glare.</b> Implementation of Alternative 5 (No Action/No Project Alternative) would not result in alterations to the North Lake Tahoe Transmission System that would influence existing light or glare conditions. This impact would be <b>less than significant</b> .
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Actions associated with this alternative would be limited to the operation and maintenance of the existing power lines and completion of deferred maintenance to comply with current standards for vegetation clearing and to meet annual inspection requirements. Although no details regarding specific locations of tree trimming or removal are known at this time, it is unlikely that actions associated with Alternative 5 (No Action/No Project Alternative) would create light or glare that would have an adverse effect. This impact would be **less than significant**.

## Mitigation Measures

*No mitigation measures are required.*

## CUMULATIVE IMPACTS

State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. The effects of past and present projects are reflected by the existing conditions in the project area. Probable future projects considered are those in the vicinity that would result in visual impacts on, or as viewed from, the visual study area defined in Section 4.4.2, which includes the immediate foreground distance zone, and limited, localized areas in the middleground distance zone. Other projects proposed in this study area that would result in visual change have the possibility to contribute to a cumulative impact if they would occur during construction and operation of any of the action alternatives. Future projects in Table 4.1-2 that are within the geographic scope of the cumulative effects analysis include the SR 89 Fanny Bridge Community Revitalization Project, the Tahoe City Vision Plan, the Martis Valley Trail, the Joerger Ranch Specific Plan, and Pollard Station Senior Neighborhood. All are in the vicinity of the Tahoe City Substation, within Martis Valley, or along SR 267, and could be seen in the same context as power line Segments 625-1, 625-1A, 650-3, 650-4, and 650-4B. Each project would, in some way, change the existing visual conditions in the vicinity of the substation and the power line segments. In other areas, future projects would not be viewed simultaneously with the proposed power line upgrade project and the potential for cumulative impacts would not occur.

With integration of APMs into project design, the impacts of the project with respect to scenic resources were determined to be less than significant.

## CUMULATIVE EFFECTS IN TAHOE CITY

The SR 89/Fanny Bridge Community Revitalization Project and future projects resulting from the Tahoe City Vision Plan could contribute to cumulative scenic impacts in Tahoe City, including TRPA travel route ratings along SR 89 and SR 28. Several alternatives for the SR 89/Fanny Bridge Community Revitalization Project are under consideration, but all alternatives would repair or replace Fanny Bridge, make modifications at the “Y” intersection, and construct a new bridge over the Truckee River near the east end of the Caltrans Maintenance Station. The new bridge and roadway would traverse the south side of the 64-Acre Recreation Site and align SR 89 to bypass the existing “Y” intersection of SR 89 and SR 28. The existing SR 89 and Fanny Bridge would become a local street with no change in access to existing recreational parking areas. One of the objectives of this project is to improve the river crossing’s structural integrity (Fanny Bridge) and resolve safety and community concerns about the cultural values related to the historic Fanny Bridge. The SR 89/Fanny Bridge Community Revitalization

Project would result in an increase in transportation-related infrastructure in the project area. The new bridge crossing would be in nearly the same location as the crossing of the power line over the Truckee River in Segment 625-1 and would be visible from the viewpoint shown in Exhibit 4.4-10.

The SR 89/Fanny Bridge Project would be a substantial undertaking (with construction of an additional bridge and interchange/roundabout) that would result in marked visual changes in the project area, changes far greater than those of the power line project. As a Community Revitalization Project, however, it is proposed to include scenic and community character enhancements throughout the project area, particularly at the existing "Y." Though design is not finalized and a final alternative is not selected, such enhancements are expected to include a reduced intersection at the existing "Y," hardscape removal, extensive landscaping, continuity of bicycle and pedestrian trails, and other features. Ultimately, the project would be required to comply with the TRPA Code of Ordinances, including scenic requirements and threshold findings.

The Tahoe City Vision Plan would guide development of the Community Plan update and future Area Plan. Under the TRPA Code of Ordinances, future development projects would undergo a design review process to ensure they comply with applicable scenic resource standards, as well as applicable community design standards.

Although the future cumulative scenic effects of the SR 89/Fanny Bridge Community Revitalization Project and projects implemented in accordance with the Tahoe City Vision Plan and ultimately, the Community Plan update and Area Plan cannot be predicted with any specificity, land use plans would encourage individual projects to be designed to maintain or improve the roadway travel unit ratings and comply with scenic resource policies and the cumulative effects of the Fanny Bridge Project, Tahoe City Area Plan developments, and the project, considered together are likely to be substantial. However, the contribution of the power line project to the cumulative impact would not be considerable because with integration of APMs into project design, the only visible element of the project from the pedestrian bridge and SR 89 would be the conductors that cross the Truckee River. This would be a negligible visual effect compared to the effect of the Fanny Bridge and/or new developments that could be contemplated under the Tahoe City Vision Plan.

## **CUMULATIVE EFFECTS ALONG SR 267 AND IN THE MARTIS VALLEY**

The Martis Valley Trail, the Joerger Ranch Specific Plan, and Pollard Station Senior Neighborhood are all in the vicinity of Segments 650-3, 650-4, and 650-4B. Pollard Station would be an age-restricted senior neighborhood consisting of a lodge and condominiums on 8-acres in the Hilltop Master Plan area; the Joerger Ranch Specific Plan would be a 70-acre mixed use planned community including industrial, office space, public facility, transportation, and apartment uses; and the Martis Valley Trail would be a paved, multi-use recreational trail extending from the southern limits of the Town of Truckee at the Nevada/Placer County line eastward to the ridgeline defining the Lake Tahoe Basin. A 5.4-mile section of the trail would run along SR 267 between Truckee and Northstar.

The impacts of the project on scenic resources are less than significant and limited to travel routes in the Martis Valley, including SR 267. In general, the project would result in minor visual changes within Martis Valley, either because it replaces existing poles, or because of the distance of the power line from potential observers. Both Pollard Station and Joerger Ranch would result in visual changes within the Martis Valley that would be conspicuous for travelers on nearby local roadways, but the development would occur in the rural transition zone where housing and golf courses are already present and part of the existing visual character. The visual changes resulting from the development projects would not occur in the same view direction as the power line in the valley. Therefore the cumulative effect would not be significant. The Martis Valley Trail would bring additional viewers to the Martis Valley area, which would remain largely unobstructed and would continue to provide unique, high quality views of the surrounding environment. The trail itself would be a minor incremental

addition to the visual effect of SR 267. Therefore the cumulative effect of the trail and the project would likewise not be significant.

## **CUMULATIVE EFFECTS SUMMARY**

There could be a cumulatively significant impact along SR 89 in Tahoe City due to the planned SR 89 Fanny Bridge Project, but the contribution of the 625 and 650 Line Electrical Upgrade Project to the cumulative impact would not be considerable because the only visible elements within views of the new bridge would be the power line conductors. Within Martis Valley and along SR 267, the cumulative impact would be less than significant because the magnitude of visual effects/changes taken together would not be sufficient to exceed significance thresholds.

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## **4.5 GEOLOGY, SOILS, LAND CAPABILITY AND COVERAGE**

This section analyzes and evaluates the potential impacts associated with the implementation of the CalPeco 625 and 650 Line Electrical Upgrade Project pertaining to geologic and soil conditions, mineral resources, and land capability and coverage (per Chapter 30 of the TRPA Code of Ordinances [Code]). The analysis includes a description of existing conditions associated with geology, soils, and mineral resources, as well as land capability and coverage pursuant to TRPA guidance.

The study area for the assessment of geology, soils, and mineral resources is the same as the project footprint described in Chapter 3, Project Alternatives. The net increase in land coverage resulting from implementation of the action alternatives was calculated for permanent disturbances within the study area. The permanent disturbance area, as defined for the purposes of balancing land coverage calculations, will be established after an alternative is approved (assuming one is approved) and prior to submittal of the Land Coverage Verification to TRPA and will comply with section 30.4.1 of the TRPA Code.

### **4.5.1 REGULATORY SETTING**

The following provides an overview of the laws and regulations related to geology, soils, minerals, and land capability and coverage that are applicable to the proposed project.

#### **FEDERAL**

##### **FEDERAL EARTHQUAKE HAZARDS REDUCTION ACT**

The United States (US) Congress passed the Earthquake Hazards Reduction Act in 1977 to “reduce the risks to life and property” from future earthquakes in the United States. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). NEHRP’s mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency (FEMA) as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Other NEHRP agencies include the National Institute of Standards and Technology, the National Science Foundation, and the US Geological Survey (USGS).

##### **OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS**

Excavation and trenching are among the most hazardous construction operations. The Occupational Safety and Health Administration’s (OSHA) Excavation and Trenching Standard, Title 29 of the Code of Federal Regulations (CFR), Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area. Construction phases of the proposed project would be required to comply with OSHA regulations.

##### **TAHOE NATIONAL FOREST**

A portion of the project area is located within Management Area 053 (Donner) of the Tahoe National Forest, which is managed under the 1990 Tahoe National Forest Land and Resource Management Plan (Forest Plan) and

the 2001 Sierra Nevada Forest Plan Amendment, which amended the Forest Plans for the 11 national forests that fall within the Sierra Nevada. The purpose of these documents is to ensure the wise use and protection of resources, fulfill legislative requirements, and address local, regional, and national issues.

The Forest Plan provides management and monitoring direction for 16 resource areas, including soils, geology, minerals, water, and lands. The Forest Plan includes the following direction related to soils is to design and implement management practices that maintain or improve the long-term inherent productive capacity of the soil resource; to plan and conduct soil quality monitoring to determine whether soil management objectives, standards, and guidelines are being achieved; and to use the results of monitoring to evaluate resource management actions and recommend mitigation measures or changes in practices to prevent significant impairment of long-term soil productivity. Roads, structures, and timber harvest units within the Tahoe National Forest are designed to avoid unstable slopes and high risk avalanche areas or to prevent accelerated failure wherever possible. Earthquake hazards are managed by locating buildings, fill slopes, dams, and other facilities out of fault zones and/or using special designs to prevent failure. It is also Tahoe National Forest policy to avoid or minimize any activities that could adversely affect resources dependent on riparian areas. Where riparian area impacts are unavoidable, such as where roads cross stream courses, mitigation measures are adopted that minimize the impacts to acceptable levels. All existing land management practices use the water quality protection measures that are specified as best management practices (BMPs) in the *“Water Quality Management for National Forest System Lands in California,”* also referred to as the Region 5 Forest Service 208 Plan because it was developed in compliance with Section 208 of the federal Clean Water Act (US Department of Agriculture, Forest Service [USFS] 2000).

Mineral resources on Tahoe National Forest lands are managed primarily in response to outside demands by imbedding mitigation and rehabilitation measures in the plans of operation, or providing stipulations in leases and permits. Forest Service regulations provide rules and procedures for using the surface of National Forest System (NFS) lands in connection with locatable mineral operations authorized by the 1872 Mining Law. The prospecting, locating, and development of mineral resources within national forests are authorized by the Organic Act of June 4, 1897. USFS requires that, where feasible, all mining operations be conducted to minimize adverse impacts on surface resources (Title 36 of the CFR, Section 228.8) (USFS 1990: pp. III-29).

## LAKE TAHOE BASIN MANAGEMENT UNIT

The majority of the project study area is located on NFS lands that are managed by the USFS Lake Tahoe Basin Management Unit (LTBMU). The LTBMU was formed in 1973 by Presidential proclamation to provide special protection for the unique features of Lake Tahoe and its watershed. The LTBMU consists of a portion of the Tahoe National Forest (28,833 acres), along with portions of the Toiyabe and El Dorado National Forests. The LTBMU is not covered by the Forest Plan, described above, although it is still legally part of the Tahoe National Forest. Rather, management of the LTBMU is guided by the 1988 LTBMU Forest Plan and the 2001 Sierra Nevada Forest Plan Amendment. All activities within the LTBMU are required to comply with Forest Plan Standards and Guidelines, including the following:

- ▲ employ Forest Service BMPs to effectively control erosion, and
- ▲ implement project-specific resource protection measures or mitigations as prescribed to maintain soil productivity.

Furthermore, Section 43, “Soil Resource,” of the LTBMU Forest Plan includes the following directives:

- ▲ Maintain surface litter, duff, and adequate coarse woody debris to maintain organic matter reserves and recycle nutrients.
- ▲ Maintain protective groundcover (litter, duff, or slash) or vegetative cover to minimize soil erosion. Areas in which the soil resource is continuously impacted by recreation use will be considered an ongoing priority.

- ▲ Minimize soil displacement when grading slopes or when piling brush or slash.
- ▲ Where past management activities have reduced soil productivity, improve soil productivity by resspreading displaced topsoil, by using tillage to increase porosity, by increasing nutrient supplies through the addition of fertilizer (utilizing the Tahoe Regional Planning Agency [TRPA] guidelines for fertilizer use), or by increasing nutrient holding capacity through the addition of organic matter.
- ▲ Where soils are susceptible to compaction and puddling, minimize the area covered by heavy equipment or operate when soils are least susceptible to damage.
- ▲ Design projects to reduce potential soil erosion and the loss of soil productivity caused by loss of vegetation and ground cover. Examples are activities that would: 1) provide for adequate soil cover in the short term; 2) accelerate the dispersal of coarse woody debris; 3) reduce the potential impacts of fire on water quality; and 4) carefully plan restoration/salvage activities to minimize additional short-term effects. Recommend restoration practices in: 1) areas with compaction in excess of soil quality standards, 2) areas with lowered water tables, or 3) areas that are either actively down cutting or that have historic gullies. Identify other management practices, for example, road building, recreational use, grazing, and timber harvests, that may be contributing to the observed degradation.

## STATE

### SEISMIC HAZARDS MAPPING ACT

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6), addresses earthquake hazards from non-surface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking or earthquake, and other geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

### ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT

The Alquist-Priolo Act (Public Resources Code Sections 2621–2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as “Earthquake Fault Zones” around the surface traces of active faults, and to issue appropriate maps.

The study area is not located within, or adjacent to, an Alquist-Priolo Earthquake Fault Zone and the action alternatives do not include buildings designed for permanent human occupancy.

### BUILDING CODES

The State of California provides minimum standards for building design through the California Building Standards Code (California Code of Regulations, Title 24). The current 2010 California Building Code (CBC) is based on the 2009 International Building Code, with modifications for California’s conditions, and more detailed and more stringent regulations. The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J regulates grading activities, including drainage and erosion control.

## **SURFACE MINING AND RECLAMATION ACT OF 1975**

The State Mining and Reclamation Act of 1975 (California Public Resources Code [PRC] Section 2710 et seq.) (SMARA) requires that the California State Geologist implement a mineral land classification system to identify and protect mineral resources of regional or statewide significance in areas where urban expansion or other irreversible land uses may occur, thereby potentially restricting or preventing future mineral extraction on such lands. As mandated by SMARA, aggregate mineral resources within the state are classified by the State Mining and Geology Board through application of the Mineral Resource Zone (MRZ) system. The MRZ system defines four zones based on the degree of available information characterizing the area and the presumed significance of the resource. These zones are described as follows.

- ▲ **MRZ-1:** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- ▲ **MRZ-2:** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- ▲ **MRZ-3:** Areas containing mineral deposits for which the significance cannot be determined from available data.
- ▲ **MRZ-4:** Areas where available information is inadequate for assignment of any other MRZ category.

## **TAHOE REGIONAL PLANNING AGENCY**

Several components of the TRPA Regional Plan include policies and regulations pertaining to geology, soils, land capability, and coverage: the Environmental Threshold Carrying Capacities, the Goals and Policies, Code of Ordinances, and Water Quality Management Plan.

### **REGIONAL PLAN**

The TRPA Regional Plan (TRPA 2012a), adopted in December 2012, contains goals and policies applicable to geology, soils, land capability, and coverage that are included in several elements and subelements of the Goals and Policies document. In the Land Use Element (Chapter 2), the Natural Hazards Subelement addresses risks from natural hazards (e.g., flood, fire, avalanche, and earthquake). The Water Quality Subelement addresses reduction of sediment loading and algal nutrients in Lake Tahoe. In the Conservation Element (Chapter 4), the Soils Subelement addresses soil erosion and loss of soil productivity. Goals and policies related to geology and soils and applicable to the project include the following.

### **Land Use Element**

#### ***Natural Hazards Subelement***

**Goal NH-1:** Risks from natural hazards (e.g., flood, fire, avalanche, earthquake, seiche) will be minimized. Land uses within the Tahoe Region should be planned with recognition of natural hazards so as to help prevent damage to property and to protect public health. Natural hazard areas or situations can be identified and precautionary measures taken to minimize impacts.

- ▲ **Policy NH-1.1:** Development shall be regulated in identified avalanche or mass instability hazard areas. In the areas with identified avalanche or mass instability danger, the type of uses or activities can be designed or regulated to protect the public during hazard periods. Construction, reconstruction, or replacement of

structures in identified avalanche or mass instability hazard areas shall be restricted unless precautionary measures can be implemented to ensure protection of public health and safety.

### **Water Quality Subelement**

**Goal WQ-3:** Reduce or eliminate non point sources of pollutants which affect, or potentially affect, water quality in the Tahoe Region in a manner consistent with the Lake Tahoe Total Maximum Daily Load, where applicable.

- ▲ **Policy WQ-3.12:** All projects shall be required, as a condition of approval, to apply BMPs to the project parcel during construction and as follows upon completion of construction:
  - A. New projects on undeveloped parcels shall require application and maintenance of temporary and permanent BMPs as a condition of project approval.
  - B. Projects which expand structures or land coverage shall require application and maintenance of temporary and permanent BMPs to the project area.
  - C. Rehabilitation projects, other than minor utility projects, shall require the preparation of a plan and schedule for application and maintenance of temporary and permanent BMPs to the entire parcel. The amount of work required pursuant to the project approval shall consider the cost and nature of the project.
  - D. Where area-wide treatments are approved, projects shall install improvements in accordance with the approved area-wide BMP plan.

### **Conservation Element**

#### **Soils Subelement**

**Goal S-1:** Minimize soil erosion and the loss of soil productivity. Protection of the region's soil is important for maintaining soil productivity and vegetative cover, and preventing excessive sediment and nutrient transport to streams and lakes. Soil protection is especially critical in the region where the soils are characteristically shallow and highly susceptible to erosion. Strategies for soil conservation are consistent with thresholds established for soil, water, and vegetation.

- ▲ **Policy S-1.1:** Allowable impervious land coverage shall be consistent with the threshold for impervious land coverage. The Land Use Element establishes policies which limit impervious land coverage consistent with the impervious land coverage limits set forth in the *Land-Capability Classification of the Lake Tahoe Basin, California-Nevada, a Guide for Planning*, Bailey 1974.
- ▲ **Policy S-1.2:** No new land coverage or other permanent disturbance shall be permitted in Land Capability Districts (LCDs) 1 through 3, except for those uses as noted in A, B, and C below: [A and B are not applicable to the project]
  - C. Public service facilities are permissible uses in LCDs 1 through 3, if:
    - i. The project is necessary for public health, safety or environmental protection;
    - ii. There is no reasonable alternative, which avoids or reduces the extent of encroachment in LCDs 1 through 3;
    - iii. The impacts are fully mitigated;
    - iv. LCDs 1 through 3 lands are restored in the amount of 1.5 times the area of LCDs 1 through 3 which is disturbed or developed beyond that permitted by the Bailey co-efficients; and
    - v. Alternatively, because of their public and environmental benefits, special provisions for non-motorized public trails may be allowed and defined by ordinances.

Development within LCDs 1 through 3 is not consistent with the goal to manage high hazard lands for their natural qualities and shall generally be prohibited except under extraordinary circumstances involving public

works. The restoration requirements of this policy can be accomplished on-site or off-site, and shall be in lieu of any coverage transfer or coverage mitigation provisions elsewhere in this plan.

- ▲ **Policy S-1.6:** Maintain seasonal limitations on ground-disturbing activities during the wet season (October 15 to May 1) and identify limited exceptions for activities that are necessary to preserve public health and safety or for erosion control. Impacts related to soil disturbance are highly exaggerated when the soil is wet. For precautionary reasons, all project sites must be adequately winterized by October 15 as a condition for continued work on the site. Exceptions to the grading prohibitions will be permitted in emergency situations, where the grading is necessary for reasons of public safety or for erosion control.

## TRPA CODE OF ORDINANCES

### Chapter 33 – Grading and Construction

Chapter 33 of the TRPA Code describes the various standards and regulations that protect the environment against significant adverse effects from excavation, filling, and clearing due to such conditions as exposed soils, unstable earthworks, or groundwater interference.

Section 33.3 describes TRPA's requirements for grading and construction schedules for certain projects. This section includes standards for seasonal limitations, dust control, discharge prohibitions, cuts and fill, and excavation limitations. Submittal and approval of grading and construction schedules may be required, as a condition of approval, for projects presenting special problems with regard to project completion, site development, or water quality management (e.g., crossings of Stream Environmental Zones [SEZs], major earthworks, or major clearing projects).

Section 33.4 of the code provides for special investigations, reports, and plans as part of an application or as a condition of project approval, as determined to be necessary by TRPA to protect the environment against significant adverse effects from grading projects. The report shall provide information sufficient to determine the effect of grading projects on stability, groundwater, or antiquities.

Section 33.4.1 lists the following locations that may be grounds for requiring subsurface investigations and reports:

- ▲ fault zones;
- ▲ contact zones between two or more geologic formations;
- ▲ zones of trapped water or high water tables;
- ▲ areas where bodies of intrusive materials, such as rocks or boulders, are prevalent;
- ▲ historic landslide areas or areas where the topography indicates prehistoric landslides;
- ▲ adversely sloped bedding planes, short-range folding areas, overturned folds, fractures, and other geologic formations of similar importance;
- ▲ proposed or existing fill slopes above a cut slope;
- ▲ proposed or existing cuts exceeding 20 feet in height, unless in competent rock;
- ▲ proposed or existing fills exceeding 20 feet in height;
- ▲ areas where groundwater from either the grading or adjoining parcels is likely to substantially reduce the subsurface stability;
- ▲ areas showing characteristics of seeped soils or areas of water influence; or
- ▲ areas in the vicinity of historic resources, as identified by the TRPA Historic Resource map, or in other locations where antiquities could be located.

The TRPA Regional Plan does not contain goals or policies that specifically address mineral resources, and the TRPA Code does not contain requirements or permits pertaining specifically to extraction of mineral resources. However, mineral extraction is not expressly listed as a “Permissible Use” in Chapter 21 of the Code of Ordinances. Additionally, compliance with Chapter 33, Grading and Construction would be required for any grading, excavation, filling, clearing of vegetation, or disturbance of the soil. In particular, Section 33.3.6 Excavation Limitations, prohibits most excavations that interfere or intercept with. Because of these restrictions, it unlikely that approval of a mining and reclamation permit under SMARA would be feasible in the area under TRPA’s jurisdiction. Active mining is therefore essentially precluded within the Lake Tahoe Basin (USFS 2012: pp. 3-522).

### Chapter 30 – Land Coverage

Chapter 30 of the TRPA Code sets forth regulations for the permissible amount of land coverage in the region. It implements provisions of the Goals and Policies concerning the land capability system, LCDs, and transfer and mitigation of land coverage. LCDs have been determined for all areas within the Lake Tahoe Basin. Land capability is defined as “the level of use an area can tolerate without sustaining permanent damage through erosion and other causes” (Bailey 1974). The Bailey system uses LCD ratings that range from 1 to 7, which rank the LCDs in terms of their tolerance for use based on slope, relative erosion and runoff potential, and potential for hazards (Table 4.5-1). Table 4.5-2 summarizes the characteristics and intensity of uses for each LCD (also known as land capability level, or class).

Capability Levels	Tolerance for Use	Slope Percent	Relative Erosion Potential	Runoff Potential	Disturbance Hazards	
7	Most	0-5	Slight	Low to moderately low	Low hazard	
6		0-16				
5		0-16		Moderately high to high		
4		9-30	Moderate	Low to moderately low		Moderate hazard lands
3		9-30		Moderately high to high		
2	Least	30-50	High	Low to moderately low	High hazard lands	
1a		30+		Moderately high to high		
1b		Poor natural drainage				
1c		Fragile flora and fauna				

Source: Bailey 1974

To establish limitations on land surface modification for each LCD, each class is assigned a numerical value representing the percentage of each area that can be used for impervious cover if environmental balance is to be maintained. Chapter 90 of the TRPA Code generally defines land coverage as: 1) a man-made structure, improvement or covering, that prevents normal precipitation from directly reaching the surface of the land underlying the structure, improvement, or covering (“hard coverage”); and 2) lands used for such things as parking of cars and heavy and repeated pedestrian traffic such that the soil is compacted so as to prevent substantial infiltration (“soft coverage”). Table 4.5-3 presents the base percentage of coverage allowed for each LCD.

**Table 4.5-2 Characteristics of Lands by Land Capability Class and Suitable Uses Based on Relative Tolerance Levels**

Land Capability Class	General Characteristics	Intensity of Uses
Low hazard lands (Classes 5-7)	Areas of gently sloping foothills and plains with deep soils.	Generally suited for various development activities as well as for concentrated public occupancy. Access should be high-standard roads and trails. May support most kinds of intensive or mass recreational uses. Facilities include campgrounds, recreation residences, hotels, and resorts or other commercial services where they do not destroy other values.
Moderate hazard lands (Classes 3 and 4)	Characterized by moderately steep mountain slopes. Often provide visual backdrops for low hazard areas.	Recreation use may be varied and concentrated, including campgrounds, picnic areas, and winter sport sites. Access should be by low standard roads and trails. Low-density housing may be permitted, as well as limited forestry.
High hazard land (Class 2)	Characterized by steep slopes and a fragile environmental balance with unique plants and animals. Also provide backdrops and foregrounds for surrounding areas.	Suited for limited recreation, restricted grazing, and selective timber harvest due to erosion hazard or very steep slopes. Should remain generally in their natural condition. Access facilities should be restricted to foot and horse trails. Recreation use should be dispersed and limited to hiking, backcountry camping, and fishing. These lands should not be managed for intensive commercial resource use.
High hazard land (Class 1)	Includes mountain tops with little to no soil mantle, and very steep slopes with shallow soils. Subclasses (i.e., 1a, 1b, 1c) include marshes, flood plains, meadows, and beaches.	Some of the uses under Class 2 apply to Class 1 as well. However, Class 1 areas are not suitable for development, grazing, or forestry. Class 1 areas have value for wildlife, recreation, and protected of water supplies.

Source: Data compiled by Ascent from Bailey 1974

**Table 4.5-3 Tahoe Regional Planning Agency Base Land Coverage Requirements**

Land Capability District	Base Allowable Coverage (percent [%])
6, 7	30
5	25
4	20
3	5 <sup>1</sup>
2	1 <sup>1</sup>
1a, 1b, 1c	1 <sup>1</sup>

<sup>1</sup>No additional land coverage or other permanent land disturbance shall be permitted in LCDs 1a, 1b (SEZ), 1c, 2, and 3 and except as defined in Chapter 30 of the TRPA Code.

Source: TRPA Code, Chapter 30, 2012

## WATER QUALITY MANAGEMENT PLAN FOR THE LAKE TAHOE REGION

The Lake Tahoe Water Quality Management Plan (also known as the 208 Plan ) (TRPA 2013) is a framework that sets forth the components of the water quality management system in the Lake Tahoe Region, the desired water quality outcomes for the Tahoe Basin, and the mechanisms adopted by all the relevant entities to achieve and maintain those outcomes. The Handbook of Best Management Practices provides technical guidance and assistance to engineers, architects, consultants, builders, homeowners, and other agencies who are proposing a

project in the Tahoe Basin which may affect water quality. It identifies and recommends BMPs for various situations. See Section 4.6, Hydrology and Water Quality, for further information on the 208 Plan.

## ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES

TRPA adopted environmental threshold carrying capacities to improve and maintain the various resources and values of the Lake Tahoe Basin. These thresholds provide environmental quality targets to be achieved in the Tahoe Basin. TRPA conducts a comprehensive evaluation of all thresholds every four years. The most recent evaluation was completed in 2011.

TRPA has two soil conservation threshold indicator standards.

- ▲ Impervious Cover (Land Coverage) – threshold to attain allowable land coverage in compliance with the Land Capability Classification of the Lake Tahoe Basin.
- ▲ SEZ – threshold to restore 25 percent of the SEZ lands that have been identified as disturbed, developed, or subdivided to attain a 5 percent increase in the area of naturally functioning SEZs.

According to the 2011 Threshold Evaluation (TRPA 2012b), LCDs 1b and 2 are exceeding allowable coverage targets by 670 and 43 acres, respectively. All other land capability classes are within allowable limits. Overall, the status for the Impervious Cover threshold indicator is “at or somewhat better than target” with an unknown trend, and is “considerably worse than target” for the SEZ threshold indicator with a trend toward moderate improvement. The soil conservation thresholds and the project’s potential effects on threshold attainment are discussed further in Section 5.8, Consequences for TRPA Environmental Threshold Carrying Capacities

## LOCAL AGENCIES

Policies and ordinances of local agencies related to geology, soils, and mineral resources that are potentially applicable to the proposed project are described in this section.

### PLACER COUNTY

#### Placer County General Plan

The relevant policies of the general plan with respect to geology and soils are listed below (Placer County 1994: Section 8, Health and Safety; pp. 128 and 136). Refer to Section 4.2, Land Use, for a discussion of the project’s consistency with these policies.

- ▲ **Policy 8.A.1.** The county shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., ground shaking, landslides, liquefaction, critically expansive soils, and avalanche).
- ▲ **Policy 8.A.2.** The county shall require submission of a preliminary soils report, prepared by a registered civil engineer and based upon adequate test borings, for every major subdivision and for each individual lot where critically expansive soils have been identified or are expected to exist.
- ▲ **Policy 8.A.4.** The county shall ensure that areas of slope instability are adequately investigated and that any development in these areas incorporates appropriate design provisions to prevent land sliding.
- ▲ **Policy 8.A.5.** In landslide hazard areas, the county shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.
- ▲ **Policy 8.A.6.** The county shall require the preparation of drainage plans for development in hillside areas that direct runoff and drainage away from unstable slopes.

- ▲ **Policy 8.A.9.** The county shall require that the location and/or design of any new buildings, facilities, or other development in areas subject to earthquake activity minimize exposure to danger from fault rupture or creep.
- ▲ **Policy 8.A.10.** The county shall require that new structures permitted in areas of high liquefaction potential be sited, designed, and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.
- ▲ **Policy 8.A.11.** The county shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.
- ▲ **Policy 8.A.12.** The county shall not issue permits for new development in potential avalanche hazard areas (PAHA) as designated in the Placer County Avalanche Management Ordinance unless project proponents can demonstrate that such development will be safe under anticipated snow loads and conditions of an avalanche.
- ▲ **Policy 8.H.2.** The county shall require new development in areas of avalanche hazard to be sited, designed, and constructed to minimize avalanche hazards.

## Placer County Grading Ordinance

Grading is subject to the Placer County Code, Chapter 15, Article 15.48 (Grading, Erosion and Sediment Control), which addresses when a permit is required and when grading is exempt from permit requirements. The most common activities requiring a grading permit include: fill or excavation greater than 250 cubic yards; cuts or fills exceeding 4 feet in depth; structural retaining walls exceeding 4 feet in total height, as measured from bottom of footing to the top of the wall and/or supporting a surcharge; soil or vegetation disturbances exceeding 10,000 square feet; grading within or adjacent to a drainage course or wetland; or grading within a floodplain.

## Placer County Avalanche Management Ordinance

Article 12.40 of the Placer County Code, addresses Avalanche Management Areas and establishes the Placer County Avalanche Management Ordinance. The article describes potential avalanche hazard areas (PAHA) as those areas where, after investigation and study, the county finds that an avalanche potential exists because of steepness of slope, exposure, snow pack composition, wind, temperature, rate of snowfall, and other interacting factors. PAHA zones are established to identify those areas with avalanche potential, and include areas where the annual probability of avalanche occurrence is greater than one in 100 based on the results approved studies, or where avalanche damage is documented.

## TOWN OF TRUCKEE

### Town of Truckee General Plan

The Conservation and Open Space Element of the Town of Truckee's *2025 General Plan*, provides planning guidance related to geology and soils. One of the Conservation and Open Space Element's guiding principles involves ensuring the "continued productivity of mineral...areas in Truckee, while minimizing land use conflicts and visual impacts associated with these activities." Other relevant goals and policies of the General Plan with respect to geology and soils are listed below (Town of Truckee 2006: Section 7, Conservation and Open Space Element; pp. 7-35, 7-36, 7-46, 7-47). Refer to Section 4.2, Land Use, for a discussion of the project's consistency with these policies.

**Goal COS-6:** Protect economically viable mineral resources and related industries in Truckee while avoiding land use conflicts and environmental impacts from mining activities.

- ▲ **Policy P6.2.** Restrict permitted uses on lands mapped as important Mineral Resource Areas within the RC/OS land use designation to those compatible with mineral resource extraction activities.
- ▲ **Policy P6.3.** Restrict permitted uses on lands containing important mineral resources within the PUB land use designation to those compatible with mineral extraction, except in cases where such uses offer public benefits that outweigh those of resource extraction.

**Goal COS-12:** Protect the Town's soil resources from erosion.

- ▲ **Policy P12.2.** Require projects that require earthwork and grading, including cuts and fills for roads, to incorporate measures to minimize erosion and sedimentation. Typical measures include project design that conforms with natural contours and site topography, maximizing retention of natural vegetation, and implementing erosion control BMPs.

## 4.5.2 EXISTING CONDITIONS/AFFECTED ENVIRONMENT

### GEOLOGY AND TOPOGRAPHY

#### GEOLOGIC CONDITIONS

The project is located in the northern portion of the Sierra Nevada geomorphic province of California, in the northwestern portion of the Lake Tahoe Basin and in the Martis Valley area extending into Truckee, north of the Lake Tahoe Basin. The Sierra Nevada is a tilted fault block with a gentle western slope and a steep, rugged eastern escarpment. It extends 400 miles through eastern California, from the Mojave Desert in the south to the Cascade Range and Modoc Plateau on the north, and averages 50 to 80 miles wide. The Sierra Nevada Range geomorphic province is primarily composed of Cretaceous granitic plutons, remnants of Paleozoic and Mesozoic metavolcanic and metasedimentary rocks, and Cenozoic volcanic and sedimentary rocks. It is bound on the west by sedimentary rocks of the Great Valley geomorphic province and on the north by volcanic sheets extending south from the Cascade Range (CGS 2002: pp. 2). The Lake Tahoe Basin is located in the northern Sierra Nevada, between the Sierra crest to the west and the Carson Range to the east. Faulting and volcanism created the Lake Tahoe Basin more than 2 million years ago and, as a result, the basin contains granitic, metamorphic, and volcanic rock (TRPA and USFS 1971: pp. 7-8).

In the northern and northwestern parts of the basin, underlying granitic basement rocks are covered by younger Tertiary and Quaternary volcanic rocks derived through erosion of the volcanic and granitic rocks. Younger glacial moraines, tills, glacial outwash, and lakebed sediments form deposits in the northwest portion of the basin but are more prevalent in the southern part of the basin (TRPA and USFS 1971: pp. 8).

A review of the Geologic Map of the Lake Tahoe Basin, California and Nevada (CGS 2012) shows that the project study area is located on 13 different rock types ranging in age from Holocene to Miocene (23.03 million years ago [mya] to present). More recent Holocene age deposits that occur along the proposed power line alignments include talus deposits, lake deposits, landslide deposits, alluvium, and alluvial fan deposits. Pleistocene age (2.5 mya to 11,700 years ago) deposits include landslide deposits, alluvium, alluvial fan deposits, outwash deposits, Bald Mountain Latite, and Prosser Creek Alluvium. Pliocene age (5.3 mya to 2.5 mya) deposits include Tahoe City Trachyandesite, Tahoe City Basalt, and andesitic and basaltic andesite flows. The oldest deposits, from the Miocene age (23.03 mya to 5.3 mya), include andesitic and dacitic lahars, flows, breccias and volcaniclastic sediments, and andesite and dacite flows.

A description of the geologic unit types that transect the project study area is provided in Appendix I, Additional Geology and Soils Information, to this EIS/EIS/EIR.

## TOPOGRAPHY

The regional terrain in the vicinity of the project is generally defined by gently sloping to moderately steep plateaus and mountain valleys (Martis Valley and Sierra Valley) and the Lake Tahoe Basin. The plateaus, valleys, and mountains are dissected by streams in moderately steep-sided canyons, including the Truckee River Canyon. Elevation ranges from about 5,000 feet above mean sea level (msl) along the Truckee River up to over 9,000 feet above msl on Mount Lola, located 12 miles northwest of Truckee. Elevations of the peaks surrounding the Lake Tahoe Basin range from approximately 8,000 to almost 11,000 feet above msl.

## SEISMICITY

Seismicity is the relative frequency and distribution of earthquakes, which are recognized in terms of intensity and magnitude. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features. Seismic magnitude is measured using the local magnitude scale, or “Richter Scale” as it is popularly known. An earthquake’s intensity varies depending on the location of the observer with respect to the earthquake epicenter.

The study area is located in a seismically active area of the western United States. The area lies within a tectonically active, asymmetric half-graben, a depressed block of land bordered by a major fault. Recorded seismic activity in the Truckee area in recent history, includes a magnitude 6.0+ earthquake in 1966, a magnitude 3.6 earthquake in 1998, and a magnitude 4.5 earthquake in 2004 (Town of Truckee 2006). Evidence shows that Lake Tahoe Basin faults have had pre-historic earthquakes of a magnitude of 7.0 within the past 10,000 years. However, scientific research appears to show that large earthquakes are “rare events” in the Lake Tahoe Basin, meaning quakes of magnitude 6.5 or greater occur on individual faults about every 3,000 to 4,000 years (Segale and Cobourn 2005: pp. 1).

East of the study area, the Carson Range fault system is one of the largest fault systems and runs for 60 miles along the east face of the Carson Range from Reno to Markleeville. The probability of at least one event of a 6.0 magnitude or greater occurring in the Reno-Carson City urban corridor over a 50-year period is estimated to be between 34 and 98 percent, the probability of an event of a 6.6 magnitude or greater is between 9 and 64 percent, and the probability of an event that is a magnitude 7.0 or greater is between 4 and 50 percent. These probabilities are relatively high and are commensurate with many parts of California (dePolo et al. 1997: pp. 3).

According to the Earthquake Potential Map for Portions of Eastern California and Western Nevada (CGS 2005), the Lake Tahoe Basin is considered to have a relatively low to moderate potential for shaking caused by seismic activity. However, earthquakes occurring nearby, such as the Reno-Carson urban corridor, have the potential to trigger secondary hazards in the project area.

## FAULTS AND FAULT RUPTURE

The project site is located within a seismically active region with a number of earthquake faults and fault zones identified in the area. Table 4.5-4 lists known faults within the Lake Tahoe Basin and Truckee area that have been sources of magnitude 6.0 or greater earthquakes during the Quaternary period (past 1.6 million years) (CGS 2010). None of these faults are considered active under the Alquist-Priolo Act, which defines an active fault as one that has ruptured in the last 11,000 years (within Holocene time).

<b>Name</b>	<b>Age (years)</b>
Agate Bay Fault	< 1,600,000
East Tahoe Fault	< 1,600,000
Incline Village Fault	< 15,000
Little Valley Fault	< 1,600,000
North Tahoe Fault	< 15,000
Tahoe-Sierra Frontal Fault Zone	< 1,600,000
Tahoe Valley Fault Zone	< 1,600,000
Unnamed	< 1,600,000
West Tahoe-Dollar Point Fault Zone	< 15,000
	< 130,000
	< 1,600,000
Dog Valley Fault	< 1,600,000
Polaris Fault	< 15,000

Source: CGS 2010, Town of Truckee 2006

## **GROUND FAILURE/LIQUEFACTION**

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits are susceptible to liquefaction, while clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking (CGS 2008: pp. 35-37). Liquefaction poses a hazard to engineered structures. The loss of soil strength can result in bearing capacity insufficient to support foundation loads, increased lateral pressure on retaining or basement walls, and slope instability. Sites underlain by relatively loose sandy soils and saturated deposits of fill combined with a shallow groundwater table, which typically are located in alluvial river valleys/basins and floodplains, are susceptible to liquefaction. Liquefaction potential within the project footprint and the greater Lake Tahoe Basin exists in low-lying areas composed of loose, unconsolidated, saturated, clay-free glacial material and certain areas with a high water table.

## **SUBSIDENCE**

Land surface subsidence can be induced by both natural and human phenomena. Natural phenomena include: subsidence resulting from tectonic deformations and seismically induced settlements; soil subsidence from consolidation, hydrocompaction, or rapid sedimentation; subsidence from oxidation or dewatering of organic rich soils; and subsidence related to subsurface cavities. Subsidence related to human activity includes subsurface fluid or sediment withdrawal. Pumping of water for residential, commercial, and agricultural uses from subsurface water tables causes more than 80 percent of the identified subsidence in the United States (Galloway et al. 1999: pp. 1). Lateral spreading is the horizontal movement of fractured rock or soil toward an open face, such as a streambank or the open side of fill embankments, resulting from liquefaction of subadjacent materials. The potential for failure from subsidence and lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks are relatively high. There is potential for subsidence to occur in the form of stream bank sloughing the project footprint near streams with persistent high water tables, particularly in the Martis Valley.

## SLOPE STABILITY

A landslide is the downhill movement of earthen material under the force of gravity. The factors contributing to landslide potential are steep slopes, unstable terrain, and proximity to faults. This process typically involves the surface soil and an upper portion of the underlying bedrock. Expansive soils shrink and swell in response to changes in moisture content. When these soils are located on a slope, gravity pulls the soils downslope with each shrink/swell cycle, which can contribute to the risk of landside. Soil movement may be very rapid, or so slow that a change of position can be noted only over a period of weeks or years (creep). The size of a landslide can range from several square feet to several square miles. The varied topography within the project area makes many areas susceptible to landslide hazards. The main hazards associated with alpine granitic terrains in the project area are massive granite rock falls on steep slopes and erosion of decomposed granite on both gentle and steep slopes.

## AVALANCHES

Snow avalanche is a rapid flow of snow down a slope that results from a mechanical failure in the snowpack when gravitational forces on the snow exceed its strength. Although primarily composed of flowing snow and air, large avalanches have the capability to entrain ice, rocks, trees, and other material. Critical stresses develop more quickly on steeper slopes and where deposition of wind-transported snow is common. Because avalanches most often occur on slopes ranging between 30 and 45 degrees, these areas are considered high hazard zones. Moderate hazard zones are usually on shallow slopes and located immediately downhill of high hazard zones. High and moderate zones are located near the Placer County/Nevada County line, south of Donner Lake and Lake Van Norden, east of Tahoe City, near Twin Peaks and McKinney Bay, and in areas near Squaw Valley, Alpine Meadows, and Sugar Bowl (Placer County 2010: pp. 4-34, 4-35).

## SOILS

The study area, including the power line alignments, footprint of the substations and switching stations, staging areas, and newly constructed or improved access roads cross 29 different soil units shown on the Natural Resource Conservation Service (NRCS) Soil Survey Geographic Database for the Tahoe National Forest and the Tahoe Basin Area (NRCS 2013). A listing the soil map units and descriptions provided by the NRCS Web Soils Survey (NRCS 2012) are included in Appendix I, Additional Soils and Geology Information, of this EIS/EIS/EIR.

Soils within the action alternatives areas are generally derived from volcanic rock, such as andesite, weathered in place from bedrock, derived from accumulated debris at the base of slopes (colluvium), or colluvium derived from glacial till. These soils vary in depth from 10 to 80 inches to bedrock or other restrictive features, and are typically well drained. Examples of these types of soil map units that occur in the 625 Line alignments include Tahoma-Jorge Complex on 2 to 15 percent slopes, Jorge-Tahoma Complex that occur on 15 to 50 percent slopes, and Jorge very cobbly fine sandy loam that occur on 5 to 30 percent slopes. In addition some soil map units with rock outcrops are located in the alignment, including Umpa rock outcrop complex located on 30 to 75 percent slopes with soil depths ranging from 0 to 4 inches on the rock outcrops to 24 to 28 inches elsewhere in the unit.

The characteristics of soils occurring in the southern portion of the 650 Line are similar to the soils along the 625 Line alignments. These soil map units include Tahoma-Jorge Complex, Jorge-Tahoma Complex, and Jorge very cobbly fine sandy loam, as well as Jorge very stony fine sandy loam on 30 to 50 percent slopes, and Aldi-Kyburz complex on ridges with 2 to 30 percent slopes.

Soil units occurring along the 650 Line in the Martis Valley and Truckee area differ from soils found along the mountain slopes and ridge tops. These soils are associated with outwash terraces and marshes, are poorly drained to well drained, and are on 0 to 5 percent slopes. These soil units include Aquilis and Borolis, Inville-Riverwash-Aquolix complex, and Euer-Martis variant complex.

Soils associated with lake deposits and alluvial fans, lake terraces, and drainage ways are present near the Tahoe City and proposed Kings Beach substations. These soils are poorly drained to moderately well drained and have a depth of more than 80 inches. These soil units include Tahoe complex on 0 to 5 percent slopes, and Kings Beach stony sandy loam on 2 to 15 percent slopes.

## **EROSION POTENTIAL AND HAZARD RATING**

Erosion is the process by which surface soils are detached and transported by water and/or wind. Erosion has a detrimental effect on soil productivity because erosion begins with the upper horizons of a soil profile, which contain organic matter and microbial communities vital to supporting plant growth. Factors that influence the erosion potential of a soil include: vegetative cover; soil properties such as soil texture, structure, rock fragments and depth; steepness and slope length; and climatic factors such as the amount and intensity of precipitation. The NRCS soil surveys provide a rating of Erosion Hazard resulting from disturbance of non-road areas (Exhibit 4.5-1). This rating is based on slope and soil erosion factor (K). The predicted soil loss is caused by sheet or rill erosion (which occurs when shallow flows of water causing sheet erosion coalesce into rills and thus increase both in velocity and scouring capacity) in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by some kind of disturbance. The hazard is described as “slight,” “moderate,” “severe,” or “very severe.” A rating of “slight” indicates that erosion is unlikely under ordinary conditions; “moderate” indicates that some erosion is likely and that erosion-control measures may be needed; “severe” indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and “very severe” indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical (NRCS 2007). The NRCS has also developed an Erosion Hazard Rating for Roads and Trails; however this rating utilizes landscape slope rather than the slope of the road or trail and therefore has limited applicability to this assessment.

The erosion potential for soils within the study area, including areas of temporary disturbance required for access and construction staging, varies from slight to severe (Exhibit 4.5-1).

## **COMPACTION POTENTIAL**

Soil compaction refers to an increase in soil density or a loss of pore space. Soil pores provide storage space for the oxygen and water needed to facilitate biological activity within the soil. Compaction negatively impacts soil productivity and hydrologic function since compacted soils resist water absorption, restrict air movement around roots, and create a physical barrier to root development. All soils are more vulnerable to compaction when they are wet; however, fine textured, poorly drained soils with little organic matter are the most susceptible.

Poorly drained soils are located in limited portions of the study area, at Tahoe City, Kings Beach, Martis Valley, and near the Truckee River in association with Tahoe complex soils, Oxyaquic-cryorthents-Aquic Xerothents soils, and Aquolls and Borolls soils.

## **EXPANSIVE SOILS**

Expansive soils contain shrink-swell clays that are capable of absorbing water. As water is absorbed the clays increase in volume. This change in volume is capable of exerting enough force on buildings and other structures to damage foundations and walls. Damage can also occur as these soils dry out and contract.

One measure of the shrink-swell potential of soils is linear extensibility. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. The volume change is reported as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent,

moderate if 3 to 6 percent, high if 6 to 9 percent, and very high if more than 9 percent. Table 4.5-5 lists the five soil mapping units within the study area that have a dominant soil component with greater than 3 percent linear extensibility (moderate Shrink Swell potential). These soils occur in the Kings Beach area, near Tahoe City, and east of Martis Valley. As discussed above, expansive soils can also be subject to landslides.

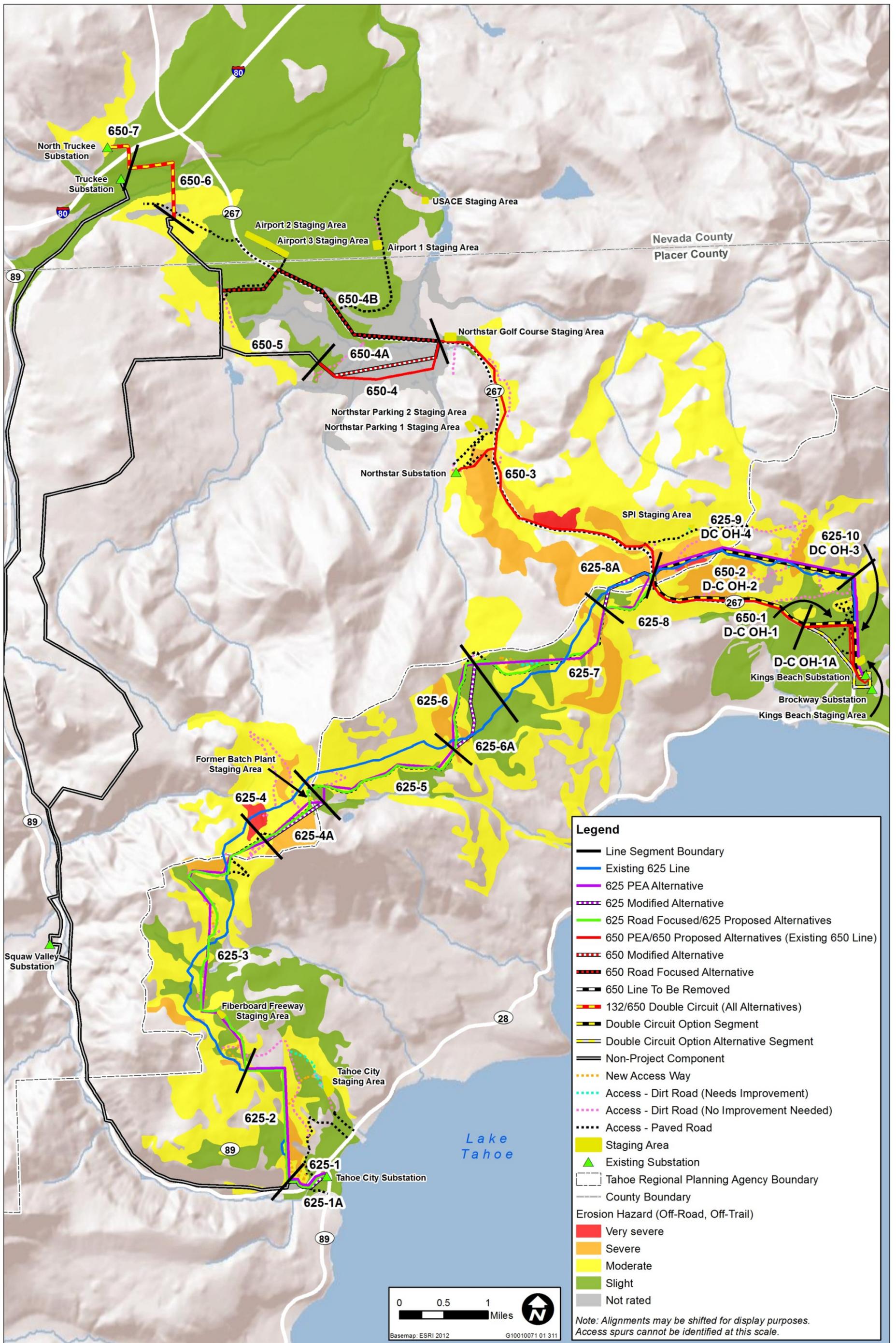
Table 4.5-5 Soil Units with Moderate Shrink-Swell Potential		
Map Unit Symbol	Map Unit Name	Linear Extensibility of Dominant Component
<b>Soil Survey of the Tahoe Basin Area, California and Nevada</b>		
7161	Kingsbeach Stony Sandy Loam 2-15% Slopes	5.8%
<b>Tahoe National Forest Area, California</b>		
FUE	Kyburz-Trojan-Sierraville Complex 2-9% Slopes	4.0%
FTE	Fugawee-Tahoma complex, 2-30% Slopes	3.9%
KRF	Kyburz-Rock Outcrop-Trojan Complex 2-30% Slopes	4.0%
KRE	Kyburz-Rock Outcrop-Trojan Complex 30-50% Slopes	4.0%
Source: Bailey 1974		

## MINERALS

Mineral resources in Nevada County include gold, copper, silver, lead, zinc, chromite, and small amounts of tungsten and manganese. Industrial minerals include barite, quartz for silicon production, and small amounts of limestone, asbestos, clay, and mineral paint. Also, significant deposits of sand, gravel, and rock types suitable for construction aggregate are exposed throughout the county (Nevada County 1995). Mineral resources found throughout Placer County include sand, gravel, clay, stone, and gold. Although current gold mining is minimal in Placer County compared to historic mining activity, some operations continue to produce. Sand and gravel are the primary mineral resources currently being extracted for construction activities (Placer County 1994).

As described in the Regulatory Setting, the California Department of Mining and Geology has established a classification system for mineral resources. The portion of the project in Placer County is located in MRZ-4, “areas of no known mineral occurrences where geologic information does not rule out either the absence or the presence of significant mineral resources.” In the Town of Truckee, there is a long stretch of land classified as MRZ-2 extending along the Truckee River that has significant deposits of sand, gravel, and crushed stone (Nevada County 1995; Town of Truckee 2006b: Figure 4.5-2, pp. 4.5-10). The existing 132/650 Line (Segment 650-6) crosses through the MRZ-2 area containing important mineral resources. The *Town of Truckee 2025 General Plan* does not directly support the protection of mineral resources in these areas since development of mining operations would be incompatible with existing development (Town of Truckee 2006).

The study area is near to or crosses through a number of sites that provide aggregate resources. Two aggregate facilities are located within the project area outside the Lake Tahoe Basin; one aggregate plant is located approximately 100 feet north of the 132/650 Line double-circuit line and a prospective sand and gravel mining area is located approximately 630 feet east of the Squaw Valley Substation. The area near the Squaw Valley Substation was recorded in 1984, but no activity has occurred in this area (Sierra Pacific 2010: pp. 4.10-2). The presence of vein-type metallic mineral resources associated with hydrothermally altered volcanic and intrusive rocks is possible in the study area, but unlikely. Based on review of the data from the USGS Mineral Resource Data System, a prospective gold mining area is located approximately 150 feet east of the 650 Line at. This area was recorded in 1983, but no mining activity has taken place (Sierra Pacific 2010: pp. 4.10-3).



Source: Data downloaded from NRCS 2007; adapted by Ascent Environmental in 2013

Exhibit 4.5-1

## LAND CAPABILITY AND COVERAGE

The study area contains LCDs 1a, 1b, 1c, 2, 3, 4, 5, and 6 (Appendix J, Land Capability Districts within the Project Study Area). Land capability has been verified for the substation sites within the study area where changes in coverage would occur as a result of the project. The Tahoe City Substation is mapped entirely as LCD 5, and the Kings Beach Substation includes LCDs 1b, 5 and 6. (Note: the action alternatives would include the decommissioning of the Brockway Substation, which currently serves as the terminus of the 650 Line. Decommissioning would involve the removal of all existing equipment and treatment of the soil to address stormwater regulations. These changes would not alter current land coverage at the Brockway Substation site and as such coverage at this substation site is not discussed further.)

The LCDs for the power line component of the study area (including the power line corridor, travel ways, and access roads) were determined using a slope phase adjustment of the 1974 Bailey LCDs and field verification of LCDs 1b and 1c in specific locations as determined by TRPA staff. Appendix J, Land Capability Districts within the Project Study Area, includes maps showing the verified LCDs throughout the study area.

### 4.5.3 ENVIRONMENTAL CONSEQUENCES AND RECOMMENDED MITIGATION MEASURES

#### SIGNIFICANCE CRITERIA

##### TRPA CRITERIA

The “Land” criteria from the TRPA Initial Environmental Checklist were used to evaluate the geology and soils impacts of the alternatives. The checklist asks if the project would result in the following conditions.

- ▲ Compaction or covering of the soil beyond the limits allowed in the land capability districts?
- ▲ A change in the topography or ground relief features of the site inconsistent with the natural surrounding conditions?
- ▲ Unstable soil conditions during or after completion of the project?
- ▲ Changes in the undisturbed soil or native geologic substructures or grading in excess of 5 feet?
- ▲ The continuation of or increase in wind or water erosion of soils, either on or off the site?
- ▲ Exposure of people or property to geologic hazards such as earthquakes, landslides, backshore erosion, avalanches, mud slides, ground failure, or similar hazards?

TRPA has established environmental thresholds, goals, and policies for geology, soils, and land coverage in several categories: natural hazards, water quality, soils, and SEZs. The goals and policies are designed to achieve and maintain adopted environmental threshold carrying capacities, and are implemented through the TRPA Code. A conflict with these goals, policies, and ordinances would be a significant impact. Refer to Section 4.2, Land Use, for a discussion of the project’s consistency with these policies. The effects of the proposed project on thresholds are assessed separately in Section 5.8, Consequences for TRPA Environmental Threshold Carrying Capacities, of Chapter 5, Other NEPA, TRPA, and CEQA Mandated Sections.

##### NEPA CRITERIA

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by, or result from, the proposed action. The factors that are taken into account under NEPA to determine the significance of an action are encompassed by the TRPA and CEQA criteria used for this analysis.

## CEQA CRITERIA

Pursuant to Placer County's Environmental Questionnaire and State CEQA Guidelines Appendix G, an adverse geologic, seismic, or mineral resources impact is considered significant if project development would:

- ▲ expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - // rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault,
  - // strong seismic ground shaking,
  - // seismic-related ground failure, including liquefaction, or
  - // landslides;
- ▲ result in substantial soil erosion or the loss of topsoil;
- ▲ be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction or collapse;
- ▲ be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
- ▲ have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water;
- ▲ result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- ▲ result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

## ISSUES DISMISSED FROM FURTHER EVALUATION

Issues dismissed from further evaluation in this section include groundwater impacts, septic tanks or wastewater disposal systems, and avalanche hazards. Refer to Section 4.6, Hydrology and Water Quality, for a discussion of grading in excess of 5 feet as it relates to the potential to intercept and adversely affect groundwater. This issue is not discussed further in this section. The proposed project would not construct septic tanks or wastewater disposal systems; therefore the potential for impacts related to capability of soils to support use of septic tanks or alternative wastewater disposal systems is not addressed in this section.

The study area includes high-altitude areas with steep terrain along the 625 Line that are subject to avalanche. Although each of the action alternatives relocates the 625 Line to various degrees, none of the modified routes are far enough from the existing line to appreciably alter the potential for an avalanche to damage the line relative to existing conditions. In addition, the project does not include any development that places residences, commercial facilities, or other structures in avalanche prone areas that would place people at increased avalanche risk. Avalanche hazard is not addressed further in this section because there would be no change in the exposure of people or property to avalanche hazards.

## METHODS AND ASSUMPTIONS

Evaluation of coverage changes, and potential geologic, soil, and mineral resource impacts was based on a review of documents pertaining to the project study area, including the CGS, USGS, and the NRCS 2007 Soil Conservation Survey; TRPA regulations and planning documents; environmental impact reports; background

reports prepared for plans and projects in the vicinity; and published and unpublished geologic literature. The information obtained from these sources was reviewed and summarized to understand existing conditions and to identify potential environmental effects, based on the thresholds of significance. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, state, and local laws, regulations, and ordinances.

## ALTERNATIVE 1 – PEA ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.5-1 (Alt.1)</b>	<b>Exposure of people or structures to seismic hazards.</b> The study area is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. However, several faults are located in the project area that could subject project components to ground shaking and ground failure. Structures proposed as part of Alternative 1 (PEA Alternative) would be designed and constructed in accordance with the current minimum seismic safety and structural design requirements set forth in the California Building Code. Therefore, there would be no substantial increased risk of loss, injury, or death or property damage from strong ground shaking alone. For these reasons, the project would have <b>no impact</b> related to exposure of people or structures to seismic hazards.
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The project area is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. However, several faults are located in the study area that could subject project components to ground shaking. Most of the geologic units crossed by the project components are not prone to liquefaction. However, Holocene lake deposits near Kings Beach and Tahoe City, alluvium deposits in Martis Valley, and glacial outwash deposits in the area located along the Truckee River and other stream channels may be prone to liquefaction during a strong earth shaking event. Facilities potentially affected by liquefaction would include the proposed Kings Beach Substation site, the Tahoe City Substation proposed for expansion, and the Truckee Substation, which would be upgraded. The existing and proposed 625 Line and the 132/650 Line in Truckee cross geologic units that, given the right hydrologic conditions, might be susceptible to liquefaction during seismic events. These conditions affect an approximately 0.3 mile portion of Segment 625-1 that would be upgraded, 1.5 miles of Segments 650-6 and 650-7 that would be rebuilt, and the 0.3 mile portion of the 650 Line connecting to the Truckee Substation that would be removed in Segment 650-7. However, the proposed project would not increase exposure to seismic risk since the project would create new facilities that replace and upgrade existing facilities. The project would also improve structural reliability of the transmission facilities and all structures would be designed and constructed to meet the minimum seismic safety and structural design requirements set forth in the CBC, which requires that structures be designed to resist stresses caused by wind and earthquakes. Therefore, there would be no substantial increased risk of loss, injury, or death or property damage from strong ground shaking alone. For these reasons, the project would have **no impacts** related to exposure of people or structures to seismic hazards.

### MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.5-2 (Alt.1)</b>	<b>Potential for soil erosion or soil compaction.</b> Installing and removing power line structures, constructing and/or upgrading substations, upgrading and establishing access ways, removal of existing structures, and installation of new structures associated with Alternative 1 (PEA Alternative) could increase the potential for soil erosion due to vegetation removal, soil disturbance, and soil compaction. However, implementation of design features, proposed APMs, and permit conditions would reduce this impact to <b>less than significant</b> .
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As described in Chapter 3, Project Alternatives, under Alternative 1 (PEA Alternative) pole installation would require excavation using an auger or backhoe of holes 3 to 8 feet in diameter and ranging from 7 to 30 feet deep. In addition, soil disturbance would occur in staging areas, temporary work areas, and from the creation of new access ways or improved dirt roads. Once disturbed, many soils within the project area have moderate to very severe hazard of sheet and rill erosion (Exhibit 4.5-1). The potential for soil erosion from storm water runoff and wind would increase as a result of vegetation removal, excavation and grading, and soil compaction from use of heavy equipment. Hydric, poorly drained, and fine textured soils occur within the project area and could be damaged by compaction from construction equipment traveling over these soils. Alternative 1 (PEA Alternative) would result in the largest disturbance area amongst the action alternatives: approximately 106 acres of temporary disturbance and roughly 188 acres of permanent disturbance.

Inappropriate recreational use of the access ways created by the proposed project could lead to repeated disturbance over the long term. Off highway vehicle use of these areas could lead to an unforeseeable acceleration in erosion and soil compaction. As described in Section 3.3.1, Common Project Features of the Action Alternatives, the access ways are not intended for public use. Where access ways connect to or cross existing roads or trails, barriers to access such as gates, boulders, and earthen berms would be placed at the entrance to the access way. During maintenance and inspection activities any evidence of public use would be noted, and public access barriers may be adjusted if needed.

As described in Chapter 3, Project Alternatives, a stormwater pollution prevention plan (SWPPP) would be prepared as part of the action alternatives. This plan would be completed by a qualified preparer and would detail the BMPs that would be implemented to minimize erosion, reduce sediment transport, and control stormwater flow from the project area. In addition, the SWPPP would address grading and slope stabilization methods, as well as construction waste disposal methods. Potential impacts to soil resource would be reduced through the SWPPP process of identifying site-specific BMPs to be implemented under the oversight of a qualified SWPPP practitioner.

The portions of the action alternatives located on NFS lands within the basin would also operate under an amended Special Use Permit (SUP). In addition to other protections, the conditions of this permit require implementation of erosion control BMPs, restriction of access over moist or wet soils, revegetation of disturbed areas, restrictions on over-snow access, and additional BMPs at the discretion of the Forest Hydrologist or Soil Scientist. Specific permit conditions are included in Appendix I (CalPeco Master Special Use Permit, Exhibit D: Resource Protection Guidelines) of this EIS/EIS/EIR. Project components located on lands managed by the Tahoe National Forest would also require a special use permit which would include similar protections.

In addition to the permit conditions discussed above, CalPeco has proposed additional Applicant Proposed Measures (APMs) (see Section 3.7, Applicant Proposed Measures) that have been incorporated into project design to reduce the threat of accelerated erosion and compaction resulting from project activities. While the SUP conditions listed above are specific to NFS lands, APMs provide protections for the entire project area. The following APMs address the potential for increased soil erosion and compaction.

- ▲ **APM SOILS-1:** Sediment control structures, such as silt fencing, coir logs, wattles, straw mulch, and straw bale check dams will be installed, as appropriate and effective given the situation, to contain sediment within construction work areas and staging areas. Where soils and slopes exhibit high erosion potential, additional sediment control structures, such as erosion control blankets, matting, and other fabrics may be installed. Implementation and maintenance of these BMPs and any others identified in the SWPPP will be monitored by a qualified environmental monitor to ensure effectiveness. In addition, a winterization plan will be prepared and incorporated into the SWPPP addressing erosion and sediment management on the project site during the winter months. Implementation, monitoring, and maintenance of BMPs will be adjusted accordingly during the winter months consistent with the winterization plan.

- ▲ **APM BIO-1:** Prior to construction, all CalPeco, contractor, and subcontractor project personnel will receive training from a qualified resource specialist regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including appropriate wildlife avoidance measures; impact minimization procedures; the importance of sensitive resources, and the purpose and methods for protecting such resources. Among other topics, the training will also include a discussion of BMPs to reduce the potential for erosion and sedimentation during construction. Additionally, CalPeco and designated environmental monitors for project construction will coordinate with the applicable public land owners/managers on communication, documentation and reporting, and data submittal protocols.

This APM develops an educational standard for all project personnel with specific mention of erosion and sediment control BMPs. Proper adherence to BMP standards would reduce the potential impact to soil resources.

- ▲ **APM BIO-23:** Topsoil, where present, will be salvaged in areas that will be graded or excavated. Topsoil will be segregated, stockpiled separately from subsoil, and covered. These soil stockpiles, as well as any others created by the proposed project, will have the proper erosion control measures applied until they are removed. The topsoil will then be replaced to the approximate location of its removal after project construction has been completed to facilitate revegetation of disturbed areas. Topsoil will not be salvaged from areas infested with invasive plants.

Topsoil salvage is a critical element of successful revegetation and soil restoration. This APM is intended to increase revegetation success that would lead to soil stabilization, an increase in soil cover, loosening of compacted soils, and a reduction in sheet and rill erosion.

- ▲ **APM BIO-36:** Prior to construction, CalPeco will develop a Restoration Plan that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. The plan will be consistent with, and implement related commitments and requirements included in the EIS/EIS/EIR project description, other APMs, mitigation measures, and agency permit requirements. The Restoration Plan will address loosening of any compacted soil, restoration of surface residue, and reseeded. If existing unpaved roads require modification to temporarily allow passage of construction equipment during the construction period, these roads will be returned to their original footprint after construction is complete. On NFS lands, restoration activities will be designed and implemented to meet invasive plant management guidelines and Visual Quality Objectives (VQO) for the area. Areas temporarily disturbed by cut and fill activities will be regraded to blend with the natural topography. On public land, CalPeco will coordinate with the land management agency to determine an appropriate seed mix or tree planting plan as well as other elements of the plan applicable to lands managed by the agency. On private land, CalPeco will coordinate with the landowner and/or provide the landowner with a suggested seed mix based on consultation with the agency of jurisdiction. The plan will include approved seed mixes, application rates, application methods, methods to record pre-disturbance conditions, success criteria for vegetation growth, monitoring and reporting protocols, and remedial measures if success criteria are not met. If broadcast seeding is determined to be the most feasible application method, seeding rates will be doubled relative to the standard seeding rate and the seeding method rationale will be explained. The plan will also include long-term erosion and sediment control measures, slope stabilization measures, criteria to determine the success of these measures, remedial actions if success criteria are not met, and monitoring and reporting procedures. As part of normal equipment inspections during project operation, an evaluation of access ways will be conducted to confirm that use has not resulted in compaction that will result in "coverage" per TRPA standards.

Stabilization and revegetation of areas disturbed by the project would reduce the potential for accelerated sheet and rill erosion. This APM requires long-term erosion control, stabilization, and monitoring that would provide protections for any areas that prove difficult to restore or that experience repeated disturbance.

The following APM addresses the potential for increased soil compaction.

- ▲ **APM BIO-30:** Prior to commencing construction in any area containing aquatic resources or potential wetlands, a qualified biologist will conduct a delineation of waters of the United States according to methods established in the USACE wetlands delineation manual (Environmental Laboratories 1987) and Western Mountains, Valleys, and Coast Region Supplement (Environmental Laboratories 2010). The delineation will map and quantify the acreage of all aquatic habitats on the project site and will be submitted to USACE for verification. CalPeco will determine, based on the verified wetland delineation and the project design plan, the acreage of impacts on waters of the United States and waters of the state that will result from project implementation. Impacts will be avoided to the extent practicable through the siting of poles and other facilities outside of delineated waters of the United States and waters of the state. Work in wetlands or wet meadow habitats with saturated soil conditions will be scheduled when soils are dry to the extent possible. If soils become saturated, timber mats will be installed along all vehicle and equipment access routes to minimize rutting. Prior to disturbance of waters of the United States or waters of the state, an environmental monitor will record via photographs and field notes the pre-disturbance condition of the water. Disturbed waters will be restored to preconstruction conditions and seeded with a native species, consistent with the vegetation community present prior to disturbance, to stabilize the soils and minimize the introduction of invasive plants, as specified by the USACE and RWQCB. In accordance with the USACE “no net loss” policy, all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio. This mitigation will come in the form of either contributions to a USACE-approved wetland mitigation bank or through the development of a Compensatory Mitigation and Monitoring Plan aimed at creating or restoring wetlands in the surrounding area (although creation is not authorized by TRPA in their jurisdiction).

The soils within the project area that are susceptible to compaction are associated with wetland and wet meadow habitats. By providing protections for these sensitive habitats, this APM would also reduce the amount of soil compaction resulting from the action alternatives.

- ▲ **APM WQ-6:** In areas where topsoil has not been salvaged, construction activities will be limited when the environmental monitor determines that the soil is too wet to adequately support vehicles and equipment. Where soil conditions are deemed too wet to work, one of the following measures will apply.
  - // Access will be limited to the minimum area feasible for construction. Where possible, vehicles and equipment will be routed around wet areas so long as the re-route does not cross into sensitive resource areas.
  - // If wet areas cannot be avoided and soil moisture is too high to strip topsoil, BMPs, including the use of wide-track or low ground pressure equipment or installation of prefabricated equipment pads or timber mats, will be implemented for use in these areas to minimize rutting and off-site sedimentation.

All soils are more susceptible to compaction when they are wet. This APM reduces the potential for soil compaction by requiring avoidance of wet soil areas, and use of specialized equipment to reduce compaction when avoidance is not feasible.

As discussed above, a comprehensive suite of soil protection measures are incorporated into the project through APMs and regulatory oversight that result in a **less-than-significant** conclusion for this impact.

## MITIGATION MEASURES

*No mitigation measures are required.*

**IMPACT  
4.5-3  
(Alt.1)**

**Other soil hazards.** Construction of the Alternative 1 (PEA Alternative) components could occur in expansive or unstable soils. Also, because of the variable and steep topography across the study area, construction of Alternative 1 (PEA Alternative) components could create slope instability. Expansive soils can change in volume, causing damage to structures or foundations. The NRCS soil surveys indicate that some moderately expansive soils may exist in the study area. Also, because portions of the study area are located on sloping ground and installation of poles and access ways would require excavations, there is a potential for these activities to create slope instability. Because a geotechnical study of the project area would be completed and recommendations from a resulting Geotechnical Engineering Report (APM SOILS-2) would be implemented prior to construction, potentially expansive or unstable soils and slope instability would be identified and avoided, or mitigated through specialized construction methods. Therefore, this impact would be **less than significant**.

The study area surface slope ranges from little or no slope up to approximately 30 percent grade. As described in Chapter 3, Project Alternatives, under Alternative 1 (PEA Alternative), pole installation would require excavation using auger or backhoe of holes 3 to 8 feet in diameter ranging from 7 to 30 feet deep. Soundless chemical demolition agents (typically materials that expand in rock fissures to split larger rocks) may be required in rocky areas where normal excavation methods are unable to meet project excavation specifications. Additionally, new access ways providing access for inspection and maintenance of the power lines would be created in some areas, which would require vegetation removal and disturbance of soil and underlying rock layers. Access way construction may require cutting of slopes and creating fill slopes.

The potential for landslides, rockfall, and debris/earth flows exists on steeper slopes in the study area. In addition, construction of the project could result in the destabilization of natural or constructed slopes, both in the study area and in adjacent areas. Excavation, chemical cracking, grading, and cut and fill activities associated with access ways to pole sites could alter existing slope profiles and could make them unstable from over-excavation of slope material.

The NRCS soil surveys relevant to the project area show the potential for moderately expansive soils near Kings Beach, Tahoe City, and east of Martis Valley. Expansive soils can cause damage to structures or foundations and may require specialized building methods. The soils surveys are not intended to replace site-specific soil analysis and only provide planning level soil data. APM SOILS-2 specifies that a design-level Geotechnical Engineering Report would be complete for the project as follows.

- ▲ **APM SOILS-2:** A California Registered Professional Geologist or a California Registered Civil or Geotechnical Engineer will conduct a geotechnical analysis and prepare a Geotechnical Engineering Report that will be used to develop the final design of all project components (access ways, staging areas, substations stations, and poles) in order to avoid or minimize damage related to geologic hazards, including seismic activity, slope stability, and soil limitations (expansive and unstable soils) and to ensure that all applicable codes and seismic standards are adequately addressed in the design and construction of the project. The report will address and make recommendations on the following:
  - /// Access way and road design;
  - /// Structural foundations;
  - /// Grading practices;
  - /// Erosion/winterization;
  - /// Special problems discovered on-site (i.e., groundwater, expansive/unstable soils, etc.);
  - /// Slope stability; and
  - /// Post-construction restoration.

The Geotechnical Engineering Report will also incorporate construction standards required by the CPUC and standards recommended by the Institute of Electrical and Electronics Engineers (IEEE 693), "Recommended Practice for Seismic Design of Substations." The final design will be reviewed and approved by a Professional Engineer registered in the State of California prior to construction. The Geotechnical Report will be provided to the lead agencies. It is the responsibility of the applicant to provide for engineering inspection and certification that earthwork has been performed in conformity with the recommendations contained in the report.

Because a geotechnical study of the study area would be completed and recommendations from a resulting Geotechnical Engineering Report (APM SOILS-2) would be implemented prior to construction, potentially expansive or unstable soils and slope instability would be identified and avoided, or mitigated through specialized construction methods. Therefore, this impact would be **less than significant**.

**MITIGATION MEASURES**

*No mitigation measures are required.*

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<b>IMPACT 4.5-4 (Alt.1)</b>	<b>Loss of availability of a known mineral resource or locally important mineral resource recovery site.</b> The existing 132/650 Line (Segment 650-6) crosses an important mineral resource area. Alternative 1 (PEA Alternative) would involve replacing the existing wood poles along this segment with steel poles. Construction would occur within the existing right-of-way and would not alter existing conditions regarding access to mineral resources in this area. Therefore, there would be <b>no impact</b> .
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The existing 132/650 Line (Segment 650-6) in the Town of Truckee crosses the Truckee River in an area mapped as containing important aggregate resources. Under Alternative 1 (PEA Alternative), the 650 Line upgrade would follow the existing alignment and would replace existing wood poles with steel poles. Therefore, there would be no change in access to the important mineral resources within the Truckee River corridor. Given that there would be no substantial change in access and considering the limitations placed on ground disturbance by the TRPA Code, the realignment of the 625 Line segments would have **no impact** on access to potential mineral resources in the study area.

**MITIGATION MEASURES**

*No mitigation measures are required.*

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<b>IMPACT 4.5-5 (Alt.1)</b>	<b>Land coverage.</b> Adequate allowable land coverage figures are available for all increases in coverage associated with Alternative 1 (PEA Alternative) in accordance with the TRPA land classification system and land coverage requirements. The applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit. Therefore, this impact would be <b>less than significant</b> .
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For project components within the Lake Tahoe Basin, Alternative 1 (PEA Alternative) would involve increases in land coverage within the project area in accordance with TRPA's land coverage regulations and land capability system. The project components of Alternative 1 (PEA Alternative) that would result in an increase in land coverage include improvement and widening of existing unpaved roads, the installation of large poles requiring a cement foundation, and upgrades at substations. Implementation of Alternative 1 (PEA Alternative) would result in the following increases in land coverage: 15,295 square feet (sf) (0.35 acres) in LCD 1a; 141 sf in LCD 1b; 28 sf in LCD 2; 4,349 sf (0.10 acre) in LCD 3; 140 sf in LCD 4; 141 sf in LCD 5; and 56 sf in LCD 6. For the purposes

of calculating coverage, the project components within the Tahoe Basin have been divided into two categories: 1) power lines and dirt roads requiring permanent widening, and 2) substations. Table 4.5-6 provides a preliminary summary of coverage increases by LCD for Alternative 1 (PEA Alternative), as described below.

Table 4.5-6 Summary of Preliminary Land Coverage Increases by LCD for Poles and Permanent Widening of Existing Unpaved Roads Associated with the Action Alternatives												
Alternatives			Square Feet (sf) by LCD							Total (sf)		
			1a	1b	1c	2	3	4	5		6	7
<b>1: PEA Alternative</b>	National Forest System Land	Poles	0	28	0	0	0	28	0	28	0	85
		Access Roads	15,295	0	0	0	4,321	0	0	0	0	19,616
	<i>National Forest System Land Totals</i>		<i>15,295</i>	<i>28</i>	<i>0</i>	<i>0</i>	<i>4,321</i>	<i>0</i>	<i>0</i>	<i>28</i>	<i>0</i>	<i>19,701</i>
	Other Land	Poles	0	113	0	28	28	112	141	28	0	451
		Access Roads	0	0	0	0	0	0	0	0	0	0
	<i>Other Land Totals</i>		<i>0</i>	<i>113</i>	<i>0</i>	<i>28</i>	<i>28</i>	<i>112</i>	<i>141</i>	<i>28</i>	<i>0</i>	<i>451</i>
<b>Totals for Alternative 1</b>		<b>15,295</b>	<b>141</b>	<b>0</b>	<b>28</b>	<b>4,349</b>	<b>140</b>	<b>141</b>	<b>56</b>	<b>0</b>	<b>20,151</b>	
<b>2: Modified Alternative</b>	National Forest System Land	Poles	0	28	0	0	0	0	0	28	0	56
		Access Roads	15,295	0	0	0	4,321	0	0	0	0	19,616
	<i>National Forest System Land Totals</i>		<i>15,295</i>	<i>28</i>	<i>0</i>	<i>0</i>	<i>4,321</i>	<i>0</i>	<i>0</i>	<i>28</i>	<i>0</i>	<i>19,673</i>
	Other Land	Poles	0	85	0	28	0	56	113	0	0	282
		Access Roads	0	0	0	0	0	0	0	0	0	0
	<i>Other Land Totals</i>		<i>0</i>	<i>85</i>	<i>0</i>	<i>28</i>	<i>0</i>	<i>56</i>	<i>113</i>	<i>0</i>	<i>0</i>	<i>282</i>
<b>Totals for Alternative 2</b>		<b>15,295</b>	<b>113</b>	<b>0</b>	<b>28</b>	<b>4,321</b>	<b>56</b>	<b>113</b>	<b>28</b>	<b>0</b>	<b>19,955</b>	
<b>3: Road Focused Alternative</b>	National Forest System Land	Poles	28	28	0	28	254	339	113	141	0	932
		Access Roads	0	0	0	0	0	0	0	0	0	0
	<i>National Forest System Land Totals</i>		<i>28</i>	<i>28</i>	<i>0</i>	<i>28</i>	<i>254</i>	<i>339</i>	<i>113</i>	<i>141</i>	<i>0</i>	<i>932</i>
	Other Land	Poles	28	113	0	28	28	169	141	28	0	536
		Access Roads	0	0	0	0	0	0	0	0	0	0
	<i>Other Land Totals</i>		<i>28</i>	<i>113</i>	<i>0</i>	<i>28</i>	<i>28</i>	<i>169</i>	<i>141</i>	<i>28</i>	<i>0</i>	<i>536</i>
<b>Totals for Alternative 3</b>		<b>56</b>	<b>141</b>	<b>0</b>	<b>56</b>	<b>282</b>	<b>508</b>	<b>254</b>	<b>169</b>	<b>0</b>	<b>1,467</b>	
<b>3A: Road Focused Alternative with Double Circuit Option</b>	National Forest System Land	Poles	28	28	0	28	254	339	113	113	0	903
		Access Roads	0	0	0	0	0	0	0	0	0	0
	<i>National Forest System Land Totals</i>		<i>28</i>	<i>28</i>	<i>0</i>	<i>28</i>	<i>254</i>	<i>339</i>	<i>113</i>	<i>113</i>	<i>0</i>	<i>903</i>
	Other Land	Poles	28	56	0	28	28	169	298	141	0	749
		Access Roads	0	0	0	0	0	0	0	0	0	0
	<i>Other Land Totals</i>		<i>28</i>	<i>56</i>	<i>0</i>	<i>28</i>	<i>28</i>	<i>169</i>	<i>298</i>	<i>141</i>	<i>0</i>	<i>749</i>
<b>Totals for Alternative 3A</b>		<b>56</b>	<b>85</b>	<b>0</b>	<b>56</b>	<b>282</b>	<b>508</b>	<b>411</b>	<b>254</b>	<b>0</b>	<b>1,652</b>	
<b>4: Proposed Alternative</b>	National Forest System Land	Poles	28	28	0	28	254	339	113	113	0	903
		Access Roads	0	0	0	0	0	0	0	0	0	0
	<i>National Forest System Land Totals</i>		<i>28</i>	<i>28</i>	<i>0</i>	<i>28</i>	<i>254</i>	<i>339</i>	<i>113</i>	<i>113</i>	<i>0</i>	<i>903</i>
	Other Land	Poles	28	56	0	28	28	169	85	28	0	423
		Access Roads	0	0	0	0	0	0	0	0	0	0
	<i>Other Land Totals</i>		<i>28</i>	<i>56</i>	<i>0</i>	<i>28</i>	<i>28</i>	<i>169</i>	<i>85</i>	<i>28</i>	<i>0</i>	<i>423</i>
<b>Totals for Alternative 4</b>		<b>56</b>	<b>85</b>	<b>0</b>	<b>56</b>	<b>282</b>	<b>508</b>	<b>198</b>	<b>141</b>	<b>0</b>	<b>1,326</b>	

## POWER LINES

For the power line portion of the project area, coverage increases associated with Alternative 1 (PEA Alternative) are related to proposed large poles requiring foundations and the widening of existing unpaved roads. As recommended by TRPA, the category of “access way” was not considered as coverage. As discussed in Section 3.3.1, Common Project Features of the Action Alternatives, access ways would be cleared of tall vegetation and would provide high clearance vehicle access to the power line. Low growing vegetation would be retained and re-seeded in disturbed areas (similar to a ski run which is also not considered coverage). Access ways would be closed to the public and would be traveled one to two times each year for routine inspections and as needed for maintenance and repairs. It is unlikely that this infrequent use would be sufficient to prevent vegetation growth or cause significant or permanent soil compaction. In winter, access would occur over snow via snowmobile or snowcat. Exhibit 4.5-2 provides representative images of existing access ways within the project area.

The removal of the existing 625 and 650 Lines were not factored into the coverage calculations, because many of the poles associated with the lines would be topped only or cut near the ground surface and the existing centerline access ways were not indicated as coverage in the 2010 TRPA LiDAR land coverage dataset. Additionally, as recommended by TRPA small diameter poles were not included in coverage calculations. Large poles requiring foundations with up to a 6 foot diameter were included. Table 4.5-6 presents coverage information related to this portion of the project area. The power line portion of Alternative 1 (PEA Alternative) would require an overall increase in land coverage of 20,151 sf (0.46 acre).

The base allowable land coverage standards by LCD normally limit the amount of coverage permitted for a project on a parcel-by-parcel basis (Section 30.4.1.A of the TRPA Code). However, because the power line and underbuild components of the project would be a linear public facility, per Sections 21.4 and 30.4.2.D of the TRPA Code, the allowable land coverage would be limited to the minimum amount needed to achieve its public purpose. Land coverage is a development right, and the increase in coverage resulting from project implementation would require that the applicant purchase and transfer the required coverage from offsite parcel owners (“sending parcels”) in accordance with Chapter 30, “Land Coverage,” of the TRPA Code. The amount of coverage that would be required to be purchased and transferred would be determined on a parcel-by-parcel basis and would be a function of: 1) the extent of TRPA-verified legally existing coverage; 2) the land capability and base allowable coverage; 3) the type of agreement between the applicant and the affected parcel owners (such as a recorded deed-restricted easement, or right-of-way dedication); and 4) the size of the affected parcel, or width of the recorded easement. These details are unknown at this time as negotiations with property owners are still in their infancy and dependent on the selection of the proposed action alternative.

The majority of the power lines within the Tahoe Basin would cross NFS lands. Preliminary discussions with LTBMU staff, the primary land manager, have indicated that there are sufficient sources of land coverage available for purchase and transfer from locations within the Tahoe City and Agate Bay hydrologic transfer areas or from the base allowable on individual parcels. Before groundbreaking and acknowledgement of the TRPA permit, the applicant would be required to demonstrate evidence of the source of coverage, the purchase or transfer of the required coverage, and restoration of any relocated coverage, in accordance with TRPA regulations. Because the coverage increase associated with the action alternatives would occur in accordance with TRPA regulations, the action alternatives would not result in an adverse effect as it relates to land coverage.



Low-growing vegetation has been retained while larger trees and obstacles have been removed as part of power line right-of-way maintenance.

**Exhibit 4.5-2**

**Existing Centerline Access Ways within the Project Area**

## SUBSTATIONS

Alternative 1 (PEA Alternative) would involve an increase in coverage at the Tahoe City Substation and Kings Beach Diesel Generation Site/Substation. The change in coverage is necessary to support the upgrade of the Tahoe City Substation from 60 kV to 120 kV capacity and the improvement of the Kings Beach Substation. The improvement of the Kings Beach Substation would allow the decommissioning of the Brockway Substation.

Table 4.5-7 provides a summary of land coverage changes for each substation. As shown in Table 4.5-7, Alternative 1 (PEA Alternative) would require an increase of 1,459 sf and 1,060 sf of new coverage for the Tahoe City and Kings Beach sites, respectively. The entire Tahoe City Substation parcel is located on LCD 5 land. The Kings Beach site includes LCDs 1b, 5, and 6, though the proposed substation would be located entirely within LCD 5.

Table 4.5-7 Summary of Existing and Proposed Land Coverage by LCD for Substations Associated with the Action Alternatives									
Land Capability District (LCD)	Parcel Area by LCD (SF)	Base Allowable Land Coverage (%)	Base Allowable Land Coverage (sf)	Verified Existing Land Coverage (sf)	Verified Existing Land Coverage (%)	Maximum Allowable Land Coverage (sf)	Verified Legal Existing Excess Coverage (sf)	Proposed Physical Coverage (sf)	New Proposed Land Coverage from Existing (sf)
<b>Tahoe City Substation<sup>1</sup></b>									
5	54,997	25%	13,749	2,810	5%	27,499 <sup>3</sup>	N/A	4,269	1,459
<b>Totals (sf)</b>	<b>54,997</b>	<b>N/A</b>	<b>13,749</b>	<b>2,810</b>	<b>N/A</b>	<b>27,499</b>	<b>N/A</b>	<b>4,269</b>	<b>1,459</b>
<b>Totals (acres)</b>	<b>1.3</b>	<b>N/A</b>	<b>0.3</b>	<b>0.1</b>	<b>N/A</b>	<b>0.6</b>	<b>N/A</b>	<b>0.1</b>	<b>0.0</b>
<b>Kings Beach Substation<sup>2</sup></b>									
1b	397,600	1%	3,976	5,646	1%	5,646	1,670	5,646	0
5	417,600	25%	104,400	85,814	21%	104,400	N/A	86,874	1,060
6	203,200	30%	60,960	0	0%	60,960	0	0	0
<b>Totals (sf)</b>	<b>1,018,400</b>	<b>N/A</b>	<b>169,336</b>	<b>91,460</b>	<b>N/A</b>	<b>171,006</b>	<b>1,670</b>	<b>92,520</b>	<b>1,060</b>
<b>Totals (acres)</b>	<b>23.4</b>	<b>N/A</b>	<b>3.9</b>	<b>2.1</b>	<b>N/A</b>	<b>3.9</b>	<b>0.0</b>	<b>2.1</b>	<b>0.0</b>
<sup>1</sup> Data for the Tahoe City Substation are derived from the TRPA land capability and coverage verification dated August 10, 2012 (TRPA file # LCAP2012-0198 and VBOC2012-0597). <sup>2</sup> Data for the Kings Beach Substation (including project area, existing physical coverage, and land capability) are derived from the TRPA land capability and coverage files dated March 25, 2008 (TRPA file # ERPS 2008-0127, Kings Beach Diesel/ Paving). <sup>3</sup> Public Service Facilities within a Community Plan Area are allowed a maximum of 50% land coverage located within LCDs 4 through 7 (Section 30.4.2 of the TRPA Code). Source: Data compiled by Ascent Environmental in 2012.									

Substations are defined in the TRPA Code (Section 21.4) as Public Service Facilities. According to Section 30.4.2C of the TRPA Code, Public Service Facilities within Community Plans are entitled to a maximum land coverage of 50 percent if located within higher capability lands (LCDs 4 through 7). This applies only to the Tahoe City Substation as it is located within the limits of the Tahoe City Community Plan and located on LCD 5. The proposed upgrades to the Tahoe City Substation would bring the total land coverage at the site to 4,269 sf or 7 percent of the parcel (Table 4.5-7).

The Kings Beach Substation is located on a 23.4-acre parcel that is partially within the Kings Beach Industrial Community Plan and partially within the Martis Peak Plan Area Statement; the proposed substation would be constructed within the portion of the parcel outside of the community plan boundaries. For this reason, coverage associated with the King Beach Substation improvements would be limited to the base allowable (Section 30.4.1 of the TRPA Code). As shown in Table 4.5-7, the proposed increase in coverage (1,060 feet) with the improvement of the substation would remain within the base allowable land coverage at the site.

As described above, adequate allowable land coverage is available for all increases in coverage associated with Alternative 1 (PEA Alternative) in accordance with the TRPA land classification system and land coverage requirements. In addition, the applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit. Therefore, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 2 – MODIFIED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.5-1 (Alt.2)</b>	<b>Exposure of people or structures to seismic hazards.</b> The study area is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. However, several faults are located in the project area that could subject project components to ground shaking and ground failure. Structures proposed as part of Alternative 2 (Modified Alternative) would be designed and constructed in accordance with the current minimum seismic safety and structural design requirements set forth in the CBC. Therefore, there would be no substantial increased risk of loss, injury, or death or property damage from strong ground shaking alone. For these reasons, the project would have <b>no impact</b> related to exposure of people or structures to seismic hazards.
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This impact would be the same as the impact described under Impact 4.5-1 (Alt. 1), above. For the same reasons described for Impact 4.5-1, this impact would have **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.5-2 (Alt. 2)</b>	<b>Potential for soil erosion or soil compaction.</b> Installing and removing power line structures, constructing and/or upgrading substations, upgrading and establishing access ways, removal of existing structures, and installation of new structures associated with Alternative 2 (Modified Alternative) could increase the potential for soil erosion due to vegetation removal, soil disturbance, and soil compaction. However, implementation of design features, proposed APMs, and permit conditions would reduce this impact to <b>less than significant</b> .
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This impact would be similar to the impact described under Impact 4.5-2 (Alt. 1), above. Alternative 2 (Modified Alternative) would result in approximately 94 acres of temporary disturbance and roughly 168 acres of permanent disturbance. For the same reasons described for Impact 4.5-2, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

**IMPACT  
4.5-3  
(Alt. 2)**

**Other soil hazards.** Construction of the Alternative 2 (Modified Alternative) components could occur in expansive or unstable soils. Also, because of the variable and steep topography across the study area, construction of Alternative 2 (Modified Alternative) components could create slope instability. Expansive soils can change in volume causing damage to structures or foundations. The NRCS soil surveys indicate that some moderately expansive soils may exist in the study area. Also, because portions of the study area are located on sloping ground and installation of poles and access ways would require excavations, there is a potential for these activities to create slope instability. Because a geotechnical study of the study area would be completed and recommendations from a resulting Geotechnical Engineering Report (APM SOILS-2) would be implemented prior to construction, potentially expansive or unstable soils and slope instability would be identified and avoided, or mitigated through specialized construction methods. Therefore, this impact is **less than significant**.

This impact would be the same as the impact described under Impact 4.5-3 (Alt. 1) above. There is not an appreciable difference in this impact among the action alternatives. For the same reasons described for Impact 4.5-3 (Alt. 1), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

**IMPACT  
4.5-4  
(Alt.2)**

**Loss of availability of a known mineral resource or locally important mineral resource recovery site.** The existing 132/650 Line (Segment 650-6) crosses an important mineral resource area. Like Alternative 1 (PEA Alternative), Alternative 2 (Modified Alternative) would involve replacing the existing wood poles along this segment with steel poles. Construction would occur within the existing right-of-way and would not alter existing conditions regarding access to mineral resources in this area. Therefore, there would be **no impact**.

This impact would be the same as the impact described under Impact 4.5-4 (Alt. 1), above. All action alternatives follow the same alignment and include the same activities in the vicinity of the identified important mineral resource area. For the same reasons described for Impact 4.5-4 (Alt. 1), there would be **no impact** to mineral resources.

## MITIGATION MEASURES

*No mitigation measures are required.*

**IMPACT  
4.5-5  
(Alt.2)**

**Land coverage.** Similar to Alternative 1 (PEA Alternative), adequate allowable land coverage figures are available for all increases in coverage associated with Alternative 2 (Modified Alternative) in accordance with the TRPA land classification system and land coverage requirements. The applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit. Therefore, this impact would be **less than significant**.

This impact would be similar to Alternative 1 (PEA Alternative). Alternative 2 (Modified Alternative) would create new coverage along the power line corridor and at the Tahoe City and Kings Beach substations, as shown in Tables 4.5-6 and 4.5-7. The power line portion of Alternative 2 (Modified Alternative) would result in an increase of 19,955 sf of land coverage (0.46 acres). Alternative 2 (Modified Alternative) would have slightly less land coverage in LCDs 1b, 3, 4, 5, and 6 for a total of a 196 sf reduction in proposed new land coverage as

compared to Alternative 1 (PEA Alternative). Coverage associated with the substation component is the same for all action alternatives. As described above, adequate allowable land coverage is available for all increases in coverage associated with Alternative 2 (Modified Alternative) in accordance with the TRPA land classification system and land coverage requirements. In addition, the applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit. Therefore, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 3 – ROAD FOCUSED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.5-1 (Alt.3)</b>	<b>Exposure of people or structures to seismic hazards.</b> The study area is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. However, several faults are located in the project area that could subject project components to ground shaking and ground failure. Structures proposed as part of Alternative 3 (Road Focused Alternative) would be designed and constructed in accordance with the current minimum seismic safety and structural design requirements set forth in the CBC. Therefore, there would be no substantial increased risk of loss, injury, or death or property damage from strong ground shaking alone. For these reasons, the project would have <b>no impact</b> related to exposure of people or structures to seismic hazards.
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This impact would be the same as the impact described under Impact 4.5-1 (Alt. 1), above. For the same reasons described for Impact 4.5-1, the project would have **no impact** related to exposure of people or structures to seismic hazards.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.5-2 (Alt.3)</b>	<b>Potential for soil erosion or soil compaction.</b> Installing and removing power line structures, constructing and/or upgrading substations, upgrading and establishing access ways, removal of existing structures, and installation of new structures associated with Alternative 3 (Road Focused Alternative) could increase the potential for soil erosion due to vegetation removal, soil disturbance, and soil compaction. However, implementation of design features, proposed APMs, and permit conditions would reduce this impact to <b>less than significant</b> .
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This impact would be similar to the impact described under Impact 4.5-2 (Alt. 1), above. Construction of Alternative 3 (Road Focused Alternative) would result in approximately 112 acres of temporary disturbance and roughly 143 acres of permanent disturbance. With implementation of Alternative 3A (Road Focused Alternative with Double Circuit Option), the permanent disturbance area would be roughly 145 acres and the temporary disturbance area would be reduced to approximately 107. For the same reasons described for Impact 4.5-2 under Alternative 1 (PEA Alternative), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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**IMPACT 4.5-3 (Alt.3)** **Other soil hazards.** Construction of the Alternative 3 (Road Focused Alternative) components could occur in expansive or unstable soils. Also, because of the variable and steep topography across the study area, construction of Alternative 3 (Road Focused Alternative) components could create slope instability. Expansive soils can change in volume causing damage to structures or foundations. The NRCS soil surveys indicate that some moderately expansive soils may exist in the study area. Also, because portions of the study area are located on sloping ground and installation of poles and access ways would require excavations, there is a potential for these activities to create slope instability. Because a geotechnical study of the study area would be completed and recommendations from a resulting Geotechnical Engineering Report (APM SOILS-2) would be implemented prior to construction, potentially expansive or unstable soils and slope instability would be identified and avoided, or mitigated through specialized construction methods. Therefore, this impact is **less than significant**.

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This impact would be the same as the impact described under Impact 4.5-3 (Alt. 1), above. There is not an appreciable difference in this impact among the action alternatives. For the same reasons described for Impact 4.5-3, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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**IMPACT 4.5-4 (Alt.3)** **Loss of availability of a known mineral resource or locally important mineral resource recovery site.** The existing 132/650 Line (Segment 650-6) crosses an important mineral resource area. Like Alternative 1 (PEA Alternative), Alternative 3 (Road Focused Alternative) would involve replacing the existing wood poles along this segment with steel poles. Construction would occur within the existing right-of-way and would not alter existing conditions regarding access to mineral resources in this area. Therefore there would be **no impact**.

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This impact would be the same as the impact described under Impact 4.5-4 (Alt. 1), above. All action alternatives follow the same alignment and include the same activities in the vicinity of the identified important mineral resource area. For the same reasons described for Impact 4.5-4 (Alt.1), there would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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**IMPACT 4.5-5 (Alt.3)** **Land coverage.** Similar to Alternative 1 (PEA Alternative), adequate allowable land coverage figures are available for all increases in coverage associated with Alternative 3 (Road Focused Alternative) in accordance with the TRPA land classification system and land coverage requirements. The applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit. Therefore, this impact would be **less than significant**.

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This impact would be similar to Alternative 1 (PEA Alternative), however there would be no coverage increase resulting from widening of existing unpaved roads. Road improvements for Alternative 3 (Road Focused Alternative) would be limited to deferred maintenance of Forest System roads and all disturbance outside of the original footprint of the road would be revegetated and restored as described in APM BIO-36. Alternative 3

(Road Focused Alternative) would create new coverage along the power line corridor resulting from the installation of large poles requiring foundations, and at the Tahoe City and Kings Beach Substations, as shown in Tables 4.5-6 and 4.5-7. The power line portion of Alternative 3 (Road Focused Alternative) would result in an increase of 1,467 sf of land coverage (0.03 acre). When compared with Alternative 1 (PEA Alternative), Alternative 3 (Modified Alternative) would result in a reduction of 18,684 sf (0.43 acre) in proposed new land coverage. LCDs 2, 4, 5, and 6 would have a slight increase in new land coverage as compared to Alternative 1 (PEA Alternative); however, substantial decreases in proposed new land coverage would occur in LCDs 1a and 3. Coverage associated with the substation component is the same for all action alternatives.

Alternative 3 (Road Focused Alternative) also includes an optional double circuit of the 650/625 Line between the Kings Beach Substation and Brockway Summit (largely along SR 267). This option would result in a slight increase in Alternative 3 (Road Focused Alternative) land coverage within LCDs 5 and 6, and a decrease of 56 sf of coverage in LCD 1b.

As described above, adequate allowable land coverage is available for all increases in coverage associated with Alternative 3 (Road Focused Alternative) in accordance with the TRPA land classification system and land coverage requirements. In addition, the applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit. Therefore, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 4 – PROPOSED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.5-1 (Alt.4)</b>	<b>Exposure of people or structures to seismic hazards.</b> The study area is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. However, several faults are located in the project area that could subject project components to ground shaking and ground failure. Structures proposed as part of Alternative 4 (Proposed Alternative) would be designed and constructed in accordance with the current minimum seismic safety and structural design requirements set forth in the CBC. Therefore, there would be no substantial increased risk of loss, injury, or death or property damage from strong ground shaking alone. For these reasons, the project would have <b>no impact</b> related to exposure of people or structures to seismic hazards.
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This impact would be the same as the impact described under Impact 4.5-1 (Alt. 1), above. For the same reasons described for Alternative 1 (PEA Alternative), the project would have **no impact** related to exposure of people or structures to seismic hazards.

## MITIGATION MEASURES

*No mitigation measures are required.*

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**IMPACT 4.5-2 (Alt.4)** **Potential for soil erosion or soil compaction.** Installing and removing power line structures, constructing and/or upgrading substations, upgrading and establishing access ways, removal of existing structures, and installation of new structures associated with Alternative 4 (Proposed Alternative) could increase the potential for soil erosion due to vegetation removal, soil disturbance, and soil compaction. However, implementation of design features, proposed APMs, and permit conditions would reduce this impact to **less than significant**.

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This impact would be similar to the impact described under Impact 4.5-2 (Alt. 1), above. Alternative 4 (Proposed Alternative) would have the smallest disturbance area among the action alternatives: approximately 108 acres of temporary disturbance and roughly 135 acres of permanent disturbance. For the same reasons described for Alternative 1 (PEA Alternative), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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**IMPACT 4.5-3 (Alt.4)** **Other soil hazards.** Construction of the Alternative 4 (Proposed Alternative) components could occur in expansive or unstable soils. Also, because of the variable and steep topography across the study area, construction of Alternative 4 (Proposed Alternative) components could create slope instability. Expansive soils can change in volume causing damage to structures or foundations. The NRCS soil surveys indicate that some moderately expansive soils may exist in the study area. Also, because portions of the study area are located on sloping ground and installation of poles and access ways would require excavations, there is a potential for these activities to create slope instability. Because a geotechnical study of the project area would be completed and recommendations from a resulting Geotechnical Engineering Report (APM SOILS-2) would be implemented prior to construction, potentially expansive or unstable soils and slope instability would be identified and avoided, or mitigated through specialized construction methods. Therefore, this impact would be **less than significant**.

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This impact would be the same as the impact described under Impact 4.5-3 (Alt. 1), above. There is not an appreciable difference in this impact among the action alternatives. For the same reasons described for Impact 4.5-3 under Alternative 1 (PEA Alternative), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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**IMPACT 4.5-4 (Alt.4)** **Loss of availability of a known mineral resource or locally important mineral resource recovery site.** The existing 132/650 Line (Segment 650-6) crosses the area in the Town of Truckee along the Truckee River that is designated as an important mineral resource area. Like Alternative 1 (PEA Alternative), Alternative 4 (Proposed Alternative) would involve replacing the existing wood poles along this segment with steel poles. Construction would occur within the existing right-of-way and would not alter existing conditions regarding access to mineral resources in this area. There would be **no impact** to mineral resources.

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This impact would be the same as the impact described under Impact 4.5-4 (Alt. 1), above. All action alternatives follow the same alignment and include the same activities in the vicinity of the identified important mineral resource area. For the same reasons described for Impact 4.5-4 (Alt. 1), there would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.5-5 (Alt.4)</b>	<b>Land coverage.</b> Similar to Alternative 1 (PEA Alternative), adequate allowable land coverage figures are available for all increases in coverage associated with Alternative 4 (Proposed Alternative) in accordance with the TRPA land classification system and land coverage requirements. The applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit. Therefore, this impact would be <b>less than significant</b> .
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This impact would be similar to Alternative 1 (PEA Alternative), however there would be no coverage increase resulting from widening of existing unpaved roads. Road improvements for Alternative 4 (Proposed Alternative) would be limited to deferred maintenance of Forest System roads. All disturbance outside of the original footprint of the road would be revegetated and restored as described in APM BIO-36. Alternative 4 (Proposed Alternative) would create new coverage along the power line corridor resulting from the installation of large poles requiring foundations, and at the Tahoe City and Kings Beach substations, as shown in Tables 4.5-6 and 4.5-7. The power line portion of Alternative 4 (Proposed Alternative) would result in an increase of 1,326 sf of land coverage (0.03 acre). When compared with Alternative 1 (PEA Alternative), Alternative 4 (Proposed Alternative) would result in a reduction of 18,825 sf (0.43 acre) of proposed new land coverage. LCDs 2, 4, 5 and 6 would have a slight increase in new land coverage as compared to Alternative 1 (PEA Alternative), however substantial decreases in proposed new land coverage would occur in LCDs 1a, 1b and 3. Coverage associated with the substation component is the same for all action alternatives.

As described above, adequate allowable land coverage is available for all increases in coverage associated with Alternative 4 (Proposed Alternative) in accordance with the TRPA land classification system and land coverage requirements. In addition, the applicant would secure the purchase or transfer of all required coverage and resolve any excess coverage mitigation requirements prior to groundbreaking and acknowledgement of the TRPA permit. Therefore, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## ALTERNATIVE 5 – NO ACTION/NO PROJECT ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.5-1 (Alt.5)</b>	<b>Exposure of people or structures to seismic hazards.</b> Under Alternative 5 (No Action/No Project Alternative) no construction would take place. Therefore, this alternative would not increase exposure of persons or structures to seismic hazards relative to existing conditions. With Alternative 5 (No Action/No Project Alternative), there would be <b>no impact</b> related to seismic hazards.
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Under Alternative 5 (No Action/No Project Alternative), no upgrades to the North Lake Tahoe Transmission System would be made. Actions associated with this alternative would be limited to existing operation and maintenance, and completion of deferred maintenance to raise the system to current standards (including compliance with vegetation clearing requirements and annual inspection requirements). This alternative would

not increase exposure to seismic hazards relative to existing conditions. Therefore, there would be **no impact** related to seismic hazards.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.5-2 (Alt.5)</b>	<b>Potential for soil erosion or soil compaction.</b> Under Alternative 5 (No Action/No Project Alternative), no construction activities that would cause soil disturbance, excavation, or soil compaction would take place. Addressing a backlog in vegetation management could result in soil disturbance; however, this activity would not be substantially different from ongoing vegetation management and would be a onetime incremental increase in activity. Therefore, there would be a <b>less-than-significant</b> impact related to soil erosion or soil compaction.
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Under Alternative 5 (No Action/No Project Alternative), the existing transmission system would remain in place. No construction activities that would cause soil disturbance, excavation, or soil compaction would take place. Addressing a backlog of vegetation removal could cause minor soil disturbance as trees encroaching on the vegetation management corridor are removed. However, this activity would not be substantially different from ongoing vegetation management and would be a onetime incremental increase in activity. Therefore, a potential for increased erosion from runoff or wind erosion would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.5-3 (Alt.5)</b>	<b>Other soil hazards.</b> Under Alternative 5 (No Action/No Project Alternative), the existing transmission system would remain in place. No new structures would be located in areas with the potential for expansive or unstable soils, and the potential for slope instability would not change relative to existing conditions. For this reason, there would be <b>no impact</b> related to other soil hazards.
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Under Alternative 5 (No Action/No Project Alternative), the existing transmission system would remain in place. No new structures would be located in areas with the potential for expansive or unstable soils and the potential for slope instability would not change relative to existing conditions. For this reason, there would be **no impact** related to other soil hazards.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.5-4 (Alt.5)</b>	<b>Loss of availability of a known mineral resource or locally important mineral resource recovery site.</b> The existing 132/650 Line (Segment 650-6) crosses an important mineral resource area. Under Alternative 5 (No Action/No Project Alternative), no alterations to the power line would be made in Segment 650-6. Therefore, there would be <b>no impact</b> to mineral resources.
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The existing 132/650 Line (Segment 650-6) crosses an area in the Town of Truckee that is designated as an important mineral resource area. Under Alternative 5 (No Action/No Project Alternative), no alterations would be made to the existing power line and poles. Therefore, there would be **no impact** to mineral resources.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT</b> <b>4.5-5</b> <b>(Alt.5)</b>	<b>Land coverage.</b> Under Alternative 5 (No Action/No Project Alternative), no changes to the existing land coverage utilized by the power infrastructure would occur. Therefore, Alternative 5 (No Action/No Project Alternative) would have <b>no impact</b> on coverage.
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No changes to land coverage would occur associated with Alternative 5 (No Action/No Project Alternative). There would be no increase in coverage along the power line corridor, at substations and switching stations, and no development of new or improved access ways. Therefore, Alternative 5 (No Action/No Project Alternative) would have **no impact** on land coverage.

## MITIGATION MEASURES

*No mitigation measures are required.*

## CUMULATIVE IMPACTS

The geology, soils, land capability and coverage issues relevant to cumulative impacts primarily relate to effects on soil erosion, soil compaction, and land coverage. Past, present, and foreseeable future activities that have affected or may affect soils erosion, soil compaction, and land coverage in the region include recreational development and activities, urban and commercial development, and right-of-way maintenance and operation activities, among others.

Geotechnical and seismic impacts tend to be site-specific rather than cumulative in nature. For example, seismic events may affect a project-related structure, but the construction of the project components (access ways, staging areas, substations/switching stations, and poles) would not cause any adjacent parcels to become more or less susceptible to seismic events. The related projects listed in Table 4.1-2, as well as the action alternatives associated with the CalPeco 625 and 650 Electrical Line Upgrade Project, would be required to be designed and constructed in accordance with the State earthquake protection law (California Health and Safety Code Section 19100 et seq.), which requires that all new structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. Therefore, the action alternatives associated with the CalPeco 625 and 650 Electrical Line Upgrade Project and related projects in the surrounding area (listed in Table 4.1-2) would not result in adverse cumulative effects related to seismicity. Under Alternative 5 (No Action/No Project Alternative), no project components would be constructed; therefore, Alternative 5 (No Action/No Project Alternative) would not contribute to cumulative effects related to seismic or related geologic hazards.

The Lake Tahoe area has steep slopes and erodible soils. The construction of the proposed improvements associated with each action alternative in such an area has the potential to result in adverse effects on structures and human life as a result of erosion hazard and slope stability, both of which are primarily local, site-specific impacts. The related projects listed in Table 4.1-2 as well as all of the CalPeco 625 and 650 Electrical Line Upgrade Project action alternatives would be required to: minimize soil erosion effects by limiting surface disturbance to the dry season; include project design features or mitigation measures; comply with regulatory permitting requirements and conditions; develop a stormwater pollution prevention plan; and implement BMPs that are expected to offset each project's short-term (construction) and long-term (operational) effects such as exposed soils, unstable earthworks, or groundwater interference. Therefore, the CalPeco 625 and 650 Electrical Line Upgrade Project and related projects in the Truckee, Martis Valley, and North Lake Tahoe areas (as listed in Table 4.1-2) would not result in adverse cumulative effects related to grading and soil erosion that could not be

addressed by BMPs and standard engineering practices. Under Alternative 5 (No Action/No Project Alternative), no improvements or upgrades to the North Lake Tahoe Transmission System would be constructed; therefore, Alternative 5 (No Action/No Project Alternative) would result in no grading and would not contribute to potential cumulative effects related to grading or soil erosion.

With respect to land coverage in the Tahoe Basin, LCDs 1b and 2 are shown to be exceeding allowable coverage targets. All other land capability classes are within allowable limits. The related on-the-ground development projects in the North Lake Tahoe area (as listed in Table 4.1-2), as well as development elsewhere in the Tahoe Basin, in addition to the CalPeco 625 and 650 Electrical Line Upgrade Project, have the potential to increase coverage in the basin, including within LCDs 1b and 2. However, all these projects are required to adhere to Chapter 30, Land Coverage, of the TRPA Code, which sets forth regulations for the permissible amount of land coverage in the Region, including LCDs, prohibition of additional land coverage in certain land capability districts, and transfer and mitigation of land coverage. Therefore, the CalPeco 625 and 650 Electrical Line Upgrade Project, as described above, and all related projects that result in additional coverage in Table 4.1-2 would be limited to the percent coverage allowed for each LCD set forth in Chapter 30 of the TRPA Code or would be required to mitigate coverage in excess of the base allowable by identifying, purchasing, and transferring coverage from off-site parcels in accordance with Chapter 30 so as not to increase the total coverage in the Tahoe Basin. Therefore, related projects listed in Table 4.1-2, as well as the 625 and 650 Electrical Line Upgrade Project, would not result in adverse cumulative effects related to increases in coverage. Because implementation of the action alternatives would propose coverage consistent with the TRPA land classification system and coverage requirements (see Impact 4.5-5), these alternatives would not hinder progress and coverage toward attainment of the threshold for impervious land coverage. Under Alternative 5 (No Action/No Project Alternative), no improvements or upgrades to the North Lake Tahoe Transmission System would be constructed; therefore, Alternative 5 (No Action/No Project Alternative) would result in no contribution to potential cumulative effects related to increases in coverage. Although the related projects listed in Table 4.1-2 would result in cumulative changes in land coverage in the project vicinity, Alternative 5 (No Action/No Project Alternative) would not contribute to cumulative land coverage effects because this alternative would not result in any project-related coverage modifications.

## **4.6 HYDROLOGY AND WATER QUALITY**

### **4.6.1 INTRODUCTION**

This section describes the existing water quality and hydrology conditions in the watersheds crossed by California Pacific Electric Company's (CalPeco's) proposed 625 and 650 Electrical Line Upgrade Project (project or proposed project) and the applicable water resource regulations. The potential short-term and long-term water quality and hydrologic impacts that could result from implementation of the proposed project are identified and assessed.

Regional data and information was reviewed and a specialist report developed in conjunction with this analysis (Wildscape Engineering Services 2013). The purpose of the report was to broadly assess and compare the potential hydrologic and water quality impacts that may result collectively under each alternative.

### **4.6.2 REGULATORY SETTING**

The following provides an overview of laws and regulations related to hydrology and water quality that are applicable to the proposed project.

#### **FEDERAL**

#### **FEDERAL WATER POLLUTION CONTROL ACT OF 1977 (33 USC 1251 ET SEQ.)**

##### **Section 404**

The Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. Section 404 of the act prohibits the discharge of fill material into waters of the United States, including wetlands, except as permitted under separate regulations by US Army Corps of Engineers (USACE) and US Environmental Protection Agency (EPA). To discharge dredged or fill material into waters of the United States, including wetlands, Section 404 requires projects to receive authorization from the Secretary of the Army, acting through the USACE. Waters of the US are generally defined as "...waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; territorial seas and tributaries to such waters."

##### **Section 401**

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification for the discharge. The certification must be obtained from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over the affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401. Water quality certification requires evaluation of potential impacts in light of water quality standards and CWA Section 404 criteria governing discharge of dredged and fill materials into waters of the United States. The federal government delegates water pollution control authority under CWA Section 401 to the states (and in California, ultimately to the Regional Water Quality Control Boards [RWQCBs]).

##### **Section 402**

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) permit program to regulate discharges of pollutants into waters of the United States. A NPDES permit sets specific discharge limits for point sources discharging pollutants into waters of the United States and establishes

monitoring and reporting requirements, as well as special conditions. The federal government delegates water pollution control authority under Section 402 of the CWA to the states, which oversee compliance.

### Section 303

Section 303(d) of the CWA requires states to identify impaired waters and establish the Total Maximum Daily Load (TMDL) of pollutants for those waters to protect water quality for beneficial uses. Lake Tahoe is currently on the 303(d) list for deep water transparency (Lake clarity), because it has not achieved the standard of 29.7 meters (97.4 feet) average annual Secchi disk visibility depth (depth at which a disk of standard size and markings remains visible as it is lowered into the water) since the early 1970s. The Lake Tahoe TMDL identifies fine sediment particles causing light scatter, and nitrogen and phosphorus contributing to phytoplankton growth as the pollutants primarily responsible for impairing the transparency of the Lake (Lahontan Regional Water Quality Control Board's [LRWQCB], NDEP 2010). With a goal to restore Lake Tahoe's historic deep water transparency through programs and policies aimed at reducing the amount of fine sediment and nutrients entering the lake, the Lake Tahoe TMDL was adopted by the LRWQCB and Nevada Division of Environmental Protection (NDEP) and approved by the EPA in August 2011 (EPA 2011). TMDL analysis showed runoff from urban land uses as the primary source of fine sediment loading to the Lake and, therefore, the TMDL plan emphasizes actions by the jurisdictions (i.e., cities, counties, and state departments of transportation) to reduce fine sediment sources from entering urban stormwater runoff and to treat urban runoff before it reaches the Lake.

The Truckee River from the Lake Tahoe outlet to the California/Nevada stateline, is the other large water body potentially affected by the project, and is listed under Section 303(d) for excess sedimentation. At higher stream flows that result from summer thunderstorms, snow melt, and dam releases, the suspended sediment concentrations in the Truckee River exceed what is recommended for aquatic life protection (LRWQCB 2008). To combat this, the Middle Truckee River TMDL established a 20 percent annual sediment load reduction through erosion control and sedimentation limiting practices and was adopted by the LRWQCB and approved by the EPA in 2009 (EPA 2009).

### US FOREST SERVICE

The action alternatives are contained within lands managed by two separate units of the Pacific Southwest Region (Region 5) of the US Forest Service (USFS), the Lake Tahoe Basin Management Unit (LTBMU), which manages federally owned forest and urban communities around Lake Tahoe, and the Tahoe National Forest, which manages forest lands in the project region to the north of the lake and in and around Truckee. Each unit operates under their own Forest Plans as described below. In addition the greater USFS has developed standards related to soil and water quality including the recently published, *National Best Management Practices for Water Quality Management on National Forest Lands* (USFS 2012) providing guidance on standard best management practice (BMP) selection and use for soil and water quality protection and a uniform process for monitoring and tracking the effectiveness of those BMPs. A Soil and Water Conservation Handbook (USFS 1988a) distributed by Region 5 describes a general procedure for assessing cumulative watershed effects on National Forest lands that was used in the analysis completed under the separate Soils and Hydrology Specialist report whose results are discussed later in this section (Wildscape Engineering Services 2013).

### Tahoe National Forest Land and Resource Management Plan

The purpose of the Tahoe National Forest Land and Resource Management Plan (Forest Plan) is to guide management decisions and methods for a decade or more including monitoring and evaluation programs to protect Tahoe National Forest resources and abide by local, regional, and National guidelines (USFS 1990). The Forest Plan objectives are summarized below followed by the standards and guidelines for managing and protecting the water, soil, and riparian resources that are also relevant to the proposed project (USFS 1990).

### ***Soil, Water Quality, and Riparian Area Objectives***

1. Improve water quality by 2020 and produce sufficient water quality and quantity to meet or exceed use requirements.
2. Maintain or improve soil productivity and prevent cumulative watershed impacts.
3. Conserve soil and water resources and prevent activities that will impair land productivity.
4. Protect streams, lakes, wetlands, streamside management zones (i.e. designated zones that vary in width (greater than or equal to 100 feet) adjacent to perennial, intermittent and ephemeral streams) and riparian areas (i.e. areas within 100-feet of a perennial stream, standing body of water or wetland).

### ***Soil, Water, and Riparian Area Standards and Guidelines***

1. Implement erosion reduction, water flow improvements, channel stabilization and sediment retention practices to correct soil erosion and water quality problems.
2. Incorporate revegetation, mulching and sediment control installations including check dams, settling basins and water spreading structures.
3. Develop and implement water resource improvement and maintenance plans.
4. Reduce compaction, improve soil fertility, and stabilize soils.
5. Give riparian dependent resources including water, fish, wildlife and riparian vegetation priority over non-riparian resources such as timber, grading, mining, structures, and transportation in streamside management zones.
6. Maintain vegetation along perennial streams to provide adequate water temperatures for cold-water fish.
7. Use BMPs to maintain and improve the quality of surface waters. Identify and document the BMP methods during environmental assessment.
8. Identify soil damage and abandoned roads in need of rehabilitation and include in project restoration and improvement plans.

### ***Lake Tahoe Basin Management Unit***

The LTBMU is currently operating under their 1988 Forest Plan (USFS 1988b) that similarly defines objectives and guidelines to meet those objectives in the areas of water quality, soils, and riparian areas as summarized below. The Forest Plan was more recently amended in 2004 to align with management recommendations developed under the Sierra Nevada Forest Plan Amendment (USFS 2003). Protection of water quality and its influence on Lake Tahoe's water clarity is designated as the highest priority under the Forest Plan's general management guidelines.

### ***Soil, Water Quality, and Riparian Area Objectives***

1. Assure sufficient water quantity to meet instream and forest land use needs. Utilize water conservation practices to minimize consumption.
2. Reverse downward trend in water quality entering Lake Tahoe and its tributaries.
3. Maintain soil productivity and protect soils from surface erosion.
4. Allow riparian areas to perform their natural function in the environment, including habitat preservation and watershed protection.

### ***Soil, Water, and Riparian Area Standards and Guidelines***

1. Restore developed or damaged areas using check dams, settling basins, infiltration and water spreading devices, rip rap, retaining walls, jute matting and revegetation.
2. Use the Lake Tahoe Basin Land Capability Classification (Bailey 1974) as a guide for locating USFS installations and activities. Ensure that permanent land disturbance and impervious surface coverage does not exceed the recommendations in the Bailey report.
3. Use BMPs to maintain and improve the quality of surface waters. Identify and document the BMP methods during environmental assessment.
4. Limit soil disturbing activities to May 1st to October 15th.
5. Avoid stream environment zone (SEZ, i.e. land capability classes 1 and 2) unless the facilities are part of a long range development plan where there are no feasible alternatives and the action is fully mitigated. Restore any disturbed SEZ beyond the allowable coverage at 150 percent. Permit public works projects including roads and utilities in SEZ and on land capability classes 1 and 2 where necessary for the health, safety, or environmental protection, where there is no reasonable alternative, and where the impacts are fully mitigated and SEZ beyond allowable coverage is restored at 150 percent.
6. Implement temporary erosion control measures prior to initiating any soil disturbing activities. Do not allow solid or liquid discharges other than clean rock or vegetative debris to the adjacent soil or water body unless waived by the state water quality protection agency.
7. Utilize fertilizer only where necessary to establish vegetation associated with restoration of disturbed areas.
8. Assist special use permittees in the planning and design of their water quality BMPs.
9. Maintain protective ground cover (i.e. duff, litter, vegetation) to minimize soil erosion.
10. Minimize soil displacement when grading slopes or when piling brush.
11. Improve degraded soil areas by respreading displaced topsoil, tilling to increase porosity, and adding organic matter or TRPA approved fertilizer as needed.
12. Minimize areas compacted by heavy equipment and operate equipment when soils are least susceptible to damage.
13. Obliterate temporary roads no longer needed and return to resource production within one year.
14. Locate and design temporary roads with the least amount of cut and fill and the fewest stream or water channel crossings, so that the land can be restored with no permanent impact.

### **FEDERAL ANTIDegradation POLICY**

The Federal Antidegradation Policy was enacted to provide protection to high-quality water resources of national importance. It directs states to develop and adopt statewide antidegradation policies that include protecting existing instream water uses and maintaining a level of water quality necessary to protect those existing uses and the water quality of high-quality waters. In EPA's CWA regulations regarding water quality standards (40 CFR Chapter 1, Section 131.12[a][3]), the criteria for requiring an antidegradation standard includes: "where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected." The EPA has designated Lake Tahoe an Outstanding National Resource Water (ONRW). ONRWs are provided the highest level of protection under EPA's Antidegradation Policy, stipulating that states may allow some limited activities that result in temporary and short-term changes

to water quality, but such changes should not adversely affect existing uses or degrade the essential character or special uses for which the water was designated an ONRW. The EPA interprets this provision to prohibit new or increased discharges to ONRWs that would degrade water quality.

## REGULATED FLOODPLAIN

Floodplain Management Executive Order 11988 adopted in May 1977 directs all federal agencies to evaluate potential effects of any actions it may take in the floodplain and to avoid all adverse impacts associated with modifications to floodplains. It also directs federal agencies to avoid encroachment into the 100-year floodplain, whenever there is a practicable alternative and to restore and preserve the natural and beneficial values served by the floodplains (EPA 1977).

The Federal Emergency Management Agency (FEMA) oversees floodplain management and runs the National Flood Insurance Program (NFIP) adopted under the National Flood Insurance Act of 1968. FEMA prepares Flood Insurance Rate Maps that delineate the regulatory floodplain to assist local governments, such as the Lake Tahoe Basin counties and cities, with land use and floodplain management decisions to meet the requirements of the NFIP. In general, the NFIP mandates that development is not to proceed within the 100-year regulatory floodplain, if the development is expected to increase flood elevation by one foot or more. Also, development is not allowed in designated 100-year floodways (i.e., flood flow channels and areas with sufficient directional flow velocity of 100-year floodwaters).

The Special Flood Hazard Areas (i.e., 100-year flood areas) per FEMA that intersect with the project site are shown in Exhibits 4.6-1 through 4.6-4.

## STATE

The California State Water Resources Control Board (SWRCB) is composed of nine regional water quality control boards responsible for preserving the state's water quality. In coordination with the EPA, USACE, and SWRCB, the nine regional water quality control boards administer portions of the federal CWA regulations, issue and enforce waste discharge permits, and monitor water quality from municipal and industrial operations and construction projects. The action alternatives are located within the LRWQCB's jurisdiction.

The Porter-Cologne Water Quality Act transferred authority from the EPA to the SWRCB to regulate and control stormwater pollutant discharges by requiring the state to establish water quality objectives and standards to protect water quality for beneficial uses. This law requires any operation or project that discharges waste or is proposing to discharge waste which could affect the quality of the state's water to file a "report of waste discharge" with the appropriate regional water quality control board. Designated beneficial uses and water quality objectives for the surface and groundwater bodies are identified in the Water Quality Control Plan for the Lahontan Region (LRWQCB 1995, as amended).

Although the Project is entirely within the LRWQCB jurisdiction it encompasses two distinct hydrologic units, Lake Tahoe and the Truckee River, each with its own TMDL program and NPDES stormwater permit to protect water quality as required by the TMDL.

A pollutant source analysis conducted by the LRWQCB and NDEP identified urban uplands runoff, atmospheric deposition, forested upland runoff, and stream channel erosion as the primary sources of fine sediment particle, nitrogen, and phosphorus loads discharging to Lake Tahoe. The largest source of fine sediment particles to Lake Tahoe is urban stormwater runoff, comprising 72 percent of the total fine sediment particle load. The urban uplands also provide the largest opportunity to reduce fine sediment particle and phosphorus contributions to the lake. Undeveloped (e.g., forested) portions of the Lake Tahoe watershed are estimated to contribute approximately 9 percent of the total fine sediment particle load (LRWQCB 2010, LRWQCB 2011c). The pollution reduction approach in the Lake Tahoe TMDL implementation plan (LRWQCB 2011c) for forest upland areas

focuses on easy-access, high pollutant-yielding disturbed areas such as unpaved roads, campgrounds, and ski runs. Implementation actions include installing and maintaining BMPs in disturbed areas, capturing and retaining sediment on unpaved roadways, and decommissioning and restoring unauthorized unpaved roads and trails. Operating under the current NPDES Stormwater Permit and Lake Tahoe TMDL, Placer County must develop and implement a comprehensive Pollutant Load Reduction Plan for review and approval by LRWQCB that illustrates how their methods of operation and maintenance, and plans for capital improvements and retrofit projects, ordinance enforcement, and related actions will achieve pollutant load reduction requirements (LRWQCB 2011b).

The Middle Truckee River Watershed TMDL (LRWQCB 2008) covers the drainage areas that lead to the Truckee River from the Lake Tahoe outflow in Tahoe City to the California border with Nevada. Its primary focus is sediment-related water quality objectives to protect in-stream aquatic life beneficial uses.

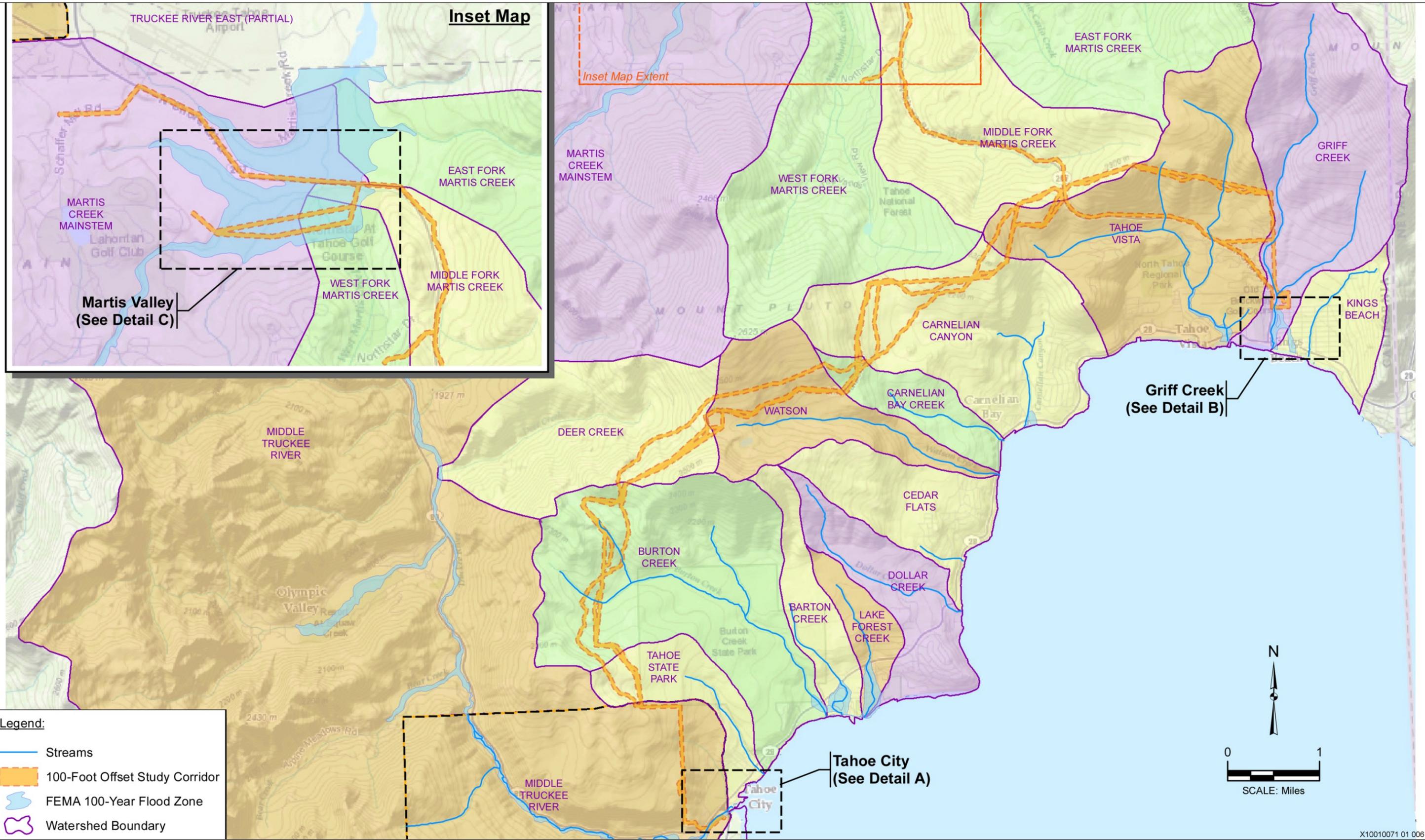
The portion of the project alternatives located within the Tahoe Basin fall under the modified Tahoe Basin NPDES General Construction Stormwater Permit (Order No. R6T-2011-0019, NPDES No. CAG616002) reissued by LRWQCB for the Lake Tahoe Hydrologic Unit in April 2011 based on a recently updated state General Permit (Order No. 2009-009-DWQ). The state General Permit covers the portions of the project alternatives that drain to the Truckee River and establishes a risk-based approach for sites with greater than 1 acre of disturbance with increased monitoring and oversight. Both construction stormwater permits require potential dischargers to file permit registration documents, including a Notice of Intent and a Storm Water Pollution Prevention Plan (SWPPP) that includes proposed BMPs and a site specific Construction Site Monitoring and Reporting Plan (CSMRP) developed by a certified Qualified SWPPP Developer. Both permits require BMP assessment before, during and following storm events with the submission and implementation of a Rain Event Action Plan and both prevent future increases in peak runoff by requiring new facilities to detain and or infiltrate any runoff that is a result of the new project.

The Tahoe Basin General Permit provides for increased monitoring and oversight for construction activities resulting in greater than one acre of disturbance, including daily rather than weekly monitoring, sampling for any discharges from a construction site rather than only during a qualifying storm event, triggering a Rain Event Action Plan when there is a 30 percent chance rather than a 50 percent chance of precipitation, and requiring all projects to be suspended or completed and winterized by October 15<sup>th</sup>. Under the Tahoe Basin General Permit any stormwater generated from an active construction site is to be sampled to determine if it exceeds the effluent limits shown in Table 4.6-1, Lake Tahoe Stormwater Effluent Limits (LRWQCB 2011b).

<b>Parameter</b>	<b>Units</b>	<b>Maximum Daily Effluent Limitations for Discharge</b>
Total Nitrogen (as N)	Mg/L	0.5
Total Phosphorus (as P)	Mg/L	0.1
Total Iron	Mg/L	0.5
Turbidity	NTU	20*
Grease and Oil	Mg/L	2

\*Note: For Active Treatment Systems use 10 NTU as daily average and 20 NTU for any single sample  
Source: LRWQCB 2011b

Under the NPDES post-construction stormwater requirements, the counties and cities must design projects according to their respective stormwater NPDES permit and low impact development techniques and onsite infiltration of stormwater must be integrated into all new and redevelopment projects. Under the Tahoe Basin permit stormwater facilities must be designed and constructed to infiltrate runoff generated under a 20-year, one-hour storm event at a minimum, which is approximately one inch of runoff during a one-hour period. If site conditions do not allow for the required infiltration, the applicant must either: (1) propose and provide information on treatment facilities to meet the Tahoe 208 Plan effluent limits; or (2) demonstrate that the public



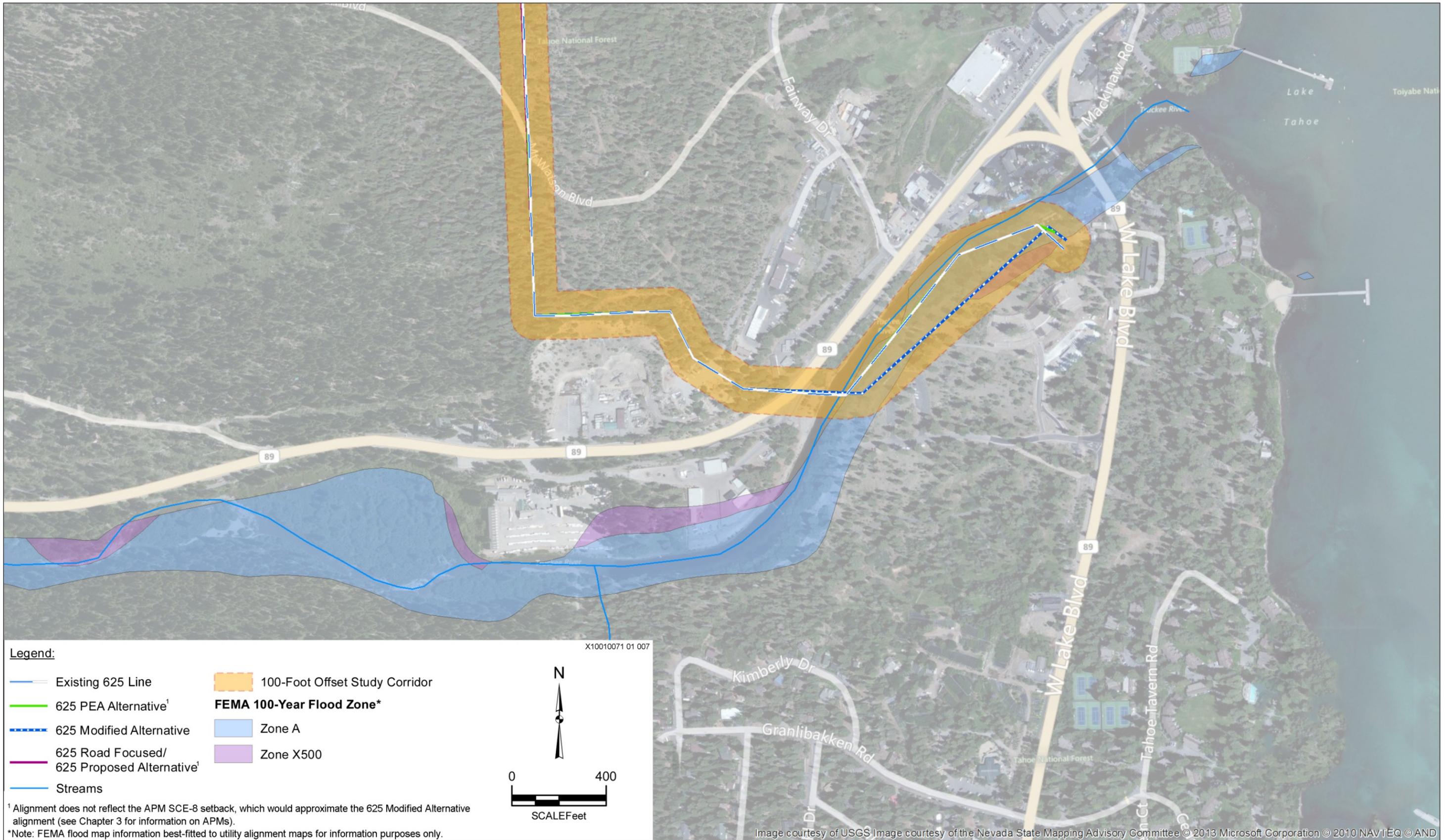
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Source: Data received from Wildscape Engineering in 2012; Adapted by Ascent Environmental in 2012

Exhibit 4.6-1

Special Flood Hazard Areas





<sup>1</sup> Alignment does not reflect the APM SCE-8 setback, which would approximate the 625 Modified Alternative alignment (see Chapter 3 for information on APMs).  
 \*Note: FEMA flood map information best-fitted to utility alignment maps for information purposes only.

Source: Data received from Wildscape Engineering in 2012; Adapted by Ascent Environmental in 2012

Exhibit 4.6-2

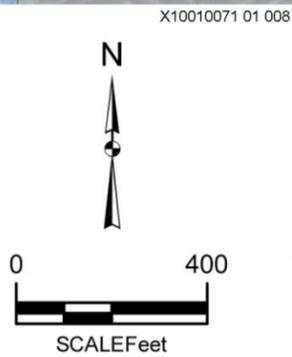
Floodplain Detail at Tahoe City (Detail A)





**Legend:**

- Existing 625 Line
- 625 PEA Alternative
- 625 Road Focused/  
625 Proposed Alternative
- 650 PEA/650 Proposed  
Alternative
- Double Circuit Option Alternative Segment
- Streams
- 100-Foot Offset Study Corridor
- FEMA 100-Year Flood Zone\***  
Zone A



\*Note: FEMA flood map information best-fitted to utility alignment maps for information purposes only.

Source: Data received from Wildscape Engineering in 2012; Adapted by Ascent Environmental in 2012

**Exhibit 4.6-3**

**Floodplain Detail at Griff Creek (Detail B)**



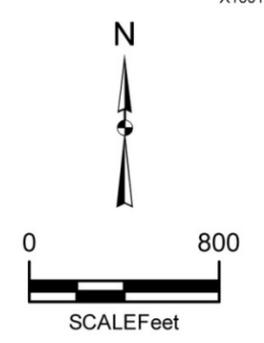
Image courtesy of USGS Image courtesy of the Nevada State Mapping Advisory Committee © 2013 Microsoft Corporation © 2010 NAVTEQ © AND



- Legend:**
- 650 PEA/650 Proposed Alternative
  - 650 Modified Alternative
  - 650 Road Focused Alternative
  - 100-Foot Offset Study Corridor

**FEMA 100-Year Flood Zone\***

Zone A



X10010071 01 009

\*Note: FEMA flood map information best-fitted to utility alignment maps for information purposes only.

Source: Data received from Wildscape Engineering in 2012; Adapted by Ascent Environmental in 2012

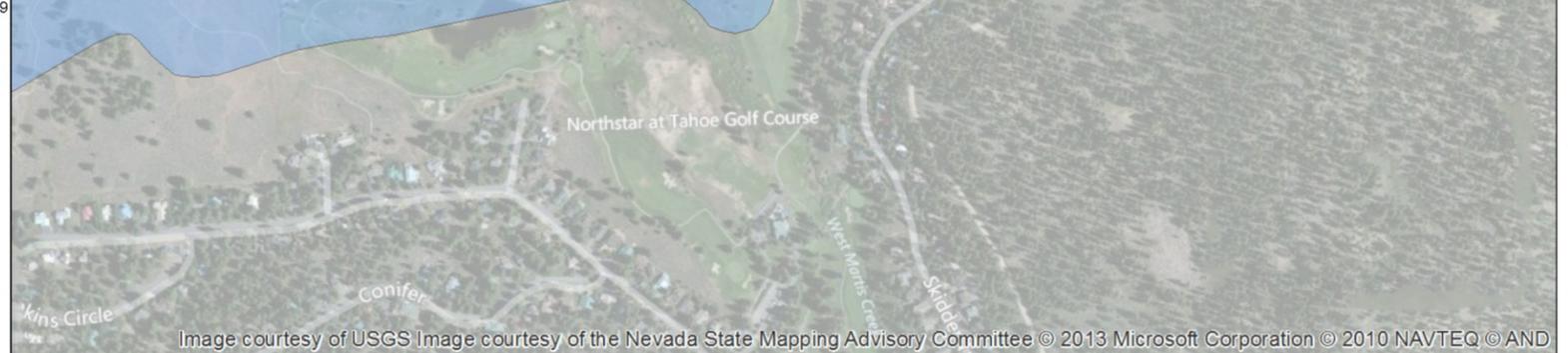


Image courtesy of USGS Image courtesy of the Nevada State Mapping Advisory Committee © 2013 Microsoft Corporation © 2010 NAVTEQ © AND

or municipal stormwater facilities are sufficient to provide adequate treatment of the project runoff to meet the sediment and nutrient load reduction requirements. Parking lots and other land uses that may contribute hydrocarbon pollutants are also required to implement pre-treatment devices to remove hydrocarbons before infiltration or discharge (LRWQCB 2011a).

The Lahontan Water Quality Control Plan includes prohibitions to protect 100-year floodplains, LRWQCB may grant exemptions to the 100-year floodplain discharge prohibition when it can be shown that either: (1) there is no reasonable alternative that avoids or reduces the extent of encroachment in the floodplain for projects that require access to buildable sites and the impacts are minimized; or (2) the project is for erosion control, habitat, or SEZ restoration necessary for environmental protection and there is no reasonable alternative that avoids floodplain encroachment.

The Lahontan Water Quality Control Plan also requires that all public utilities, transportation facilities and other necessary public uses in the 100-year floodplain be constructed and maintained so as to prevent damage from flooding and to not cause flooding.

California Antidegradation Policy, Resolution No. 68 16 is incorporated into all Regional Water Quality Control Plans to protect high-quality waters as directed by the federal Antidegradation Policy mentioned above. The state policy differs in that it extends protections to high-quality groundwater sources in addition to surface waters. Under this policy Lake Tahoe has been identified as one of only two ONRWs in California.

## TAHOE REGIONAL PLANNING AGENCY

### TRPA ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES

Water quality standards adopted by the Tahoe Regional Planning Agency (TRPA) set a target to return the Lake to the transparency observed in the late 1960s. Six major indicator themes are currently used by TRPA to assess the water quality of Lake Tahoe and its tributaries. Table 4.6-2, TRPA Summary of Findings by Threshold Category (Water Quality), lists each threshold category, indicator reporting category (indicator theme), and generalized characterization of current status, trend, and confidence (TRPA 2012a).

<b>Threshold Category</b>	<b>Indicator Reporting Category (Indicator Theme)</b>	<b>Generalized Characterization of Current Status, Trend and Confidence<sup>1</sup></b>
Water Quality	Pelagic Lake Tahoe (open waters of Lake Tahoe)	<b>Status:</b> somewhat worse than target <b>Trend:</b> moderate decline <b>Confidence:</b> high
Water Quality	Littoral Lake Tahoe (nearshore waters of Lake Tahoe)	<b>Status:</b> insufficient data to determine status, or no target established <b>Trend:</b> insufficient data to determine trend <b>Confidence:</b> low
Water Quality	Tributaries	<b>Status:</b> somewhat worse than target <b>Trend:</b> moderate improvement <b>Confidence:</b> moderate
Water Quality	Surface Runoff (stormwater runoff to surface waters)	<b>Status:</b> insufficient data to determine status, or no target established <b>Trend:</b> insufficient data to determine trend <b>Confidence:</b> low
Water Quality	Groundwater (stormwater runoff to soil)	<b>Status:</b> insufficient data to determine status, or no target established <b>Trend:</b> insufficient data to determine trend <b>Confidence:</b> low

**Table 4.6-2 TRPA Summary of Findings by Threshold Category (Water Quality)**

Threshold Category	Indicator Reporting Category (Indicator Theme)	Generalized Characterization of Current Status, Trend and Confidence <sup>1</sup>
Water Quality	Other Lakes (Fallen Leaf Lake)	<b>Status:</b> insufficient data to determine status, or no target established <b>Trend:</b> insufficient data to determine trend <b>Confidence:</b> low
<sup>1</sup> Range of Qualifiers from best to worst: <b>Possible Status Categories:</b> Considerably better than, at or somewhat better than, somewhat worse than, considerably worse than, and insufficient data to determine status or no target established. <b>Possible Trend Categories:</b> Rapid movement, moderate improvement, little or no change, moderate decline, rapid decline, and insufficient data to determine trend. <b>Confidence Categories:</b> High, Moderate, and Low Source: TRPA 2012a		

## NEARSHORE WATER QUALITY

The quality of water in the nearshore area, the primary point of contact for most residents and visitors to the Lake, has been tracked by measuring turbidity, which is an indication of the cloudiness of water expressed in Nephelometric Turbidity Units (NTU). Higher turbidity measurements indicate cloudier water. Higher turbidity measurements in the nearshore area of the Lake, defined by Taylor (Minor and Cablk 2004: pp. 29) as levels exceeding 0.25 NTU, appear to be influenced by surface runoff from developed areas. Of the 72 miles (115.9 kilometers [km]) of Lake shoreline, Taylor identified 0.9 mile (1.5 km) of shoreline with extremely elevated turbidity, 2.5 miles (4 km) of shoreline with moderately elevated turbidity, and 5.6 miles (9 km) of shoreline with slightly elevated turbidity (Minor and Cablk 2004: pp. iii).

Turbidity in Lake Tahoe is influenced by the presence of both sediment and algae (phytoplankton) suspended in the water. In the nearshore environment turbidity can vary considerably by location and time. Concentrations of sediment and suspended algae can be affected by upland and upstream inputs of sediment and nutrients (with nutrients supporting algae growth) that may be temporally consistent, seasonal (carried by spring runoff), or episodic (tied to a heavy rain event, forest fire, or other perturbation). Currents and eddies within the lake can also carry sediment and algae and move it to or from different nearshore areas. Perceived nearshore water quality is also significantly influenced by the presence of algae attached to rocks, gravel, and other substrates. Widespread growth of attached algae in the nearshore during the spring remains a characteristic of Lake Tahoe, where thick expanses of algae often coat the shoreline, particularly in spring (Heyvaert et. al. 2013).

## DEEP WATER (PELAGIC) TRANSPARENCY AND CLARITY

Long-term changes to the transparency and clarity of Lake Tahoe are influenced by the amount of particulate material in the water, which includes inorganic particles that scatter light (e.g., fine sediment suspended in the water column) and organic particles that absorb light (e.g., suspended algae). Exhibit 4.6-5 presents average annual measurements of Secchi disk visibility depth from 1968 to 2010 (Data Provided by TRPA; Jan 2012), illustrating about a 26-foot decline in Tahoe's transparency since 1968. In 2010 the average annual Secchi disk visibility depth measured from the surface of the lake was 64.4 feet, which is the second lowest recording (the lowest was an average annual measurement of 64.1 feet in 1997).

## DEEP WATER PRIMARY PRODUCTIVITY

Primary productivity measures the rate at which algae grow. Measurements of primary productivity are expressed as grams of carbon per square meter ( $gC/m^2$ ). Exhibit 4.6-6 presents average annual measurements of primary productivity in the Lake which have trended upwards since 1968.

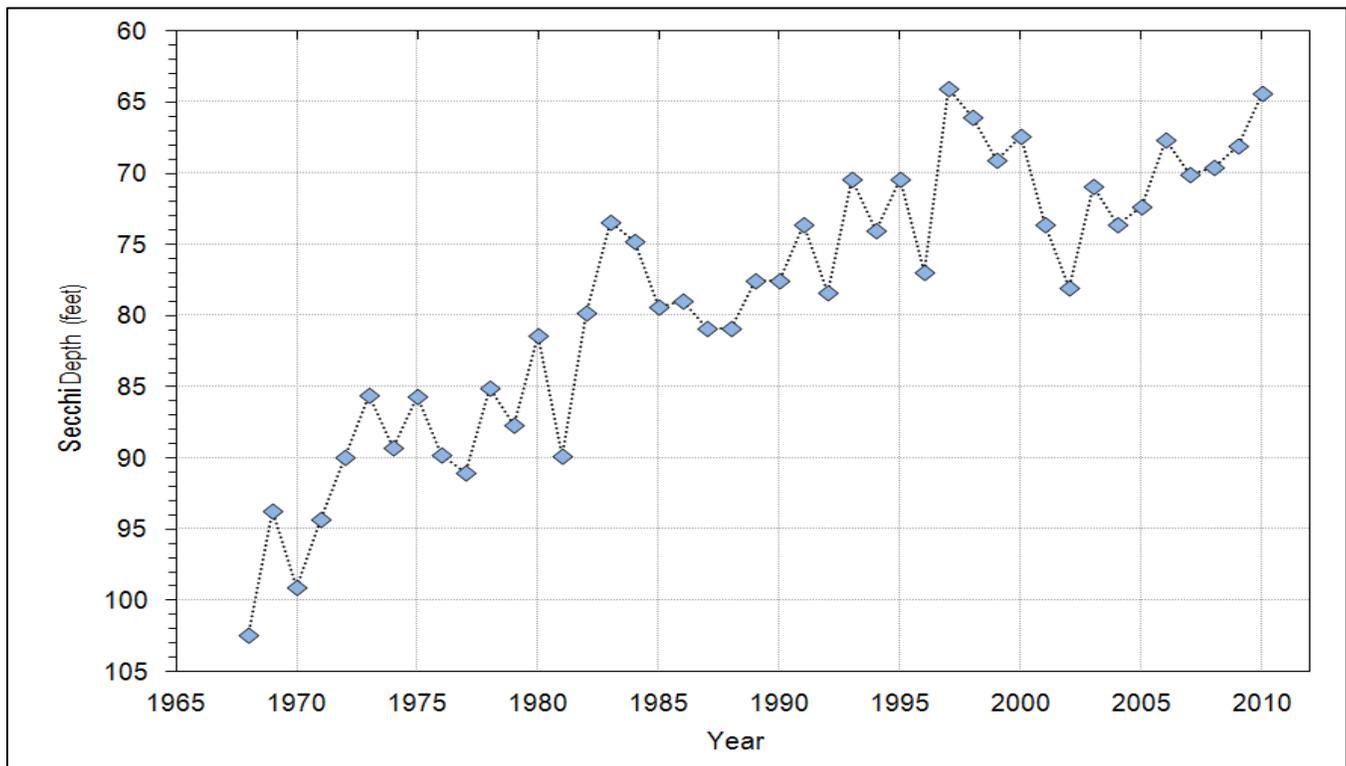
## OTHER THRESHOLDS

In addition to water quality thresholds and standards that specifically measure the water quality of Lake Tahoe, additional thresholds are used by TRPA to assess the quality of water in tributary streams to Lake Tahoe or other waters directly discharged to Lake Tahoe. These thresholds include standards that define: maximum allowable pollutant concentrations for various constituents in tributaries to Lake Tahoe; surface runoff concentrations discharged to surface waters; surface runoff concentrations discharged to land surfaces for infiltration; stormwater runoff to soil (affecting groundwater); and the quality of other lakes in the Tahoe Region. Table 4.6-2, above, provides the current status for these additional Water Quality Indicator Reporting Categories.

## 2012 REGIONAL PLAN UPDATE

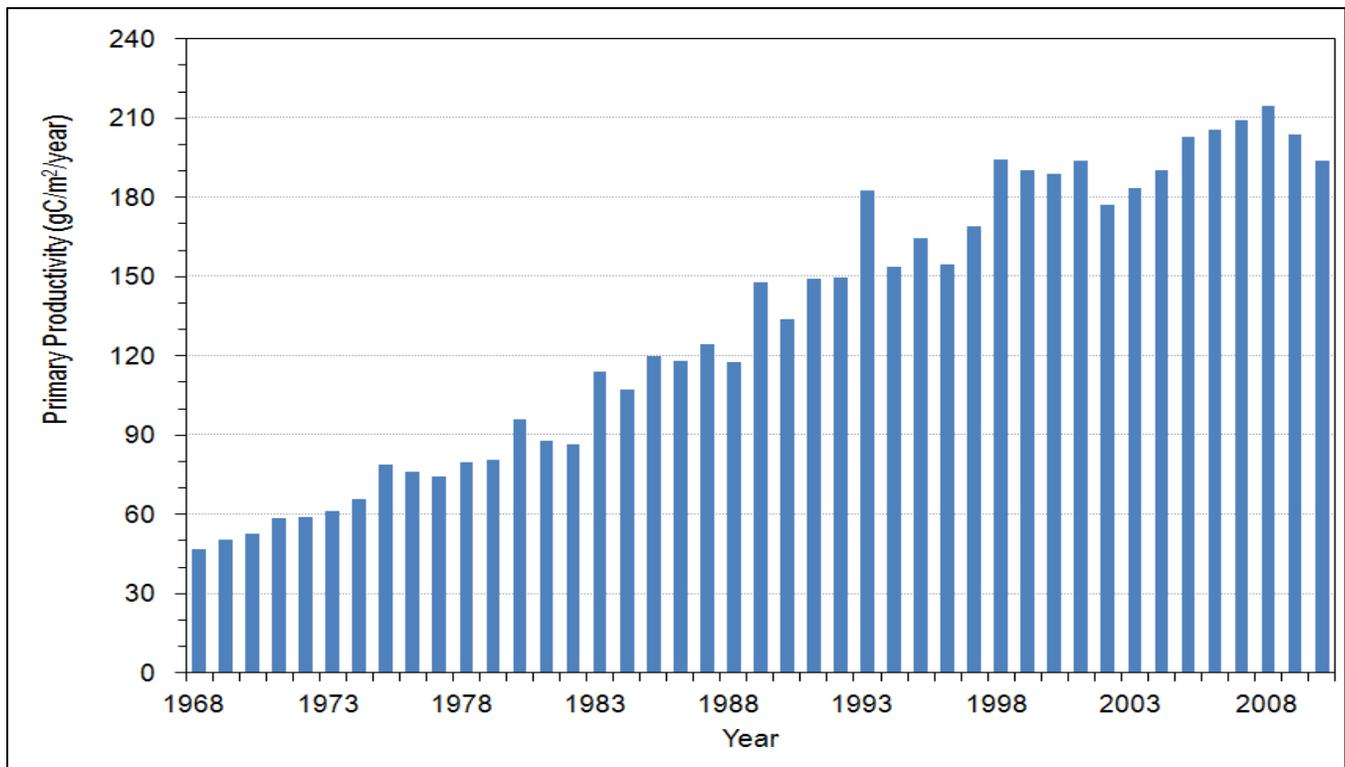
Regional Plan Update priorities and policies include accelerating water quality restoration by targeting environmental redevelopment and Environmental Improvement Program opportunities, retaining the current regional growth system that prevents overdevelopment and encourages preservation of open space, and integrating with the Regional Transportation Plan to address congestion and support pedestrian and bike improvement projects that reduce vehicle dependency (TRPA 2011b).

The 2012 TRPA Regional Plan uses environmental thresholds for water quality, air quality, soils, wildlife, fisheries, vegetation, scenic quality and recreation to guide development and restoration in the Lake Tahoe Region. One of the primary goals is to accelerate public and private investments in environmentally-beneficial redevelopment activities (TRPA 2012b).



Source: TRPA 2012

**Exhibit 4.6-5 Average Annual Secchi Depth (Data Provided by TRPA; Jan 2012)**



Source: TRPA 2012

**Exhibit 4.6-6 Primary Productivity (Data Provided by TRPA; Jan 2012)**

**GOALS AND POLICIES**

TRPA Goals and Policies document an overall approach to meeting the environmental thresholds. Table 4.6-3, Tahoe Regional Plan Goals and Policies Relevant to Hydrology and Water Quality, lists the current TRPA Regional Plan goals and policies relevant to hydrology and water quality that pertain to the portion of the project alternatives within TRPA jurisdiction.

<b>Goal/Policy</b>	<b>Description</b>
Natural Hazards Goal 1, Policy 2	Prohibit additional development, grading, and filling of lands within the 100-year flood plain and in the area of wave run-up except for public recreation facilities, public service facilities, necessary crossings, restoration facilities, and as otherwise necessary to implement the goals and policies of the plan. Require all facilities located in the 100-year flood plain and area of wave run-up to be constructed and maintained to minimize impacts on the flood plain.
Water Quality Goal 1, Policy 1	Achieve and maintain water quality thresholds through comprehensive regional planning and through coordination with other public agencies and the private sector.
Water Quality Goal 1, Policy 3	Require that development and other activities in the Lake Tahoe region mitigate anticipated water quality impacts.
Water Quality Goal 3, Policy 1	Reduce loads of sediment, nitrogen, and phosphorus to Lake Tahoe; and meet water quality thresholds for tributary streams, surface runoff, and groundwater.
Water Quality Goal 3, Policy 2	Restore at least 80 percent of the disturbed lands within the region (from the 1983 baseline; excluding hard coverage).
Water Quality Goal 3, Policy 3	Units of local government, state transportation departments, U.S. Forest Service and other implementing agencies shall restore 25 percent of the SEZ lands (from the 1983 baseline) that have been disturbed, developed, or subdivided in accordance with the environmental improvement program.

<b>Table 4.6-3 Tahoe Regional Plan Goals and Policies Relevant to Hydrology and Water Quality</b>	
<b>Goal/Policy</b>	<b>Description</b>
Water Quality Goal 3, Policy 5	Promote infiltration facilities and functioning flood plains along stream corridors as a strategy for removing instream loads of sediment and nutrients.
Water Quality Goal 3, Policy 6	All persons engaging in public road maintenance or snow disposal operations in the Tahoe region shall maintain roads and dispose of snow to minimize the discharge of deicers, fine particulates and other contaminants to stream environment zones, groundwater and surface-water in accordance with site criteria and management standards in the best management practices handbook.
Water Quality Goal 3, Policy 8	Off road motorized vehicle use is prohibited in the Lake Tahoe region except on specified roads, trails, or designated areas where the impacts can be mitigated.
Water Quality Goal 3, Policy 11	Require all persons who own land and all public agencies which manage public lands in the Lake Tahoe region to install and maintain best management practices (BMPs) improvements in accordance with a BMP manual that shall be maintained and regularly updated by TRPA. BMP requirements shall protect vegetation from unnecessary damage, restore the disturbed soils and be consistent with fire defensible space requirements. As an alternative, area-wide water quality treatment facilities and funding mechanisms may be implemented in lieu of certain site specific BMPs where area-wide treatments can be shown to achieve equal to or greater water quality benefits.
Water Quality Goal 3, Policy 12	Projects shall be required to meet TRPA BMP requirements as a condition of approval for all projects.
Soils Goal 1, Policy 6	Maintain seasonal limitations on ground disturbing activities during the wet season (October 15 to May 1) and identify limited exceptions for activities that are necessary to preserve public health and safety or for erosion control.
Soils Goal 1, Policy 7	All existing natural functioning stream environment zones shall be retained as such and disturbed stream environment zones shall be restored whenever possible and maybe treated to reduce the risk of catastrophic wildfire.
Shoreline Zone Goal 1, Policy 1	All vegetation at the interface between the backshore and foreshore zones shall remain undisturbed unless allowed by permit for uses otherwise consistent with the shorezone policies.
Shoreline Zone Goal 1, Policy 8	Stream channel entrances to the lake shall be maintained to allow unobstructed access of fishes to upstream spawning sites.
SEZ Goal 1, Policy 2	SEZ lands shall be protected and managed for their natural values.
SEZ Goal 1, Policy 5	No new land coverage or other permanent land disturbance shall be permitted in stream environment zones except for those uses as noted in A, B, C, D, E and F below: A. Public outdoor recreation facilities B. Public service facilities C. Projects which require access across stream environment zones to otherwise buildable sites D. New development may be permitted in man-modified stream environment zones E. Stream environment zone restoration projects and erosion control projects. F. Non-motorized public trails
SEZ Goal 1, Policy 6	Replacement of existing coverage in stream environment zones may be permitted where the project will reduce impacts on stream environment zones and will not impede restoration efforts.

Source: TRPA 2012b

## **TAHOE REGIONAL PLANNING AGENCY WATER QUALITY MANAGEMENT PLAN (208 PLAN)**

TRPA developed a Water Quality Management Plan for the Lake Tahoe Region under Section 208 of the federal CWA (TRPA 2013). The 208 Plan includes descriptions of the geologic, hydrologic, geomorphic, soils, stream environment zone (SEZ), and water quality setting. The plan analyzes regional water quality problems and describes programs and activities to address these problems. The plan contains the Handbook of Best Management Practices (BMP Handbook)(TRPA 2013). The 2013 Water Quality Management Plan was developed to address adoption of Total Maximum Daily Loads for Lake Tahoe and is aligned with the 2012 Regional Plan and Code of Ordinances as well as the July 26, 2012 Bi-State recommendations.

TRPA recently completed a final draft update of the BMP Handbook, incorporating information from the Lake Tahoe TMDL reports related to protecting Lake clarity by reducing the key pollutants of concern- fine sediment, phosphorus, and nitrogen (TRPA 2011a). The BMP Handbook is a tool for agencies and project implementers to use in meeting the standards for reducing pollutants of concern as identified in the Lake Tahoe TMDL. The BMP Handbook is not necessarily all inclusive or site specific, but it does provide targeted guidance on site analysis dependent upon project scale, temporary and permanent BMP planning, and design. It also includes a BMP tool-kit and long-term maintenance strategies for stormwater quality control measures. (TRPA 2011a).

## CODE OF ORDINANCES

The TRPA Code of Ordinances, renewed as part of the Regional Plan Update and enacted in February 2013 addresses Grading and Construction in Chapter 33, Driveway and Parking Standards in Chapter 34, 100-year Floodplains in Chapter 35 (Natural Hazard Standards chapter), and Site and Building Design, Landscape and Water Conservation Standards in Chapters 36 and 37 (TRPA 2012b).

Chapter 60 of the TRPA Code of Ordinances regulates Water Quality. It includes discharge limits for surface runoff and discharge to groundwater (Table 4.6-4, TRPA Discharge Limits for Surface Runoff and Discharge to Groundwater) and required installation and maintenance of BMPs (TRPA 2012b). Discharge limits are similar to those stipulated in the LRWQCB's Basin Plan introduced above with the exception of suspended sediment being used as a measurement for surface runoff in lieu of turbidity and the TRPA code specifies allowable discharge to groundwater concentrations while LRWQCB does not.

<b>Constituent</b>	<b>Maximum Concentration</b>
<b>Surface Runoff</b>	
Dissolved Inorganic Nitrogen as N	0.5 mg/l
Dissolved Phosphorus as P	0.1 mg/l
Dissolved Iron as Fe	0.5 mg/l
Grease and Oil	2.0 mg/l
Suspended Sediment	250 mg/l
<b>Discharge to Groundwater</b>	
Total Nitrogen as N	5 mg/l
Total Phosphate as P	1 mg/l
Iron as Fe	4 mg/l
Turbidity	200 NTU
Grease and Oil	40 mg/l
Source: TRPA 2012b. mg/l = milligrams per liter NTU = nephelometric turbidity units	

In accordance with Code Chapter 60 and TRPA's BMP Handbook, temporary BMPs are required on construction sites and should be maintained throughout the construction period. Permanent BMPs are required for new and existing development and infrastructure. All of the action alternatives would require temporary BMPs such as exclusion fencing, silt fencing and fiber rolls in order to limit the disturbance footprint and protect sensitive vegetation and water resources during construction. Permanent BMPs would include but not necessarily be limited to soil decompaction, seeding, and revegetation efforts to restore disturbed soil areas along the alignments and temporary access roads post-construction.

Infiltration facilities must be designed to accommodate a 20-year one-hour storm, per the BMP Handbook. Drainage conveyances through a parcel must be designed for at least a 10-year, 24-hour storm. Conveyances through an SEZ must be designed for a minimum 50-year storm. SEZ is defined by TRPA as the major and minor streams, intermittent streams, drainage ways, meadows and marshes, primary and secondary riparian vegetation and other areas of surface and ground water influence zones within the Lake Tahoe Region which provide natural treatment and conveyance of surface runoff (TRPA 2004: pp.28). Given the nature of power lines, which require minimal impervious surfaces (limited to pole foundations) that are widely dispersed across a linear route, the increase in runoff would not be appreciable and infiltration facilities would be impractical and unnecessary. Temporary work sites associated with the power line construction would be restored to pre-project conditions for all the action alternatives, which should limit the need for constructed infiltration facilities. Infiltration facilities are more appropriate for development involving contiguous, connected impervious surfaces (i.e., buildings, parking lots, driveways) that could increase the rate and volume of stormwater runoff compared to existing conditions. Expanded or new infiltration facilities will be needed where substation improvements result in an expansion of already densely concentrated impervious areas.

Floodplain management under Chapter 35 (Natural Hazard Standards chapter) requires that TRPA review development in 100-year floodplains, as defined by the FEMA or where TRPA has reason to believe that a flood hazard may exist. The TRPA Code prohibits development, grading or filling of lands within 100-year floodplains with certain exceptions, including specific public outdoor recreation facilities, public health or safety facilities, access to buildable sites across a floodplain, and erosion control projects or water quality control facilities when it can be proven there are no viable alternatives and all potential impacts can be minimized (TRPA 2012b). Given the action alternatives are geared to improve electrical system reliability and that the current system could be subject to a greater number of power outages, the action alternatives could be granted an exception as public health and safety improvement facilities (i.e., less risk of outages or interruption of power with the improvements made under the action alternatives) that require access in a few cases across the 100-year floodplain in order to tie into buildable sites on the other side.

## **TRPA PLAN AREA STATEMENTS**

TRPA's Plan Area Statements outline land use classifications, special policies and planning considerations, permissible uses and maximum allowances for the Lake Tahoe Region. Water quality protection features allowed in plan areas are described in the list of Resources Management Allowed Uses in the Plan Area Statements, such as erosion control and runoff control.

## **LOCAL AGENCIES**

Policies and ordinances of local agencies applicable to the proposed project are described in this section.

## **PLACER COUNTY**

Placer County developed Storm Water Management Programs (SWMP) in compliance with the NPDES and LRWQCB Phase I Municipal Permit that summarize goals and activities related to stormwater management in three different regions of the county, two of which pertain to the project alternatives, the Lake Tahoe Basin that includes the areas in and around Tahoe City, and the Truckee River Basin. The Truckee River Basin SWMP aims to reduce fine sediment, nitrogen, chloride, sodium, and phosphorus in stormwater flows by implementing efforts to educate and involve the public and minimize municipal and construction site impacts via pollution prevention and runoff controls (Placer County 2007b). The SWMP for the Lake Tahoe Basin targets reductions in fine sediment, nitrogen and phosphorus and includes a Municipal Facilities Retrofit Program to improve erosion control and stormwater treatment facilities in the Lake Tahoe Basin; a Construction Component to educate, monitor, and enforce stormwater quality protection measures; and a Road and Facility Inspection Component to reduce stormwater pollution from public stormwater collection and conveyance facilities. Actions under the

latter include inspection of public road and drainage facilities and construction and post-construction BMPs for Placer County projects. Placer County coordinates much of the stormwater planning and improvement efforts in the Tahoe Region with neighboring El Dorado County.

Placer County's Grading Ordinance requires a grading permit for any activity that would result in more than 250 cubic yards of fill or excavation, or cuts or fill over 4 feet deep, in order to prevent the pollution of waterways with sediment, nutrients, or hazardous materials that may be generated during those activities. Changes were made to the County's grading ordinance specific to the Tahoe Basin requiring grading permits for all construction where 3 or more cubic yards of earthwork is to occur and requiring that projects implement BMPs for erosion prevention, slope stabilization, phased grading, revegetation, native vegetation preservation, SEZ protection, and source control and retention (Placer County 2007a).

## **TOWN OF TRUCKEE**

Operating as a small municipal separate storm sewer system (MS4) the Town of Truckee also developed and implemented a SWMP to reduce the discharge of pollutants that was approved by the LRWQCB in 2008. In 2010-11, the Town of Truckee completed the following activities related to the SWMP (Town of Truckee 2012):

- ▲ reviewed and amended existing policies for consistency with the State General Permit;
- ▲ reviewed and revised existing construction and inspection processes;
- ▲ require BMPs to be inspected and installed at first inspection and permanent BMPs installed for final occupancy;
- ▲ require that all projects retain stormwater from the 20-year, 1-hour storm event for impervious areas of the site;
- ▲ updated inspection procedures and BMP checklists for town inspectors;
- ▲ updated BMP handouts; and
- ▲ require project applicants to submit a SWPPP and erosion control plans displaying temporary and permanent BMPs for all projects disturbing an acre or more.

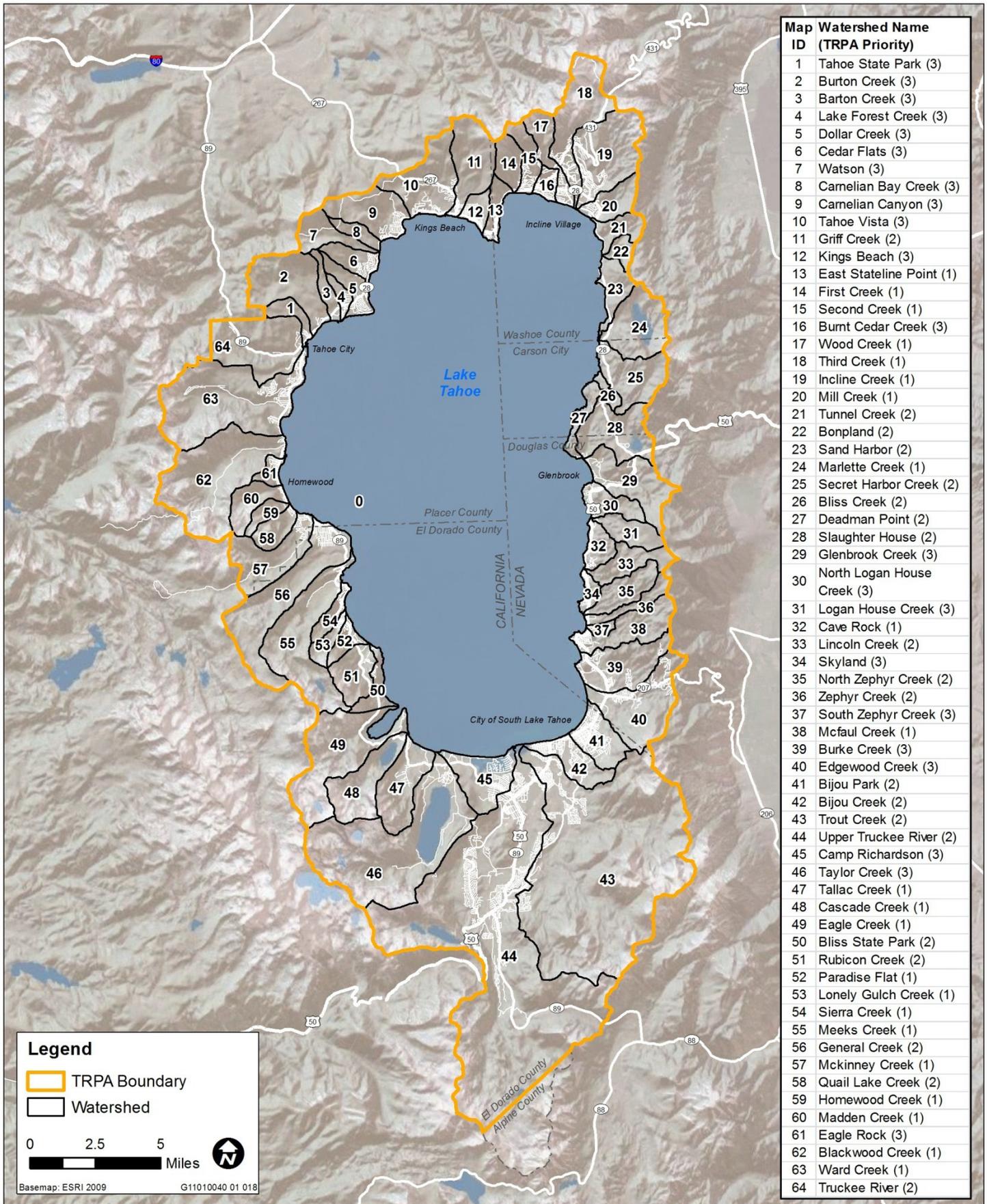
### **4.6.3 EXISTING CONDITIONS/AFFECTED ENVIRONMENT**

#### **HYDROLOGY**

The project alternatives are split between two larger watersheds, either draining to Lake Tahoe or the Truckee River between its outlet at the lake and the Town of Truckee.

#### **LAKE TAHOE BASIN WATERSHED**

The Lake Tahoe Basin was formed approximately 2 to 3 million years ago by geologic faulting and volcanic activity. Geologic faults running in a north-south direction allowed the formation of a valley between the uplifting Sierra Nevada and the Carson Range. The northeastern portion of the valley was blocked and dammed by volcanic activity to create the 506 square mile basin that lies along the California-Nevada border. Precipitation and runoff eventually filled a portion of the basin to create Lake Tahoe, which has a water surface area covering nearly two-fifths of the total basin area (191 square miles).



Source: Data received from Wildscape Engineering in 2012; Adapted by Ascent Environmental in 2012

Exhibit 4.6-7

Lake Tahoe Basin Watersheds



Lake Tahoe is fed by 63 tributary streams and 52 intervening zones that drain directly to the Lake (see Exhibit 4.6-7). The Truckee River at the northwest end of the basin is the Lake's only outlet, flowing to Pyramid Lake in Nevada. A dam constructed at Tahoe City in the early 1900s regulates water flow to the Truckee River from the natural rim (6,223 feet above sea level) to the maximum legal Lake level of 6,229.1 feet. The Lake is 12 miles wide and 22 miles long with 72 miles of shoreline.

Regional topography is characterized by steep mountain slopes at higher elevations, transitioning to more moderately sloped terrain near the lakeshore.

Average precipitation, measured at almost 32 inches a year at Tahoe City (WRCC 2012), generally falls as snow in the higher elevations and as snow and rain in the lower elevations, including the lake shore from October to May. Peak stream runoff in the watersheds of interest is typically triggered by spring snowmelt in May and June. The snow pack near the lakeshore predominantly melts before the peak in snowmelt and runoff from the higher elevations.

Land cover within the Lake Tahoe Basin is primarily forest, with areas of granitic outcrops and meadows. Less than four percent of the land cover in the Lake Tahoe Basin has been converted to impervious surfaces associated with development (distinctions between hard cover and soft cover have not yet been quantified). Of this total amount of impervious surfaces, approximately 75 percent is found within three kilometers of the lakeshore (Minor and Cablk 2004: pp. 58), and most of this 75 percent is concentrated near the Lake shore. The densest urbanized land uses in the North Lake Tahoe area are in Tahoe City in the northwest, Kings Beach in the north, and Incline Village in the northeast.

## TRUCKEE RIVER WATERSHED

Portions of the proposed utility alignments to the north and northwest of the Lake Tahoe Basin occur within the 2,720 square mile Truckee River watershed. The watershed drains to the Truckee River as it flows from the Lake Tahoe outlet in Tahoe City north and northwestward towards the Town of Truckee and ultimately northeastward down to Pyramid Lake in Nevada. The geology along the western Sierra Nevada boundary of the watershed is mostly granitic base rocks capped in some cases with basaltic lava flows, while the southern boundary consists of volcanic deposits that also formed a natural dam across Lake Tahoe's northern end. Volcanic rocks are dispersed through the area south of the Town of Truckee; glacial outwash, fluvial (river-related) and lacustrine (lake-related) deposits also occur in the watershed. It is estimated that more than fifty percent of the Truckee River watershed has "moderate" to "very high" erosion potential due in part to the steep slopes (LRWQCB 2008).

Topography in the Truckee River watershed is similar to that of the Lake Tahoe Basin with a large majority of land characterized by steep mountainous terrain above 6,000 feet elevation. The larger drainages within the Truckee River watershed relevant to the proposed project include Martis Creek, Trout Creek, and upper portions of the Middle Truckee watershed (LRWQC 2008). The prominent Martis Valley is set at elevations between 5,700 and 5,900 feet above sea level and is surrounded by hills rising 1,000 feet or more above this valley feature (DWR 2006).

Similar to the Lake Tahoe Basin watershed, stream flows typically peak during the spring snowmelt in May or June and lower to base flows during the later summer months. Near the town of Truckee the Truckee River is joined by Donner Creek, which is controlled via a dam at Donner Lake. Martis Creek joins the Truckee River about 1.5 miles downstream from the Town of Truckee; it is controlled by a dam at Martis Creek Reservoir operated by the USACE for flood control purposes about 2 miles upstream of its confluence with the Truckee River. From there and beyond the proposed utility alignment areas the Truckee River continues and is joined by Prosser Creek and the Little Truckee River (LRWQCB 2008).

The Truckee River and Lake Tahoe Basin watersheds have several identified beneficial uses per the LRWQCB Basin Plan and NDEP as listed in Table 4.6-5, Beneficial Uses per LRWQCB and NDEP.

**Table 4.6-5 Beneficial Uses per LRWQCB and NDEP**

Truckee River	Lake Tahoe – California Side	Lake Tahoe – Nevada Side
Municipal and Domestic Supply	Municipal and Domestic Supply	Municipal or Domestic Supply, or both
Agricultural Supply	Agricultural Supply	Irrigation/Watering of Livestock
Industrial Service Supply	---	Industrial Supply
Groundwater Recharge	Groundwater Recharge	---
Freshwater Replenishment	---	---
Hydropower Generation	---	---
Water Contact Recreation	Water Contact Recreation	Recreation involving contact with the water
Non-water Contact Recreation	Non-water Contact Recreation	Recreation not involving contact with the water
Commercial and Sportfishing	Commercial and Sportfishing	---
Wildlife Habitat	Wildlife Habitat	Propagation of Wildlife
Rare and Endangered Species Habitat	---	---
Migration of Aquatic Organisms	Migration of Aquatic Organisms	Propagation of aquatic life including a cold water fishery
Spawning, Reproduction and Development	Spawning, Reproduction and Development	Propagation of aquatic life including a cold water fishery
---	Cold Freshwater Habitat	---

Source: LRWQCB 2008, LRWQCB/NPDES 2007

To help protect these beneficial uses the LRWQCB Basin Plan includes the sediment-related water quality objectives shown in Table 4.6-6, LRWQCB Basin Plan Water Quality Objectives.

**Table 4.6-6 LRWQCB Basin Plan Water Quality Objectives**

Objective	Description
Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause a nuisance or adversely affect the water for beneficial uses.
Suspended Materials	Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affect the water for beneficial uses. For natural high quality waters, the concentration of total suspended materials shall not be discernible at the 10 percent significant level.
Settleable Materials	Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For natural high quality waters the concentration of settleable materials shall not be raised by more than 0.1 milliliter per liter.
Turbidity	<i>Truckee River Hydrologic Unit:</i> The turbidity shall not be raised above 3 Nephelometric Turbidity Units (NTUs), mean of monthly means. (This objective is approximately equal to the State of Nevada standard of 5 NTU sample mean). <i>Lahontan Region-wide:</i> Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.
Nondegradation	Whenever the existing quality of water is better than the quality of water established in the Basin Plan as objectives (both narrative and numerical), such existing quality shall be maintained unless appropriate findings are made under the State Water Board's Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California."

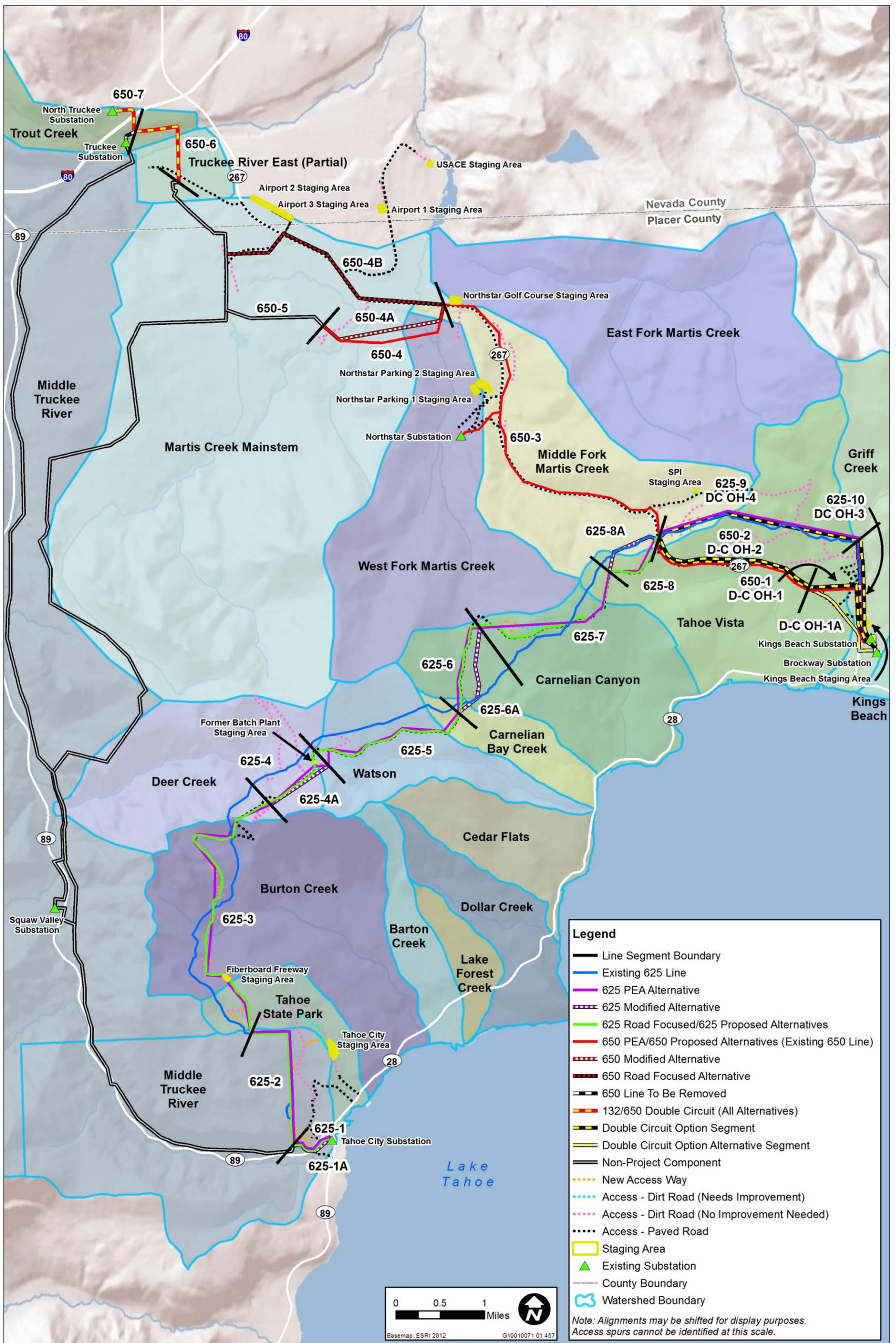
Source: LRWQCB 2008

## SUBWATERSHEDS

Within the two larger Lake Tahoe and Truckee River watersheds, the proposed power line improvements pass through thirteen smaller watersheds that eventually drain to either Lake Tahoe or the Truckee River as shown on Exhibit 4.6-8.

For this analysis, the relevant Lake Tahoe Basin watersheds were taken from TRPA data files and the Truckee River watersheds were approximated using USGS 7.5 Quadrangle maps imported into a computer assisted drafting system. Exhibit 4.6-8 shows the watersheds of interest and Table 4.6-7, Watersheds Potentially Affected by the Action Alternatives, lists them along with their respective areas and the proposed power line sections that occur within them.

<b>Watershed</b>	<b>TRPA Priority Number<sup>1</sup></b>	<b>Watershed Area (Acres)</b>	<b>Power Line Sections within Watershed</b>
<b>Tahoe Basin Watersheds</b>			
Truckee River	2	4,366	625-1 625-2 625-3
Tahoe State Park	3	782	625-3
Burton Creek	3	3,652	625-3
Watson	3	1,490	625-5
Carnelian Bay Creek	3	635	625-6
Carnelian Canyon	3	2,662	625-7
Tahoe Vista	3	3,495	625-8 625-9 625-10 650-1 650-2
Griff Creek	2	2,914	625-10 650-1
<b>Truckee River Watersheds</b>			
Deer Creek	n/a	386.4	625-4
Martis Creek Mainstem	n/a	1,342.4	650-4 650-5
Middle Fork Martis Creek	n/a	430.1	625-8 625-9 650-2 650-3
Trout Creek	n/a	320.2	650-6 650-7
Truckee River Middle drains to Partial at Truckee	n/a	53,234/460	650-6
Truckee River East (Partial)	n/a	20	650-6
<sup>1</sup> TRPA assigned priority values of 1 through 3, with 1 having the greatest propensity for accelerated erosion due to steeper terrain, highly erosive soils, and a higher ratio of development to undisturbed land requiring more immediate BMP implementation. Source: TRPA 2012a, USGS 7.5 Quadrangle Map			



Source: Data received from Wildscape Engineering in 2012; Adapted by Ascent Environmental in 2012

Exhibit 4.6-8

## FLOODING

Extreme peak flows resulting in damaging floods in the Tahoe and Truckee regions are typically associated with winter rain on snow events where warmer weather rainstorms fall on antecedent snowpack conditions increasing runoff substantially. Moderate flood events can occur during spring snowmelt or rain on snow events.

With a controlled outlet on the Truckee River at the dam just east of the State Route 89/Fanny Bridge crossing in Tahoe City, flooding from Lake Tahoe itself is avoided by controlled releases and precautionary drawdowns. Projections of maximum water surface elevation in the Lake are made in early spring based on snow water content and expected physical and climate conditions affecting that season's runoff. Calculated scheduled releases are made to ensure the water surface elevation is not allowed to exceed 6,229.1 feet Lake Tahoe datum (USBR 2008). Occasionally flooding of river mouths may occur when a high Lake level (6,229.1 feet) occurs in unison with large rain on snow or summer rainstorm events (i.e., backwater effect in a tributary reach entering the Lake).

The project alternatives intersect FEMA designated Special Flood Hazard Areas (areas expected to be inundated by a 1 percent annual chance flood [i.e., 100-year flood]) in a few locations as can be seen in Exhibits 4.6-1 through 4.6-4. Parts of the existing and proposed alignments along the Truckee River in Tahoe City are within the 100-year regulatory floodplain (Exhibit 4.6-2) as well as a small portion of the proposed double-circuit alignment in Kings Beach along Griff Creek (Exhibit 4.6-3) and proposed segments under the action alternatives in the low lying Martis Valley (Exhibit 4.6-4).

In the unlikely event of a partial or complete collapse of the dam at Tahoe City, the immediate floodwaters would be conveyed within the Truckee River floodway, but could threaten up to 1,000 people (Placer County 2010).

## GROUNDWATER

Groundwater enters Lake Tahoe and the Truckee River via subsurface discharge to tributary stream channels or as subsurface flow directly to the Lake and River. As groundwater moves towards the lake and river, it may pick up soluble nutrients via stormwater infiltration basins, fertilized areas, urban areas, and leaking sewer lines. These types of effects on groundwater quality have the potential to also affect the river and lake's water quality and clarity. Lake Tahoe and the Truckee River are also sources for groundwater recharge and municipal and domestic water supplies (LRWQCB and NDEP 2007).

The proposed project spans two groundwater basins, the Martis Valley Groundwater Basin and the Tahoe Valley Groundwater Basin (DWR 2006). The Tahoe Valley Groundwater Basin is further divided into the north, south, and west sides of Lake Tahoe on the California side, with Tahoe City in the west subbasin and the towns of Tahoe Vista and Kings Beach in the north subbasin. Groundwater north of the lake is found in the unconsolidated basin-fill sediments, volcanic rock interbedded with the basin-fill sediments and fractured rock and is described more typical of a fracture-flow system rather than a true aquifer (DWR 2004). The more prominent aquifers in the Lake Tahoe Basin include the Tahoe City/West Shore and Tahoe Vista/Kings Beach aquifers composed of younger alluvium, glacial till and outwash deposits with older alluvium at greater depths. The Tahoe City/West Shore Aquifer extends roughly 18 miles from Dollar Point to the north southward to Rubicon Bay and is at an estimated depth of 590 feet. The Tahoe Vista/Kings Beach aquifer starts at Dollar Point on the west and extends eastward to Stateline and consists of younger alluvium overlying volcanic rocks at varying depths followed by a deeper layer of older alluvium (USGS 2007).

The USACE conducted a study in 2003 to estimate nutrient loading rates to Lake Tahoe via groundwater sources. They reported that the Tahoe Vista/Kings Beach area contributed 9,400 kg/year of total nitrogen and 1,100 kg/year of total phosphorus and the Tahoe City/West Shore area contributed 28,000 and 4,400 kg/year of total nitrogen

and phosphorus respectively. Overall, USACE estimated that groundwater contributes 13 percent of the overall nitrogen loading budget and 15 percent of the total phosphorus loading budget for the Lake annually (USACE 2003).

## LAKE TAHOE TOTAL MAXIMUM DAILY LOAD

Lake Tahoe is classified as an oligotrophic lake, which means the lake has clear water, high levels of dissolved oxygen, and very low concentrations of nutrients that support algal growth (TERC 2011: pp. 6.15). The exceptional transparency of the lake results from naturally low inputs of nutrients and sediment from the surrounding watershed. As previously mentioned, Lake Tahoe is designated an ONRW under the CWA, and is also designated a “water of extraordinary ecological or aesthetic value” by the NDEP (TERC 2011: pp. 6.2).

The Lake Tahoe TMDL was developed collaboratively by LRWQCB and NDEP, and adopted by EPA for both states in 2011. As an impaired water body for transparency, Lake Tahoe is required to have a TMDL to determine the key pollutants and contributing sources to the impairment. The three pollutants identified as the primary basis for Lake Tahoe’s impaired status include fine sediment, nitrogen, and phosphorus. The TMDL also identifies the maximum amount of each of these three pollutants Lake Tahoe can receive and remain in attainment of water quality goals. A completed TMDL provides the framework for a comprehensive water quality restoration plan to address identified pollutant sources (LRWQCB and NDEP 2010: pp. 1-1).

## POLLUTANT SOURCES

Various multi-agency efforts went into collecting and compiling stormwater data and analyzing the primary sources of pollutants to the Lake and optimum ways to target load reductions to attain water quality goals. An EPA approved Lake Tahoe Watershed Model was developed to estimate 1) runoff and pollutant loading from all subwatersheds of the Lake Tahoe Basin, and 2) expected pollutant loads that might result from various land uses and land use changes in the Lake Tahoe Basin. A Lake Clarity Model was developed to estimate Lake Tahoe’s response to these pollutant loadings and to help quantify the necessary reductions in pollutant loads to achieve water quality goals, including increased lake transparency.

The Lake Tahoe TMDL research included an analysis of pollutant sources to identify the magnitude of pollutant loads to Lake Tahoe from source categories defined as: surface runoff from developed lands (urban upland); atmospheric deposition; forested runoff; stream channel erosion; groundwater; and shoreline erosion. Exhibit 4.6-9 displays the relative distribution of average annual pollutant loading to Lake Tahoe for each pollutant of concern among the source categories (LRWQCB and NDEP 2010: pp. 7-2 and 7-3). As shown in Exhibit 4.6-9, the TMDL identifies surface runoff from developed lands as the most significant source of pollutant loading for fine sediment particles (the primary pollutant of concern) and phosphorus. Surface runoff from developed lands is estimated to deliver over 70 percent of the average annual fine sediment particle load and approximately 40 percent of the average annual phosphorus load to the Lake. For nitrogen, atmospheric deposition is identified as the most significant source of loading to the Lake, contributing 55 percent of the average annual load.

## LOAD REDUCTION MILESTONES AND IMPLEMENTATION

The Lake Tahoe TMDL indicates that to achieve the target transparency standard of 29.7 meters annual average Secchi depth, total Region-wide loads of fine sediment particles, phosphorus, and nitrogen need to be reduced by 65 percent, 35 percent, and 10 percent, respectively. Load reductions expressed as a percentage are relative to baseline pollutant loads calculated for the year 2004.

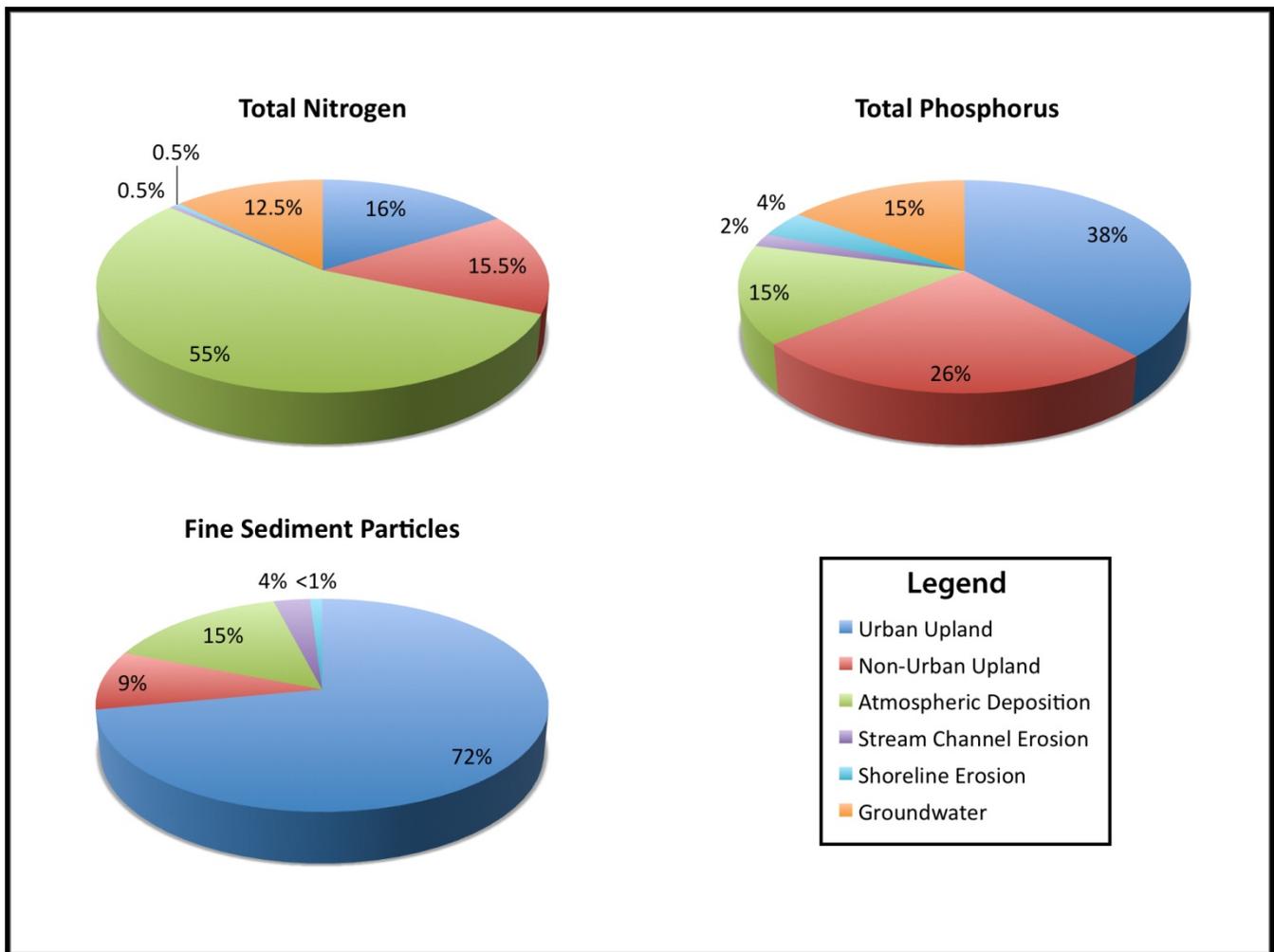


Exhibit 4.6-9

Existing Pollutant Sources to Lake Tahoe

Through the Lake Tahoe TMDL, the LRWQCB and NDEP have established five year load reduction milestones shown in Table 4.6-8 to help assess progress towards meeting the overall load reduction goals. Given that the majority of pollutant loads for fine sediment particles and phosphorus are delivered to the Lake from developed lands (72 percent of the total fine sediment load), the LRWQCB and NDEP have prioritized this source category as the greatest opportunity for pollutant control. Undeveloped (e.g., forest) portions of the Lake Tahoe watershed, where the proposed project would primarily take place, are estimated to contribute approximately 9 percent of the total fine sediment particle load. Through a NPDES permit, each city and county in the California side of the Lake Tahoe Basin is expected to develop load reduction plans that prioritize water quality projects and actions to reduce loading from developed lands to meet the TMDL milestones shown in Table 4.6-8. The TMDL also provides milestone load reductions for forest upland, atmospheric deposition, and stream channels pollutant sources. These are also shown in Table 4.6-8.

Pollutant Source Category	Pollutant of Concern	2016 Target	2021 Target
Urban Upland	Fine Sediment Particles	10%	21%
	Total Phosphorus	7%	14%
	Total Nitrogen	8%	14%

**Table 4.6-8 Load Reduction Milestones for TMDL Pollutant Source Categories<sup>1</sup>**

Pollutant Source Category	Pollutant of Concern	2016 Target	2021 Target
Forest Upland	Fine Sediment Particles	6%	9%
	Total Phosphorus	1%	1%
	Total Nitrogen	0%	0%
Atmosphere	Fine Sediment Particles	8%	15%
	Total Phosphorus	9%	17%
	Total Nitrogen	0%	0%
Stream Channel	Fine Sediment Particles	13%	26%
	Total Phosphorus	8%	15%
	Total Nitrogen	0%	0%

<sup>1</sup> Load reductions expressed as a percentage are relative to baseline pollutant loads calculated for the year 2004.  
Source: LRWQCB and NDEP 2010

## MIDDLE TRUCKEE RIVER WATERSHED TMDL

The middle Truckee River Watershed TMDL focuses on sediment-related water quality objectives for the reach of the Truckee River from the outflow at Lake Tahoe to the California/Nevada state line. This reach drains roughly 428 square miles. The primary goal of the TMDL is to lower sediment inputs to protect in-stream aquatic life which has decreased in diversity and structure as it trended towards more sediment tolerant species. Suspended sediment concentrations in the Truckee River are above what is recommended for healthy aquatic life. High flow events from thunderstorms, snow melt, and dam releases resulting in short-term turbidity pulses and urbanization and development lead to increased sedimentation over the long-term (LRWQCB 2008). Primary sediment sources in the watershed have been linked to dirt roads, urban stormwater runoff, legacy erosion sites and in some cases graded ski runs. It is estimated that a 20 percent reduction in sediment loading is needed to achieve the desired in-stream conditions which amounts to 40,300 tons per year based on 1996 to 1997 water years (EPA 2009). The TMDL emphasizes the continuation and improvement of existing erosion control and monitoring programs, NPDES stormwater permits and sediment controls for construction projects, highway operations and long-term operations such as ski resorts and industrial areas.

### 4.6.4 ENVIRONMENTAL CONSEQUENCES AND RECOMMENDED MITIGATION MEASURES

#### SIGNIFICANCE CRITERIA

##### TRPA CRITERIA

The “Water Quality” criteria from the TRPA Initial Environmental Checklist were used to evaluate the hydrology and water quality impacts of the alternatives. The checklist asks whether the project would result in the following conditions.

- ▲ Changes in currents, or the course or direction of water movements?
- ▲ Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff so that a 20 year 1 hour storm runoff (approximately 1 inch per hour) cannot be contained on the site?
- ▲ Alterations to the course or flow of 100-year flood waters?
- ▲ Change in the amount of surface water in any water body?

- ▲ Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?
- ▲ Alteration of the direction or rate of flow of groundwater?
- ▲ Change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?
- ▲ Substantial reduction in the amount of water otherwise available for public water supplies?
- ▲ Exposure of people or property to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?
- ▲ The potential discharge of contaminants to the groundwater or any alteration of groundwater quality?
- ▲ The project being located within 600-feet of a drinking water source?

## NEPA CRITERIA

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. The factors that are taken into account under NEPA to determine the significance of an action in terms of the context and the intensity of its effects are encompassed by the TRPA and CEQA criteria used for this analysis.

## CEQA CRITERIA

Based on Appendix G of the State CEQA Guidelines and consideration of physical and regulatory conditions in the project area, an alternative would have a significant impact on hydrology and water quality if implementation of the alternative would do any of the following:

- ▲ violate any water quality standards or waste discharge requirements;
- ▲ substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- ▲ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion, siltation or flooding on- or off-site;
- ▲ create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage, infiltration, and treatment systems or facilities resulting in increased sources of pollutants reaching surface waters or causing detrimental flooding to property or infrastructure;
- ▲ otherwise substantially degrade water quality;
- ▲ place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- ▲ place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- ▲ expose people or structures to a significant risk of loss, injury, or death involving flooding; or
- ▲ inundation by seiche, tsunami, or mudflow.

## ISSUES DISMISSED FROM FURTHER EVALUATION

Potential impacts related to water supply are evaluated in Section 4.11, Public Services and Utilities. The proposed project would not alter long-term water demand or groundwater or surface water supplies or the volume of water contained in any surface water bodies. Therefore, these issues are not evaluated further in that

section. Potential for mudflow is addressed in Section 4.5, Geology, Soils, and Land Capability Coverage, as part of the evaluation of landslide. In regards to inundation by seiche or tsunami, according to recent research it is possible that a 7.0 magnitude earthquake originating along one of three faults under Lake Tahoe could trigger a tsunami in the lake that would generate up to 30-foot high seiche waves (standing or sloshing waves) near the shoreline. With a portion of the proposed power lines and substation upgrades roughly 500 feet from shore, the action alternatives could potentially be affected; however, with only a 3 to 4 percent chance of the magnitude of earthquake occurring that would generate such a wave in the next 50 years (Los Angeles Times 2000, Ichinose and Anderson 2000) and the proposed project not consisting of housing or businesses that would place people at risk if a large seiche were to occur, this issue is not addressed further. The proposed project does not include housing, and therefore would not place housing within a 100-year flood hazard area.

## METHODS AND ASSUMPTIONS

The evaluation of potential hydrology, water quality, and flooding impacts associated with implementation of the project alternatives was based on a review of background reports, applicable federal, state, TRPA and other regional laws, regulations, codes and guidelines, and FEMA flood hazard maps.

Approximate areas of disturbance by alternative within each watershed were evaluated by multiplying the proposed power line distances taken from geographic information system (GIS) data by the 65-foot wide temporary and 40-foot wide permanent easement widths (or 65-foot permanent easement width for double-circuit segments). The 65-foot width was used to gauge the area of land that would be subjected to temporary earth disturbance during construction of single-circuit segments and the 40-foot width was used to gauge the area of land that may not be fully restored hydrologically in single-circuit segments due to continued access for periodic maintenance and lesser vegetative recovery. Disturbances due to new and improved access roads were added to the disturbance value by multiplying the respective road distances by a 12 foot width. Staging areas were assumed to count for 28 acres total disturbance common to all action alternatives. The Northstar parking areas were not included since they are already paved and the highest value of 8.2 acres of disturbance was selected from the Airport and USACE options given only one of those four areas would be selected and carried forward. Disturbance associated with potential hazard tree removal was not included in the calculations as the location and extent of hazard tree removal and conditions that may be encountered at hazard tree removal sites (e.g., proximity to the power line ROW or existing road) are not known at this time. See the subsection titled "Tree Removal" in Chapter 3, Project Alternatives, for more information on hazard tree removal. Since all the action alternatives were assessed in the same manner, the information shown in Table 4.6-9, Approximate Disturbance Areas Associated with Project Alternatives by Watershed, provides a useful comparison of the potential disturbance associated with each. Existing power line disturbance is included as a comparison; however, existing access roads were not distinguished at the time and therefore not added to the subtotal.

**Table 4.6-9 Approximate Disturbance Areas Associated with Project Alternatives by Watershed**

Power Line and Disturbance Description	Existing Conditions	Action Alternatives				
		Alternative 1 (PEA)	Alternative 2 (Modified)	Alternative 3 (Road Focused)	Alternative 3A (Road Focused with Double Circuit Option)	Alternative 4 (Proposed)
<b>Truckee River Watershed - South</b>						
Lines 625-1, 625-2, and 625-3 (FT)	2,755	11,872	11,894	11,872	11,872	11,872
Permanent Easement (AC)	2.53	10.90	10.92	10.90	10.90	10.90
New Access Road (AC)	---	4.26	4.26	4.26	4.26	<b>4.26</b>
Improved Dirt Access Road (AC)	---	0.34	0.34	0.34	0.34	0.34
Disturbance (AC)	<b>2.5</b>	<b>15.5</b>	<b>15.5</b>	<b>15.5</b>	<b>15.5</b>	<b>15.5</b>

**Table 4.6-9 Approximate Disturbance Areas Associated with Project Alternatives by Watershed**

Power Line and Disturbance Description	Existing Conditions	Action Alternatives				
		Alternative 1 (PEA)	Alternative 2 (Modified)	Alternative 3 (Road Focused)	Alternative 3A (Road Focused with Double Circuit Option)	Alternative 4 (Proposed)
<b>Tahoe State Park Watershed</b>						
625-3 (FT)	2,827	3,100	3,100	3,225	3,225	3,225
Permanent Easement (AC)	2.60	2.85	2.85	2.96	2.96	2.96
New Access Road (AC)	---	1.07	1.07	0.59	0.59	0.59
Improved Dirt Access Road (AC)	---	0.67	0.67	0.67	0.67	0.67
Tahoe City Staging Area (AC)	---	9.1	9.1	9.1	9.1	9.1
Disturbance (AC)	<b>2.6</b>	<b>13.7</b>	<b>13.7</b>	<b>13.7</b>	<b>13.7</b>	<b>13.7</b>
<b>Burton Creek Watershed</b>						
625-3	12,789	13,510	13,510	14,379	14,379	14,379
Permanent Easement (AC)	11.74	12.41	12.41	13.20	13.20	13.20
New Access Road (AC)	---	3.3	3.3	0.56	0.56	0.56
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Fiberboard Freeway Staging (AC)	---	1.9	1.9	1.9	1.9	1.9
Disturbance (AC)	<b>11.7</b>	<b>17.6</b>	<b>17.6</b>	<b>15.7</b>	<b>15.7</b>	<b>15.7</b>
<b>Deer Creek Watershed</b>						
625-4	8,243	5,820	5,711	6,486	6,486	6,486
Permanent Easement (AC)	7.57	5.34	5.24	5.96	5.96	5.96
New Access Road (AC)	---	1.2	1.5	0.31	0.31	0.31
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Former Batch plant Staging (AC)	---	0.2	0.2	0.2	0.2	0.2
Disturbance (AC)	<b>7.6</b>	<b>6.7</b>	<b>6.9</b>	<b>6.5</b>	<b>6.5</b>	<b>6.5</b>
<b>Watson Watershed</b>						
625-5 (FT)	6,624	9,010	8,953	8,656	8,656	8,656
Permanent Easement (AC)	6.08	8.27	8.22	7.95	7.95	7.95
New Access Road (AC)	---	2.4	2.56	0.07	0.07	0.07
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Disturbance (AC)	<b>4.56</b>	<b>7.8</b>	<b>7.7</b>	<b>7.5</b>	<b>7.5</b>	<b>7.5</b>
<b>Carnelian Bay Creek Watershed</b>						
625-5/625-6(FT)	2,691	2,187	2,133	2,350	2,350	2,350
Permanent Easement (AC)	2.47	2.01	1.96	2.16	2.16	2.16
New Access Road (AC)	---	0.97	0.59	0	0	0
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Disturbance (AC)	<b>2.5</b>	<b>3.0</b>	<b>2.6</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>
<b>Carnelian Canyon Watershed</b>						
625-6/625-7	10,378	12,791	12,784	13,315	13,315	13,315
Permanent Easement (AC)	9.53	11.75	11.74	11.74	12.23	12.23
New Access Road (AC)	---	3.21	2.18	0.15	0.15	0.15
Improved Dirt Access Road (AC)	---	0.61	0.61	0	0	0
Disturbance (AC)	<b>9.5</b>	<b>15.6</b>	<b>14.5</b>	<b>11.9</b>	<b>12.4</b>	<b>12.4</b>

**Table 4.6-9 Approximate Disturbance Areas Associated with Project Alternatives by Watershed**

Power Line and Disturbance Description	Existing Conditions	Action Alternatives				
		Alternative 1 (PEA)	Alternative 2 (Modified)	Alternative 3 (Road Focused)	Alternative 3A (Road Focused with Double Circuit Option)	Alternative 4 (Proposed)
<b>Tahoe Vista Watershed</b>						
625-7 to 625-10 (FT)	13,677	15,184	3,007	5,346	5,346	5,346
650-1 to 650-2		14,943	10,065	14,943	16,961	12,341
Total Length Utility Line	13,677	30,127	13,072	20,289	22,307	17,687
Permanent Easement (AC)	12.56	27.66	12.00	18.63	20.48	16.24
New Access Road (AC)	---	7.68	4.09	3.24	2.52	3.24
Improved Dirt Access Road (AC)	---	0.16	0.16	0	0	0
Disturbance (AC)	<b>12.6</b>	<b>35.5</b>	<b>16.3</b>	<b>21.9</b>	<b>23.0</b>	<b>19.5</b>
<b>Middle Fork Martis Creek Watershed</b>						
625-8 to 625-9	4,556	5,245	2,741	798	798	798
650-2 to 650-3	---	24,552	28,378	23,645	23,645	24,552
Total Length Utility Line (FT)	4,556	29,797	31,119	24,443	24,443	25,350
Permanent Easement (AC)	4.18	27.36	28.58	22.45	22.45	23.28
New Access Road (AC)	---	7.95	8.37	5.97	5.97	5.97
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Disturbance (AC)	<b>4.2</b>	<b>35.3</b>	<b>37.0</b>	<b>28.4</b>	<b>28.4</b>	<b>29.3</b>
<b>East Fork Martis Creek Watershed</b>						
650	---	1,341	1,341	1,341	1,341	1,341
Permanent Easement (AC)	---	1.23	1.23	1.23	1.23	1.23
New Access Road (AC)	---	0.37	0.37	0.37	0.37	0.37
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Disturbance (AC)	---	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>
<b>West Fork Martis Creek Watershed</b>						
650	---	4,151	3,725	1,263	1,263	4,151
Permanent Easement (AC)	---	3.81	3.42	1.16	1.16	3.81
New Access Road (AC)	---	0.35	0.35	0.35	0.35	0.35
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Disturbance (AC)	---	<b>4.2</b>	<b>3.8</b>	<b>1.5</b>	<b>1.5</b>	<b>4.2</b>
<b>Griff Creek Watershed</b>						
625-10	4,076	10,964	---	---	---	---
650-1	---	8,501	10,792	8,329	6,428	4,167
650 to be Removed	---	(1,152)	(1,152)	(1,152)	(1,152)	(1,152)
Total Utility Line (FT)	4,076	18,313	9,640	7,177	5,276	3,015
Permanent Easement (AC)	3.74	16.82	8.85	6.59	4.84	2.77
New Access Road (AC)	---	2.48	1.46	1.03	1.03	1.03
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Kings Beach Staging Area (AC)	---	2.9	2.9	2.9	2.9	2.9
Disturbance (AC)	<b>3.7</b>	<b>22.2</b>	<b>13.2</b>	<b>10.5</b>	<b>8.8</b>	<b>6.7</b>

**Table 4.6-9 Approximate Disturbance Areas Associated with Project Alternatives by Watershed**

Power Line and Disturbance Description	Existing Conditions	Action Alternatives				
		Alternative 1 (PEA)	Alternative 2 (Modified)	Alternative 3 (Road Focused)	Alternative 3A (Road Focused with Double Circuit Option)	Alternative 4 (Proposed)
<b>Martis Creek Mainstem Watershed</b>						
650-4/650-5	---	5,576	5,467	15,681	15,681	5,576
Permanent Easement (AC)	---	5.12	5.02	14.40	14.4	5.12
New Access Road (AC)	---	0.13	0.13	0.13	0.13	0.13
Improved Dirt Access Road (AC)	---	0	0	0	0	0
SPI/Northstar Golf Course Staging (AC)	---	5.7	5.7	5.7	5.7	5.7
Disturbance (AC)	---	<b>11.0</b>	<b>10.9</b>	<b>20.2</b>	<b>20.2</b>	<b>11.0</b>
<b>Truckee River East (Partial) Watershed</b>						
650-6 (FT)	---	2,692	2,692	2,692	2,692	2,692
Permanent Easement (AC)	---	2.47	2.47	2.47	2.47	2.47
New Access Road (AC)	---	0	0	0	0	0
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Airport 2 Staging (AC)	---	8.2	8.2	8.2	8.2	8.2
Disturbance (AC)	---	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>
<b>Trout Creek Watershed</b>						
650-6 to 650-7 (FT)	---	6,165	6,165	6,165	6,165	6,165
Permanent Easement (AC)	---	5.66	5.66	5.66	5.66	5.66
New Access Road (AC)	---	0	0	0	0	0
Improved Dirt Access Road (AC)	---	0	0	0	0	0
Disturbance (AC)	---	<b>5.7</b>	<b>5.7</b>	<b>5.7</b>	<b>5.7</b>	<b>5.7</b>
Power Line Total (Feet)	68,616	156,878	131,732	139,760	139,877	126,686
Power Line Total (Miles)	13	29.71	24.95	26.47	26.49	23.99
Power Line Temporary Easement Disturbance (AC) <sup>1</sup>	---	234.1	196.6	208.6	208.7	189.0
Power Line Permanent ROW (AC) <sup>2</sup>	63.0	144.1	121.0	128.3	128.5	116.3
Access Road Disturbance (AC) <sup>3</sup>	---	37.2	32.0	18.0	17.3	18.0
Staging Area Disturbance (AC)	---	28	28	28	28	28
<b>Total Construction Disturbance (AC)</b>	---	<b>299</b>	<b>257</b>	<b>255</b>	<b>254</b>	<b>235</b>
<b>Total Permanent ROW (AC)</b>	<b>63</b>	<b>181</b>	<b>153</b>	<b>146</b>	<b>146</b>	<b>134</b>
<sup>1</sup> Acreages for power line construction disturbances (i.e., temporary easement disturbance) are based on a 65-foot wide construction easement width multiplied by the length. <sup>2</sup> Acreages for power line right of way are based on a 40-foot wide easement width multiplied by the length for single-circuit line segments and a 65-foot wide easement width multiplied by length for double-circuit line segments. <sup>3</sup> Acreages for access roads assumes 12-foot wide disturbance multiplied by the road length. FT = Feet, AC = Acres						

Unable to avoid sensitive lands completely, all the action alternatives traverse some land designated as SEZ (i.e., TRPA Land Capability 1 and 2) in the Lake Tahoe Basin and Montane Riparian outside of the Lake Basin. In addition to the named waterways identified previously in this section, there are several smaller creeks and unnamed drainages that run through and adjacent to the wetlands and SEZs within these watersheds, the most significant in the lower lying areas of Martis Valley where the various branches of Martis Creek converge. Table 4.6-10, Sensitive Resources Potentially Impacted by Alternatives and by Watershed, summarizes the action alternative disturbance areas within these sensitive lands and the number of necessary stream crossings by watershed.

<b>Table 4.6-10 Sensitive Resources Potentially Impacted by Alternatives and by Watershed</b>					
<b>Sensitive Resource</b>	<b>Alternative 1 (PEA)</b>	<b>Alternative 2 (Modified)</b>	<b>Alternative 3 (Road Focused)</b>	<b>Alternative 3A (Road Focused with Double Circuit Option)</b>	<b>Alternative 4 (Proposed)</b>
<b>Truckee River Watershed - South</b>					
Distance in SEZ/Montane Riparian <sup>1</sup> (Feet)	1,847.31	971.4	1,832.69	1,832.69	1,832.69
Disturbance Area in SEZ (Acres) <sup>2</sup>	1.70	0.89	1.68	1.68	1.68
Number of Stream Crossings (Truckee River)	1	1	1	1	1
<b>Tahoe State Park Watershed</b>					
Distance in SEZ/Montane Riparian <sup>1</sup> (Feet)	0	0	0	0	0
<b>Burton Creek Watershed</b>					
Distance in SEZ/Montane Riparian <sup>1</sup> (Feet)	773.79	773.79	815.75	815.75	815.75
Disturbance Area in SEZ (Acres) <sup>2</sup>	0.71	0.71	0.75	0.75	0.75
Number of River Crossings (Unnamed Stream)	1	1	3	3	3
<b>Deer Creek Watershed</b>					
Distance in SEZ/Montane Riparian <sup>1</sup> (Feet)	0	0	0	0	0
<b>Watson Watershed</b>					
Distance in SEZ/Montane Riparian (Feet)	513.20	513.20	199.60	199.60	199.60
Disturbance Area in SEZ (Acres) <sup>2</sup>	0.47	0.47	0.18	0.18	0.18
Number of River Crossings	0	0	0	0	0
<b>Carnelian Bay Creek Watershed</b>					
Distance in SEZ/Montane Riparian <sup>1</sup> (Feet)	0	0	0	0	0
<b>Carnelian Canyon Watershed</b>					
Distance in SEZ/Montane Riparian <sup>1</sup> (Feet)	0	0	0	0	0
<b>Tahoe Vista Watershed</b>					
Distance in SEZ/Montane Riparian (Feet)	443.24	104.40	338.84	208.98	254.61
Disturbance Area in SEZ (Acres) <sup>2</sup>	0.41	0.1	0.31	0.19	0.23
Number of River Crossings (Unnamed Stream)	4	2	2	2	2
<b>Middle Fork Martis Creek Watershed</b>					
Distance in SEZ/Montane Riparian (Feet)	2,031.25	2,030.89	1,952.38	1,952.38	2,031.25
Disturbance Area in SEZ (Acres) <sup>2</sup>	1.87	1.86	1.79	1.79	1.87
Number of River Crossings (Martis Creek)	8	8	7	7	8
<b>East Fork Martis Creek Watershed</b>					
SEZ/Montane Riparian	0	0	0	0	0
<b>West Fork Martis Creek Watershed</b>					
Distance in SEZ/Montane Riparian (Feet)	47.55	0	0	0	47.55
Disturbance Area in SEZ (Acres) <sup>2</sup>	0.04	0	0	0	0.04
Number of River Crossings (West Martis Creek)	1	1	0	0	1
<b>Griff Creek Watershed</b>					
Distance in SEZ/Montane Riparian (Feet)	5,410.0	2,706.91	2,704.77	347.83	1,365.65
Disturbance Area in SEZ (Acres) <sup>2</sup>	4.97	2.49	2.48	0.32	1.25
Number of River Crossings (Griff, Unnamed)	8	4	4	1	4
<b>Martis Creek Mainstem Watershed</b>					
Distance in SEZ/Montane Riparian (Feet)	171.82	289.01	0	0	171.82
Disturbance Area in SEZ (Acres) <sup>2</sup>	0.16	0.27	0	0	0.16
Number of River Crossings (Martis, Unnamed)	2	2	1	1	2

**Table 4.6-10 Sensitive Resources Potentially Impacted by Alternatives and by Watershed**

Sensitive Resource	Alternative 1 (PEA)	Alternative 2 (Modified)	Alternative 3 (Road Focused)	Alternative 3A (Road Focused with Double Circuit Option)	Alternative 4 (Proposed)
<b>Truckee River East (Partial) Watershed</b>					
Distance in SEZ/Montane Riparian (Feet)	274.55	274.55	274.55	274.55	274.55
Disturbance Area in SEZ (Acres) <sup>2</sup>	0.25	0.25	0.25	0.25	0.25
Number of River Crossings (Truckee, Unnamed)	2	2	2	2	2
<b>Trout Creek Watershed</b>					
Distance in SEZ/Montane Riparian (Feet)	141.68	141.68	141.68	141.68	141.68
Disturbance Area in SEZ (Acres) <sup>2</sup>	0.13	0.13	0.13	0.13	0.13
Number of Stream/River Crossings (Trout Creek)	2	2	2	2	2
<b>Total Acreage in Sensitive Area</b>	<b>10.7</b>	<b>7.2</b>	<b>7.6</b>	<b>5.3</b>	<b>6.5</b>
<b>Total # of Stream Crossings</b>	<b>29</b>	<b>23</b>	<b>22</b>	<b>19</b>	<b>25</b>
<sup>1</sup> SEZ identified as sensitive resource when in Lake Tahoe Basin, Montane Riparian when outside of Lake Tahoe Basin					
<sup>2</sup> Area of disturbance estimated by multiplying length of utility line within SEZ or Montane Riparian by assumed 40-foot wide right of way for single-circuit segments and 65-foot wide right of way for double-circuit segments.					

A cumulative watershed effects analysis was conducted and reported on separate from this analysis (Wildscape Engineering 2013) that looked at the Project Alternatives relative to how each one may increase soil loss and sediment delivery within the subwatersheds listed in Table 4.6-7, Watersheds Potentially Affected by the Action Alternatives. The analysis used an indicator of “allowable impervious coverage” for each of the subwatersheds to then compare the cumulative project impacts (i.e., total disturbance from the proposed alternatives added to build out conditions within each watershed) to an estimate of the “upper limit” of watershed tolerance and determine whether they had the potential to negatively impact water uses downstream. The results of this analysis are summarized in the Cumulative Impacts Section below.

## ALTERNATIVE 1 - PEA ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

<b>IMPACT 4.6-1 (Alt.1)</b>	<p><b>Violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.</b></p> <p>Construction of Alternative 1 (PEA Alternative) would result in temporary soil disturbance along the upgraded utility alignment, new access ways and improved road sections, and staging areas. Soil disturbance associated with these construction activities could cause accelerated soil erosion and sediment loss that could be transported to nearby water bodies. Use of hazardous materials during construction (e.g., fuels, lubricants) could result in the release of these materials into nearby water bodies. Construction dewatering could also provide a mechanism for contaminant discharges. These short-term construction impacts would be avoided or minimized through adherence to various federal, state, and local laws, regulations, and programs which require implementation and continual monitoring and maintenance of BMPs to protect water quality during construction. Various measures included as part of the proposed project would further reduce the risk of water quality degradation. Therefore, this impact would be <b>less than significant</b>.</p>
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This discussion focuses on the short-term effects to water quality from construction activities and related ground disturbances along the Alternative 1 (PEA Alternative) temporary construction easement and associated access ways, and the potential need for temporary dewatering and stream diversions. Long term effects related

to maintenance and operation of the permanent power line right of way (ROW) and access ways are discussed under Impact 4.6-3.

## 625 LINE

The new 625 Line under Alternative 1 (PEA Alternative) would start at the Tahoe City Substation and cross the Truckee River approximately 1,200 feet downstream of the Tahoe Substation, in the same location as the existing line. Cross-river stringing would occur over a period of minutes and affect an approximately 200 foot length of the river on both sides. From Tahoe City, the new 625 Line would head north (Segment 625-2), generally coincident with the existing alignment, west along the southern boundary of Burton Creek State Park (BCSP), and then diverge from the existing alignment at Segment 625-3. From the southwest corner of BCSP, the 625 Line would continue north for approximately 2.5 miles, then northeast for approximately 6 miles, across SR 267, then east for approximately 2 miles, and finally south for approximately 1.25 miles to Kings Beach. On the east side of SR 267 the new 625 Line would generally follow the existing 625 alignment with some straightening to eliminate angle points as described in Chapter 3, Project Alternatives.

The new 625 Line under Alternative 1 (PEA Alternative) would frequently parallel the 20-foot wide Fiberboard Freeway, which would be used as the primary route for access, staging, construction, and maintenance throughout most of its length, from Segments 625-3 at BCSP, through 625-8 at Brockway Summit.

From SR 267, the 625 Line would generally follow the existing alignment, but with straighter segments and fewer angle points similar to above. The line would cross the Tahoe Rim Trail in Segment 625-9, as it currently does. Approximately 2 miles east of SR 267, the new 625 Line would follow the existing alignment, turning south toward Kings Beach. Similarly, the new 625 Line would follow the alignment of the existing 625 and 650 Lines to the Kings Beach Substation.

## 650 LINE

The new 650 Line under Alternative 1 (PEA Alternative) would exit the Kings Beach Substation in a southwesterly direction following the alignment of the existing 650 and 625 Lines, then head north within the existing ROW (Segment 650-1). The 650 Line would be replaced along its existing alignment, which turns west, diverging from the 625 Line approximately 0.6 mile north of the Kings Beach Substation, and continuing in the existing ROW to SR 267, then along, and east of SR 267 toward Truckee (Segments 650-2 and 650-3). In Martis Valley, the new 650 Line would diverge from SR 267 and cross the mostly flat, montane meadow habitat of the Martis Creek Lake area (Segment 650-4). In the northern portion of the project area, line segments would mostly follow roadways, including Pioneer Trail, Donner Pass Road, and Glenshire Drive (Segment 650-6). Where the line would extend south, it would cross the Truckee River and Truckee River Trail, and run along Riverview Drive, adjacent to the eastern boundary of the Truckee River Regional Park.

## ANALYSIS

Construction and operation of Alternative 1 (PEA Alternative) would require temporary soil disturbance along the power line alignment, new access ways and improved road sections, at substations, and at staging areas. Power line construction under all the action alternatives including Alternative 1 (PEA Alternative) would involve clearing and grubbing, moderate grading, localized excavations for pole placement, and compaction from equipment travel within the 65-foot wide temporary easement along each alignment. Following construction the temporary easement would be reduced down to a permanent 40-foot width easement for single circuits and remain a 65-foot easement for double circuits. Per Table 4.6-9, Approximate Disturbance Areas Associated with Project Alternatives by Watershed, there would be approximately 29.7 miles of new and improved utility line segments under Alternative 1 (PEA Alternative) resulting in roughly 234 acres of temporary ground disturbance within the temporary ROW and approximately 144 acres of permanent ROW. New access way and improved

access road construction would disturb an additional 37 acres for a total of approximately 271 acres of construction disturbance and 181 acres of permanent ROW, the largest disturbance footprint of all the alternatives.

The substation improvements described here are similar under all the action alternatives and so would result in the same potential ground disturbance. In Kings Beach, construction activities would occur at the Brockway Substation to decommission the facility, and at the Kings Beach Substation, to convert the facility to 120 kilovolt. Activity at the Tahoe City Substation would primarily occur within the existing fence line; however, portable (temporary) transformers mounted on two 8-foot by 40-foot trailers and secured by temporary fencing would be placed near the Tahoe City Substation during construction, as described in Chapter 3, Project Alternatives. Temporary power and distribution poles would be required to maintain distribution capabilities. Temporary power poles would be similar to the existing 60-kilovolt poles (70-foot wooden poles, 61 feet exposed and 9 feet buried) and temporary distribution poles would be 50-foot wooden poles, 43 feet exposed and 7 feet buried). The temporary power and distribution poles and transformers would be removed following completion of the Tahoe City Substation upgrade, and the 625 and 629 Lines would be connected to the new, permanent, transformers.

The Squaw Valley Substation, the North Truckee Substation, and the Northstar Substation would not require extensive grading or excavation but rather improvements would be done within the existing hardened footprint. The upgrades to the Tahoe City and Kings Beach Substations would require significant excavation for deep footings, grading, and import of engineered fill. Table 4.6-11 lists the excavation volume for each of the substations. The Kings Beach Substation would require trenching for underground power facilities to exit and connect with overhead lines. The trenches, 25 feet by 2 feet, 775 feet by 2 feet, and 1,125 feet by 2 feet, would be backfilled and compacted with Type II aggregate base and the excess 545 cubic yards of borrow from the excavation incorporated into the substation grading or disposed of at an approved facility.

<b>Substation</b>	<b>Number and Type of Excavation</b>	<b>Excavation Volume (cubic yards)</b>
Squaw Valley Substation	7 Footings	22.4
North Truckee Substation	5 Footings	18
Northstar Substation	1 new transformer 1 oil containment basin	140
Tahoe City Substation	20 Footings 2 oil containment basins 1 switchgear building foundation	400
Kings Beach Station	Substation Pad 16 Footings 2 oil containment basins 1 switchgear building foundation	285 (plus 5,000 cubic yards of import)

The proposed project would require several staging areas to be selected from a list common to all the action alternatives shown in Table 4.6-12 below and described in the Chapter 3, Project Alternatives. Many of these locations are within pre-existing disturbance but may require additional clearing, grubbing, and grading activities. None of the action alternatives would use all staging areas listed, so it is assumed that disturbance under Alternative 1 (PEA Alternative) as well as the others, would amount to roughly two-thirds of the total acreage shown or 35 acres on already disturbed land. Any active staging areas in populated or high use areas would be fenced. The proposed Tahoe City Staging Area would occupy approximately 8.9 acres and be used as a helicopter landing zone and for material storage and staging as it was for the recent 629 Line upgrade (line extending along SR 89 from Squaw Valley to Tahoe City).

**Table 4.6-12 Staging Area Summary**

Staging Area	Purpose	Required Improvements	Approximate Area (acres)
Tahoe City	Material and equipment storage and staging, and helicopter landing	Installation of temporary construction fencing	9.1
Fiberboard Freeway	Material and equipment storage, and staging and logging activities	Vegetation clearing, tree removal, and installation of temporary construction fencing	1.9
Former Batch Plant	Material and equipment storage, and staging and potentially logging activities	Vegetation clearing, tree removal, and installation of temporary construction fencing	0.2
Kings Beach	Material and equipment storage and staging, and helicopter landing	Vegetation clearing, tree removal, and installation of temporary construction fencing	2.9
SPI	Material and equipment storage and staging, and helicopter landing	Vegetation clearing, improvement to existing dirt access road and new access way, and installation of temporary construction fencing	0.6
Northstar Parking 1	Material and equipment storage and staging, and helicopter landing	Installation of temporary construction fencing	3.5
Northstar Parking 2	Material and equipment storage and staging, and helicopter landing	Installation of temporary construction fencing	7.1
Northstar Golf Course	Material and equipment storage and staging	Vegetation clearing and installation of temporary construction fencing	5.1
Airport 1	Material and equipment storage and staging, and helicopter landing	Vegetation clearing, improvements to dirt access ways, installation of temporary construction fencing	4.1
Airport 2	Material and equipment storage and staging, and helicopter landing	Vegetation clearing and installation of temporary construction fencing	8.2
Airport 3	Material and equipment storage and staging, and helicopter landing	Vegetation clearing and installation of temporary construction fencing	7.6
USACE	Material and equipment storage and staging, and helicopter landing	Improvement to existing dirt access road and installation of temporary construction fencing	1.8

Ground disturbance would result from vegetation removal and minor grading to provide access and a level working area, localized excavations for new steel pole installations spaced approximately every 300 feet, existing pole removal and localized backfill and compaction operations, and construction equipment and vehicle trips. New steel pole installations would typically require a 3-foot diameter pre-dug hole augered down to a depth of approximately 7 to 10 feet.

A portion of this type of utility line disturbance would occur in sensitive areas including SEZ, riparian, and wet meadow habitats. Alternative 1 (PEA Alternative) poses the largest potential disturbance to sensitive lands of all the action alternatives requiring 29 stream crossings in all and intersecting with approximately 10.7 acres of SEZ and montane riparian zones. The most noticeable impacts to these resources are within the Martis Creek valley where there are over 6 acres of disturbance in the SEZ and riparian zones and 11 crossings on Martis Creek and an unnamed tributary. In the Griff Creek watershed there are almost 5 acres of disturbance in the SEZ and 8 crossings on Griff Creek and an unnamed stream.

At each of the 29 stream crossings and in areas where Alternative 1 (PEA Alternative) traverses wet meadow, SEZ areas or intercepts high groundwater tables dewatering and stream diversion may be required or temporary bridge crossings and specialized road surfaces installed to separate construction traffic from waterways and saturated or wet areas, dry out areas to be excavated or graded, and protect water quality and sensitive vegetation. More than 1.5 miles of the Alternative 1 (PEA Alternative) alignment traverses the lower elevation meadow area of the Martis Creek valley which, depending upon the preceding year's snow accumulation, could

have multiple locations with standing water or saturated soils. These areas would require site specific BMPs such as timber mats or road decking, encapsulated road sections, temporary culverts and late season scheduling to prevent aggravated compaction and water pollution from construction traffic in those areas. In addition to the Martis Creek crossings, several sections of the Alternative 1 (PEA Alternative) alignment would cross streams and drainages in the remaining watersheds including a single crossing at Burton Creek, four crossings at unnamed creeks in the Tahoe Vista watershed, two crossing at Trout Creek (a tributary to the Truckee River) and a crossing each on segments of the Truckee River in Tahoe City and the Town of Truckee. Where the current alignment runs alongside the Truckee River in Tahoe City and Martis Creek in Martis Valley some pole installations and removals and associated disturbance may also be required within the ordinary high water mark (OHWM). Alternative 1 (PEA Alternative) has five pole installations currently identified within 15 feet and 11 poles within 30 feet of a stream or creek implicating up to 26 pole installations that may qualify as permanent fill within the OHWM requiring a USACE Section 404 permit and 1:1 mitigation in order to adhere to their “no net loss” policy and achieve authorization to proceed.

Soil disturbance associated with construction activities could cause accelerated soil erosion and sediment loss that could be transported to nearby water bodies. Grading of new access ways and improved access roads, excavating for pole installations and pulling poles and felled trees across the landscape could initiate soil loss and introduce suspended sediment into nearby surface waters. For the new and upgraded power lines, steel poles would be installed 300 feet apart on average along the new and replacement alignments and old wooden poles removed under the upgraded alignments. Typical pole installation would require a 3-foot diameter pre-dug hole augered down or excavated an additional 7 to 10 feet. The less common self-supporting steel poles would require a 6 to 8 feet diameter hole dug 20 to 30 feet deep with a concrete foundation. The permanent footprint of self-supporting poles would be just over 50 square feet with around 56 cubic yards of displaced soil. Up to 1 cubic yard of soil would be mounded around the base of newly installed poles. Angle poles would require up to a 0.5 acre disturbance area and tangent poles 0.25 acres. In a few cases a 15 by 50 foot work area that extends from the temporary ROW may be disturbed when guy wire anchors are installed. The anchor itself would require a 4 by 6 foot area to dig the 2 foot hole. Decommissioned poles would be cut off at the ground and transported by trucks along the utility ROW and temporary access roads to an appropriate offsite disposal facility. In more remote areas the poles may be cut off at ground level and removed from the area via helicopter. In the case where poles house other utilities under different ownership, the CalPeco lines would be removed and the poles trimmed and left in place.

Limited vegetation removal and minor grading would be done to prepare each pole installation site. Excavation and backfilling for typical steel poles would result in only 3 cubic yards of native material being temporarily displaced at each installation site while the fewer self-supporting poles would require up to 60 cubic yards of displaced material. Topsoil in the areas disturbed by pole installation would be salvaged prior to grading and reincorporated onsite. Following construction all temporary disturbance areas and land within the ROW would be decompacted and revegetated via native seed application. Any excess soil produced during pole installations that is not incorporated into restoration efforts would be removed from the site and hauled to an approved landfill or reuse site.

Stringing sites roughly 300-foot diameter in size would be needed during construction every 2,500 feet or so along the alignment. Temporary crossing structures constructed of wood poles and netting may be needed in some areas to protect existing overhead utilities and pedestrian and vehicle crossings during conductor removal and installation. These installations using an auger to excavate the holes and a crane to lift the structures would disturb up to a 0.25 acre area. When the conductor stringing is complete the poles would be removed and the holes backfilled with excavated soils. Conductors would be removed and installed in an elevated position off the ground. Decommissioned conductors would be loaded onto trucks and taken to an existing storage facility or recycled.

To limit disturbance, construction access would follow existing paved and dirt roads and travel routes to pole work areas would follow the centerline of the utility whenever possible. The 37 acres of new access way and improved access road construction under Alternative 1 (PEA Alternative) would typically require vegetation removal, grading with a bulldozer to level, widening 12 to 25 feet and applying a gravel surface layer in order to accommodate the equipment. No new access ways would be needed for substation construction. Helicopters would be used to move materials to and from the steeper more rugged areas where equipment access is less feasible.

Standard BMPs such as exclusion fencing to limit the earth and vegetation disturbance to the ROW and fiber rolls, silt fencing, and gravel bag check dams to control sediment would be incorporated into the designs and applied during construction. With only 3 cubic yards of excavated material on average spaced every 300 feet under the typical pole installation, sediment control installations may not be needed at every pole site, but instead focused in areas where there are streams, drainages or wetlands, steep gradients, or where the excavations are more substantial, such as in the case of self-supporting poles. The more continuous disturbance from new and improved access road grading would require linear vegetation protection and sediment control measures. Staging areas would need to incorporate stabilized construction entrances and perimeter controls. Water application for dust control would need to be applied in areas where construction equipment and trucks are stirring up dust and all temporary stockpiles would require perimeter controls (i.e., silt fence or fiber rolls) and be covered when inactive more than 14 days or prior to forecasted storm events. Additional measures to protect water quality during construction that would be implemented as part of all the action alternatives including Alternative 1 (PEA Alternative) are listed as applicant proposed measures (APM) at the end of this section.

Storage and use of hazardous materials during construction (e.g., fuels, lubricants) could result in the release of these materials into nearby water bodies. Per APM WQ-1 listed below, refueling would be done at least 100 feet from any waterways and onsite spill kits would be made available. Construction dewatering may be needed for the deeper self-supporting pole installations or in the occasion that a pole installation is required within the ordinary high water mark of the creek or river. Alternative 1 (PEA Alternative) has five pole installations within 15 feet of a creek. Dewatering activities could also provide a mechanism for contaminant discharges if surface or groundwater that is removed is accidentally discharged to a nearby surface water body. Per APM WQ-3 any dewater decant will be used to irrigate well vegetated areas and poles or trees are not to be skidded through streams or drainages per APM WQ-4. Any disturbed aquatic feature will be restored to pre-project conditions. All construction projects must adhere to multiple rigorous requirements and regulations of the TRPA, LRWQCB, and federal, state, and local (city and county) agencies. Specifically all construction projects in California greater than 1 acre in size are required to prepare and implement a detailed SWPPP that includes a site specific CSMRP pursuant to the NPDES 2011 California General Permit for construction or in the case of the Lake Tahoe Basin, the Tahoe Construction Stormwater permit. The required SWPPP would provide for a description of construction activities and phases, proposed temporary and long-term erosion and sediment controls, means of waste containment and disposal, and BMP maintenance and monitoring requirements. Installation of temporary BMPs to protect water quality would be required before any earth disturbing activities and a pre-grade inspection and approval of those BMPs by LRWQCB and TRPA would have to take place before proceeding with any grading, pole installation and removal, or similar earth disturbing activities. All BMPs and water quality protection installations proposed in the SWPPP would need to be consistent with TRPA and LRWQCB requirements and would have to be evident that once installed and maintained any site runoff would not exceed TRPA or LRWQCB discharge limits for surface and groundwater sources and would preserve the beneficial uses of the Truckee River and Lake Tahoe.

Comprehensive stormwater quality sampling and reporting requirements would also be required under the California NPDES permits and full faith effort to do so would be outlined in the CSMRP as part of the SWPPP.

Dewatering operations and creek and river diversions are authorized under the NPDES California General and Tahoe Construction permits as long as activities conform to the following requirements:

- ▲ Construction site dewatering waste must not be discharged to surface waters or tributaries thereto, including municipal separate storm sewer systems.
- ▲ Before conducting dewatering or clear water diversion activities, the Discharger must prepare a dewatering/diversion plan as part of the SWPPP for review and approval by LRWQCB.
- ▲ The Dewatering/Diversion plan must have the following minimum elements:
  - // location of the discharge area or outfall and name of receiving water;
  - // a description of the discharge or diversion method and plan drawings;
  - // the frequency and estimated volume and rate of discharge;
  - // expected pollutants and concentration in discharge, and control measures to be applied and maintained for pollutant control;
  - // planned effluent and/or receiving water monitoring (visual and other). Parameters to be monitored for discharge to surface waters or municipal storm sewer systems include turbidity, total nitrogen, and total phosphorus; and
  - // when discharging to wetlands, SEZs or floodplains, receiving water monitoring will likely need to be included.

By mapping out and implementing a detailed BMP plan as part of the required Project SWPPP to protect water quality, Alternative 1 (PEA Alternative) would avoid contradicting the current TMDL strategies and efforts to improve Lake Tahoe clarity and reduce Truckee River sediment levels.

In addition, the following APMs (see Section 3.7, Applicant Proposed Measures, for a description of all APMs) have been incorporated into the project to minimize, avoid, and reduce potential adverse effects on water quality. Several of these measures were integrated into project design to address biological resources or other resources areas, but would also improve protection of water quality.

- ▲ **APM WQ-1:** All refueling will be conducted at least 100 feet away from waterways, within designated refueling stations. If refueling within 100 feet of a waterway is unavoidable, CalPeco will require that spill kits are on site, install secondary containment to control accidental spills, and notify an environmental monitor prior to fueling. Environmental monitors will regularly inspect refueling areas to help ensure that proper measures are being implemented in accordance with the project's SWPPP and SPCC Plan.
- ▲ **APM WQ-3:** Where feasible (e.g., landowner approval is provided, sufficient space with permeable surfaces is available, slopes are gentle enough to allow control of potential sediment transport), all stormwater or groundwater removed from excavations will be discharged overland into well-vegetated areas to promote the settling of sediment. If overland discharge is not possible, then water removed from excavations will be collected, treated, and disposed of consistent with requirements of the Lahontan Regional Water Quality Control Board and any other agencies with jurisdiction over the activity.
- ▲ **APM WQ-4:** When working near aquatic resources, poles and trees will be cut by hand and felled away from such features (unless there is an ecological reason to do otherwise that is approved by applicable regulatory agencies, such as adding coarse woody debris to a stream to enhance fish habitat). The skidding of poles and trees through aquatic resources will not be permitted. Within Stream Environment Zones (SEZs) poles and trees will be removed by hand, by cable system, or by helicopter. No mastication will occur in SEZs and no chip material will be left in SEZs unless approved for erosion control. Vehicles and equipment will be staged away from aquatic features, along designated access routes or within staging areas. If there are circumstances where disturbance to the bank or channel of an aquatic feature is unavoidable, CalPeco will restore the banks and channels to preconstruction conditions immediately afterwards. An environmental monitor will be present in all instances where disturbance to an aquatic feature may occur to ensure

conditions of this APM and any other applicable APMs, permit conditions, and mitigation measures are complied with.

- ▲ **APM WQ-5:** When construction activities are required adjacent to flowing streams or rivers, work will be conducted during low-flow conditions (i.e., when surface flow is restricted to the low-flow channel, as confirmed by the environmental monitor).
- ▲ **APM WQ-7:** CalPeco will minimize vehicle and equipment usage within and crossing of stream channels and other aquatic resources consistent with the requirements of other APMs. If vehicles and equipment must cross stream channels or other aquatic resources, CalPeco will construct shoo-fly access roads, install culvert crossings, or use other methods to access either side of the resource or utilize existing bridges, where feasible, in order to minimize the need to install temporary bridges. Limit crossings to no more than one for every 800 feet of channel. If there are no existing crossings and the construction of shoo-fly roads or other crossing methods may cause greater resource impact, CalPeco will install timber mats, slash mats, or other materials suitable for a temporary bridge. If bridges are installed over streams with discernible flow, all attempts will be made to span the channel. Temporary crossings on ephemeral or intermittent drainages will be constructed and removed, to the maximum extent feasible, when the channels are dry and will be removed before the winter season begins. These crossings will be designed to not obstruct water flow and fish passage and to accommodate flows from a 1 inch or greater precipitation event.
- ▲ **APM WQ-8:** CalPeco will obtain permits from appropriate regulatory agencies prior to commencing work in waters of the US or waters of the state and implement all applicable permit conditions. Following construction, CalPeco will restore any impacted water bodies and wetlands to pre-project conditions and compensate for any permanent wetland impacts in accordance with the US Army Corps of Engineer's "no net loss" policy.
- ▲ **APM HAZ-1:** Prior to construction, all CalPeco, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs to comply with the applicable environmental laws and regulations associated with hazardous materials.
- ▲ **APM BIO-1:** Prior to construction, all CalPeco, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including appropriate wildlife avoidance measures; impact minimization procedures; the importance of sensitive resources, and the purpose and methods for protecting such resources. Among other topics, the training will also include a discussion of BMPs to reduce the potential for erosion and sedimentation during construction. Additionally, CalPeco and designated environmental monitors for project construction will coordinate with the applicable public land owners/managers on communication, documentation and reporting, and data submittal protocols.
- ▲ **APM BIO-30:** Prior to commencing construction in any area containing aquatic resources or potential wetlands, a qualified biologist will conduct a delineation of waters of the United States according to methods established in the USACE wetlands delineation manual (Environmental Laboratories 1987) and Western Mountains, Valleys, and Coast Region Supplement (Environmental Laboratories 2010). The delineation will map and quantify the acreage of all aquatic habitats on the project site and will be submitted to USACE for verification. CalPeco will determine, based on the verified wetland delineation and the project design plan, the acreage of impacts on waters of the United States and waters of the state that will result from project implementation. Impacts will be avoided to the extent practicable through the siting of poles and other facilities outside of delineated waters of the United States and waters of the state. Work in wetlands or wet meadow habitats with saturated soil conditions will be scheduled when soils are dry to the extent possible. If soils become saturated, timber mats will be installed along all vehicle and equipment access routes to minimize rutting. Prior to disturbance of waters of the United States or waters of the state, an environmental monitor will record via photographs and field notes the pre-disturbance condition of the water. Disturbed waters will be restored to preconstruction conditions and seeded with a native species, consistent with the vegetation community present prior to disturbance, to stabilize the soils and minimize the introduction of invasive plants, as specified by the USACE and RWQCB. In accordance with the USACE

“no net loss” policy, all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio. This mitigation will come in the form of either contributions to a USACE-approved wetland mitigation bank or through the development of a Compensatory Mitigation and Monitoring Plan aimed at creating or restoring wetlands in the surrounding area (although creation is not authorized by TRPA in their jurisdiction).

With integration of standard BMPs described above and these APMs into construction plans and activities, as well as compliance with applicable federal, state, and local laws, regulations, and programs, construction of Alternative 1 (PEA Alternative) would not violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. This impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-2 (Alt.1)</b>	<p><b>Increase the rate or amount of stormwater runoff so that it would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities resulting in increased sources of pollutants reaching surface waters or causing detrimental flooding to property or infrastructure.</b> Alternative 1 (PEA Alternative) would include some increases in impervious surfaces associated with pole and foundation installations and upgrading of two of the five substations. Any increase in impervious surfaces associated with these activities would be relatively small and only a small portion would occur in areas currently served by existing or planned stormwater facilities. There is little potential to increase the amount or rate of stormwater runoff in locations served by drainage infrastructure in a manner that would exceed the capacity of those existing or planned stormwater facilities or cause detrimental flooding to property or infrastructure. In addition, all installations under Alternative 1 (PEA Alternative) would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program, and existing NPDES permits. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided. Therefore, this impact would be <b>less than significant</b>.</p>
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Long-term increases in heavily compacted or impervious areas that could reduce infiltration, thereby increasing runoff under Alternative 1 (PEA Alternative), could be associated with pole infrastructure, temporary work areas, new access ways, and substation upgrades. These increased in impervious area would only affect stormwater drainage, infiltration, and treatment system facilities where such infrastructure is already present, such as the Town of Truckee and the communities of Tahoe City and Kings Beach.

As stated above, typical pole installation would entail a 3-foot diameter pre-dug hole augered down to approximately 7 to 10 feet deep. Guy wire anchors for these poles would require a 2-foot diameter hole between 4 and 8 feet deep to install a 2-foot-diameter disk attached to a steel rod. Self-supporting steel poles (with no guy wires) would require a 6- to 8-foot diameter hole, 20 to 30 feet deep, and a concrete foundation within the hole. The permanent footprint of self-supporting poles would be just over 50 square feet with around 56 cubic yards of displaced soil. The spacing of these installations at 300 feet or more would help dilute the total amount of localized compacted or impervious surfaces within each watershed overall. This combined with the majority of these installations occurring away from the denser residential and commercial areas where drainage infrastructure exists would further alleviate any potential impacts to the rate or amount of stormwater discharge.

The Squaw Valley Substation, the North Truckee Substation and the Northstar Substation would not require extensive grading or excavation. The Tahoe City Substation and the upgrade of the Kings Beach Substation would require significant excavation for deep footings, grading, and import of engineered fill as shown in Table 4.6-11. Construction at the Kings Beach Substation would involve trenching for underground power facilities to exit the facility and intercept the overhead lines via risers. One set of 25 foot long parallel trenches 2 feet wide by 5 feet deep would leave the station and head west. A second set of trenches with similar width and depths would extend 775 feet and 1, 125 feet to the south, for a total disturbance footprint of almost 4,000 square feet, still less than a tenth of an acre. Trenches would be backfilled and compacted with Type II aggregate base.

For all alternatives, the temporarily disturbed areas around each pole associated with the conductor stringing and staging sites would be restored to preconstruction conditions to the extent practicable by re-grading to original contours and reseeding per landowner specifications; therefore, there should be no significant increase in impervious area associated with these installations.

To limit disturbance, construction access would follow existing paved and dirt roads when possible and all temporary access roads used for construction would be re-graded to preconstruction conditions. New access ways would have woody vegetation removed, be stabilized with low growing vegetation, and may be graded in some areas to adjust topography to allow for vehicle travel. Access ways would appear as a “two-track” dirt path that a four-wheel drive vehicle could travel on. New access ways would not be paved, heavily compacted, or otherwise be altered in a way that would create an impervious surface.

Any increase in impervious surfaces associated with concrete foundations for pole infrastructure and substation upgrades would be relatively small with little potential to increase the amount or rate of stormwater runoff in a manner that would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities or cause detrimental flooding to property or infrastructure. In addition, all installations under Alternative 1 (PEA Alternative) would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program, and existing NPDES permits. For the substation improvements that occur within the more populated areas with existing storm drainage infrastructure possible compliance actions could include permanent BMPs, low-impact development techniques, and onsite stormwater infiltration to accommodate at least a 20-year, 1-hour storm, which would prevent any increase in volume or peak flows leaving the project sites. Given the slight increase in impervious surfaces associated with the substation improvements, even in areas that have a high groundwater table, stormwater collection and treatment to address that increase would be feasible. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided. Therefore, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

<b>IMPACT 4.6-3 (Alt.1)</b>	<b>Substantially alter existing drainage patterns or alter the course or direction of any water body in a manner that may result in detrimental flooding to property or infrastructure or substantial erosion or siltation that may be carried to surface waters.</b> Although some temporary access routes under Alternative 1 (PEA Alternative) would sometimes need to cross creeks and drainages, the crossings would only be temporary and would be required under the NPDES permits and SWPPP to install and remove temporary bridges or adequate diversions that would maintain conveyance of anticipated flows without causing aggravated erosion or siltation within the waterway. A portion of the proposed access ways under Alternative 1 (PEA Alternative) would occur in mountainous terrain resulting in steep grades that could intercept and redirect natural drainages or instigate accelerated erosion and rilling. Without adequate erosion control and drainage designs these steeply inclined access
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ways (greater than 15 percent grade) could become a conduit for concentrated flow and substantial erosion. Therefore this impact would be **significant**.

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Access for the power line installation under Alternative 1 (PEA Alternative) could require crossing creeks and drainages in up to 29 locations; however these intersections would only be temporary and in compliance with the NPDES permits and the SWPPP and would require installation and removal of temporary crossings or adequate diversions to maintain conveyance of anticipated flows without causing aggravated erosion or siltation within the waterway. Integration of APMs WQ-5 and WQ-7 into construction activities, described above in the discussion of Impact 4.6-1, would further minimize the potential for work near and across creeks and drainages to alter flows in a manner that would cause detrimental flooding or adverse erosion or siltation by limiting equipment within the channel to only what is needed to establish that access and scheduling those activities during late summer low flow conditions.

Pole installations would be kept out of drainages whenever feasible and when they are required to run adjacent to or within the ordinary high water mark of rivers or streams, as might be the case for the six locations within 15 feet of creeks including the stretch of the Truckee River in Tahoe City. In these instances the poles would be kept as close to the bank as possible to avoid disrupting or redirecting flows. In addition, because of the relatively small diameter of each pole (typically 15 to 19 inches in diameter at the base) and the spacing between poles (typically 300-feet), it is unlikely that the poles would have a substantial effect on flows if a high water event were to place them within a waterway.

Where new alignments replace and diverge away from existing alignments, the existing poles would be removed and the prior ROW footprint would be re-graded and re-vegetated so as to minimize the total permanent disturbance. Maintenance and operation of the new permanent 40-foot ROW (65-foot along double-circuit lines) would entail annual patrols to inspect the lines, separate annual hazard tree inspections by a California Registered Forester and additional patrols as needed in response to needed repairs, unexplained outages or weather or fire induced events. All inspections would be conducted using helicopters, all-terrain vehicles, and/or line trucks, with the vehicles following the centerline of the access routes established during construction. Following construction, the ROW areas would be reseeded and in the subsequent years managed via tree and vegetation trimming and removal operations. The ROW conditions as a result of occasional vehicle access for inspection and maintenance would likely be low growing grasses and shrubs. This type of condition could become a detriment in the steeply sloped areas where runoff volumes and velocities may be increased to a high enough level to concentrate flows that incite erosion and rilling. Additionally, public use of the ROW could further exacerbate compaction and vegetation damage, resulting in increased erosion events. The access routes would be maintained post construction with low growing vegetation that provides erosion control while allowing over-land vehicle travel by line trucks and inspection trucks (i.e., pickup trucks). Line trucks would access the power line ROW using the centerline access routes several times per year for routine maintenance, while inspection trucks would access the ROW one to two times per year. Vehicles would also travel on the centerline access routes as needed to perform repairs. If any of the existing access roads become impassable, CalPeco would contact the property owner prior to use or conducting any potential improvements. Similar to the ROW, where these access roads traverse steep gradients or are easily accessible to the public they could become more heavily compacted inhibiting healthy vegetation growth and inciting increased erosion and rutting.

Several of the new access ways and locations of improvements to existing roads would be along steeply inclined grades in soils with moderate to severe erosion hazard, therefore are at risk of becoming a conduit for surface water drainage to collect and concentrate, potentially leading to accelerated erosion and the formation of rills and gullies and the loss of sediment that is carried to surface waters. Although access ways would be stabilized with low growing vegetation, and the SWPPP and several APMs would address potential erosion issues (e.g., BIO-36, SOILS-1, SOILS-2), if slopes were steep enough substantial erosion could still occur within the road prism. The

access roads could also detrimentally capture and redirect existing drainages if not sited or designed correctly. In addition to the 37 acres of potential disturbance from new access ways and improved dirt access roads under Alternative 1 (PEA Alternative), additional disturbance areas may result from cut and fill slopes adjacent to the access ways/roads in the steeper gradient areas or in areas where the road turns. Even with APMs and SWPPP requirements, there is the risk of accelerated erosion and hillside drainage capture at these cut and fill slopes and road turns if not adequately designed. For this reason, this would be a **significant** impact.

## MITIGATION MEASURES

The following mitigation measures would be implemented by CalPeco to provide erosion control BMPs on new access ways and improved roads in steep terrain and monitor and maintain the access roads and ROW as part of annual maintenance operations to prevent drainage capture and aggravated erosion and sediment transport.

**Mitigation Measure 4.6-3a (Alt. 1): Follow USFS guidance on locating and designing roads to protect water quality and incorporate erosion control BMPs for all new access ways or improvements to existing roads. Avoid constructing access ways steeper than 15 percent gradient where feasible and when required implement site-specific proven BMPs to prevent concentrated runoff and gullying.**

*During the project design process, the applicant shall follow USFS Guidance (USFS 2011) and coordinate directly with representatives of the LTMBU and Tahoe National Forest in their respective project areas to identify optimum siting, design and erosion control BMP type and placement for new access ways and modified access roads.*

*USFS guidance on locating and designing roads to minimize problems and risks to water, aquatic, and riparian resources includes (USFS 2011) the following.*

- › *Fit the terrain, limit the need for excavation, and prevent damage to resources.*
- › *Avoid riparian areas, wetlands, meadows, overly steep slopes and unstable landforms to the extent practicable.*
- › *Use bridges or raised prisms with diffuse drainage to sustain flow patterns.*
- › *Set crossing bottoms at natural channel bed and wet meadow surfaces.*
- › *Balance cut and fills, consider full bench construction or mechanically stabilized fills on unstable slopes or slopes greater than 60 percent.*
- › *Design road surfaces to dissipate intercepted water via outsloping, insloping with drains or crowning with drains.*
- › *Reduce hydrologic connectivity of the road segment and limit connectivity to water crossings.*
- › *Incorporate stormwater and erosion controls and properly spaced cross drains to disperse flows.*
- › *Design stable ditch configurations and include energy dissipaters at culvert outlets.*

*Designs will also include minimizing road sections with 15 percent or steeper gradients and outsloping and designing an adequate number of cross-drains. BMPs could include rolling dips, waterbars, rock-dissipaters, or other measures sufficient to meet USFS standards.*

More specific design criteria to be followed include the following.

- › A typical 150-foot spacing for grade reversals.
- › Locate grade reversals to hydraulically disconnect the road from surface waters.
- › Use drainage dips as an exception when reverse grades cannot be achieved.
- › Countour road alignments to have an average grade of 7 percent.
- › Maximum road grade will equal ½ slope grade when over 7 percent.
- › Maximum road alignment length of 150-feet over 7 percent grade.
- › Avoid fall line locations.

**Mitigation Measure 4.6-3b (Alt. 1): Incorporate into annual power line inspection and maintenance routines a permanent ROW and access way/road inspection and maintenance program.**

*Include observations and recordings of any aggravated compaction or erosion along the ROW and access ways/roads into the annual power line inspections. Note any evidence of rilling, gulying, rutting, or drainage capture along the ROW and access ways. Also note any effects of unauthorized access. Make repairs and implement measures in line with the USFS guidance on locating and designing roads to protect water quality (USFS 2011) to reduce or eliminate any erosion issues including limiting public access via gates, placement of rocks or logs, plantings, or signage; minimizing compaction; interrupting, distributing and attenuating peak flows through rolling dips; check dams, and preventing road capture of drainages via culverts, fords crossings and other mechanisms.*

By incorporating appropriate designs and BMPs into new access ways and modifications and timely repairs to new and existing access ways and ROW in steep areas, these mitigation measures would prevent substantial erosion or siltation that could be carried to surface waters and reduce this impact to a **less-than-significant** level.

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<b>IMPACT 4.6-4 (Alt.1)</b>	<b>Place structures within a 100-year flood hazard area that would impede or redirect flood flows.</b> There are two locations where Alternative 1 (PEA Alternative) would be located within a 100-year flood hazard area. Given the small footprint of the proposed facilities, placement of poles in the flood hazard area would not appreciably impede or redirect flood flows. This impact would be <b>less than significant</b> .
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Located within largely mountainous terrain, 100-year flood hazard areas in the project vicinity are typically restricted to the immediate vicinity of waterways and are not widespread as in valley locations. Alternative 1 (PEA Alternative) passes through a designated 100-year flood hazard area in two locations:

- ▲ approximately 1,185 feet of the 625 (625-1) Line occurs within the 100-year flood zone along the Truckee River in Tahoe City (Exhibit 4.6-2); and
- ▲ approximately 7,860 feet of the 650 Line (650-3 and 650-4) traverses the 100-year flood zone along Martis meadow south of the Town of Truckee (Exhibit 4.6-4).

Given the small footprint of the power poles and the typical 300-foot spacing between poles, placing these facilities in the flood hazard area would not appreciably alter the course or flow of the 100-year floodwaters. In both instances where Alternative 1 (PEA Alternative) would be within a 100-year flood hazard area, it follows the

existing alignment of the 625 and 650 Lines (Exhibits 4.6-2 and 4.6-4). There have not been reports of the existing poles adversely affecting flood conveyance or being adversely affected by high water events. The proposed steel poles would be more resistant to damage from high water events than the current wooden poles. Given these conditions, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-5 (Alt.1)</b>	<b>Intercept or alter the direction or rate of flow of groundwater or degrade groundwater quality.</b> Alternative 1 (PEA Alternative) involves the subsurface installation of steel poles and self-supporting poles with concrete foundations that have the potential to intercept groundwater flows. Given the small diameter and large spacing of the single poles it is unlikely they would have an impact to groundwater direction or rate of flow; however, the temporary interception of groundwater during pole excavation and dewatering activities could create the potential to introduce contaminants. This impact would be <b>significant</b> .
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Groundwater interception or interference is prohibited under TRPA's Code of Ordinance's Grading Standards, Section 33.3.6 and includes cases where excavation for bridge abutments, parking structures, or drainage improvements may alter the direction or rate of groundwater flow, capture or intercept groundwater flow, or raise or lower the groundwater table.

Under Alternative 1 (PEA Alternative) as well as the remaining action alternatives, steel utility poles would be installed to a depth of up to 10-feet for poles supported with guy wires and up to 30- feet for self-supporting poles with no guy wires. Self-supporting poles would also have concrete foundations rather than being directly placed into an augered hole. Diameters of pole installations would vary from 15 to 19 inches for single buried poles up to 3- to 6-feet for self-supporting poles mounted in concrete. Poles would be spaced at roughly 300-foot intervals. Poles would be buried at sufficient depths to intercept groundwater in some locations. However, given the relatively small diameter of the poles and the large distances between poles, Alternative 1 (PEA Alternative) would not be expected to disrupt the rate or direction of groundwater flow.

Temporary interception of groundwater during construction to excavate and dewater for pole installations, particularly the 30-foot deep self-supporting poles could temporarily introduce contaminants into the groundwater if that water was subjected to equipment leakage or refueling related spills and directly released back to a ground source. This impact is considered **significant**.

## MITIGATION MEASURES

The following mitigation measure would protect groundwater quality during project construction.

### **Mitigation Measure 4.6-5 (Alt. 1): Prepare and implement a dewatering and discharge plan.**

*A dewatering and discharge plan shall be developed, submitted to TRPA and the LRWQCB for approval and implemented prior to initiating any excavation activities to protect groundwater resources in addition to surface waters in the event that groundwater is intercepted during project activities. The dewatering and discharge plan shall provide methods to protect groundwater during excavations from potential contaminant releases during equipment use and refueling, such as specific spill control and clean up and response measures in the vicinity of excavations. Additionally the dewatering and discharge plan shall include methods to collect and treat the sediment-laden water prior to releasing directly to a surface or groundwater source or demonstrate that it can be used to irrigate or applied as dust control without short-circuiting directly to surface waters.*

Implementation of this mitigation measure would prevent potential degradation of groundwater quality and reduce this impact to a **less-than-significant** level.

## ALTERNATIVE 2 – MODIFIED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.6-1 (Alt.2)</b>	<b>Violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.</b> Construction of Alternative 2 (Modified Alternative) would result in temporary soil disturbance along the upgraded utility alignment, new access ways and improved road sections, and staging areas. Soil disturbance associated with these construction activities could cause accelerated soil erosion and sediment loss that could be transported to nearby water bodies. Use of hazardous materials during construction (e.g., fuels, lubricants) could result in the release of these materials into nearby water bodies. Construction dewatering could also provide a mechanism for contaminant discharges. These short-term construction impacts would be avoided or minimized through adherence to various federal, state, and local laws, regulations, and programs which require implementation and continual monitoring and maintenance of BMPs to protect water quality during construction. Various measures included as part of the proposed project would further reduce the risk of water quality degradation. Therefore, this impact would be <b>less than significant</b> .
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### 625 LINE

The new 625 Line under Alternative 2 (Modified Alternative) would be the same as that described for Alternative 1 (PEA Alternative) with five exceptions. First, Alternative 2 (Modified Alternative) would relocate the Truckee River crossing to the opposite side of a stand of trees along the river and farther from the viewshed of the Truckee River corridor (Segment 625-1A). Second, Segment 625-4A would replace 625-4 in the vicinity of the Former Batch Plant Staging Area, moving the line upslope of the Fiberboard Freeway to reduce visibility of the line by recreational users along the road. Third, Segment 625-6A would replace 625-6, resulting in an alignment that follows Mt. Watson Road along the outer edge of an existing northern goshawk protected activity center to avoid this sensitive biological area. Fourth, Segment 625-8A would replace Segment 625-8 to follow the existing 625 Line route more closely, allowing greater distance from the Fiberboard Freeway at a location where no utility lines are currently located, and to place the line outside the boundary of the Lake Tahoe Basin. Finally, Alternative 2 (Modified Alternative) would construct a double-circuit 650/625 Line along the 625 Line alignment proposed in Alternative 1 (PEA Alternative), thereby removing the 650 Line along SR 267 through this reach.

### 650 LINE

Under Alternative 2 (Modified Alternative), the new 650 Line would be the same as that described for Alternative 1 (PEA Alternative) with two exceptions. First, Segment 650-4A would replace 650-4 through the Martis Creek Lake. The purpose of this modification would be to avoid sensitive cultural resources areas. Second, rather than the rebuild of a single-circuit of the 650 Line between the Kings Beach Substation and Brockway Summit, Alternative 2 (Modified Alternative) would construct a double-circuit 650/625 Line along the 625 Line alignment proposed in the Alternative 1 (PEA Alternative), thereby removing the power line along SR 267 through this reach. With regard to impacts to recreation resources and access, this alignment of the 650 Line would be the same as the Alternative 1 (PEA Alternative).

## ANALYSIS

This impact is similar to Impact 4.6-1 (Alt. 1) described above for Alternative 1 (PEA Alternative) with the exception that the changes to the alignments just described would result in less construction disturbance and permanent ROW than Alternative 1 (PEA Alternative) as described below.

The same impact mechanisms related to soil disturbance, erosion, contaminant releases, and dewatering would occur but to a lesser degree than Alternative 1 (PEA Alternative) with the reduction in overall project footprint. Per Table 4.6-8, Approximate Disturbance Areas Associated with Project Alternatives by Watershed, construction and operation of Alternative 2 (Modified Alternative) would result in approximately 25 miles of new and improved utility line segments for a total of 197 acres of construction disturbance along the alignment and 121 acres of permanent ROW. New access way and improved access road construction would amount to 32 acres for a total potential construction disturbance of 229 acres and 153 acres of permanent ROW, 42 and 28 acres less, respectively, than Alternative 1 (PEA Alternative).

Twenty-three stream and drainage crossings would be needed for Alternative 2 (Modified Alternative), six less crossings than Alternative 1 (PEA Alternative) and 7.2 acres of disturbance would take place in sensitive SEZ and montane riparian lands (Table 4.6-9).

The same standard construction BMPs, APMs and federal, State, and local laws, regulations, and programs related to protection of water quality identified above in the discussion of Impact 4.6-1 (Alt. 1) would also apply to Alternative 2 (Modified Alternative). With adherence to these laws, regulations, and programs and implementation of standard BMPs and APMs, construction of Alternative 2 (Modified Alternative) would not violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. This impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-2 (Alt.2)</b>	<p><b>Increase the rate or amount of stormwater runoff so that it would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities resulting in increased sources of pollutants reaching surface waters or causing detrimental flooding to property or infrastructure.</b> Alternative 2 (Modified Alternative) would include some increases in impervious surfaces associated with pole and foundation installations and upgrading of two of the five substations. Any increase in impervious surfaces associated with these activities would be relatively small with little potential to increase the amount or rate of stormwater runoff in a manner that would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities or cause detrimental flooding to property or infrastructure. In addition, all installations under Alternative 2 (Modified Alternative) would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program, and existing NPDES permits. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided. Therefore, this impact would be <b>less than significant</b>.</p>
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This impact is similar to Impact 4.6-2 (Alt. 1) described above for Alternative 1 (PEA Alternative). For each alternative installation of power poles, use of temporary construction and staging areas, and creation of access ways would have little effect on the creation of impervious surface. Periodic vehicle travel by maintenance crews along the access ways/roads and ROW and public recreational use along these same corridors could

further compact and degrade vulnerable soils along steep gradients and potentially concentrate stormwater runoff in localized areas that may lead to increased suspended sediment reaching surface waters. Given the majority of these alignments are located well outside the denser residential and urban areas with existing stormwater facilities, this potential impact is further addressed under 4.6-3. The substation modifications and corresponding increases in impervious surface area are the same for all alternatives. Because Alternative 2 (Modified Alternative) has less mileage of power line overall, due primarily to the inclusion of a double circuit in Segments 625-9 and 625-10, it would have fewer tower installations and therefore generate less impervious surface from towers. However, because of the small area of impervious surface generated by each pole; between 1 and 2 square feet for typical poles, less than 1 square foot for each guy wire anchor for typical poles; and just over 50 square feet for self-supporting, and the wide spacing of poles (approximately 300 feet under most circumstances), pole placement under any alternative would not generate a substantial amount of impervious surface in any particular area.

Any increase in impervious surfaces associated with concrete foundations for pole infrastructure and substation upgrades would be relatively small with little potential to increase the amount or rate of stormwater runoff in a manner that would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities or cause detrimental flooding to property or infrastructure. In addition, all installations under Alternative 2 (Modified Alternative) would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program, and existing NPDES permits. Possible compliance actions could include permanent BMPs, low-impact development techniques, and onsite stormwater infiltration to accommodate at least a 20-year, 1-hour storm, which would prevent any increase in volume or peak flows leaving the project sites. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided. Therefore, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-3 (Alt.2)</b>	<b>Substantially alter existing drainage patterns or alter the course or direction of any water body in a manner that may result in detrimental flooding to property or infrastructure or substantial erosion or siltation that may be carried to surface waters.</b> Although some temporary access routes under Alternative 2 (Modified Alternative) would sometimes need to cross creeks and drainages, the crossings would only be temporary and be required under the NPDES permits and SWPPP to install and remove adequate diversions that would maintain conveyance of anticipated flows without causing aggravated erosion or siltation within the waterway. A portion of the proposed access ways under Alternative 2 (Modified Alternative) would occur in mountainous terrain resulting in steep grades. Without adequate erosion control designs these steeply inclined access ways (greater than 15 percent grade) may become a conduit for concentrated flow and substantial erosion. Therefore this impact would be <b>significant</b> .
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This impact is the same as Impact 4.6-3 described above for Alternative 1 (PEA Alternative) with the exception that Alternative 2 (Modified Alternative) would need less roads overall (approximately 5 acres less) and therefore could impact drainage patterns to a slightly lesser scale or occurrence. Both alternatives would not substantially alter drainage patterns in waterways, but new access ways, particularly in areas with steep slopes or with erodible soils or subjected to heavy recreational use would be susceptible to aggravated erosion. Both Alternatives 1 (PEA Alternative) and Alternative 2 (Modified Alternative) require similar lengths of access ways in areas of steep grades (see Exhibits 3-4a and 3-4b). For the same reasons described in Alternative 1 (PEA Alternative), this impact would be **significant**.

## MITIGATION MEASURES

**Mitigation Measure 4.6-3a (Alt. 2):** Follow USFS guidance on locating and designing roads to protect water quality and incorporate erosion control BMPs for all new access ways or improvements to existing roads. Avoid constructing access ways steeper than 15 percent gradient where feasible and when required implement site-specific proven BMPs to prevent concentrated runoff and gulying.

*This mitigation measure is the same as Mitigation Measure 4.6-3a (Alt. 1), described above.*

**Mitigation Measure 4.6-3b (Alt. 2):** Incorporate into annual power line inspection and maintenance routines a permanent ROW and access way/road inspection and maintenance program.

*This mitigation measure is the same as Mitigation Measure 4.6-3b (Alt. 1), described above.*

By incorporating appropriate designs and BMPs into new access ways and modifications and timely repairs to new and existing access roads and ROW in steep areas, these mitigation measures would prevent substantial erosion or siltation that could be carried to surface waters and reduce this impact to a **less-than-significant** level.

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<b>IMPACT 4.6-4 (Alt.2)</b>	<b>Place structures within a 100-year flood hazard area that would impede or redirect flood flows.</b> There are two locations where the Alternative 2 (Modified Alternative) alignment falls within a 100-year flood hazard area. Given the small footprint of the proposed facilities, placement of poles in the flood hazard area would not appreciably impede or redirect flood flows. This impact would be <b>less than significant</b> .
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The Alternative 2 (Modified Alternative) alignment intersects with the 100-year flood hazard area in two locations.

- ▲ Two ends of the 625 Line (625-1A) along the Truckee River in Tahoe City, where it ties into the Tahoe City Substation and where it crosses the Truckee River (Exhibit 4.6-2), add up to 1,100 feet in the 100-year floodplain.
- ▲ Approximately 7,321 feet of the 650 Line along Martis meadow south of the Town of Truckee is in the 100-year floodplain (Exhibit 4.6-4).

Like Alternative 1 (PEA Alternative), given the small footprint of the power poles and the typical 300-foot spacing between poles, placing these facilities in the flood hazard area would not appreciably alter the course or flow of the 100-year floodwaters. For the same reasons described for Alternative 1 (PEA Alternative), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-5 (Alt.2)</b>	<b>Intercept or alter the direction or rate of flow of groundwater or degrade groundwater quality.</b> Alternative 2 (Modified Alternative) involves the subsurface installation of steel poles and self-supporting poles with concrete foundations that have the potential to intercept groundwater flows. Given the small diameter and large spacing of the single poles it is unlikely they would have an impact to groundwater direction or rate of flow; however, interception of groundwater could create the potential to introduce contaminants. This impact is considered <b>significant</b> .
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This impact is similar to Impact 4.6-5 described above for Alternative 1 (PEA Alternative). Both alternatives would have similar pole installation requirements with similar potential to intercept and potentially contaminate groundwater. However, because Alternative 2 (Modified Alternative) has less mileage of power line overall, due primarily to the inclusion of a double circuit in Segments 625-9 and 625-10, there could be some reduced potential to intercept groundwater during construction. For the same reasons described for Alternative 1 (PEA Alternative), this impact would be **significant**.

## MITIGATION MEASURES

### Mitigation Measure 4.6-5 (Alt. 2): Prepare and implement a dewatering and discharge plan.

*This mitigation measure is the same as Mitigation Measure 4.6-5 (Alt. 1) described above.*

Implementation of this mitigation measure would prevent potential degradation of groundwater quality and reduce this impact to a **less-than-significant** level.

## ALTERNATIVE 3 – ROAD FOCUSED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.6-1 (Alt.3)</b>	<b>Violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.</b> Construction of Alternative 3 (Road Focused Alternative) would result in temporary soil disturbance along the upgraded utility alignment, new access ways and improved road sections, and staging areas. Soil disturbance associated with these construction activities could cause accelerated soil erosion and sediment loss that could be transported to nearby water bodies. Use of hazardous materials during construction (e.g., fuels, lubricants) could result in the release of these materials into nearby water bodies. Construction dewatering could also provide a mechanism for contaminant discharges. These short-term construction impacts would be avoided or minimized through adherence to various federal, state, and local laws, regulations, and programs which require implementation and continual monitoring and maintenance of BMPs to protect water quality during construction. Various measures included as part of the proposed project would further reduce the risk of water quality degradation. Therefore, this impact would be <b>less than significant</b> .
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This impact is similar to Impact 4.6-1 (Alt. 1) described above for Alternative 1 (PEA Alternative). The same impact mechanisms related to soil disturbance, erosion, contaminant releases, and dewatering would occur.

## 625 LINE

Under Alternative 3 (Road Focused Alternative), the new 625 Line would be similar to that described for the Alternative 1 (PEA Alternative) in the segments between Tahoe City and Brockway Summit, except that it would

follow even more closely the Fiberboard Freeway. East of Brockway Summit, the 625 Line would be constructed in a double circuit with the 650 Line, and the existing 625 Line would be removed.

## 650 LINE

Under Alternative 3 (Road Focused Alternative), the new 650 Line would be the same as that described for the Alternative 1 (PEA Alternative), but emphasizes placement near established roadways. Segment 650-4B would replace 650-4 and 650-5 through the Martis Creek Lake area and areas west to follow SR 267 and Schaffer Mill Road. Also, rather than the rebuild of a single-circuit of the 650 Line between the Kings Beach Substation and Brockway Summit, Alternative 3 (Road Focused Alternative) would construct a double-circuit 650/625 Line along the 650 Line alignment proposed in the Alternative 1 (PEA Alternative) (largely along SR 267), thereby removing the power line in forested lands through this reach.

Per Table 4.6-9, Approximate Disturbance Areas Associated with Project Alternatives by Watershed, there are approximately 26 miles of new and improved utility line segments under Alternative 3 (Road Focused Alternative) resulting in roughly 209 acres of construction disturbance and 128 acres of ROW along the alignment. New and improved access roads add an additional 18 acres of disturbance (Table 4.6-9, Approximate Disturbance Areas Associated with Project Alternatives by Watershed) for a total of 227 acres of construction disturbance and 146 acres of permanent ROW (Alternative 3A would result in approximately the same permanent ROW and 1 acre less construction disturbance). This is 44 acres less construction disturbance than Alternative 1 (PEA Alternative) and 7 acres less than Alternative 2 (Modified Alternative). As a reminder the total estimated disturbance shown here for comparison is likely greater than the actual proposed disturbance since the access road lengths in GIS were not always designated as to whether they fell inside or outside of the proposed power line ROW, and so in many locations could likely be one in the same. Because Alternative 3 (Road Focused Alternative) places much of the alignment adjacent to existing roads, the ROW footprint contains many areas where ground disturbance to make the area suitable for project construction and operation would not be required and the actual acreage of ground disturbance would be less. This alternative involves 22 stream and drainage crossings, one less than Alternative 2 (Modified Alternative), but slightly more total disturbance in sensitive areas than Alternative 2 with 7.6 acres in SEZ and montane riparian zones.

The same standard BMPs, APMs and federal, state, and local laws, regulations, and programs related to protection of water quality identified above in the discussion of Impact 4.6-1 (Alt. 1) would also apply to Alternative 3 (Road Focused Alternative). With adherence to these laws, regulations, and programs and implementation of APMs, construction of Alternative 3 (Road Focused Alternative) would not violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. This impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-2 (Alt.3)</b>	<b>Increase the rate or amount of stormwater runoff so that it would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities resulting in increased sources of pollutants reaching surface waters or causing detrimental flooding to property or infrastructure.</b> Alternative 3 (Road Focused Alternative) would include some increases in impervious surfaces associated with pole and foundation installations and upgrading of two of the five substations. Any increase in impervious surfaces associated with these activities would be relatively small with little potential to increase the amount or rate of stormwater runoff in a manner that would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities or cause detrimental flooding to property or infrastructure. In addition, all installations under
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Alternative 3 (Road Focused Alternative) would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program, and existing NPDES permits. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided. This impact would be **less than significant**.

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This impact is similar to Impact 4.6-2 (Alt. 1) described above for Alternative 1 (PEA Alternative). For each alternative installation of power poles, use of temporary construction and staging areas, and creation of access ways would have little effect on the creation of impervious surface. The substation modifications and corresponding increases in impervious surface area are the same for all action alternatives. Because Alternative 3 (Modified Alternative) has less mileage of power line relative to Alternative 1 (PEA Alternative), due primarily to the inclusion of a double circuit in Segments 650-1 and 650-2, it would have fewer tower installations and therefore generate less impervious surface from towers (although total mileage of power line ROW would be slightly greater than for Alternative 2 [Modified Alternative]; see Table 4.6-9). Because of the small area of impervious surface generated by each pole; between 1 and 2 square feet for typical poles, less than 1 square foot for each guy wire anchor for typical poles, and just over 50 square feet for self-supporting; and the wide spacing of poles (approximately 300-feet under most circumstances), pole placement under any action alternative does not generate a substantial amount of impervious surface in any particular area.

Any increase in impervious surfaces associated with concrete foundations for pole infrastructure and substation upgrades would be relatively small with little potential to increase the amount or rate of stormwater runoff in a manner that would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities or cause detrimental flooding to property or infrastructure. In addition, all installations under Alternative 3 (Road Focused Alternative) would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program, and existing NPDES permits. Possible compliance actions could include permanent BMPs, low-impact development techniques, and onsite stormwater infiltration to accommodate at least a 20-year, 1-hour storm, which would prevent any increase in volume or peak flows leaving the project sites. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided. Therefore, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-3 (Alt.3)</b>	<b>Substantially alter existing drainage patterns or alter the course or direction of any water body in a manner that may result in detrimental flooding to property or infrastructure or substantial erosion or siltation that may be carried to surface waters.</b> Although some temporary access routes under Alternative 3 (Road Focused Alternative) would sometimes need to cross creeks and drainages, the crossings would only be temporary and be required under the NPDES permits and SWPPP to install and remove adequate diversions that would maintain conveyance of anticipated flows without causing aggravated erosion or siltation within the waterway. A portion of the proposed access ways under Alternative 3 (Road Focused Alternative) would occur in mountainous terrain resulting in steep grades. Without adequate erosion control designs these steeply inclined access ways (greater than 15 percent grade) may become a conduit for concentrated flow and substantial erosion. Therefore, this impact would be <b>significant</b> .
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This impact is similar to Impact 4.6-3 described above for Alternative 1 (PEA Alternative). Both alternatives would not substantially alter drainage patterns in waterways, but new access ways would be susceptible to

compaction from vehicle access and public use and aggravated erosion in areas with steep slopes or erodible soils. Because Alternative 3 (Road Focused Alternative) makes greater use of the Fiberboard Freeway and other existing roads for access, and places a double circuit in Segments 650-1 and 650-2, eliminating new construction in the steep terrain in Segments 625-9 and 625-10, Alternative 3 includes much fewer lengths of access ways in areas of steep grades compared to Alternatives 1 and 2 (see Exhibits 3-4a, 3-4b, and 3-4c). However, for the same reasons described for Alternative 1 (PEA Alternative), this impact would be **significant**.

## MITIGATION MEASURES

**Mitigation Measure 4.6-3a (Alt. 3):** Follow USFS guidance on locating and designing roads to protect water quality and incorporate erosion control BMPs for all new access ways or improvements to existing roads. Avoid constructing access ways steeper than 15 percent gradient where feasible and when required implement site-specific proven BMPs to prevent concentrated runoff and gulying.

*This mitigation measure is the same as Mitigation Measure 4.6-3a (Alt. 1), described above.*

**Mitigation Measure 4.6-3b (Alt. 3):** Incorporate into annual power line inspection and maintenance routines a permanent ROW and access way/road inspection and maintenance program.

*This mitigation measure is the same as Mitigation Measure 4.6-3b (Alt. 1), described above.*

By incorporating appropriate designs and BMPs into new access ways and modifications and timely repairs to new and existing access roads and ROW in steep areas, these mitigation measures would prevent substantial erosion or siltation that could be carried to surface waters and reduce this impact to a **less-than-significant** level.

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<b>IMPACT 4.6-4 (Alt.3)</b>	<b>Place structures within a 100-year flood hazard area that would impede or redirect flood flows.</b> There are three locations where the Alternative 3 (Road Focused Alternative) alignment falls within a 100-year flood hazard area. Given the small footprint of the proposed facilities, placement of poles in the flood hazard area would not appreciably impede or redirect flood flows. This impact would be <b>less than significant</b> .
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The Alternative 3 (Road Focused Alternative) alignment intersects with the 100-year flood hazard area in two locations:

- ▲ approximately 1,185 feet of the 625 Line along the Truckee River in Tahoe City (in the same location as Alternative 1 [Exhibit 4.6-2]); and
- ▲ approximately 3,867 feet of the 650 Line where SR 267 crosses the Martis area south of the Town of Truckee (Exhibit 4.6-4).

Like Alternative 1 (PEA Alternative), given the small footprint of the power poles and the typical 300-foot spacing between poles, placing these facilities in the flood hazard area would not appreciably alter the course or flow of the 100-year floodwaters. For the same reasons described for Alternative 1 (PEA Alternative), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-5 (Alt.3)</b>	<b>Intercept or alter the direction or rate of flow of groundwater or degrade groundwater quality.</b> Alternative 3 (Road Focused Alternative) involves the subsurface installation of steel poles and self-supporting poles with concrete foundations that have the potential to intercept groundwater flows. Given the small diameter and large spacing of the single poles it is unlikely they would have an impact to groundwater direction or rate of flow; however, interception of groundwater could create the potential to introduce contaminants. This impact is considered <b>significant</b> .
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This impact is similar to Impact 4.6-5 described above for Alternative 1 (PEA Alternative). Both alternatives would have similar pole installation requirements with similar potential to intercept and potentially contaminate groundwater. However, because Alternative 3 (Road Focused Alternative) has less mileage of power line overall, due primarily to the inclusion of a double circuit in Segments 650-1 and 650-2, there could be some reduced potential to intercept groundwater during construction relative to Alternative 1 (although slightly more than Alternative 2 based on total ROW mileage shown in Table 4.6-9). For the same reasons described for Alternative 1 (PEA Alternative), this impact is considered **significant**.

## MITIGATION MEASURES

### Mitigation Measure 4.6-5 (Alt. 3): Prepare and implement a dewatering and discharge plan.

*This mitigation measure is the same as Mitigation Measure 4.6-5 (Alt. 1) described above.*

Implementation of this mitigation measure would prevent potential degradation of groundwater quality and reduce this impact to a **less-than-significant** level.

## ALTERNATIVE 4 – PROPOSED ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.6-1 (Alt.4)</b>	<b>Violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.</b> Construction of Alternative 4 (Proposed Alternative) would result in temporary soil disturbance along the upgraded utility alignment, new access ways and improved road sections, and staging areas. Soil disturbance associated with these construction activities could cause accelerated soil erosion and sediment loss that could be transported to nearby water bodies. Use of hazardous materials during construction (e.g., fuels, lubricants) could result in the release of these materials into nearby water bodies. Construction dewatering could also provide a mechanism for contaminant discharges. These short-term construction impacts would be avoided or minimized through adherence to various federal, state, and local laws, regulations, and programs which require implementation and continual monitoring and maintenance of BMPs to protect water quality during construction. Various measures included as part of the proposed project would further reduce the risk of water quality degradation. Therefore, this impact would be <b>less than significant</b> .
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This impact is similar to Impact 4.6-1 (Alt. 1) described above for Alternative 1 (PEA Alternative). The same impact mechanisms related to soil disturbance, erosion, contaminant releases, and dewatering would occur.

## 625 LINE

Under Alternative 4 (Proposed Alternative), the new 625 Line would be identical to Alternative 3 (Road Focused Alternative), except for Segment 625-1A, which would be the same as under Alternative 2 (Modified Alternative).

## 650 LINE

Under Alternative 4 (Proposed Alternative), the new 650 Line would be the same as that described for Alternative 1 (PEA Alternative) from Brockway Summit to Truckee, and the same as Alternative 3 (Road Focused Alternative) from Brockway Summit to Kings Beach. As such, the alignment would follow the alignment of the existing 650 Line, but would be a double circuit with the 625 Line from Brockway Summit to Kings Beach.

Per Table 4.6-9, Approximate Disturbance Areas Associated with Project Alternatives by Watershed, construction and operation of Alternative 4 (Proposed Alternative) would result in approximately 24 miles of new and improved utility line segments for a total of 189 acres of temporary construction disturbance and 116 acres of ROW, the least disturbance of all the action alternatives. New and improved access road construction would amount to 18 acres for a total disturbance area of 207 acres and 134 acres permanent ROW, still the least amount of disturbance of all action alternatives and 64 acres less construction disturbance than Alternative 1 (PEA Alternative).

Alternative 4 (Proposed Alternative) would require 25 stream and drainage crossings not the least of all action alternatives, but four less crossings than Alternative 1 (PEA Alternative) and 6.5 acres of disturbance would take place in sensitive SEZ and montane riparian lands (Table 4.6-9).

The same standard construction BMPs, APMs and federal, state, and local laws, regulations, and programs related to protection of water quality identified above in the discussion of Impact 4.6-1 (Alt. 1) would also apply to Alternative 4 (Proposed Alternative). With adherence to these laws, regulations, and programs and implementation of standard BMPS and APMs, construction of Alternative 4 (Proposed Alternative) would not violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. This impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-2 (Alt.4)</b>	<b>Increase the rate or amount of stormwater runoff so that it would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities resulting in increased sources of pollutants reaching surface waters or causing detrimental flooding to property or infrastructure.</b> Alternative 4 (Proposed Alternative) would include some increases in impervious surfaces associated with pole and foundation installations and upgrading of two of the five substations. Any increase in impervious surfaces associated with these activities would be relatively small with little potential to increase the amount or rate of stormwater runoff in a manner that would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities or cause detrimental flooding to property or infrastructure. In addition, all installations under Alternative 4 (Proposed Alternative) would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program, and existing NPDES permits. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided. This impact would be <b>less than significant</b> .
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This impact is similar to Impact 4.6-2 (Alt. 1) described above for Alternative 1 (PEA Alternative). For each alternative installation of power poles, use of temporary construction and staging areas, and creation of access ways would have little effect on the creation of impervious surface. The substation modifications and corresponding increases in impervious surface area are the same for all alternatives. Because Alternative 4 (Proposed Alternative) has the least mileage of power line out of all the alternatives, it would have fewer tower installations and therefore generate less impervious surface from towers. That combined with the small area of impervious surface generated by each pole placement under this alternative would not generate a substantial amount of impervious surface in any particular area.

Any increase in impervious surfaces associated with concrete foundations for pole infrastructure and substation upgrades in the more populated areas would be relatively small with little potential to increase the amount or rate of stormwater runoff in a manner that would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities or cause detrimental flooding to property or infrastructure. In addition, all installations under Alternative 4 (Proposed Alternative) would need to comply with stringent requirements for stormwater and erosion control contained in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program, and existing NPDES permits. Possible compliance actions could include permanent BMPs, low-impact development techniques, and onsite stormwater infiltration to accommodate at least a 20-year, 1-hour storm, which would prevent any increase in volume or peak flows leaving the project sites. Therefore, if adverse increases in runoff were possible in a particular area, compliance with these plans and programs would ensure that adverse effects were avoided. This impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-3 (Alt.4)</b>	<b>Substantially alter existing drainage patterns or alter the course or direction of any water body in a manner that may result in detrimental flooding to property or infrastructure or substantial erosion or siltation that may be carried to surface waters.</b> Although some temporary access routes under Alternative 4 (Proposed Alternative) would sometimes need to cross creeks and drainages, the crossings would only be temporary and be required under the NPDES permits and SWPPP to install and remove adequate diversions that would maintain conveyance of anticipated flows without causing aggravated erosion or siltation within the waterway. A portion of the proposed access ways under Alternative 4 (Proposed Alternative) would occur in mountainous terrain resulting in steep grades. Without adequate erosion control designs these steeply inclined access ways (greater than 15 percent grade) may become a conduit for concentrated flow and substantial erosion. Therefore this impact would be <b>significant</b> .
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This impact is the same as Impact 4.6-3 described above for Alternative 1 (PEA Alternative), with the exception that Alternative 4 (Proposed Alternative) would need the least amount of roads overall similar to Alternative 3 (Road Focused Alternative) (approximately 19 acres less) and therefore would impact drainage patterns to a lesser degree or occurrence than Alternative 1 (PEA Alternative). Similarly this alternative would not substantially alter drainage patterns in waterways, but new access ways, particularly in areas with steep slopes would be susceptible to erosion. For the same reasons described in Alternative 1 (PEA Alternative), this impact would be **significant**.

## MITIGATION MEASURES

**Mitigation Measure 4.6-3a (Alt. 4):** Follow USFS guidance on locating and designing roads to protect water quality and incorporate erosion control BMPs for all new access ways or improvements to existing roads. Avoid constructing access ways steeper than 15 percent gradient where feasible and when required implement site-specific proven BMPs to prevent concentrated runoff and gulying.

*This mitigation measure is the same as Mitigation Measure 4.6-3a (Alt. 1), described above.*

**Mitigation Measure 4.6-3b (Alt. 4):** Incorporate into annual power line inspection and maintenance routines a permanent ROW and access way/road inspection and maintenance program.

*This mitigation measure is the same as Mitigation Measure 4.6-3b (Alt. 1), described above.*

By incorporating appropriate designs and BMPs into new access ways and modifications and timely repairs to new and existing access roads and ROW in steep areas, these mitigation measures would prevent substantial erosion or siltation that could be carried to surface waters and reduce this impact to a **less-than-significant** level.

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<b>IMPACT 4.6-4 (Alt.4)</b>	<b>Place structures within a 100-year flood hazard area that would impede or redirect flood flows.</b> There are two locations where the Alternative 4 (Proposed Alternative) alignment falls within a 100-year flood hazard area. Given the small footprint of the proposed facilities, placement of poles in the flood hazard area would not appreciably impede or redirect flood flows. This impact would be <b>less than significant</b> .
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The Alternative 4 (Proposed Alternative) alignment intersects with the 100-year flood hazard area in the following two locations.

- ▲ Similar to Alternative 1 (PEA Alternative), Alternative 4 (Proposed Alternative) would place two ends of the 625 Line along the Truckee River in Tahoe City where it ties into the Tahoe City Substation and where it crosses the Truckee River (Exhibit 4.6-2) for a total of 1,185 feet in the 100-year floodplain.
- ▲ Approximately 7,860 feet of the 650 Line along Martis south of the Town of Truckee would be in the 100-year floodplain (Exhibit 4.6-4).

Given the small footprint of the power poles and the typical 300-foot spacing between poles, placing these facilities in the flood hazard area would not appreciably alter the course or flow of the 100-year floodwaters. For the same reasons described for Alternative 1 (PEA Alternative), this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-5 (Alt.4)</b>	<b>Intercept or alter the direction or rate of flow of groundwater or degrade groundwater quality.</b> Alternative 4 (Proposed Alternative) involves the subsurface installation of steel poles and self-supporting poles with concrete foundations that have the potential to intercept groundwater flows. Given the small diameter and large spacing of the single poles it is unlikely they would have an impact to groundwater direction or rate of flow; however interception of groundwater could create the potential to introduce contaminants. This impact is considered <b>significant</b> .
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This impact is similar to Impact 4.6-5 described above for Alternative 1 (PEA Alternative). Both alternatives would have similar pole installation requirements with similar potential to intercept and potentially contaminate groundwater. However, because Alternative 4 (Proposed Alternative) has the least mileage of power line overall, there would be an even less potential to intercept groundwater during construction than the other alternatives. For the same reasons described for Alternative 1 (PEA Alternative), this impact would be **significant**.

## MITIGATION MEASURES

### Mitigation Measure 4.6-5 (Alt. 4): Prepare and implement a dewatering and discharge plan.

*This mitigation measure is the same as Mitigation Measure 4.6-5 (Alt. 1), described above.*

Implementation of this mitigation measure would prevent potential degradation of groundwater quality and reduce this impact to a **less-than-significant** level.

## ALTERNATIVE 5 – NO ACTION/NO PROJECT ALTERNATIVE

### DIRECT AND INDIRECT IMPACTS

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<b>IMPACT 4.6-1 (Alt.5)</b>	<b>Violate any federal, state, regional or TRPA water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.</b> Alternative 5 (No Action/No Project Alternative) would leave the existing transmission system in place and result in only very minor disturbances because of operational and maintenance access and localized repairs. Any repairs that may result in more than an acre of disturbance would require the same NPDES permit and therefore compliance with the same water quality protection measures described under the action alternatives. Given the typical small area of disturbance, and regulatory requirements triggered by larger disturbances, this impact would be <b>less than significant</b> .
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There would be no upgrades to the North Lake Tahoe Transmission System under the No Action Alternative (No Action/No Project Alternative). The only potential earth disturbing actions associated with this alternative would be in association with existing operation and maintenance access and completion of existing deferred maintenance to raise the system to current standards, including compliance with vegetation clearing requirements. Most disturbances would be small and have little potential to adversely affect water quality. If disturbance greater than 1 acre may result from target repairs or maintenance, they would require compliance with all applicable federal, state, local, and TRPA regulations regarding the continued protection of water quality. Given the typical small area of disturbance under Alternative 5 (No Action/No Project Alternative), and regulatory requirements triggered by larger disturbances, this impact would be **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.11-2 (Alt.5)</b>	<b>Significantly increase the rate or amount of stormwater runoff within the watershed which would exceed the capacity of existing or planned stormwater drainages, infiltration, and treatment systems or facilities resulting in increased sources of pollutants reaching the lake or river or detrimental flooding to property or infrastructure.</b> Alternative 5 (No Action/No Project Alternative) would leave in place the existing transmission system and result in only minor increases, if any, to impervious surface areas because of repairs. If any repairs resulted in a significant increase in impervious surface area they would be required to comply with the stringent stormwater and sediment control measures in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program and existing NPDES permits so this impact would be <b>less than significant</b> .
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Alternative 5 (No Action/No Project Alternative) would leave in place the existing transmission system, no construction would take place and therefore no increase in impervious surface area would result. Minor increases in impervious surfaces could result from system repairs, such as addressing a failing equipment pad or foundation. However, these would not be expected to be of a scale to affect stormwater runoff. If any repairs resulted in a significant increase in impervious surface area they would be required to comply with the stringent stormwater and sediment control measures in the Lahontan Water Quality Control Plan, the Lake Tahoe TMDL Program and existing NPDES permits. Given these conditions, this impact is considered **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-3 (Alt.5)</b>	<b>Substantially alter existing drainage patterns or alter the course or direction of any water body in a manner that may result in detrimental flooding to property or infrastructure or substantial erosion or siltation that may be carried to surface waters.</b> Under Alternative 5 (No Action/No Project Alternative) no new towers would be installed and no new access ways would be constructed. Therefore, no structures would be placed in waterways and no new access ways would be constructed in steep areas that could lead to erosion. Therefore, there would be <b>no impact</b> .
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Under the Alternative 5 (No Action/No Project Alternative) no construction would take place. No new structures would be installed in waterways or floodways that could alter the course or direction of any water body. There would be no construction of new access ways; therefore, there would be no potential for access ways to be constructed on steep grades (greater than 15 percent) that could lead to erosion or siltation. Therefore, there would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-4 (Alt.5)</b>	<b>Place structures within a 100-year flood hazard area that would impede or redirect flood flows.</b> Under Alternative 5 (No Action/No Project Alternative) no new structures would be placed in a 100-year flood hazard area. Therefore, there would be <b>no impact</b> .
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Under Alternative 5 (No Action/No Project Alternative) no construction would take place. No new structures would be installed; therefore, there would be no new structures placed in a 100-year flood hazard area. There would be **no impact**.

## MITIGATION MEASURES

*No mitigation measures are required.*

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<b>IMPACT 4.6-5 (Alt.5)</b>	<b>Intercept or alter the direction or rate of flow of groundwater or degrade groundwater quality.</b> Under Alternative 5 (No Action/No Project Alternative) there would be no new construction and no new installations below ground, except potentially as part of system maintenance and repairs. Excavations as part of maintenance and repairs would be small, infrequent, and dispersed and would have little potential to adversely affect groundwater. This impact is <b>less than significant</b> .
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Under the Alternative 5 (No Action/No Project Alternative) there would be no new construction and no installations below ground for new facilities. As part of ongoing system maintenance and repairs it is possible that excavations may be needed to install replacement poles or repair existing underground facilities. Although there is the potential for these excavations to intercept groundwater, repair activities would be infrequent, dispersed, and of a small scale. They would not involve installation of new facilities that would appreciably alter the direction or rate of flow of groundwater or result in degradation of groundwater quality. Therefore, this impact is considered **less than significant**.

## MITIGATION MEASURES

*No mitigation measures are required.*

## CUMULATIVE IMPACTS

### SURFACE WATER QUALITY

As introduced in Section 4.6.3, a separate cumulative watershed effects (CWE) analysis (Wildscape Engineering 2013) was conducted based on USFS guidelines to assess and compare the potential cumulative hydrologic and water quality impacts that may result collectively under each of the four action alternatives.

The action alternatives, to varying degrees, would increase the extent and density of access roads, generate areas of earthen compaction, and create new impervious surfaces that could potentially lead to increased runoff and soil loss that may increase sediment loading to collector creeks and ultimately to the Truckee River or Lake Tahoe. The CWE analysis completed under the specialist report (Wildscape Engineering 2013) compared the anticipated level of cumulative watershed disturbance under each alternative to an estimate of the “upper limit” of watershed tolerance based on a percentage of allowable impervious coverage.

Threshold of Concern (TOC) values were applied to each watershed based on weighted values of allowable impervious cover dependent upon land type. Equivalent Roaded Acres (ERAs) were then used as a measure of existing and future land use impacts by assigning coefficients based on the degree of impact. For example impervious road surfaces and buildings were assigned a coefficient of 1.0 while unpaved roads, including the proposed access roads a coefficient of 0.8. Acreages for the action alternatives once again assumed the 40-foot wide permanent easement width and additional 25 feet temporary easement for power line disturbances and new and improved access roads were assumed to have a 12 foot width. Staging areas for the proposed Project were included in the disturbance accounting and assigned the ERA coefficient of 0.3 to represent a post-construction restored condition.

ERA accounting for existing and future development common to all the action alternatives conservatively assumed full build-out in the various land use zones. Acreages of existing roadway types (i.e., city and county,

highway, dirt) and assumed future development in each land use zone (i.e., residential, commercial, industrial, agricultural, and recreational) were determined using Placer County GIS data and Nevada County PDF zoning maps and accompanying Google Earth imagery. Existing land types that result in minimal disturbance or positive improvements were disregarded; including conservation areas, forested areas, and open space which were not counted.

The ERA values for the action alternatives were summed and then added to the ERA values for existing and future development in each watershed. As an example, the Watson Watershed had a base ERA value of 45 attributed to residential build out, timberland production and roadways prior to applying each alternative ERA value.

A comparison of susceptibility to CWE was completed for the four action alternatives by examining whether the land disturbance activities associated with installation and operation of each action alternatives when added to existing and future land disturbances came close to or exceeded the TOC value.

Risk ratios were calculated using the following equation:

$$\text{Risk Ratio (\%)} = \text{ERA/TOC} \times 100$$

When the Risk Ratio was less than 100 percent it was assumed there would be relatively minimal risk of adverse cumulative impacts to the watershed as a whole. Table 4.6-13 shows the results from the analysis.

Not surprisingly the greatest portion of ERA is attributed to impervious coverage from existing roads, trails and build-out of residential, commercial and industrial areas. In a few watersheds ongoing timberland production also contributes a fairly significant ERA component including Tahoe Vista, and Martis Creek Middle Fork, and Mainstem watersheds. All four action alternatives result in a slight increase in total ERA for each watershed but the differences are minimal compared to the overall contribution from existing and future impervious areas and activities associated with development and timber production. The maximum increase in Risk Ratio under all four action alternatives was less than ten percent for all watersheds. The difference between each action alternative ERA contribution was also very slight, amounting to 5 percent or less for each watershed. Alternative 4 (Proposed Alternative) shows the lowest total ERA value reaffirming it would cause the least amount of disturbance of all the action alternatives.

In the eight watersheds in Table 4.6-13 where the ERA value is less than the TOC, each action alternative's contribution to the ERA is not great enough to push the total ERA above the TOC. In these instances, the proposed project does not provide a sizeable enough contribution to bring about a significant cumulative impact.

Five of the 13 watersheds in Table 4.6-13 already show an ERA value over the TOC due in large part to existing and future residential, commercial, and industrial developments, resulting in Risk Ratios greater than 100 percent before any small contribution from each action alternative. This is indicative of a potential existing significant cumulative water quality impact with the proposed project contributing a very small percentage (i.e., less than 10 percent) to the total impact. However, with such minimal values in increased Risk Ratio for all four action alternatives the potential for adverse cumulative watershed impacts relevant to hydrology and water quality is low. In other words there should be no cumulative contribution under the action alternatives that would result in a substantial increase in soil loss from increased runoff and erosion that would negatively impact Lake Tahoe or the Truckee River. This doesn't eliminate the possibility of localized impacts under each action alternative, however, through compliance with existing laws regulations and programs, and implementation of APMs and mitigation measures described above in Section 4.6.4, Environmental Consequences and Recommended Mitigation Measures, each action alternatives localized contribution to the ERA value would be less than significant.

Table 4.6-13 Summary of CWE, ERA and Risk Ratio Results for the Action Alternatives by Watershed													
Watershed Name	Total Acres	TOC	Baseline ERA <sup>1</sup>	PEA ERA Total	PEA Risk Ratio (RR)	Modified ERA Total	Modified Risk Ratio	Road Focused ERA Total	Road Focused Risk Ratio	Proposed ERA Total	Proposed Risk Ratio	Maximum RR Change Due to Alts	Max Difference in RR between Alts
<u>Truckee River Middle (South at Tahoe City)</u>	4,366	398.5	526.9	528.9	<u>133%</u>	528.9	<u>133%</u>	528.9	<u>133%</u>	528.9	133%	3.5%	0%
Tahoe State Park	782	163.0	136.2	140.2	86%	140.2	86%	140.0	86%	140.0	86%	2.5%	0.2%
Burton Creek	3,652	524.3	123.5	137.8	26%	138.7	26%	138.6	26%	138.6	26%	2.9%	0.2%
Deer Creek	2,330	386.4	62.1	68.1	18%	68.2	18%	67.9	18%	67.9	18%	1.6%	0.1%
Watson	1,490	188.1	45.0	54.7	29%	54.8	29%	52.5	28%	52.5	28%	5.2%	1.2%
Carnelian Bay Creek	635	121.1	18.1	20.8	17%	20.4	17%	20.2	17%	20.2	17%	2.2%	0.5%
Carnelian Canyon	2,662	443.1	358.4	372.5	84%	371.6	84%	370.0	83%	370.0	84%	3.2%	0.7%
<u>Tahoe Vista</u>	3,495	487.8	730.2	753.0	<u>154%</u>	736	<u>151%</u>	740.9	<u>152%</u>	738.6	151%	6.6%	3.6%
Middle Fork Martis Creek	3,067	430.1	370.7	402.7	94%	404.2	94%	396.6	92%	397.4	92%	7.8%	1.8%
Griff Creek	2,914	299.4	204.3	222.0	74%	213.8	71%	211.3	70.6%	207.7	69%	5.9%	4.8%
<u>Martis Creek Mainstem</u>	11,080	1,342.4	1,911.0	1,915.9	<u>143%</u>	1,915.8	<u>143%</u>	1,924.6	<u>143%</u>	1,915.9	143%	1.0%	0.6%
<b>Truckee River Middle (East Partial)</b>	<b>53,234 (460)</b>	<b>8,624(20)</b>	<b>Addressed separate from table since watershed is very large compared to localized project footprint in this case.</b>										
<u>Trout Creek Watershed</u>	3,420	320.2	349.2	354.5	<u>111%</u>	354.5	<u>111%</u>	354.5	<u>111%</u>	354.5	111%	1.7%	0%
<u>ERA Totals</u>	---	---	4,835.6	4,971.1	---	4,947.1	---	4,946.1	---	4,932.2	---	---	---
ERA value of existing and future roads and development assuming complete build-out prior to applying action alternative ERA values.					RR over 100% due to existing and future development disturbance <b>Addressed separately from table.</b>								

The following discussion addresses more site specific cumulative impacts using a detailed list of past, current and probable future projects rather than the more conservative CWE analysis described above that assumed full build out conditions in the watershed areas impacted by the action alternatives.

There are several planned communities and residential developments in and adjacent to the proposed project that would ultimately increase impervious areas that could increase stormwater runoff volumes and peak flows. These specific developments would have been captured under the assumed CWE full build-out above. They include the Coldstream Specific Plan with 345 residential units, Canyon Springs with 177 single family parcels, Pollard Station with 120 residential units, Joerger Ranch mixed use planned community, and the Domus Development Kings Beach Housing Project with 76 affordable housing units. There are also commercial developments including the Truckee-Donner Recreation and Parks District Cultural Arts Center, the Hilltop Master Plan for commercial lodging, and the Boulder Bay Project which includes a four story, 275 room hotel and casino at the Tahoe Biltmore. These developments within the Lake Tahoe Basin would be required to design and construct permanent infiltration facilities to accommodate the 20-year one hour storm per the TRPA BMP Handbook and incorporate low-impact development techniques and onsite stormwater infiltration facilities in order to comply with the Lahontan Water Quality Control Plan and the Lake Tahoe and Truckee TMDL programs and permits.

Several ski resort improvements are proposed at Northstar, Squaw Valley, Alpine Meadows, and Homewood Mountain Resort. Proposed projects at Northstar include expansion of recreational opportunities (i.e., toboggan ride, widening of existing ski trails, various additions and modifications to ski lifts, trails, recreational amenities, and recreational access) and development of residential units, retail/commercial space, and other features). Probable future projects at Squaw Valley include additional lodging and resort amenities at Squaw Valley Village, replacement of an existing chairlift with a larger capacity chairlift, and construction of an alpine coaster attraction. Alpine Meadows proposes replacement of an existing chairlift with a larger capacity chairlift. Homewood Mountain Resort Master Plan proposes redevelopment of mixed-use and residential uses, a lodge, and ski area. These projects would all result in temporary construction disturbance and long-term increases in impervious surfaces, but similar to the residential developments previously listed would be required to incorporate construction BMPs to protect water quality and post-construction stormwater infiltration facilities to mitigate for increased impervious areas in compliance with TRPA and Lahontan RWQCB permits and the Lake Tahoe and Truckee TMDL programs.

Recreational and transportation improvements are in the planning and construction phases, including the SR 89/Fanny Bridge Improvement Project in Tahoe City located adjacent to the Tahoe City Substation, the Truckee River Corridor Access Plan, the Lake Tahoe Passenger Ferry, the Caltrans' Highway Improvement Projects, the Kings Beach Commercial Core Improvement Project, and the Martis Valley Trail a paved multi-use trail and the Dollar Creek Shared Use Trail. Fuels reduction programs that incorporate tree thinning and prescribed burning operations are being undertaken in and around Carnelian Bay, Tahoe Vista, Kings Beach, and Incline Village. Applications for a 10-year mining permit for the Hirschfeld Cindercone Mine in the Town of Truckee and the proposed Cabin Creek Biomass Facility which would be located 2 miles outside of the Town of Truckee are currently under review.

In general, these probable future projects could impose temporary impacts to water quality that would be prevented through compliance with construction permits and individual Project SWPPPs. Most of the projects would increase impervious surface areas to varying degrees, however any substantial increases in impervious surfaces would have to be paired with infiltration and stormwater facilities designed and built to capture those increases and prevent any increase in stormwater runoff or peak flows. Implementation of the proposed project including the APMs committed to by the project applicant, the standard BMPs required by the agencies and the mitigation measures recommended under the above sections there would not be a considerable contribution to any significant cumulative hydrology or water quality impact in the project vicinity.

With such minimal values in increased Risk Ratio for all action alternatives the potential for adverse cumulative watershed effects to soil, hydrology and water quality is low. In other words, there should be no cumulative contribution under the action alternatives that would result in a substantial increase in soil loss, erosion, or sediment transport that could negatively impact these two valuable water resources and so beneficial uses of Lake Tahoe and the Truckee River would be preserved.

## **GROUNDWATER QUALITY**

As described above in Section 4.6.4, Environmental Consequences and Recommended Mitigation Measures, the potential for the proposed project to affect groundwater would be through small and dispersed excavations for installation of transmission poles. The project does not include the extraction or use of groundwater (except for construction dewatering if needed) or the construction of new facilities that might result in groundwater contamination (e.g., underground storage tanks). Although there is a slight potential for excavations that intersect groundwater to provide a pathway for contamination, mitigation measures provided in Section 4.6.4 address this issue. Given these conditions, the action alternatives would not make a significant contribution to a significant cumulative groundwater impact, if such a cumulative impact were to occur.

## **FLOOD RISK**

As described above in Section 4.6.4, Environmental Consequences and Recommended Mitigation Measures, the action alternatives would place a limited number of transmission poles within the 100-year flood hazard area. However, given the relative small diameter of these poles and their dispersed placement, they are not expected to increase potential flood risk. In addition, the proposed project would not increase impervious surfaces in a manner that would generate additional stormwater runoff that could increase flood risk. Given these conditions, the action alternatives would not make a significant contribution to a significant cumulative flood risk impact, if such a cumulative impact were to occur.

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## 4.7 BIOLOGICAL RESOURCES

This section describes the common and sensitive vegetation, terrestrial wildlife, and aquatic biological resources that are known or have the potential to occur in the project area. Biological resources include common vegetation and habitat types, sensitive plant communities, and special-status botanical (plant, lichen, and fungi) and animal species. Federal, Tahoe Regional Planning Agency (TRPA), state, and local regulations related to biological resources are summarized. The potential for biological resources to be affected by the action alternatives is fully assessed.

For the project area that includes National Forest System (NFS) lands, this analysis is based partly on information, detailed analysis, and conclusions presented in the following specialist reports prepared for the project:

- ▲ Biological Assessment (BA);
- ▲ Biological Evaluation for Aquatic and Terrestrial Species (hereinafter referred to as the “Animal BE”);
- ▲ Management Indicator Species Report (hereinafter referred to as the “MIS Report”);
- ▲ memorandum with subject titled “Migratory Landbird Conservation on the Proposed CalPeco 625 and 650 Electrical Line Upgrade Project” (hereinafter referred to as the “Migratory Bird Report”);
- ▲ Biological Evaluation for Threatened, Endangered, and Sensitive Plants and Fungi (hereinafter referred to as the “Plant BE”);
- ▲ Invasive Plant Risk Assessment (IPRA); and
- ▲ Riparian Conservation Objectives Report.

These documents are hereby incorporated by reference, are part of the project record, and available for review at the Tahoe National Forest and Lake Tahoe Basin Management Unit (LTBMU) Forest Supervisor’s offices.

The potential loss or conversion of forest land, and potential zoning conflicts related to forest land and timberland, as addressed in the California Environmental Quality Act (CEQA) are analyzed separately in Section 4.3, Forestry Resources.

### 4.7.1 REGULATORY SETTING

Biological resources in the project area are regulated by several federal, State, TRPA, and local laws, regulations, and policies. Key regulations and conservation planning issues applicable to the project are discussed below.

#### FEDERAL

##### FEDERAL ENDANGERED SPECIES ACT

The US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) are charged with oversight of species designated as threatened or endangered under the federal Endangered Species Act of 1973 (Title 50, Part 17 of the Code of Federal Regulations [i.e., 50 CFR 17]), as amended under the USFWS Mitigation Policy of 1956 (Title 16, Chapter 35, Section 1531 of the United States Code [16 USC 1531 et seq.]), as well as those species that are designated by Region 1 of the USFWS as species of concern.

USFWS has authority over projects that may result in take of a federally listed species. Under the ESA, “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in any such conduct” (Public Law 93-205, as amended by Section 3 of Public Law 107-136 [16 USC 1532]). The loss of habitat

can also be considered “take” under the ESA. For projects with a federal nexus, such as this project, the process is accomplished through consultation under ESA Section 7 (16 USC 1536[a][2]), which produces a biological assessment (BA) to describe the impact mechanisms and any adverse effects on the listed population. Information within the BA is used to prepare the biological opinion (BO).

## **MIGRATORY BIRD TREATY ACT**

The Migratory Bird Treaty Act, enacted in 1918, domestically implements a series of international treaties that provide protection for migratory birds. It authorizes the Secretary of the Interior to regulate the taking of migratory birds and provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the Migratory Bird Treaty Act includes several hundred species, which is essentially all the native birds, in the United States.

## **BALD AND GOLDEN EAGLE PROTECTION ACT**

The Bald and Golden Eagle Protection Act, enacted in 1940 and amended multiple times since, prohibits the taking of bald and golden eagles without a permit from the Secretary of the Interior. Similar to the ESA, the Bald and Golden Eagle Protection Act defines “take” to include “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb” (16 USC 668-668c). For the purpose of the act, disturbance that would injure an eagle, decrease productivity, or cause nest abandonment, including habitat alterations that could have these results, are considered take and can result in civil or criminal penalties.

## **EXECUTIVE ORDER 11990, PROTECTION OF WETLANDS**

Executive Order 11990 established the protection of wetlands and riparian systems as the official policy of the federal government. The order requires all federal agencies to consider wetland protection as an important part of their policies and take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

## **EXECUTIVE ORDER 13112, NATIONAL INVASIVE SPECIES MANAGEMENT PLAN**

Executive Order 13112 directs all federal agencies to prevent the introduction and control the spread of invasive species in a cost-effective and environmentally sound manner to minimize economic, ecological, and human health impacts. It established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. The Invasive Species Council and advisory committee oversee and facilitate implementation of the executive order.

## **SECTION 404 OF THE CLEAN WATER ACT**

Section 404 of the Clean Water Act (CWA) establishes a requirement for a project applicant to obtain a permit before engaging in any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Under Section 404 of the CWA, the US Army Corps of Engineers (USACE) regulates and issues permits for activities that involve the discharge of dredged or fill materials into waters of the United States. Fills of less than 0.5 acre of nontidal waters of the United States for residential, commercial, or institutional development projects can generally be authorized under USACE’s

nationwide permit (NWP) program, provided that the project satisfies the terms and conditions of the particular NWP. Fills that do not qualify for a NWP require a letter of permission or an individual permit.

## **SECTION 401 WATER QUALITY CERTIFICATION**

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the State's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine Regional Water Quality Control Boards (RWQCBs). The project area is within the jurisdiction of the Lahontan RWQCB.

## **US FOREST SERVICE, LAKE TAHOE BASIN MANAGEMENT UNIT AND TAHOE NATIONAL FOREST**

### **Lake Tahoe Basin Management Unit**

The US Forest Service (USFS), LTBMU manages 75 percent of lands within the Tahoe Basin. Management of LTBMU lands in the study area is guided by the LTBMU Forest Plan (USFS 1988). Specific standards and guidelines for biological and other resources are also described in detail in the *Sierra Nevada Forest Plan Amendment* (USFS 2004) and the resulting Record of Decision. The 1988 Forest Plan provides the basis for evaluating the proposed project's consistency with LTBMU planning guidance. The project's consistency with the Forest Plan is considered in the National Forest Management Act (NFMA) Forest Plan Consistency Checklist, a planning tool developed and used by LTBMU staff, included in Appendix G of this EIS/EIS/EIR. As described in the NFMA checklist, incorporated herein by reference, the action alternatives would be consistent with the relevant Forest Plan directives. Therefore, specific Forest Plan directives are not included for consistency analysis in this section.

In accordance with the forest plan, USFS will do all of the following, in order of priority:

- ▲ protect and enhance water clarity and quality,
- ▲ protect threatened and endangered plant and animal species native to the area,
- ▲ preserve significant cultural resources,
- ▲ achieve air quality standards for health and visibility and prevent the adverse impacts of atmospheric deposition upon water quality,
- ▲ maintain viable populations of wildlife,
- ▲ achieve diverse vegetation communities, and
- ▲ enhance outdoor recreational opportunities.

In addition, LTBMU maintains a list of plants and animals designated as sensitive by the Regional Forester of USFS Region 5, and a list of management indicator species, that should be addressed when a project may affect LTBMU land. All segments of the 625 Line are entirely or partially within LTBMU lands, as are portions of the 650 Line, and are therefore subject to LTBMU Forest Plan policies, standards, and guidelines.

### **Tahoe National Forest**

The Tahoe National Forest Land and Resource Management Plan (Forest Plan) (USFS 1990) provides direction for managing the Tahoe National Forest, which includes an approximately 1-mile stretch of the 625 Line (portions of Segment 625-3 and Segment 625-4/4A) and a 0.25 mile stretch of the 650 Line (Segment 650-4) within the project study area. Specifically, Chapter V, Management Direction, presents both forest-wide and area-specific management direction for the Tahoe National Forest. The forest-wide management direction consists of forest goals and desired future conditions, objectives, and forest-wide standards and guidelines. Specific management direction for each of the 106 management areas includes: management emphasis for the area, selected

standards and guidelines, and compatible available management practices. The Tahoe National Forest, Forest Plan is amended by the *Sierra Nevada Forest Plan Amendment* (USFS 2004), described below. The project's consistency with the Forest Plan is considered in a matrix similar to the NFMA checklist described above for the LTBMU (but with relevant standards and guidelines only) and is included in Appendix G of this EIS/EIS/EIR. As described in the Tahoe National Forest NMFA checklist, incorporated herein by reference, the action alternatives would be consistent with the Tahoe National Forest standards, guidelines, and management practices. Therefore, specific Tahoe National Forest standards, guidelines, and management practices are not included for consistency analysis in this section.

### **Sierra Nevada Forest Plan Amendment**

The Sierra Nevada Forest Plan Amendment (SNFPA) of 2004 amends the Forest Plans for the 11 National Forests in the Sierra Nevada, including the LTBMU Forest Plan and the Tahoe National Forest Plan, described above. The SNFPA Final Supplemental Environmental Impact Statement and Record of Decision (ROD) describe the amendments to the Sierra Nevada Forest Plan developed to improve protection of old forests, wildlife habitats, watersheds and communities in the Sierra Nevada and the Modoc Plateau. Appendix A of the ROD provides management direction for the Record of Decision. The appendix is divided into six parts.

- ▲ Part A presents broad management goals and strategies for addressing the five problem areas: old forest ecosystems and associated species; aquatic, riparian, and meadow ecosystems and associated species; fire and fuels management; noxious weeds; and lower westside hardwood ecosystems.
- ▲ Part B describes desired conditions for land allocations across Sierra Nevada national forests.
- ▲ Part C describes management intents and objectives.
- ▲ Part D describes management standards and guidelines that provide direction for specific aspects of project planning and analysis.
- ▲ Part E sets forth management direction for the Herger-Feinstein Quincy Library Group Pilot Project Area during the life of the pilot project.
- ▲ Part F describes the monitoring plan for the ROD.

While the ROD generally establishes broad goals, the Management Direction appendix (Appendix A of the ROD) is intended to provide more specifics at the objectives and implementation level. The project's consistency with specific guidance provided in the SNFPA is considered in the NFMA Forest Plan Consistency Checklist included as Appendix G of this EIS/EIS/EIR. As described in the NFMA checklist, incorporated by reference here, the action alternatives would be consistent with the SNFPA guidance. Therefore, specific SNFPA standards and guidelines are not included for consistency analysis in this section.

## **STATE**

### **CALIFORNIA ENDANGERED SPECIES ACT**

The California Endangered Species Act (CESA) prohibits the taking of state-listed endangered or threatened species, as well as candidate species being considered for listing. Applicants may obtain a Section 2081 incidental take permit if the impacts of the take are minimized and fully mitigated and the take would not jeopardize the continued existence of the species. A "take" of a species, under CESA, is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include "harm" or "harass" as is included in the federal ESA.

### **CALIFORNIA FISH AND GAME CODE SECTION 1602 — STREAMBED ALTERATION**

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by the California Department of Fish and

Wildlife (CDFW) (formerly California Department of Fish and Game) under Sections 1600 *et seq.* of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a Lake or Streambed Alteration Agreement authorizing such activity. “Stream” is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. CDFW’s jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

### **CALIFORNIA FISH AND GAME CODE SECTIONS 3503–3503.5—PROTECTION OF BIRD NESTS AND RAPTORS**

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., hawks, owls, eagles, and falcons), including their nests or eggs. Violations of these codes include destroying active nests by removing the vegetation in which the nests are located and disturbance of nesting pairs that results in the failure of active raptor nests.

### **CALIFORNIA NATIVE PLANT PROTECTION ACT**

In addition to CESA, the California Native Plant Protection Act provides protection to endangered and rare plant species, subspecies, and varieties of wild native plants in California. The California Native Plant Protection Act definitions of “endangered” and “rare” closely parallel the CESA definitions of endangered and threatened plant species.

### **PORTER-COLOGNE WATER QUALITY CONTROL ACT**

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCBs’ jurisdiction includes waters of the United States as well as areas that meet the definition of “waters of the state.” Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCBs have the discretion to take jurisdiction over areas not federally protected under Clean Water Act Section 404 provided they meet the definition of waters of the state. Mitigation requiring no net loss of wetland functions and values of waters of the state is typically required by the RWQCBs.

### **Z’BERG-NEJEDLY FOREST PRACTICE ACT**

The Z’Berg-Nejedly Forest Practice Act (Forest Practice Act) and the associated California Public Resource Code (Division 4, Chapter 8) establish the authority for California Department of Forestry and Fire Protection (CAL FIRE) to act as the lead agency for timber harvest activities on non-federal land in the state. The Forest Practice Act was enacted to ensure that logging is done in a manner that will preserve and protect our fish, wildlife, forests, and streams. The California Forest Practice Rules (Title 14, California Code of Regulations) provide the explicit requirements by which Registered Professional Foresters prepare Timber Harvest Plans (THP) and by which CAL FIRE serves as the lead agency and reviews their completeness, adequacy, and enforceability. CAL FIRE is responsible for administering THP Regulations throughout California on all non-federal timberland. This applies regardless of zoning and includes lands inside of city limits. The removal of commercial timber species from forested areas is included under these regulations and may require a THP, a Timberland Conversion Permit, or another type of timber harvest plan exemption or emergency document, depending on project type.

## TAHOE REGIONAL PLANNING AGENCY

TRPA implements its authority to regulate growth and development in the Lake Tahoe Region through the Regional Plan. The Regional Plan includes Resolution 82-11, the Environmental Threshold Carrying Capacities (threshold standards), Goals and Policies, Code of Ordinances (Code), and other guidance documents. The following applies to the portion of the project that would be implemented within the Lake Tahoe Region.

### ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES

Through the adoption of Resolution 82-11, TRPA has established threshold standards for fish, vegetation, and wildlife, among others. TRPA cannot approve projects that would cause a significant adverse effect on a threshold standard without appropriate mitigation. Every five years TRPA conducts a comprehensive reevaluation to determine whether each threshold standard is being achieved and/or maintained, creates specific recommendations to address problem areas, and directs general planning efforts for the next review period. The most recent (2011) threshold evaluation was adopted in December 2012 (TRPA 2012a) and henceforth, threshold evaluation will occur every four years.

The TRPA threshold standards define special attainment goals that have been developed to focus management efforts and provide a measure of progress for vegetation, wildlife, and fisheries. The Conservation Element of TRPA’s Goals and Policies specifically identifies several attainment goals or threshold standards for certain vegetation and wildlife resources. The adopted TRPA threshold standards for vegetation, wildlife, and fisheries are listed below, and Table 4.7-1 summarizes the draft 2011 attainment status for these threshold standards (TRPA 2012a).

<b>Table 4.7-1 TRPA Vegetation, Wildlife, and Fisheries Resource Threshold Indicators and their Attainment Status</b>	
TRPA Threshold Indicator	2012 Attainment Status
<b>Vegetation</b>	
Common Vegetation— <i>Overall Status for Indicator Reporting Category</i>	Somewhat Worse than Target
Common Vegetation—Community Species Richness	At or Somewhat Better than Target
Common Vegetation—Proportion of Red Fir Stands in Small Diameter Size Class	Considerably Worse than Target
Common Vegetation—Proportion of Yellow Pine Stands in Small Diameter Size Class	Considerably Worse than Target
Common Vegetation—Relative Abundance of Meadows and Wetland Vegetation Types	Somewhat Worse than Target
Common Vegetation—Relative Abundance of Shrubs Vegetation Type	Considerably Better than Target
Common Vegetation—Relative Abundance of Deciduous Riparian Vegetation Type	Considerably Worse than Target
Uncommon Plant Communities— <i>Overall Status for Indicator Reporting Category</i>	At or Somewhat Better than Target
Uncommon Plant Communities—Upper Truckee Marsh	Somewhat Worse than Target
Uncommon Plant Communities—Taylor Creek Marsh	At or Somewhat Better than Target
Uncommon Plant Communities—Pope Marsh	Somewhat Worse than Target
Uncommon Plant Communities—Osgood Swamp	Somewhat Worse than Target
Uncommon Plant Communities—Hell Hole	At or Somewhat Better than Target
Uncommon Plant Communities—Grass Lake	At or Somewhat Better than Target

<b>Table 4.7-1 TRPA Vegetation, Wildlife, and Fisheries Resource Threshold Indicators and their Attainment Status</b>	
TRPA Threshold Indicator	2012 Attainment Status
Uncommon Plant Communities—Freel Peak	At or Somewhat Better than Target
Uncommon Plant Communities—Deep-Water Plants	Unknown (Insufficient Information)
<b>Sensitive Plants—Overall Status for Indicator Reporting Category</b>	
Sensitive Plants—Tahoe Yellow Cress	Considerably Better than Target
Sensitive Plants—Tahoe Draba	Considerably Better than Target
Sensitive Plants—Long-petaled Lewisia	Considerably Better than Target
Sensitive Plants—Cup Lake Draba	Considerably Better than Target
Sensitive Plants—Galena Creek Rockcress	Unknown (Insufficient Information)
Late Seral/Old-Growth Ecosystems Overall and in Montane, Upper Montane, and Subalpine Elevation Zones	Considerably Worse than Target (overall and in all elevation zones)
<b>Wildlife</b>	
<b>Special-Interest Species—Overall Status for Indicator Reporting Category</b>	
Special-Interest Species—Northern Goshawk	Somewhat Worse than Target
Special-Interest Species—Osprey	Considerably Better than Target
Special-Interest Species—Bald Eagle—Nesting	At or Somewhat Better than Target
Special-Interest Species—Bald Eagle—Wintering	No target established
Special-Interest Species—Golden Eagle	Unknown (Insufficient Information)
Special-Interest Species—Peregrine Falcon	At or Somewhat Better than Target
Special-Interest Species—Waterfowl	Somewhat Worse than Target
Special-Interest Species—Deer	No target established
Habitats of Special Significance	Implemented/Attainment
<b>Fisheries</b>	
Lake Habitat	Somewhat Worse than Target
Stream Habitat	Unknown
Instream Flow	Implemented/Attainment
Lahontan Cutthroat Trout	Implemented/Attainment
Source: TRPA 2012a	

## Common Vegetation

Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern by using the following indicators:

- ▲ provide for the perpetuation of yellow pine forest, red fir forest, subalpine forest, shrub associations, sagebrush scrub, deciduous riparian, meadow associations, wetland associations, cushion plant association;
- ▲ maintain at least 4 percent meadow and wetland vegetation, 4 percent deciduous riparian vegetation;
- ▲ maintain no more than 25 percent dominant shrub vegetation;
- ▲ maintain 15 to 25 percent of the yellow pine forest in seral stages other than mature;
- ▲ maintain 15 to 25 percent of the red fir forest in seral stages other than mature;

- ▲ limit acreage size of new forest openings to no more than 8 acres; and
- ▲ ensure that adjacent forest openings are not of the same relative age class or successional stage.

### Uncommon Plant Communities

Provide for the non-degradation of the natural qualities of any plant community that is uncommon to the Tahoe Basin or of exceptional scientific, ecological, or scenic value. This Threshold Standard will apply but not be limited to the deep-water plants of Lake Tahoe, Grass Lake (sphagnum fen), Osgood Swamp, the Freel Peak Cushion Plant Community, Hell Hole (sphagnum fen), Upper Truckee Marsh, Taylor Creek Marsh, and Pope Marsh.

### Sensitive Plants

Maintain the following minimum number of population sites for TRPA special-interest plant species: Galena Creek rockcress (*Arabis rigidissima* var. *demota*) (seven sites); long-petaled lewisia (*Lewisia longipetala*) (two sites); Cup Lake draba (*Draba asterophora* var. *macrocarpa*) (two sites); Tahoe draba (*Draba asterophora* var. *asterophora*) (five sites); and Tahoe yellow cress (*Rorippa subumbellata*) (26 sites).

### Late Seral/Old-Growth Ecosystems

Attain and maintain a minimum percentage of 55 percent by area of forested lands within the Tahoe Basin in a late seral or old-growth condition, and distributed across elevation zones. Forested lands within TRPA-designated urban areas are excluded in the calculations for threshold standard attainment.

### Wildlife Species of Special Interest

Provide a minimum number of population sites for six TRPA special-interest wildlife taxa: northern goshawk (12 sites); osprey (four sites); bald eagle (two winter sites and one nesting site); golden eagle (four sites); peregrine falcon (two sites); and waterfowl (18 sites). Mule deer is also a special-interest species; however, no threshold site number for deer has been specified. Perching and nesting sites of special-interest bird species will not be physically disturbed. TRPA maintains a nondegradation standard within buffer zones (“disturbance zones”) around nest sites of these species. In areas outside existing urban areas, projects or land uses within the disturbance zones will not, directly or indirectly, significantly affect the habitat or cause the displacement or extirpation of the population. Habitat within disturbance zones will not be manipulated in any manner, except for habitat enhancement. The disturbance zone for northern goshawk and bald eagle is a 0.5-mile radius around each nest site; the disturbance zone for osprey, peregrine falcon, and golden eagle is a 0.25-mile radius around each nest site. TRPA has also mapped disturbance zones for wintering bald eagles. Disturbance zones for deer are meadows.

The nondegradation standard in wildlife disturbance zones does not apply to situations where these species select areas in proximity to existing developed parcels.

### Habitats of Special Significance

Apply a nondegradation standard to habitats consisting of deciduous trees, wetlands, and meadows (i.e., riparian, wetland, and meadow habitats) while providing for opportunities to increase the acreage of such riparian associations. This includes but is not limited to preserving existing natural functioning stream environment zone (SEZ) lands in their natural hydrologic condition, restoring all disturbed SEZ lands in undeveloped, unsubdivided lands, and restoring 25 percent of the SEZ lands that have been identified as disturbed, developed, or subdivided, to attain a 5 percent total increase in the naturally functioning SEZ land.

### Lake Habitat

Apply a nondegradation standard to fish habitat in Lake Tahoe. Achieve the equivalent of 5,948 total acres of excellent (prime) habitat.

## Stream Habitat

Maintain 75 miles of excellent, 105 miles of good, and 38 miles of marginal stream habitat, as indicated by the map on page 76 of the EIS for the Establishment of Environmental Thresholds.

## Instream Flow

Until instream flow standards are established in the Regional Plan to protect fishery values, a nondegradation standard will apply to instream flows.

## Lahontan Cutthroat Trout

Support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout.

## REGIONAL PLAN

Elements of the existing Regional Plan that pertain to biological resources are described below.

### Goals and Policies

The Conservation Element (Chapter IV) of the TRPA Goals and Policies document establishes goals for the preservation, development, utilization, and management of natural resources within the Tahoe Region. These goals and policies are designed to achieve and maintain adopted threshold standards and are implemented through the Code.

The Conservation Element includes 10 subelements that address the range of Lake Tahoe's natural and historical resources. The Vegetation, Wildlife, and SEZ Subelements are discussed in this section, and the goals related to each of these subelements are identified below.

Chapter IV of the Goals and Policies identifies the following six goals for vegetation in the Tahoe Region:

- ▲ provide for a wide mix and increased diversity of plant communities;
- ▲ provide for the protection, maintenance, and restoration of such unique ecosystems as wetlands, meadows, and other riparian vegetation;
- ▲ conserve threatened, endangered, and sensitive plant species and uncommon plant communities of the Lake Tahoe Region;
- ▲ provide for and increase the amount of late seral/old-growth stands within the Lake Tahoe Region;
- ▲ the appropriate stocking level and distribution of snags and coarse woody debris shall be retained in the Region's forests to provide habitat for organisms that depend on such features and to perpetuate natural ecological processes; and
- ▲ TRPA shall work with fire protection agencies in the Region to reduce the risk of catastrophic wildfire.

The two goals identified for wildlife are as follows:

- ▲ maintain suitable habitats for all indigenous species of wildlife without preference to game or nongame species through maintenance and improvement of habitat diversity; and
- ▲ preserve, enhance, and where feasible, expand habitats essential for threatened, endangered, rare, or sensitive species found in the Region.

The goal identified for fisheries is:

- ▲ improve aquatic habitat essential for the growth, reproduction, and perpetuation of existing and threatened fish resources in the Lake Tahoe Region.

The goal identified for SEZs is:

- ▲ provide for the long-term preservation and restoration of stream environment zones.

## **Code of Ordinances**

The applicable provisions of the TRPA Code regarding vegetation, wildlife, and fisheries are summarized below.

### ***Protection and Management of Vegetation***

The Code requires the protection and maintenance of all native vegetation types. Chapter 61, Vegetation and Forest Health, Section 61.3, Vegetation Protection and Management, provides for the protection of SEZ vegetation, other common vegetation, uncommon vegetation, and sensitive plants in SEZs (TRPA 2012b). TRPA defines an SEZ as an area that owes its biological and physical characteristics to the presence of surface water or groundwater. SEZ includes perennial, intermittent, or ephemeral streams; meadows and marshes; and other areas with near-surface water influence within the Tahoe Basin. No project or activity may be implemented within the boundaries of an SEZ except as otherwise permitted for habitat improvement, dispersed recreation, vegetation management, or as provided in Code Chapter 30, Land Coverage. TRPA can require the preparation and implementation of a remedial vegetation management plan, where the need has been identified, for the purposes of threshold standard maintenance or attainment. In addition, Chapter 61, Section 61.4, Revegetation, specifies minimum criteria for revegetation programs.

### ***Protection of Sensitive and Uncommon Plants***

Code Chapter 61, Section 61.3.6, Sensitive and Uncommon Plant Protection and Fire Hazard Reduction, establishes standards for preserving and managing sensitive plants and uncommon plant communities, as referenced above in Environmental Threshold Carrying Capacities. Projects and activities that are likely to harm, destroy, or otherwise jeopardize sensitive plants or their habitat must fully mitigate their significant adverse effects. Measures to protect sensitive plants and their habitat include:

- ▲ fencing to enclose individual populations or habitat,
- ▲ restricting access or intensity of use,
- ▲ modifying project design as necessary to avoid adverse impacts,
- ▲ dedicating open space to include entire areas of suitable habitat, or
- ▲ restoring disturbed habitat.

### ***Tree Removal***

TRPA regulates the management of forest resources in the Tahoe Basin to achieve and maintain the threshold standards for species and structural diversity, to promote the long-term health of the resources, and to create and maintain suitable habitats for diverse wildlife species. Tree removal is subject to review and approval by TRPA (TRPA 2012b). Provisions for tree removal are provided in the following chapters and sections of the TRPA Code: Chapter 61, Vegetation and Forest Health, Section 61.1, Tree Removal, Section 61.3.6, Sensitive and Uncommon Plant Protection and Fire Hazard Reduction, and Section 61.4, Revegetation; Chapter 36, Design Standards; and Chapter 33, Grading and Construction, Section 33.6, Vegetation Protection During Construction.

Applicants must obtain a tree removal permit from TRPA for cutting of live trees 14 inches diameter at breast height (dbh) or greater. However, trees of any size marked as a fire hazard by a fire protection district or fire department that operates under a memorandum of understanding with TRPA can be removed without a separate tree permit.

With limited exceptions, Code Section 61.1.4, Old Growth Enhancement and Protection, prohibits the removal of trees greater than 24 and 30 inches dbh in eastside and westside forest types, respectively. Code Section 61.1.4 allows private landowners to remove trees larger than these size classes provided the landowner follows one of

the planning processes identified in that section of the Code. However, trees larger than 30 inches dbh in westside forest types and larger than 24 inches dbh in eastside forest types may be removed for large public utilities projects if TRPA finds there is no other reasonable alternative. The dividing line between eastside and westside forest bisects the project in Segment 625-7 at the point where the existing 625 Line and proposed PEA Alternative Line intersect.

In addition, trees and vegetation not scheduled to be removed must be protected during construction in accordance with Chapter 33, Grading and Construction, Section 33.6, Vegetation Protection during Construction.

If a project would result in substantial tree removal, a tree removal or harvest plan must be prepared by a qualified forester. The required elements of this plan, and TRPA's review process for tree removal plans, are described in Chapter 61, Section 61.1.5 of the Code. Substantial tree removal is defined under Code Section 61.1.8 as activities on project areas of three acres or more and proposing the removal of more than 100 live trees 14 inches dbh or larger.

Code Chapter 62 also provides quantitative requirements for retention and protection of snags and coarse woody debris by forest type, in terms of size, density, and decay class.

### **Wildlife**

TRPA sets standards for preserving and managing wildlife habitats, with special emphasis on protecting or increasing habitats of special significance, such as deciduous trees, wetlands, meadows, and riparian areas (Code Chapter 62). Specific habitats that are protected include riparian areas, wetlands, and SEZs; wildlife movement and migration corridors; important habitat for any species of concern; critical habitat necessary for the survival of any species; nesting habitat for raptors and waterfowl; fawning habitat for deer; and snags and coarse woody debris. In addition, TRPA-designated special-interest species (also referred to as "threshold species"), which are locally important because of rarity or other public interest, and species listed under the ESA or CESA are protected from habitat disturbance by conflicting land uses.

TRPA-designated special-interest wildlife species are northern goshawk (*Accipiter gentilis*), osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), peregrine falcon (*Falco peregrinus anatum*), mule deer (*Odocoileus hemionus*), and waterfowl species.

The Code includes the following requirements for protection of wildlife movement and migration corridors.

- ▲ SEZs adjoining creeks and major drainages that link islands of habitat will be managed, in part, for use by wildlife as movement corridors. Structures, such as bridges, proposed within these movement corridors will be designed to avoid impairment of wildlife movement.
- ▲ Projects and activities in the vicinity of deer migration areas will be required to mitigate or avoid significant adverse impacts.

The Code also contains several provisions regarding critical habitat. TRPA defines critical habitat as any element of the overall habitat for any species of concern that, if diminished, could reduce the existing population or impair the stability or viability of the population. This applies also to habitat for special-interest species native to the Tahoe Basin whose breeding populations have been extirpated, but could return or be reintroduced. The Code includes the following critical-habitat provisions.

- ▲ No project or activity will cause, or threaten to cause, the loss of any habitat component considered critical to the survival of a particular wildlife species.
- ▲ No project or activity will threaten, damage, or destroy nesting habitat of raptors and waterfowl or fawning habitat of deer.

- ▲ Wetlands shall be preserved and managed for their ecological significance, including their value as nursery habitat to fishes, nesting and resting sites for waterfowl, and as a source of stream recharge, except as permitted pursuant to Chapter 30 of the TRPA Code.
- ▲ No project or activity will be implemented within the boundaries of an SEZ except as otherwise permitted for habitat improvement, dispersed recreation, vegetation management, or as provided in Chapter 30 of the Code.

### ***Fish Resources***

Chapter 63, Fish Resources, of the Code includes provisions for the protection of fish habitat, enhancement of degraded habitat, and prevention of the introduction and spread of aquatic invasive species. For instream habitats, protection provisions include prohibiting stream channel alterations, facilitating fish movement at stream crossings, removing barriers to fish movement, mitigating impacts on fish habitat from development, maintaining instream flows, preventing sediment entry into the stream system, and encouraging native vegetative cover.

The maintenance of essential habitat serves as the fisheries management emphasis for the Conservation Element of TRPA's Goals and Policies. The first goal of the Conservation Element for fisheries is to "improve aquatic habitat essential for the growth, reproduction and perpetuation of existing and threatened fish resources in the Lake Tahoe Basin." For streams within the Tahoe Basin, management focus is on the quality and quantity of habitat provided for fish species, including spawning and rearing habitat, food supply, and cover. The Conservation Element identifies the following five policies related to instream fish habitat.

- ▲ Development proposals affecting streams, lakes, and adjacent lands will evaluate impacts on the fishery.
- ▲ Unnatural blockages and other impediments to fish movement will be prohibited and removed wherever appropriate.
- ▲ Habitat improvement projects in streams and lakes will be encouraged.
- ▲ Instream flows will be maintained or enhanced.
- ▲ State and federal efforts to reintroduce Lahontan cutthroat trout will be supported.

### ***Aquatic Invasive Species***

Code Section 63.4, Aquatic Invasive Species, states that aquatic invasive species pose a serious threat to the waters of the Lake Tahoe Region and can have a disastrous impact to the ecology and economy of the Lake Tahoe Region. Section 63.4 includes various provisions related to watercraft necessary to prevent the introduction and spread of aquatic invasive species; however, because the proposed project does not include the use of watercraft, these provisions would not apply.

## **LOCAL AGENCIES**

### **PLACER COUNTY POLICIES AND ORDINANCES**

The following regulations from the Placer County Code of Ordinances are applicable to biological resources in portions of the project within the jurisdiction of Placer County:

#### **Article 12.16. Tree Preservation Generally (Countywide)**

**Riparian Zone Requirements.** No tree permit or discretionary approval for any development activity within a riparian zone shall be approved until environmental impacts within the riparian zone are identified, an environmental determination is made and the mitigation measures identified (Chapter 18, Placer County Code). Additionally, no development activity shall be permitted until any stream alteration agreement or mitigation agreements required by CDFW have been completed.

**Removal of More than Fifty Percent of Trees.** Except for developed, single-family residential lots that cannot be subdivided, the removal of more than 50 percent of existing native trees, 6 inches dbh or greater, shall be subject to the issuance of a tree permit.

### **Article 12.20. Tree Preservation in Area East of Sierra Summit**

No person shall cut down, move, remove, kill, or materially damage any live tree 6 inches dbh or over, or attach any appurtenance to a tree, without first having obtained a tree cutting permit from the permit-issuing authority, unless such tree is located on lands devoted to the growing and harvesting of timber for commercial purposes for which permits have been granted permitting timber harvesting. Such permit shall be unnecessary for the removal of trees proposed to be removed as approved in connection with the approval by the agency of a tentative map under the subdivision ordinance, except where such subdivision involves a land use conversion, or for the removal of trees as permitted under a permit issued pursuant to the grading ordinance, provided, however, that the standards contained in this article shall also be applicable to the approval of a tentative and final subdivision map and to the issuance of a grading permit.

## **4.7.2 EXISTING CONDITIONS/AFFECTED ENVIRONMENT**

To evaluate and describe the presence or absence and quality of common and sensitive biological resources in the project area, map land cover types, and identify potential effects of project implementation on those resources, project biologists reviewed several existing data sources providing information for the project area and conducted reconnaissance surveys of the site. The data review included:

- ▲ *Proponent's Environmental Assessment (PEA) for the 625 and 650 Line Upgrade Project* (Sierra Pacific 2010);
- ▲ *Administrative Draft Preliminary Delineation of Waters of the United States, Including Wetlands* (USACE 2010); and
- ▲ *Draft Preliminary Biological Data Report Martis Creek Dam Safety Modification Study* (USACE 2011).

The reconnaissance surveys were conducted on June 19 and 20, 2012 and July 11, 12, and 13, 2012 by botanist Tammie Beyerl and wildlife biologists Heather Valentine and Steve Henderson, and July 11 through July 15, 2012 by botanist Ken McDonald and ecologist Tom Herzog. The wildlife biologists also conducted surveys in various locations on August 8 and 29, 2012 and August 16, 2013. A reconnaissance-level habitat assessment of the proposed alignment alternatives, proposed access ways, access roads, and other project elements was conducted. The study area covered all project elements and generally comprised a 200-foot-wide corridor centered on the existing and proposed electric lines and access ways (i.e., the area within 100 feet of the centerline); however, for existing roads that would not need improvement but would be used for access during construction, the study area encompassed the area within 50 feet of the road centerline. In the Martis Valley National Recreation Area, a 400-foot wide corridor (i.e., 200 feet on each side of centerline) was surveyed. No focused surveys for special-status botanical or animal species potentially occurring within the project area were conducted; however, reconnaissance surveys were conducted during the peak season of regional plant communities and a concerted effort was made to identify all plant species encountered. Despite compiling a floristic inventory of the areas surveyed, these surveys cannot be considered protocol level because surveys did not cover the blooming periods of all potentially occurring special-status botanical species and time constraints for completing the reconnaissance surveys did not allow intensive searches of all potentially suitable habitats for all potentially occurring special-status botanical species.

The following sections summarize the biological resources in the study area that are most relevant to the significance criteria and impact analysis for the project, which are provided in Section 4.7.3, Environmental Consequences and Recommended Mitigation Measures.

## TERRESTRIAL VEGETATION COMMUNITIES AND WILDLIFE HABITATS

Coniferous forest is the predominant habitat type in the study area, followed by disturbed and developed habitats concentrated around the Kings Beach, Tahoe City, and Truckee population centers. In the Martis Valley, the project traverses a large meadow complex featuring wet and dry meadow communities surrounded by low sage and sagebrush scrub. Riparian vegetation communities are present along rivers and streams in the study area, including the Truckee River, Martis Creek, and Griff Creek. Exhibit 4.7-1, consisting of a series of over 30 vegetation maps provided in Appendix K, shows the location and extent of vegetation communities and habitat types in the study area. Table 4.7-2 provides a brief description of each habitat type mapped in the study area. Classification and community descriptions generally follow California Wildlife Habitat Relationships (CDFW 2012b) and Holland (1986), with modifications to account for local variability and communities not specifically treated in these two classification systems. Meadow community classification and descriptions are based on *Meadow Hydrogeomorphic Types for the Sierra Nevada and Southern Cascade Ranges in California* (Weixelman et al. 2011). Scientific and common names of plant species observed during surveys are provided in Appendix L, Plant Species List.

Table 4.7-2 Vegetation Community/Habitat Types Mapped in the Study Area for Each Action Alternative and the Existing 625 Line Corridor	
Vegetation Community/ Habitat Type	Summary Description
<b>Coniferous Forest Habitats</b>	
Red Fir Forest	Typically dominated by even-aged, monotypic stands of mature red fir. In the study area, scattered western white pine and sugar pine are present. The understory is much more open than the mixed conifer forests, with the primary understory shrub species being pinemat manzanita. A heavy duff layer exists in this community, contributing to the lack of understory diversity. This is the most abundant community in the study area and is primarily present at the higher elevations along the existing and new 625 Lines.
White Fir-Red Fir Forest	Similar to red fir forest, but with white fir and red fir codominant throughout and occasional occurrences of incense cedar and Jeffrey pine. The understory is also similar to the description of red fir forest, with the primary understory shrub species being pinemat manzanita. A heavy duff layer exists contributing to the lack of understory diversity. Within the study area, occurs primarily along Segments 625-8 through 625-10 and 650-1 through 650-2.
Jeffrey Pine-White Fir Forest	Similar to mixed conifer forest, but with shorter trees, and dominated by Jeffrey pine and white fir. The understory of this community tends to be open with scattered montane chaparral species, and smaller trees, blue wild rye, and snowberry. A thick layer of duff is typical, contributing to the low understory abundance. Common understory species observed include pinemat manzanita, mule ears, mountain monardella, and rockcress species. Jeffrey pine-white fir forest occurs within the study area, mainly along the 625 Line and Segments 650-1 through 650-2.
Jeffrey Pine Forest	Open forest community clearly dominated by Jeffrey pine. In the study area, lodgepole pine is also present in small numbers. Canopy cover is less dense than in other forest communities as Jeffrey pine tends to be more scattered throughout the community. This generally allows for the understory of the Jeffrey pine forest to contain plants requiring drier, sunnier conditions than in other conifer communities. These understory plants include big sagebrush, bitterbrush, rabbitbrush, mule ears, and Idaho fescue. Present in the study area primarily along Segments 650-3, 650-4B, and 650-6.
Sierran Mixed Conifer Forest	Dense forest dominated by a mix of white fir, red fir, Jeffrey pine, sugar pine, and incense cedar (3 or more codominant). Historic burning and logging have created wide variability in stand structure and composition in this community. Canopy cover varies from nearly 100 percent to a more open canopy. In open areas, the understory consists of a variety of shrubs, grasses, and forbs, including mahala mat, mountain whitethorn, tobacco brush, pinemat manzanita, greenleaf manzanita, bush chinquapin, huckleberry oak, and several currant species. Mixed conifer forest is the second most widespread vegetation community in the study area, extending from Kings Beach north to the Brockway Summit area along the existing and new 625 Lines and the 650 Line and between

**Table 4.7-2 Vegetation Community/Habitat Types Mapped in the Study Area for Each Action Alternative and the Existing 625 Line Corridor**

Vegetation Community/ Habitat Type	Summary Description
	Brockway Summit and Tahoe City along the existing and new 625 Lines. At higher elevations, the vegetation community transitions from mixed conifer forest to red fir forest.
<b>Chaparral and Scrub Habitats</b>	
Sagebrush Scrub	Comprised of soft-woody shrubs dominated by mountain big sagebrush. Occurs on a variety of soils and terrain. Rubber rabbitbrush and bitterbrush are the most common associates of this community in the study area. Found within the Martis Valley and Truckee portions of the study area along Segments 650-4, 650-4B, and 650-6 and associated access roads.
Montane Chaparral	Composition changes with elevation, soil type, and aspect. Montane chaparral exists in small patches throughout the study area and is characterized by one or more of the following species: mountain whitethorn, tobacco brush, greenleaf manzanita, pinemat manzanita, huckleberry oak, bush chinquapin, and bitter cherry. Open areas in the Sierran mixed conifer forest are dominated by this vegetation community. These openings are either natural forest openings or clearings created by disturbances, such as logging, road construction, fire, or utility line clearance. Much of the right-of-way (ROW) beneath the existing 625 and 650 Lines where regular vegetation maintenance occurs is dominated by montane chaparral species.
Low Sage Scrub	A low-growing scrub community dominated by low sage and often associated with bitterbrush, rabbitbrush, or big sagebrush. Several forb species are present in the low sage community, including lupine and buckwheat. The low sage community in the study area exists on the edges of open wet or dry meadow communities. Low sage is present in the Martis Valley area along the 650 Line.
<b>Riparian Habitats</b>	
Montane Riparian	Varies greatly in vegetative structure and species composition. Many of the montane riparian areas at higher elevations consist of extremely dense, shrub-like mountain alder and willow with no standing or flowing water. Along the Truckee River, large mountain alder, black cottonwood, and willows are the dominant species, with an extensive understory of a wide variety of herbaceous vegetation. Along Middle Martis Creek and Martis Creek, small, shrub-like willows dominate the vegetative community and are surrounded by an expansive wet meadow. Several montane riparian communities in the study area are not associated with perennial flowing streams or seasonal channels, but instead with wet seeps or small ravines.
Open Water	Areas containing pools of standing or flowing freshwater with little to no emergent vegetation. This category is comprised of a man-made pond along Segment 650-6 and a portion of the Truckee River channel in Segments 625-1 and 625-1A.
<b>Meadow Habitats</b>	
Wet Montane Meadow	Comprised of a wide variety of grasses and forbs adapted for growth in saturated soils, such as sedges, rushes, and bentgrasses. Wet meadows in the project area have seasonally saturated soils and are usually associated with an adjacent riparian forest or scrub community, seep, or waterway. The best examples of this relationship are located along Middle Martis Creek, West Martis Creek, and Martis Creek, where soils are too wet, due to a shallow water table, throughout much of the year to support trees. Several small wet meadow communities exist throughout the study area. Additionally, the 650 Line traverses a large wet meadow in the Martis Creek Wildlife Area.
Dry Montane Meadow	Characterized by dense growth of perennial herbs and graminoids such as common bluegrasses, yarrow, dryland rushes, and mat muhly. Dry meadows form in areas where water is concentrated near the soil surface early in the growing season only, but long enough to allow perennial herbs to reproduce. Dry meadows are generally located adjacent to wet meadows supported by groundwater and where snowmelt is slow at higher elevations and on shady slopes. In the study area, dry meadow is found primarily in the Martis Creek Recreation Area in association with wet montane meadow.

<b>Table 4.7-2 Vegetation Community/Habitat Types Mapped in the Study Area for Each Action Alternative and the Existing 625 Line Corridor</b>	
<b>Vegetation Community/ Habitat Type</b>	<b>Summary Description</b>
Mule Ears Meadow	A type of dry meadow community characterized by near monotypic stands of mule ears. Occurs on dry, rocky slopes within openings in red fir forest along the existing and proposed 625 Lines in Segment 625-5.
Seasonal Wetland	Seasonal meadow type developing from runoff accumulation in topographic depressions with no outflow. Characterized by fluctuating periods of inundation and saturation, but typically completely dry by late summer. Vegetation generally consists of small, short-lived annuals. One small seasonal wetland dominated by short woollyheads and near navarretia is present in the study area in Segment 650-6.
Fresh Emergent Wetland	A perennial meadow type that develops in topographic depressions with little or no outflow and standing water throughout all or most of the growing season. Vegetation is generally dominated by emergent monocots such as sedges, bulrushes, and cattails. One small fresh emergent wetland exists in the study area, approximately 40 feet south of the Truckee River within Segment 625-1.
<b>Barren Habitats</b>	
Rock Outcrop/ Barren	Barren habitat is defined by the absence of dominant vegetation (less than 2% cover). In the study area, small patches of barren habitat are best characterized as rock outcrops or talus slopes with minimal vegetative cover. Rock outcrops are located along ridgelines at high elevations along the existing and proposed 625 Lines.
<b>Anthropogenic (Human-Made) Habitats</b>	
Disturbed or Developed	Consists of highways, paved roads, dirt roads, dirt tracks/trails, and road shoulders, as well as housing and commercial developments, which are primarily concentrated around Kings Beach, Tahoe City, Truckee, and the Northstar-at-Tahoe Resort.

## AQUATIC RESOURCES

Aquatic resources within the project area include streams, rivers, drainages, ponds, seeps, and seasonally flooded areas. Approximately 45 perennial and intermittent aquatic features, including Griff Creek, Truckee River, Middle Martis Creek, Martis Creek, wet meadows, ponds, and other drainages, were identified and described within the project area (Sierra Pacific 2010). Many of these aquatic features provide habitat for several fish species, including brown trout, rainbow trout, and other species. Additionally, suitable habitat for amphibians and other riparian/aquatic-associated wildlife is generally found in streams, ponds, wetlands, and associated riparian zones, as well as in upland areas adjacent to aquatic and riparian habitats.

Primary water bodies in the study area include the Truckee River, which is located in Tahoe City and the Town of Truckee; Griff Creek, which flows through Kings Beach into Lake Tahoe; and Middle Martis Creek and Martis Creek, which cross Martis Valley. Additionally, Burton Creek, Snow Creek, and a tributary to Watson Creek would be crossed in some locations by the project alternatives. These primary aquatic habitats are summarized below.

The Truckee River is located in Segment 625-1 near the Tahoe City substation. This is the upper reach of the lower Truckee River located immediately below the dam controlling flow out of Lake Tahoe. The Truckee River is a perennial river that flows generally northward from Lake Tahoe receiving some regulated flow year around, though the levels can vary significantly depending on downstream usage. Aquatic habitat varies along this reach but includes slow-moving sections with sandy/muddy substrate as well as riffle and pool sections that contain medium-sized gravels with larger boulders interspersed. In the slower-moving sections, aquatic vegetation, such as milfoil, is established in the channel. The area surrounding the reach of the Truckee River located in Segment 625-1 near the Tahoe City substation is highly disturbed by roads, recreation, and commercial development. Much of the northern bank within Segment 625-1 is disturbed and/or developed with limited natural vegetation. The southern bank within Segment 625-1 is also disturbed, primarily from recreational access and use, though some natural

vegetation is present. A narrow strip of montane riparian vegetation is present along the southern bank and is adjacent to open-canopy mixed conifer forest. Riparian vegetation along the Truckee River within Segment 625-1 is comprised of mountain alder, black cottonwood, and willow, with an understory of several herbaceous species.

Griff Creek is located along Segment 625-10 in the eastern portion of the study area. The creek runs parallel to the existing and proposed alignments in this segment of the project. Griff Creek drains Martis Peak and primarily flows southward into Lake Tahoe. Until the late 1990's, the North Tahoe Public Utility District managed a reservoir for drinking water upstream of the study area; however, in 1995 the dam creating the reservoir was removed and the stream was restored. Currently, Griff Creek is unregulated and generally maintains some level of flow throughout most of the year in years with normal precipitation. Except for the Truckee River, Middle Martis Creek, and Martis Creek, Griff Creek was the only stream in the study area that exhibited flow during the reconnaissance surveys in 2012. Griff Creek is a shallow, low-gradient stream; its channel substrate is comprised primarily of sand and fine gravel, with some larger cobbles dispersed along its course. Habitat along the creek section at Segment 625-10 consists of dense riparian and herbaceous vegetation immediately adjacent to the channel, with coniferous forest interspersed within the riparian zone. Conifer trees are located along the creek bank, but woody riparian vegetation creates the majority of the dense water surface shade along this reach.

The 650 Line alternatives cross two perennial creeks—Middle Martis Creek and Martis Creek. Middle Martis Creek runs parallel to SR 267 and the existing 650 Line before flowing into Martis Valley from the east. The channel of Middle Martis Creek varies from approximately 1 to 3 feet wide and 0.5 to 1 foot deep, and is surrounded by a riparian thicket comprised of small willows along much of its length. Martis Creek is crossed by the existing 650 Line in Martis Valley. The Martis Creek channel varies from approximately 3 to 10 feet wide and 1.5 to 2 feet deep. In the study area, Martis Creek and its floodplain are characterized by a riparian corridor dominated by dense willow scrub, abundant cover of herbaceous vegetation along the stream bank, and areas of ponded water. Middle Martis Creek provides high-quality fish habitat, characterized by a diversity of riffles, runs, glides, and pools; stable banks that support intact riparian vegetation that overhangs or protrudes into the water, providing shade, cooler water temperatures, and refugia; and substrate conditions composed of a variety of size classes (e.g., sand, gravel, cobbles, mudflats). Middle Martis Creek and Martis Creek are historic Lahontan cutthroat trout habitat, though it is believed that they have been extirpated from the area or that any trout found have been hybridized with other species. In Martis Valley, the willow-dominated riparian vegetation along Middle Martis Creek and Martis Creek are surrounded by an expansive wet meadow.

The upper reaches of Burton Creek are located in Segment 625-3. Burton Creek drains Painted Rock and the surrounding area, flowing south/southeast through Burton Creek State Park and downslope into Lake Tahoe. Burton Creek is a perennial stream that will generally maintain some level of flow throughout most of the year in years with normal precipitation. Flows within Burton Creek are regulated downstream of the study area where it is impounded in Antone Meadows and diverted to the Tahoe City Golf Course (California State Parks 2005: pp. 20). In addition, barriers exist at the confluence with Lake Tahoe making it unsuitable for passage by migratory fish or other aquatic species. However, within the study area the creek flows freely, except in areas where it is bisected by the Fiberboard Freeway. In these locations, the creek is routed under the road through culverts. Burton Creek flows through a variety of substrates along its path ranging from steeper boulder lined channel to low gradient fine sand and gravel bedded channel. Vegetation along the creek also varies, though riparian vegetation is generally limited and water surface shade is generated by taller trees. Habitat located along the sections of Burton Creek within the study area is primarily conifer forest with limited montane riparian and wet meadow habitat present in isolated locations immediately adjacent to the creek.

Watson Creek is located in Segment 625-5. Its headwaters begin just south of the area that would be affected by construction of the new 625 Line. The creek drains the northeastern slope of Mount Watson as well as some of Mount Pluto. Watson Creek is also a perennial creek that flows east/southeast to its confluence with Lake Tahoe. Habitat within and adjacent to Watson Creek was not evaluated during reconnaissance surveys due to its distance from the primary area of ground disturbing activities.

The upper reaches of Snow Creek are located in Segment 625-9; downstream it also passes through Segment 650-2. Snow Creek flows through steep terrain down the southwest slope of Martis Peak. It primarily flows

southward crossing SR 267 just south of National Avenue, then continues south/southwest through national forest lands and residential areas to its confluence with Lake Tahoe just west of Kings Beach. Along the upper reaches located within the study area, habitat is exclusively red fir forest with no riparian habitat present.

## NONNATIVE FISH AND AQUATIC INVASIVE SPECIES

Nonnative aquatic invasive species have become a priority for prevention and control in the Tahoe Basin. The Lake Tahoe Region Aquatic Invasive Species Management Plan (USACE 2009) details past introductions of aquatic nonnative and invasive species, their current status, priority threats, and future management strategies to avoid additional introductions and spread of current nonnative invasive populations (USACE 2009). Two invasive nonnative aquatic mussels – quagga mussel (*Dreissena bugensis*) and zebra mussel (*Dreissena polymorpha*) – and an invasive aquatic snail – New Zealand mudsnail (*Potamopyrgus antipodarum*) – are not present in the Tahoe Basin and are of particular concern due to their expanding range elsewhere, highly invasive nature, and potential to disrupt ecosystem functions. Aquatic invasive species of serious concern that are present in the Lake Tahoe area include Asian clam (*Corbicula fluminea*), bullfrog (*Rana catesbeiana*), Eurasian watermilfoil (*Myriophyllum spicatum*; an aquatic weed), and curlyleaf pondweed (*Potamogeton crispus*; an aquatic weed).

Nonnative introduced salmonid species that are present in Tahoe area streams and lakes are lake trout (*Salvelinus namaycush*), brook trout (*S. fontinalis*), rainbow trout (*Oncorhynchus mykiss*), and brown trout (*Salmo trutta*). Several warm-water fish species have also been introduced into Lake Tahoe and some tributary streams, including bluegill sunfish (*Lepomis macrochirus*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*M. dolomieu*), and brown bullhead catfish (*Ictalurus nebulosus*) (California State Parks et al. 2010). Several of these species have potential to occur in the study area.

## SENSITIVE BIOLOGICAL RESOURCES

In this analysis, sensitive biological resources include those species and biological communities that receive special consideration through the Code, ESA, CESA, CWA, USFS Manual, or local plans, policies, and regulations; or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. Sensitive biological resources evaluated as part of this analysis include special-status species and sensitive natural communities. These resources are addressed in the following sections.

The California Natural Diversity Database (CNDDDB) and its geographic information system (GIS) application, California Native Plant Society (CNPS) online *Inventory of Rare and Endangered Plants* (CNPS 2012), TRPA GIS data, USFS-LTBMU and Tahoe National Forest GIS data, and Nevada Natural Heritage GIS data were used as the primary sources to preliminarily identify and map previously reported occurrences of special-status species and sensitive natural communities within the project area. The CNDDDB is a California statewide database, managed by CDFW that is continually updated with the location and condition of the state's rare and declining species and habitats. Although the CNDDDB is the most current and reliable tool available for tracking occurrences of special-status species in California, it contains only those records that have been reported to CDFW. TRPA and USFS GIS data are supplemented and updated annually based on annual monitoring survey results or other confirmed occurrence records provided to the agencies. USACE provided a draft preliminary wetland delineation report (USACE 2010) and draft preliminary biological data report (USACE 2011) prepared for the Martis Dam project, which were used as supplemental information sources regarding biological resources in the Martis Valley Recreation Area portion of the project study area.

## SPECIAL-STATUS SPECIES

Special-status species include botanical species (plants, lichen, and fungi) and animals that are legally protected or otherwise considered sensitive by federal, state, or local resource agencies and conservation organizations. In this document, special-status species are defined as botanical species and animals in the following categories.

- ▲ Listed or proposed for listing as threatened or endangered under ESA.
- ▲ Designated as a candidate for listing as threatened or endangered under ESA.
- ▲ Designated as a sensitive, special-interest, or threshold species by TRPA.
- ▲ Designated as sensitive by the USFS Regional Forester in Region 5.
- ▲ Listed or proposed for listing as threatened or endangered under CESA
- ▲ Listed or a candidate for listing by the state of California as threatened or endangered under CESA.
- ▲ Listed as fully protected under the California Fish and Game Code.
- ▲ Animals identified by CDFW as species of special concern.
- ▲ Plants considered by CDFW to be “rare, threatened or endangered in California” (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California; 1B, considered rare or endangered in California and elsewhere; and 2, considered rare or endangered in California but more common elsewhere). The California Rare Plant Ranks correspond with and replace former CNPS listings. While these rankings do not afford the same type of legal protection as ESA or CESA, the uniqueness of these species requires special consideration under CEQA.
- ▲ Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA Section 15125 (c)) or is so designated in local or regional plans, policies, or ordinances (State CEQA Guidelines, Appendix G).
- ▲ Otherwise meets the definition of rare or endangered under CEQA Section 15380(b) and (d).

Preliminary lists of special-status botanical and animal species known or with potential to occur in the project area were initially developed based on a review of the following:

- ▲ a list of taxa designated by TRPA as sensitive or special interest/threshold species (TRPA 2012a);
- ▲ TRPA and USFS GIS data for wildlife surveys and special-interest species monitoring;
- ▲ a records search and GIS query of the CNDDDB (CDFW 2012a) for the Kings Beach, Martis Peak, Tahoe City, and Truckee US Geological Survey 7.5 minute quadrangles;
- ▲ the CNPS online Inventory of Rare and Endangered Plants;
- ▲ a list of federally endangered, threatened, or candidate species that may be affected by projects in Kings Beach, Martis Peak, Tahoe City, and Truckee US Geological Survey 7.5 minute quadrangles, the Lake Tahoe Basin, or the Tahoe National Forest (USFWS 2012);
- ▲ *Draft Preliminary Biological Data Report for the Martis Creek Dam Safety Modification Study* (USACE 2011);
- ▲ *Proponent’s Environmental Assessment (PEA) for the 625 and 650 Line Upgrade Project* (Sierra Pacific 2010); and
- ▲ LTBMU and Tahoe National Forest lists of threatened, endangered, and sensitive (TES) botanical species (plants, lichen, and fungi).

### Special-Status Botanical Species

The initial data review preliminarily identified 67 special-status botanical species (plant, lichen, and fungi) that could occur in the Tahoe-Truckee region. A number of botanical species included on the Tahoe National Forest list of TES species and other special-status species are found only at lower elevations (e.g., Sierra Nevada foothills) that are outside the analysis area for botanical resources (i.e., a 1-mile buffer surrounding the project area), which ranges from approximately 5,700 to 8,075 feet in elevation; or are restricted to habitats (e.g., foothill chaparral) or particular soil types (e.g., serpentine and gabbroic soils) that are not present in the Truckee Tahoe area. Other special-status botanical species and species on the Tahoe National Forest or LTBMU TES lists are known only from specific areas of the state outside of the analysis area. These 28 botanical species listed in Table 4.7-3 along with their habitat and elevation, were eliminated from further consideration.

Table 4.7-3 Special-Status Botanical Species Considered but not Evaluated Further Due to Habitat, Distribution, and/or Elevation Range	
Species	Habitat and Range Information
Lemmon's milk-vetch <i>Astragalus lemmonii</i>	Typically occurs in wetlands such as meadows, seeps, marshes and swamps, but also in Great Basin scrub, from 3,300 to 7,218 feet elevation. Project area is outside the known distribution of this species; no known occurrences in Placer County.
Pulsifer's milk-vetch <i>Astragalus pulsiferae</i> var. <i>coronensis</i>	Granitic, sandy, or rocky soils in Great Basin scrub, lower montane coniferous forest, and pinyon-juniper woodland 4,400 to 6,200 feet elevation. Known primarily from the Modoc Plateau, but there is also a known occurrence in Sierra Valley just south of Loyalton.
Webber's milk-vetch <i>Astragalus webberi</i>	Eastside forests from 2,700 to 4,000 feet elevation; known only from Plumas and Sierra Counties.
Tulare rockcress <i>Boechera tularensis</i>	Rocky slopes in subalpine and upper montane coniferous forest. No known occurrences in Placer County; the species' core range is in Tulare County. One historic occurrence is in the Tahoe Basin near Emerald Bay, El Dorado County (the only known record from El Dorado County).
Slender moonwort <i>Botrychium lineare</i>	Wet or moist soils, often in disturbed areas, in upper and lower montane coniferous forest at approximately 8,500 feet elevation; known in California only from one occurrence in Fresno County.
Stebbins' morning-glory <i>Calystegia stebbinsii</i>	Openings in chaparral or cismontane woodland on serpentine or gabbroic soils, elevation 600 to 3,600 feet.
Mountain cudonia <i>Cudonia monticola</i>	Spruce needles and conifer debris under conifers and occasionally near snow banks; nearest known occurrence in the Yuba Pass area of Nevada County near a campground.
Mountain lady's-slipper <i>Cypripedium montanum</i>	Openings in forested areas up to 7,000 feet; primarily between 2,500 and 4,000 feet; nearest documented occurrences are from Plumas National Forest.
Mineral King draba <i>Draba cruciata</i>	Subalpine conifer forest from 8,200-10,876. No occurrence records for Placer County.
Jack's wild buckwheat <i>Eriogonum luteolum</i> var. <i>saltuarium</i>	Great Basin scrub and upper montane coniferous forest, from 5,577 to 7,874 feet elevation. No occurrence records for Placer County
Brook pocket moss <i>Fissidens aphelotaxifolius</i>	Sea level to 6,000 feet elevation on wet soil, humus, and rocks along narrow streams; known only from two occurrences in California, one in the Klamath National Forest and one in the Sierra National Forest.
Butte County fritillary <i>Fritillaria eastwoodiae</i>	Westside forests from 100 to 5,000 feet.
Sierra Valley ivesia <i>Ivesia aperta</i> var. <i>aperta</i>	Eastside meadows and seasonal drainages in sagebrush scrub, juniper woodland, conifer forest from 4,500 to 7,500 feet; known only from Plumas and Sierra Counties.
Dog Valley ivesia <i>Ivesia aperta</i> var. <i>canina</i>	Meadows and openings in coniferous forests from 5,000 to 6,500 feet; known only from Dog Valley area in Sierra and Nevada Counties.
Cantelow's lewisia <i>Lewisia cantelovii</i>	Westside wet cliffs or rock outcrop seeps in riparian settings from 1,300 to 5,000 feet; known only from Yuba and American River drainages.
Saw-toothed lewisia <i>Lewisia serrata</i>	Westside wet cliffs or rock outcrop seeps in riparian settings from 1,300 to 5,000 feet; known only from Yuba and American River drainages.
Elongate copper moss <i>Mielichoferia elongata</i>	Found in foothill woodlands growing on seasonally moist rock outcrops containing copper or other heavy metals, or less commonly on moist streambanks. Elevation range is from sea level to 3,500 feet.
Follett's monardella <i>Monardella follettii</i>	Serpentine soils in openings in conifer forests from 2,000 to 6,500 feet; known only from Plumas and Nevada Counties.

<b>Species</b>	<b>Habitat and Range Information</b>
Orthotrichum moss <i>Orthotrichum praemorsum</i>	Moist, shaded areas in eastern Sierra Nevada rock outcrops. Currently no extant occurrences from California.
Layne's butterweed <i>Packera layneae</i>	Serpentine soils in chaparral & foothill woodland habitat. Elevation range is below 3,500ft. Only known from western Eldorado, Placer, and Yuba counties.
Closed-throated beardtongue <i>Penstemon personatus</i>	Openings in westside mixed conifer and red fir forests at elevations of 4,000 to 6,500 feet; nearest known occurrences are in the Middle Yuba River area in Nevada County.
Stebbins' phacelia <i>Phacelia stebbinsii</i>	Meadows within openings in westside coniferous forest, on gravelly soils; 3,000 to 6,000 feet; known only from American and Rubicon River drainages.
Olive phaeocollybia <i>Phaeocollybia olivacea</i>	Mixed forests containing oak or pine species; primarily found in coastal lowlands, but two occurrences are known in Yuba County near Bullard's Bar Reservoir below 3,000 feet.
Sierra blue grass <i>Poa sierrae</i>	Lower montane coniferous forest from 1,200 to 4,921 feet elevation.
Sticky pyrrocoma <i>Pyrrocoma lucida</i>	Alkaline clay soils in eastside meadows or alkali flats below 6,000 feet; known only from Plumas, Sierra, and Yuba Counties.
Parry's tetraococcus <i>Tetraococcus dioicus</i>	Southern California chaparral and coastal scrub communities, from 540 to 3,280 feet elevation. Known only from Orange, Riverside, and San Diego Counties.
False orange peel <i>Sowerbyella rhenana</i>	Duff of moist, relatively undisturbed, older conifer forests; nearest known occurrence is near Bullard's Bar Reservoir in Yuba County, below 3,000 feet.
Howell's tauschia <i>Tauschia howellii</i>	Hot dry ridge summits and slopes in decomposed granite gravel and red sand; 5500-8200ft; known only from Siskiyou and Sierra counties.

The potential for occurrence of the remaining 42 plant species initially identified in the literature and database searches is evaluated further in Table 4.7-4. Based on a review of existing documentation and results of project-specific surveys, two of these special-status botanical species – Mingan moonwort (*Botrychium minganense*) and Plumas ivesia (*Ivesia sericoleuca*) are known to occur in the study area, and one species – Galena Creek (Carson Range) rockcress (*Arabis rigidissima* var. *demota*) – has been documented within 1 mile of and could occur in the study area. An additional 18 of these special-status botanical species have potential to occur in the study area (noted as “Could occur” in Table 4.7-4). The remaining 21 species are considered unlikely to occur in the study area based on the range of the species, habitat requirements, or other factors. No state or federal threatened or endangered plant species are known or have potential to occur in the study area. Exhibit 4.7-2 provides an overview map of all special-status botanical species that have been documented in or within 1 mile of the study area. Exact locations of known occurrences of special-status botanical species are shown in Appendix K, Vegetation Maps.

## Special-Status Animals

The preliminary data review identified 35 special-status wildlife and fish species that could occur in or near the study area. Of these 35 species, nine are known to occur in the study area (waterfowl [collectively], northern goshawk, northern harrier, California spotted owl, black-backed woodpecker, willow flycatcher, yellow warbler, Pacific marten, and mule deer), eight more have a moderate to high likelihood to occur, and the remaining 18 are not expected to or have a low potential to occur. This determination was based primarily on the types, extent, and quality of habitats in the study area observed during surveys; the proximity of the study area to known extant occurrences of the species; and the regional distribution and abundance of the species. Exhibit 4.7-3 provides an overview map of all special-status animal species that have been documented and mapped in or within 1 mile of the study area. Table 4.7-5 summarizes the regulatory status, habitat associations, and potential for occurrence of each of the 35 special-status fish and wildlife species that was evaluated during this analysis.