



# CalPeco 625 and 650 Electrical Line Upgrade Project

## Biological Evaluation for Threatened, Endangered and Sensitive Plants and Fungi

### PREPARED FOR:

United States Department of Agriculture, Forest Service  
Lake Tahoe Basin Management Unit  
35 College Drive  
South Lake Tahoe, CA 96150

and

United States Department of Agriculture, Forest Service  
Tahoe National Forest  
10811 Stockrest Springs Road  
Truckee, CA 96161

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**USDA Forest Service – Lake Tahoe Basin Management Unit  
and  
Tahoe National Forest**

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# TABLE OF CONTENTS

Section	Page
<b>1 INTRODUCTION .....</b>	<b>1</b>
<b>2 CURRENT MANAGEMENT DIRECTION .....</b>	<b>1</b>
<b>3 CONSULTATION TO DATE .....</b>	<b>2</b>
<b>4 PROJECT DESCRIPTION .....</b>	<b>2</b>
4.1 Project Location.....	3
4.2 Legal Land Description .....	3
4.3 Removal and Reconstruction of the Existing 625 Line .....	3
4.4 Rebuild of the Existing 650 Line .....	3
4.5 Substations .....	4
4.6 Permanent Right-of-Way Requirements.....	4
4.7 Temporary Right-of-Way Requirements .....	4
4.8 Pole Work Areas .....	5
4.9 Stringing Sites .....	5
4.10 Access .....	5
4.11 Staging Areas .....	7
4.12 Clean-up and Post-Construction Restoration.....	8
4.13 Operations and Maintenance.....	8
4.14 Applicant Proposed Measures to minimize effects.....	9
<b>5 ANALYSIS METHODOLOGY .....</b>	<b>12</b>
5.1 Project Area and Analysis Area .....	12
5.2 Pre-Field Review of Existing Information .....	12
<b>6 FIELD RECONNAISSANCE .....</b>	<b>18</b>
<b>7 EXISTING ENVIRONMENT .....</b>	<b>19</b>
7.1 <i>Arabis rigidissima</i> var. <i>demota</i> , Galena Creek rockcress .....	19
7.2 <i>Botrychium ascendens</i> , upswept moonwort.....	19
7.3 <i>Botrychium crenulatum</i> , scalloped moonwort.....	20
7.4 <i>Botrychium lunaria</i> , Common moonwort .....	20
7.5 <i>Botrychium minganense</i> , Mingan moonwort.....	20
7.6 <i>Botrychium montanum</i> , western goblin.....	21
7.7 <i>Bruchia bolanderi</i> , Bolander’s candle moss .....	21
7.8 <i>Dendrocollybia racemosa</i> , branched collybia.....	22
7.9 <i>Erigeron miser</i> , starved daisy .....	22
7.10 <i>Eriogonum umbellatum</i> var. <i>torreyanum</i> , Donner Pass buckwheat.....	22
7.11 <i>Hulsea brevifolia</i> , short-leaved hulsea .....	23
7.12 <i>Ivesia sericoleuca</i> , Plumas ivesia .....	23
7.13 <i>Juncus luciensis</i> , Santa Lucia dwarf rush .....	23

**8 EFFECTS OF THE PROPOSED PROJECT.....23**

8.1 Direct and Indirect Effects .....24

8.1.1 PEA Alternative (Alternative 1) .....25

8.1.2 Modified Alternative (Alternative 2) .....27

8.1.3 Road Focused Alternative (Alternative 3) .....27

8.1.4 Proposed Alternative (Alternative 4) .....28

8.2 Cumulative Effects.....29

8.2.1 Methodology .....29

8.2.2 Past .....30

8.2.3 Present .....30

8.2.4 Foreseeable Future Actions.....30

8.2.5 General Cumulative Effects .....30

8.2.6 Cumulative effects Specific to Plumas Ivesia .....31

**9 APPLICANT PROPOSED MEASURES .....32**

**10 DETERMINATIONS.....32**

**11 REFERENCES .....34**

**Exhibits**

Exhibit 1 Project Vicinity

Exhibit 2 Project Overview Map

Exhibit 3 USFS Analysis Area and Special-Status Plant Occurrences

Exhibit 4.1 USFS Vegetation – Map 1

Exhibit 4.2 USFS Vegetation – Map 2

Exhibit 4.3 USFS Vegetation – Map 3

Exhibit 4.4 USFS Vegetation – Map 4

Exhibit 4.5 USFS Vegetation – Map 5

Exhibit 4.6 USFS Vegetation – Map 6

Exhibit 4.7 USFS Vegetation – Map 7

Exhibit 4.8 USFS Vegetation – Map 8

Exhibit 4.9 USFS Vegetation – Map 9

Exhibit 4.10 USFS Vegetation – Map 10

Exhibit 4.11 USFS Vegetation – Map 11

Exhibit 4.12 USFS Vegetation – Map 12

Exhibit 4.13 USFS Vegetation – Map 13

Exhibit 4.14 USFS Vegetation – Map 14

Exhibit 4.15 USFS Vegetation – Map 15

Exhibit 4.16 USFS Vegetation – Map 16

Exhibit 4.17 USFS Vegetation – Map 17

- Exhibit 4.18 USFS Vegetation – Map 18  
 Exhibit 4.19 USFS Vegetation – Map 19  
 Exhibit 4.20 USFS Vegetation – Map 20

## Tables

Table 1	New and Improved Access Ways and Roads within the LTBMU.....	7
Table 2	New and Improved Access Ways and Roads within the TNF .....	7
Table 3	TES Species Considered but not Evaluated Further Due to Habitat, Distribution, and/or Elevation Range .....	13
Table 4	TNF and LTBMU TES Botanical Species Status and Habitat Suitability in the Project area.....	15

## Appendices

- A Plant Species Observed in the Project Area during 2012 Surveys  
 B Exhibits and Maps  
 C Cumulative Projects List and Locations  
 D USFWS List of Endangered and Threatened Species

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# 1 INTRODUCTION

Forest Service Manual 2672.42 specifies that a biological evaluation (BE) be prepared to determine if a project may affect any US Forest Service (USFS) sensitive species or any species listed as threatened, endangered, or proposed for listing under the Endangered Species Act (ESA). The purpose of a BE is to analyze and describe the effects of the proposed action on all threatened, endangered, and sensitive (TES) botanical species (plants, lichen, fungi) that may occur in the project area. The objectives of the BE are to:

- ▲ ensure that USFS actions or funding of actions do not contribute to the loss of viability of any native or desired nonnative plant or animal species;
- ▲ ensure that USFS actions or funding of actions do not hasten the federal listing of any species; and
- ▲ provide a process and standard through which TES species receive full consideration throughout the planning process, thereby reducing negative impacts to species and enhancing opportunities for mitigation.

# 2 CURRENT MANAGEMENT DIRECTION

Forest-wide direction is in the LTBMU Land Resource Management Plan (LRMP) (USFS 1988) and the Tahoe National Forest Land and Resource Management Plan (USFS 1990), which state that the forests must “manage sensitive plants to ensure that species do not become threatened or endangered because of Forest Service actions.” The primary purpose of the direction is to assure that existing habitat of these plants is adequately protected and that additional habitat is provided to perpetuate the species” (USFS 1988). The current management direction for the CalPeco 625 and 650 Electrical Line Upgrade Project area is found in the LRMP under the Lower Truckee River, Martis, and Watson Management Areas. These management areas have been designated as developed recreation, alpine skiing, intensive dispersed recreation, unroaded recreation, administrative site, timber stand maintenance, and reduced timber management area.

Current management direction of desired future conditions for TES species on the LTBMU and Tahoe National Forest (TNF), as well as life history and species accounts information can be found in the following documents, filed at the Supervisor’s Office:

- ▲ Sierra Nevada Forest Plan Amendment (2004);
- ▲ Sierra Nevada Forest Plan Amendment, Final Supplemental Environmental Impact Statement and Record of Decision (ROD) (January 2004);
- ▲ Forest Service Manual and Handbooks (FSM/H 2670);
- ▲ National Forest Management Act (NFMA);
- ▲ TNF LRMP as amended by the Sierra Nevada Forest Plan Amendment;
- ▲ LTBMU LRMP (1988);
- ▲ LTBMU Draft Revised LRMP (June 2012);
- ▲ ESA;
- ▲ National Environmental Policy Act (NEPA);
- ▲ Species-specific recovery plans, which establish population goals for recovery of those species;
- ▲ Species management plans;
- ▲ Sensitive species list, accounts, and life history;
- ▲ Species management guides or conservation strategies;
- ▲ Regional Forester policy and management direction; and

- ▲ TRPA Regional Plan Update (2012a), Threshold Evaluation Report (2012b), and Code of Ordinances (2012c).

### 3 CONSULTATION TO DATE

The most recent lists of threatened and endangered species that could be affected by projects in the Lake Tahoe Basin Management Unit (LTBMU) and TNF were obtained from the USFWS, Sacramento Fish and Wildlife Office website on August 28, 2014, which had been updated on September 28, 2011 (Appendix D). These lists fulfill the requirements of the USFWS to provide a current species list pursuant to Section 7 of the ESA. Two federally threatened species are known to occur on or near TNF: Layne's butterweed (*Packera layneae*) and Webber's ivesia (*Ivesia webberi*). Layne's butterweed is known only in foothill areas with serpentine or gabbroic soils and do not occur in the vicinity of the proposed project. Webber's ivesia restricted to shallow, clay type soils derived from andesitic rock on mid-elevation flats, benches or terraces; it occurs on non-National Forest System (NFS) lands in Sierra Valley, but does not occur in the vicinity of the project area. The LTBMU does not currently support any plant species listed as threatened or endangered under the ESA. A draft biological assessment (BA) addressing both of these species was submitted to USFWS offices in Sacramento and Reno on January 29, 2014. A final BA will be submitted at the time of the Record of Decision for the CalPeco 625 and 650 Electrical Line Upgrade Project.

There are two candidate species for federal listing known to occur on TNF and LTBMU; however neither occurs in the vicinity to the project area. Tahoe yellow cress (*Rorippa subumbellata*) is endemic to the shoreline of Lake Tahoe and its habitat does not occur in the project area. Whitebark pine (*Pinus albicaulis*) occurs in subalpine areas on both LTBMU and TNF, but the closest known stands are approximately 2.5 miles from the project area.

### 4 PROJECT DESCRIPTION

The proposed action consists primarily of an upgrade of the 625 and 650 Electrical Lines and associated substations from an existing 60 kilovolt (kV) capacity to a 120 kV capacity to allow the entire transmission loop to operate at 120 kV. The electrical lines and associated infrastructure are owned by the California Pacific Electric Company (CalPeco), the project proponent. The primary project components that would occur at least partially on NFS lands are: 1) removal of the existing 625 Line that extends between Tahoe City and Kings Beach and construction of a new, rerouted 625 Line; and 2) rebuild of the existing 650 Line that extends from Kings Beach to the Town of Truckee. In addition to the electric line improvements, a number of access ways would be improved or created and existing NFS roads would be used for construction and operational access. In some locations, improvements to existing NFS roads would be required (e.g., grading, widening, removal of encroaching vegetation). The proposed system improvements would increase the ability to maintain the current maximum system loads while experiencing an outage on any one of the four legs of the system, and decrease reliance on the Kings Beach Diesel Generation Station for back-up power generation. 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 inspection, maintenance, and repair activities.

Four action alternatives are being evaluated (See Exhibit 1 for the regional project location and Exhibit 2 for the alternatives, both in Appendix B). The PEA Alternative (Alternative 1) is the alternative described in the Proponent's Environmental Assessment (PEA) submitted by Sierra Pacific Power Company as part of the original permit application provided to the California Public Utilities Commission (CPUC) in 2010. The Modified Alternative (Alternative 2) is similar to the PEA Alternative, but includes rerouting of some portions of the alignment based on various factors, such as resource constraints, public and agency input received during scoping, additional information gathered during detailed field reviews, and further progress on project engineering and design. The Road Focused Alternative (Alternative 3) re-routes the 625 Line to more closely follow the Fiberboard Freeway and other area roadways and places more of the 650 Line, as well as the 625 Line, on a double circuit along State Route (SR) 267. The Road Focused Alternative includes a sub-alternative (Alternative 3A) that begins placement of the 625/650 Line double circuit at a more southerly point, closer to Kings Beach. The Proposed Alternative (Alternative 4) is a combination of the Road Focused Alternative (Alternative 3) for the 625 Line improvements and elements of

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

Alternatives 1, 3, and 4 include two Applicant Proposed Measures (APMs) that alter the proposed power line alignment to minimize scenic impacts. APM SCE-7 moves the 650 Line along SR 267 between Kings Beach and Brockway summit further away from SR 267. APM SCE-8 moves the 625 Line along the Truckee River in Tahoe City slightly south, further away from the river (see discussion below).

The following subsections describe components of the action alternatives that would occur on NFS lands.

## 4.1 PROJECT LOCATION

The proposed CalPeco 625 and 650 Electrical Line Upgrade Project is located in northeastern Placer County and southeastern Nevada County, California (Exhibit 1, Appendix B). The project components are predominantly located on lands managed by the USFS; these lands are located in the TNF and in the LTBMU. The project area also spans the Town of Truckee and the unincorporated communities of Kings Beach and Tahoe City, as well as the Martis Creek Lake Recreation Area managed by the US Army Corps of Engineers (USACE) and Burton Creek State Park. Land use in the project area is predominantly forested, with segments of residential, industrial, and tourism-related uses where the project components enter more developed communities. A project overview map showing the location of each project component and alternative and the extent of NFS lands traversed by the project is provided in Exhibit 2, Appendix B. For the purposes of analysis, the electrical lines are divided into segments; there are 10 segments in the 625 Line and seven segments in the 650 Line (refer to Exhibit 2 in Appendix B). All of the 625 Line segments are located on NFS lands. On the 650 Line, only Segments 650-1, 650-2, 650-4 (Alternatives 1 and 4 only), and 650-6 are on NFS lands.

## 4.2 LEGAL LAND DESCRIPTION

Segments of the project on NFS lands are located in Township 15N Range 16E Sections 1 and 12, Township 15N Range 17E Section 7, Township 16N Range 16E Sections 13, 23, 24, 26, and 35; Township 16N Range 17E Sections 1-3, 8-10, 12, and 16-18; Township 16N Range 18E Section 18; Township 17N Range 16E Section 11; and Township 17N Range 17E Section 30 of the Mt. Diablo Meridian (21).

## 4.3 REMOVAL AND RECONSTRUCTION OF THE EXISTING 625 LINE

As part of the North Lake Tahoe Transmission System upgrade to 120 kV, CalPeco is proposing to “reconductor” and reroute the 625 Line with the objective that the new conductor can accommodate 120 kV capacity 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 right of way (ROW). There are one to three alternative alignments considered for each segment of the new 625 Line (e.g., only one possible route is being considered in Segment 625-2 but three possible routes are being considered for Segment 625-4). With incorporation of APM SCE-8, Alternatives 1, 3, and 4 would be setback into the 64-Acre Recreation Site in Tahoe City. Setting the line back from the Truckee River corridor would shield views of the power line from SR 89 and the Truckee River.

## 4.4 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 MCM AA conductor (non-specular material) to allow transmission at a 120 kV capacity.

In the Kings Beach/Brockway Summit area, for Alternatives 1, 3, and 4, incorporation of APM SCE-7 would result in construction of the new 650 line in an alignment that is set-back up to 200 feet east of SR 267. 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. The realigned portion of the 650 Line would be unseen or minimally visible from the highway.

## 4.5 SUBSTATIONS

There are no substations on NFS lands; however, construction at the Tahoe City Substation would require a temporary work area outside of the existing fence line on an adjacent NFS land parcel managed by the LTBMU. In order 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 (a separate line in the looped system extending from Tahoe City to Squaw Valley that has already been upgraded to 120 kV under a separate project) using temporary poles. These transformers would be located on the NFS parcel (i.e., the 64-Acre Recreation Site) 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. The temporary poles would be similar to the existing 60 kV poles. 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.

## 4.6 PERMANENT RIGHT-OF-WAY REQUIREMENTS

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. 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. 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.

## 4.7 TEMPORARY RIGHT-OF-WAY REQUIREMENTS

To accommodate construction, a temporary 65-foot-wide ROW 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.

## 4.8 POLE WORK AREAS

To accommodate construction equipment and activities, work areas surrounding each pole location would be cleared of vegetation and graded as necessary to provide a safe work area. Each angle pole (where there is a turn in the line) would require an approximately 0.5-acre work area measuring approximately 65 feet by 335 feet; each tangent pole (where the line continues in a straight path) would require an approximately 0.25-acre work area measuring approximately 65 feet by 170 feet; however, these work areas can be reduced or adjusted to avoid sensitive resources. Pole work areas would typically be accessed by truck using existing access roads or new access ways and the power line ROW. In areas where the terrain is too rugged for truck access, crews would use all-terrain vehicles or hike in by foot to access the pole sites and helicopters would be used to deliver materials and assist with pole placement and conductor stringing.

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.

## 4.9 STRINGING SITES

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 a distance between approximately 500 feet and approximately 8,000 feet apart depending on the terrain and surface conditions along the ROW, as well as placement of angle structures. On average, they would be located approximately 2,500 feet apart. Stringing sites require a relatively flat surface; therefore, they would need to be cleared and may 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.

## 4.10 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.

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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 National Forest System 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 National Forest Road System (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 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 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, National Forest System 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.

Among the access ways to be used are categories titled “Dirt Road (No Improvement Needed)” and “Paved Road;” these 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.

Another category, “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.” 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 (approximately 30 feet wide) would be needed approximately every 1,000 feet for vehicle passing. The power line ROWs would initially be cleared of 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).

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. 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).

In locations where slopes are greater than 20 percent, 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) 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.

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. During maintenance and inspection activities any evidence of public use would be noted, and public access barriers would be adjusted, if needed.

The mileage of existing USFS system roads to be used during project construction and operation that both do and do not need improvements and mileage of proposed new access ways on NFS lands are summarized by Forest in Tables 1 and 2.

Number	Alternative 1: PEA (miles)		Alternative 2: Modified (miles)		Alternative 3: Road Focused (miles)		Alternative 3A: Road Focused Double Circuit Option Segment (miles)		Alternative 4: Proposed (miles)	
	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW
Miles of existing USFS system roads to be used (no improvement)	16.5	16.0	16.5	16.1	16.5	13.8	16.5	13.8	16.5	13.8
Miles of Existing USFS system roads to be used (improved)	0.5	0.4	0.5	0.4	-	-	-	-	-	-
Miles of new access ways on USFS Land	15.0	6.6	12.1	5.5	4.3	1.2	3.9	1.2	4.3	1.2
<b>Total</b>	<b>32.0</b>	<b>23.0</b>	<b>29.1</b>	<b>22.0</b>	<b>20.7</b>	<b>15.0</b>	<b>20.4</b>	<b>15.0</b>	<b>20.7</b>	<b>15.0</b>

Number	Alternative 1: PEA (miles)		Alternative 2: Modified (miles)		Alternative 3: Road Focused (miles)		Alternative 3A: Road Focused Double Circuit Option Segment (miles)		Alternative 4: Proposed (miles)	
	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW	Total	Outside of Alignment ROW
Miles of existing USFS system roads to be used (no improvement)	2.5	2.4	2.5	2.4	2.5	2.3	2.5	2.3	2.5	2.3
Miles of Existing USFS system roads to be used (improved)	-	-	-	-	-	-	-	-	-	-
Miles of new access ways on USFS Land	0.8	0.7	1.0	0.3	0.2	-	0.2	-	0.2	-
<b>Total</b>	<b>3.3</b>	<b>3.1</b>	<b>3.5</b>	<b>2.7</b>	<b>2.7</b>	<b>2.3</b>	<b>2.7</b>	<b>2.3</b>	<b>2.7</b>	<b>2.3</b>

### 4.11 STAGING AREAS

Three staging areas proposed for use during construction are located on LTBMU land (Kings Beach, Former Batch Plant, and Fiberboard Freeway). There are no staging areas proposed on TNF land.

The Kings Beach Staging Area would be used for material storage and equipment staging and as a helicopter landing zone. In order to prepare this staging area, minor improvements to the existing access road—including the removal of approximately 10 trees—would be required and a temporary fence would be installed around its perimeter.

The Former Batch Plant Staging Area would be used to store and stage material and equipment, and may also be used for logging activities related to the project. Vegetation and brush present would be cleared and approximately 30 trees would be removed to prepare this staging area for use.

The Fiberboard Freeway Staging Area would be used to store and stage material and equipment, and for logging operations related to the project. Vegetation and brush would be cleared and approximately five trees would be removed to prepare this staging area for use.

## **4.12 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 either be chipped and stored on the ROW for later use during reclamation or disposed of off-site, depending on agency agreements. 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.

All areas that are temporarily disturbed around each pole, as well as areas used for conductor stringing, staging, and temporary vehicle access would be restored to preconstruction conditions, to the extent practicable, following construction. This would include returning areas to their original contours and reseeding in accordance with USFS guidelines. Unless otherwise requested by the USFS, existing access roads on NFS land that have been widened would be returned to their preconstruction widths and USFS approved seed mixes would be applied to disturbed areas. CalPeco would attempt to close or restrict vehicle access to areas that would not remain open to the public or that have been seeded until the reclamation success criteria have been achieved. Rocks removed during access way grading and foundation excavation would be redistributed over the ROW to resemble adjacent site conditions.

## **4.13 OPERATIONS AND MAINTENANCE**

Current operations and maintenance activities would continue with implementation of the action alternatives. 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. 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 No. 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.

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.

## 4.14 APPLICANT PROPOSED MEASURES TO MINIMIZE EFFECTS

The following Applicant Proposed Measures (APMs) have been incorporated into the project design to minimize, avoid, and reduce potential adverse effects on vegetation resources. Additional APMs are also part of the project; however, for purposes of this BE, only those APMs relevant to plant resources that may occur on NFS lands are listed below. Descriptions and rationale of all APMs are provided in Section 3.7, “Applicant Proposed Measures,” of the EIS/EIS/EIR.

The impact analysis in this BE 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 the EIS/EIS/EIR.

- ▲ **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 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-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.
- ▲ **APM BIO-3:** CalPeco will complete an invasive plant risk assessment for all areas to be temporarily impacted, including the ROW, access roads that require improvement, staging areas, and pull sites.
- ▲ **APM BIO-4:** Before construction activities begin, CalPeco will treat 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 Sporax or an EPA-registered borate compound to prevent the spread of Annosus root disease.

- ▲ **APM 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.
- ▲ **APM 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.
- ▲ **APM BIO-7:** Only certified weed-free construction materials, such as sand, straw, gravel, seed, and fill, will be used throughout the project.
- ▲ **APM BIO-8:** If invasive plant-infested areas are unavoidable, the invasive 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, 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.
- ▲ **APM BIO-9:** Exclusion zones will be established around any identified special-status species. In consultation with a qualified biologist, CalPeco will first attempt to avoid effects of project implementation on special-status plants and protect occurrences *in situ*. 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 *Plumas ivesia*: if, through consultation with an occurrence's land manager, it is determined that *Plumas ivesia* plants cannot be avoided or protected *in situ*, 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.
- ▲ **APM BIO-10:** Any special-status botanical species identified during the floristic surveys will be documented and photographed, and a Native Species Field Survey Form will be 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.
- ▲ **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-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.
- ▲ **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-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 annual species 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 contribution 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).
- ▲ **APM BIO-35:** No harm, harassment, or collection of plant and wildlife species will be allowed. Feeding of wildlife will be prohibited.
- ▲ **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.

- ▲ **APM 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.
- ▲ **APM 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.
- ▲ **APM AQ-7:** Traffic speeds on unpaved roads and the ROW will be limited to 15 miles per hour.
- ▲ **APM 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.

## 5 ANALYSIS METHODOLOGY

### 5.1 PROJECT AREA AND ANALYSIS AREA

For purposes of data review, evaluating existing conditions, and analyzing project-related effects at multiple spatial scales, this analysis considers both the project area and a broader analysis area. The *project area* is the spatial extent assumed to include all potential temporary and permanent disturbances associated with project construction, access, and operation and maintenance (e.g., vegetation management) on NFS lands. The project 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 project 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) defined the project area. The project area is shown on Exhibits 4.1 through 4.20, Appendix B. The *analysis area* for botanical resources was defined as a 1-mile buffer surrounding the project area. The analysis area was identified to provide a broader geographic context for evaluating the nearby distribution and potential effects on any TES occurrences beyond the project area. Additionally, this analysis assumes that all potential construction-related disturbances or indirect effects on TES would not extend beyond the analysis area. The analysis area is shown on Exhibit 3, Appendix B.

### 5.2 PRE-FIELD REVIEW OF EXISTING INFORMATION

A pre-field review of existing information from the LTBMU and TNF and available Geographic Information System (GIS) data was performed to evaluate the extent of potential habitat and known occurrences of federally Threatened, Endangered, Proposed, and Candidate botanical species and USFS sensitive botanical species (referred to collectively as “TES botanical species” or “TES plants”) within the project area and the analysis area. Preliminary investigation included review of information obtained from literature searches, examinations of habitat as discernible from aerial photographs, and database searches including the California Native Plant Society (CNPS 2012) records and the California Natural Diversity Database (CNDDB 2012) records (California Department of Fish and Wildlife [CDFW] 2012a).

In addition, Ascent biologists met with LTBMU biologists and other staff on May 1, 2012, to review the project and begin identifying resource issues of concern. On May 16, 2012, Ascent biologists met with LTBMU and TNF biologists to discuss biological resource issues in more depth, review the environmental analysis approach, and obtain TES lists from each Forest (Appendix D). The LTBMU and TNF staff provided Ascent with GIS point location data for known TES botanical species occurrences on their lands in the project vicinity and these are depicted in Exhibit 3, Appendix B, along with occurrences documented in the California Natural Diversity Database (CNDDDB). The LTBMU also provided GIS data layers depicting known stands of whitebark pine in the LTBMU, which are also shown in Exhibit 3, Appendix B.

To identify the existing and potential biological resources present in the vicinity of the proposed project, a GIS search was performed. This consisted of mapping baseline biological resource data (vegetation mapping, CNDDDB records, and water resources). To maintain consistency with previous documents, the following US Geological Survey quadrangles were reviewed: Kings Beach, Martis Peak, Tahoe City, and Truckee. Floras of the area, specifically The Jepson Manual (Hickman 1993 and Baldwin et al. 2012), were utilized in pre-field data review, and in identification of plants observed during the surveys.

Several species included on the TNF TES list are found only at lower elevations (e.g., Sierra Nevada foothills) than the project area, which ranges from approximately 5,700 to 8,075 feet in elevation, or are restricted to habitats (e.g., foothill woodlands) or particular soil types (e.g., serpentinite and gabbroic soils) that are not present in the analysis area. Certain species on the TNF or LTBMU TES lists are known only from specific geographic areas outside the analysis area. These species--listed in Table 3 along with their habitat and elevation--were eliminated from further consideration.

<b>Species</b>	<b>Habitat and Range Information</b>
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, from 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.
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 elevation; 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 to 10,876 feet elevation. No occurrence records for Placer County.

Table 3 TES Species Considered but not Evaluated Further Due to Habitat, Distribution, and/or Elevation Range	
Species	Habitat and Range Information
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.
Butte County fritillary <i>Fritillaria eastwoodiae</i>	Westside forests from 100 to 5,000 feet elevation.
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 elevation; 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 elevation; 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 stream banks. 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.
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 west side 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 west side 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, 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.
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.

Table 4 presents the list of TES species known or with suitable habitat in the TNF and LTBMU within the analysis area, their regulatory status, and discusses habitat and occurrence in the project area. Exhibit 3, Appendix B, shows the locations of all known occurrences of TES plants documented within the analysis area. Exhibit 3, Appendix B, depicts known TES plant locations in or adjacent to the project area, at a larger scale to provide a better visual representation of where these occurrences have been recorded relative to the project area. Documented occurrences consist of those mapped by the USFS, those obtained from the CNDDDB GIS database, and those mapped during reconnaissance-level surveys conducted specifically for this project.

Table 4 TNF and LTBMU TES Botanical Species Status and Habitat Suitability in the Project area					
Species	Status	Known to occur in analysis area (within 1 mile of project area)	Potential habitat in project area	No habitat in project area	Habitat <sup>1</sup> unsuitable based on the following:
<i>Arabis rigidissima</i> var. <i>demota</i> (= <i>Boechera rigidissima</i> ) Galena Creek rockcress	S, TRPA	Y	X		
<i>Boechera tiehmii</i> Tiehm's rockcress	S	N		X	This species occurs in open rocky soils in the Mt. Rose Wilderness, on granitic alpine boulder and rock fields, from 9,745 to 11,780 feet in elevation. <b>No suitable habitat occurs within the project area, and the elevation of the proposed project is below the known elevation range for this species.</b>
<i>Botrychium ascendens</i> Upswept moonwort	S	N	X		
<i>Botrychium crenulatum</i> Scalloped (dainty) moonwort	S	N	X		
<i>Botrychium lunaria</i> Common moonwort	S	N	X		
<i>Botrychium minganense</i> Mingan moonwort	S	Y	X		
<i>Botrychium montanum</i> Western goblin	S	N	X		
<i>Bruchia bolanderi</i> Bolander's candle moss	S	N	X		
<i>Clustered lady's slipper</i> Cypripedium fasciculatum	S	N		X	This species occurs in moist, shady coniferous forests, often on slopes, usually in serpentinite seeps or stream banks. Elevation range is 300 to 8,000 feet. Not known to occur in the Tahoe Basin or surrounding region. <b>No serpentinite habitat is present within the project area.</b>
<i>Dendrocollybia racemosa</i> ( <i>Collybia racemosa</i> ) Branched collybia	S	N	X		
<i>Draba asterophora</i> var. <i>asterophora</i> Tahoe draba	S, TRPA	N		X	Species is found in rock crevices and open granite talus slopes at high elevations between 8,200 to 11,500 feet on northeast facing slopes. <b>No suitable habitat for this species occurs within the project area, and the elevation of the proposed project is below the known elevation range for the species.</b>
<i>Draba asterophora</i> var. <i>macrocarpa</i> Cup Lake draba	S, TRPA	N		X	This species is found on steep, gravelly or rocky slopes at elevations of 8,200 to 9,235 feet elevation. <b>No suitable habitat for this species occurs within the project area, and the elevation of the proposed project is below the known elevation range for the species.</b>

Table 4 TNF and LTBMU TES Botanical Species Status and Habitat Suitability in the Project area					
Species	Status	Known to occur in analysis area (within 1 mile of project area)	Potential habitat in project area	No habitat in project area	Habitat <sup>1</sup> unsuitable based on the following:
<i>Erigeron miser</i> Starved daisy	S	N	X		
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i> Torrey (Donner Pass) buckwheat	S	Y	X		
<i>Helodium blandowii</i> Blandow's bog-moss	S	N		X	This species occurs in bogs and fens with calcareous groundwater at elevations of 5,000 to 9,460 feet elevation. <b>No suitable habitat for this species occurs within the project area.</b>
<i>Hulsea brevifolia</i> Short-leaved hulsea	S	N	X		
<i>Ivesia sericoleuca</i> Plumas ivesia	S	Y	X		
<i>Ivesia webberi</i> Webber's ivesia	FT, S	N		X	This species occurs on shallow, clayey soils derived from andesitic rock at elevations of 3,000 to 7,000 feet elevation. Typically found on sparsely to moderately densely vegetated sites in low sage scrub in association with dwarfed or cushion-like perennial herbs. <b>No suitable habitat for this species occurs within the project area.</b>
Santa Lucia dwarf rush <i>Juncus luciensis</i>	S	Y	Y		
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i> Sierra Valley lewisia	S	N		X	This species occurs on ridge tops or flat open spaces with widely spaced trees and sandy granite, slate or volcanic rubble in upper montane coniferous forest at elevations of 5,000 to 7,000 feet in elevation. <b>No suitable habitat for this species occurs within the project area and the nearest confirmed occurrences are in the Sierra Valley.</b>
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i> Kellogg's lewisia	S	N		X	This species occurs on ridge tops in decomposed granite, volcanic ash, or rubble in upper montane coniferous forest at elevations of 4,500 to 8,000 feet in elevation. <b>No suitable habitat for this species occurs within the project area and nearest confirmed occurrence is in Yosemite National Park.</b>
<i>Lewisia longipetala</i> Long-petaled lewisia	S, TRPA	N		X	This species occurs on the northerly exposures on slopes and ridge tops at elevations between 8,200 and 9,360 feet where snow banks persist throughout the summer. The plants are often found near the margins of the snow banks in wet soils. <b>No suitable habitat for this species occurs within the project area, and the elevation of the proposed project is below the known elevation range for the species.</b>

**Table 4 TNF and LTBMU TES Botanical Species Status and Habitat Suitability in the Project area**

Species	Status	Known to occur in analysis area (within 1 mile of project area)	Potential habitat in project area	No habitat in project area	Habitat <sup>1</sup> unsuitable based on the following:
<i>Meesia uliginosa</i> Broad-nerved hump-moss	S	N		X	This species occurs in bogs and fens, and permanently wet meadows, typically spring fed, in subalpine and upper montane coniferous forest, at elevations of 4,265 to 9,200 feet. <b>No suitable habitat for this species occurs within the proposed project area; meadow habitats in the project area are not permanently wet.</b>
<i>Peltigera gowardii</i> Veined water lichen	S	N		X	This species grows on rocks in cold, unpolluted, perennial streams in old-growth mixed conifer forests (Peterson 2010). Found in partially shaded sites at elevations of 3,000 to 8,500 feet. Typically in spring-fed, first or second order streams in upper watersheds, with relatively stable flows and not subject to heavy scour (Peterson 2010). <b>The particular microhabitat characteristics this species is typically associated with are not present within the project area.</b>
Whitebark pine <i>Pinus albicaulis</i>	C, S	N		X	Several stands have been mapped in the LTBMU, the closest being approximately 2.5 miles northeast of Segment 625-10 near Incline Village, Nevada. The majority of populations in the Tahoe Basin are on the Nevada side or south of Lake Tahoe. Suitable habitat for whitebark pine consists of rocky sites at or near timberline. <b>Whitebark pine was not observed during reconnaissance-level surveys and it is not expected to occur because the project area is below timberline and below the elevation where this species is typically found in the Tahoe Basin.</b>
<i>Rorippa subumbellata</i> Tahoe yellow cress	C, S, TRPA, SE	N		X	This species occurs on decomposed granitic beaches in lower montane coniferous forest. It is endemic to the shore zone around Lake Tahoe in California and Nevada. Typically found in back beach areas between elevations of 6,223 and 6,230 feet. <b>No suitable habitat for this species occurs within the project area.</b>

<sup>1</sup>Habitat descriptions are derived from species accounts contained in the TNF biological evaluation template (USFS 2011), the CNPS inventory (CNPS 2012), and CNDDDB records, except where noted otherwise.

<sup>a</sup>Status explanations

FT = Federally threatened species listed under ESA

C = Candidate species for listing as threatened or endangered under ESA

SC = USFWS Species of Concern

SE = State-listed as Endangered

S = Forest Service Sensitive, per Regional Forester's Sensitive Species List, Amended 2013

TPRA = TRPA Sensitive Species, Regional Plan Update (TRPA 2012a) and Code of Ordinances (TRPA 2012c).

The following TES botanical species have known occurrences within the project area:

- ▲ *Arabis rigidissima* var. *demota*, Galena Creek (Carson Range) rockcress
- ▲ *Botrychium minganense*, Mingan moonwort
- ▲ *Ivesia sericoleuca*, Plumas ivesia

In addition, the following TES species have suitable habitat, but no known occurrences in the project area:

- ▲ *Botrychium ascendens*, upswept moonwort
- ▲ *Botrychium crenulatum*, scalloped moonwort
- ▲ *Botrychium lunaria*, common moonwort
- ▲ *Botrychium montanum*, western goblin
- ▲ *Bruchia bolanderi*, Bolander's candle moss
- ▲ *Dendrocollybia racemosa*, branched collybia
- ▲ *Erigeron miser*, starved daisy
- ▲ *Eriogonum umbellatum* var. *torreyanum*, Torrey (Donner Pass) buckwheat
- ▲ *Hulsea brevifolia*, short-leaved hulsea
- ▲ *Juncus luciensis*, Santa Lucia dwarf rush

## 6 FIELD RECONNAISSANCE

Surveys were conducted on June 19 and 20, 2012 and July 11, 12, and 13 by botanist Tammie Beyerl and biologists Heather Valentine and Steve Henderson, and July 11 through July 15, 2012 by botanist Ken McDonald and ecologist Tom Herzog. A reconnaissance-level habitat assessment of the proposed alignment alternatives, proposed access ways, access roads, and other project elements was conducted. As described previously, the project 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 project 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.

The entire project area was observed during the surveys to allow for vegetation mapping, and included driving some portions of the alignment, with spot-checking of vegetation, while the majority of the project area was observed while walking pedestrian transects. The survey was also intuitive controlled to specifically walk and map areas of vegetation that may potentially be suitable for TES botanical species. Botanical surveys were conducted concurrently while conducting pedestrian transects, and in areas comprised of habitats specific to TES plant species or with a known or high probability of occurrence. Many species have specific habitat preferences (such as wet meadows, fens, granite scree), and botanists searched for these during the surveys, as well as their constituent species. Botanical surveys within the project area focused on species with potential habitat; however, surveys were floristic in nature and attempts were made to identify all plants encountered in the field. TES plant populations were recorded using a global positioning system and marked on aerial maps, and then incorporated into a GIS database. A list of all plant species encountered is included as Appendix A. The only TES species encountered during the reconnaissance surveys was Plumas ivesia (*Ivesia sericoleuca*).

The surveys took place at the appropriate time of year to identify most TES species with the exception of Galena Creek rockcress, the moonworts, and branched collybia. Additionally, the sporophyte production period of Bolander's candle moss is unknown and the moonworts often do not produce sporophytes in dry years like the 2012 growing season and are difficult to find even when present because they are very small and inconspicuous.

In accordance with the project's APMs, protocol-level surveys would be conducted prior to any ground disturbance in suitable habitats for TES botanical species.

## 7 EXISTING ENVIRONMENT

For those species known or with potential to occur in or near the analysis area (see Table 4), the following summarizes their regulatory status, habitat suitability in the project area, and occurrence information.

### 7.1 *ARABIS RIGIDISSIMA* VAR. *DEMOTA*, GALENA CREEK ROCKCRESS

**Status:** Galena Creek rockcress is a CRPR 1B.2 species, and a USFS sensitive plant species, known to bloom in June and July and be identifiable by fruit in July and August.

**Potential to Occur in Project area:** Occurrences of Galena Creek rockcress have been previously documented north of a potential project access road (Martis Peak Road), north of Segment 625-9 (Exhibit 4.3) and east and west of the existing and Proposed Alternative electric alignments in Segment 625-3 (Exhibit 4.14), but these occurrences are all outside of the project area. Plants thought to potentially be Galena Creek rockcress were mapped along the existing 625 Line, in Segment 625-3, during reconnaissance-level surveys conducted in 2007 for the PEA; however, these plants could not be positively identified due to the timing of those surveys. During the 2012 reconnaissance survey, no individuals of Galena Creek rockcress were observed within the project area; however, surveys may have been too early to observe fruit (necessary for identification). Protocol-level surveys for Galena Creek rockcress would be conducted prior to ground disturbance, so these potential occurrences will be verified or dismissed prior to implementation. Suitable habitat for this species within the study area occurs primarily along conifer forest edges.

### 7.2 *BOTRYCHIUM ASCENDENS*, UPSWEPT MOONWORT

**Status:** Upswept moonwort is a CRPR 2.3 species – rare, threatened or endangered in California, but more common elsewhere (not very endangered in California), and a USFS sensitive plant species. Its sporophyte production period is from July to August.

**Potential to Occur in Project area:** Suitable habitat for upswept moonwort within the project area occurs primarily in the wet meadows and riparian areas. No individuals of upswept moonwort have been previously documented within the study area and none were observed during reconnaissance surveys. However, focused surveys for this species were not conducted and the small size, inconspicuous growth form, and potential for dormancy of moonworts present challenges for surveying, identification, and conservation. Upswept moonwort is a very diminutive plant that does not produce flowers, usually occurs in very small numbers where it is present, and typically grows in areas with dense vegetative cover, all of which make it difficult to find. Typically, locating moonworts requires carefully searching on hands and knees. Time constraints for completing the reconnaissance surveys did not allow intensive searches of all potentially suitable habitats for this species. Furthermore, moonwort species do not produce above-ground, spore-bearing structures (sporophytes) every year. Therefore undetected populations could be present within suitable meadow and riparian habitats in the study area and could be adversely affected during project construction. Protocol-level surveys for moonworts would be conducted before initiating any project actions that could disturb meadow or riparian habitats. The reproductive strategies and metapopulation dynamics of moonworts make it particularly important to protect unoccupied suitable habitat.

### 7.3 ***BOTRYCHIUM CRENULATUM*, SCALLOPED MOONWORT**

**Status:** Scalloped moonwort is a CRPR 2.2 species – rare, threatened, or endangered in California, but more common elsewhere (fairly endangered in California), and a USFS sensitive plant species. Its sporophyte production period is from June to September.

**Potential to Occur in Project area:** Suitable habitat for scalloped moonwort within the project area occurs primarily in the wet meadows and riparian areas. No individuals of scalloped moonwort have been previously documented within the project area and none were observed during reconnaissance surveys. However, focused surveys for this species were not conducted and the small size, inconspicuous growth form, and potential for dormancy of moonworts present challenges for surveying, identification, and conservation. Scalloped moonwort is a very diminutive plant that does not produce flowers, and typically grows in areas with dense vegetative cover, which makes it difficult to find. Typically, locating moonworts requires carefully searching on hands and knees. Time constraints for completing the reconnaissance surveys did not allow intensive searches of all potentially suitable habitats for this species. Furthermore, moonwort species do not produce sporophytes every year and populations generally consist of only a few individuals. Therefore undetected populations could be present within suitable meadow and riparian habitats in the study area and could be adversely affected during project construction. Protocol-level surveys for moonworts would be conducted before initiating any project actions that could disturb meadow or riparian habitats. The reproductive strategies and metapopulation dynamics of moonworts make it particularly important to protect unoccupied suitable habitat.

### 7.4 ***BOTRYCHIUM LUNARIA*, COMMON MOONWORT**

**Status:** Slender moonwort is a CRPR 2.3 species – rare, threatened or endangered in California, but more common elsewhere (not very endangered in California), and a USFS sensitive plant species. Its sporophyte production period is in August.

**Potential to Occur in Project area:** Suitable habitat for slender moonwort within the project area occurs primarily in the wet meadows and riparian areas. No individuals of slender moonwort have been previously documented within the project area and none were observed during reconnaissance surveys. However, focused surveys for this species were not conducted and the small size, inconspicuous growth form, and potential for dormancy of moonworts present challenges for surveying, identification, and conservation. Common moonwort is a very diminutive plant that does not produce flowers and typically grows in areas with dense vegetative cover, which makes it difficult to find. Locating moonworts generally requires carefully searching on hands and knees. Time constraints for completing the reconnaissance surveys did not allow intensive searches of all potentially suitable habitats for this species. Furthermore, moonwort species do not produce sporophytes every year. Therefore undetected populations could be present within suitable meadow and riparian habitats in the project area and could be adversely affected during project construction. Protocol-level surveys for moonworts would be conducted before initiating any project actions that could disturb meadow or riparian habitats. The reproductive strategies and metapopulation dynamics of moonworts make it particularly important to protect unoccupied suitable habitat.

### 7.5 ***BOTRYCHIUM MINGANENSE*, MINGAN MOONWORT**

**Status:** Mingan moonwort is a CRPR 2.2 species – rare, threatened, or endangered in California, but more common elsewhere (fairly endangered in California), and a USFS sensitive plant species. Its sporophyte production period is from July to September.

**Potential to Occur in Project area:** One occurrence of Mingan moonwort has been previously documented within the project area, in Segment 625-10/650-1 (Exhibits 4.5 and 4.6), along Griff Creek, on LTBMU lands.

Suitable habitat for Mingan moonwort within the project area occurs in the wet meadows and riparian areas. No individuals of Mingan moonwort were observed within the project area during the field survey; however, the small size, inconspicuous growth form, and potential for dormancy of moonworts present challenges for surveying, identification, and conservation. The location of the known occurrence along Griff Creek was surveyed during the 2012 reconnaissance and Mingan moonwort was not found, but moonworts do not produce above-ground sporophytes every year and when they do, there are generally no more than a few individuals present. Moonworts are sensitive to drought and often do not appear in dry years such as the survey year (2012). Furthermore, these are diminutive plants (approximately 1 inch tall) and the riparian vegetation at this location, mostly alders, is extremely dense and difficult to penetrate. All of these factors increase the difficulty of finding Mingan moonwort even at locations where it has been found previously. Therefore, undetected populations could be present within suitable riparian habitats in the project area and this species could be adversely affected by project construction. Protocol-level surveys for moonworts would be conducted before initiating any project actions that could disturb meadow or riparian habitats. The reproductive strategies and metapopulation dynamics of moonworts make it particularly important to protect unoccupied suitable habitat.

## 7.6 ***BOTRYCHIUM MONTANUM*, WESTERN GOBLIN**

**Status:** Western goblin is a CRPR 2.1 species – rare, threatened, or endangered in California, but more common elsewhere (fairly endangered in California), and a USFS sensitive plant species. Its sporophyte production period is from July to September.

**Potential to Occur in Project area:** Suitable habitat for western goblin within the project area occurs primarily in the wet meadows and riparian areas. No individuals of western goblin have been previously documented within the project area or the analysis area, and none were observed during reconnaissance surveys. However, focused surveys for this species were not conducted and the small size, inconspicuous growth form, and potential for dormancy of *Botrychium* species present challenges for surveying, identification, and conservation. Time constraints for completing the reconnaissance surveys did not allow intensive searches of all potentially suitable habitats for this species. Furthermore, *Botrychium* species do not produce sporophytes every year. Therefore undetected populations could be present within suitable meadow and riparian habitats in the project area and could be adversely affected during project construction. Protocol-level surveys for this species would be conducted before initiating any project actions that could disturb meadow or riparian habitats. The reproductive strategies and metapopulation dynamics of *Botrychium* species make it particularly important to protect unoccupied suitable habitat.

## 7.7 ***BRUCHIA BOLANDERI*, BOLANDER'S CANDLE MOSS**

**Status:** Bolander's candle moss is a CRPR 2.2 species – rare, threatened or endangered in California, but more common elsewhere (fairly endangered in California), and a USFS sensitive plant species. Its sporophyte production period is unknown.

**Potential to Occur in Project area:** Suitable habitat for Bolander's candle moss within the project area occurs primarily in the wet meadows and riparian areas. No individuals of Bolander's candle moss have been previously observed within the project area and the nearest known occurrences are northwest of Donner Lake. Very few mosses were encountered during the reconnaissance surveys. Sporophyte production is infrequent, especially in dry years, and the species is difficult to identify without sporophytes. Therefore undetected populations could be present within suitable riparian habitats in the project area and this species could be adversely affected by project construction. Protocol-level surveys for Bolander's candle moss would be conducted before initiating any project actions that could disturb meadow or riparian habitats.

## 7.8 *DENDROCOLLYBIA RACEMOSA*, BRANCHED COLLYBIA

**Status:** Branched collybia is a USFS sensitive fungus species. Its fruiting period is from late fall to mid-winter.

**Potential to Occur in Project area:** Suitable habitat for branched collybia within the project area occurs primarily in old growth stands on decayed or decaying mushrooms or coniferous duff. No individuals of branched collybia have been previously observed within the project area and it was not identified during reconnaissance-level surveys; however, the surveys were not conducted at the appropriate time of year when this species would be fruiting and identifiable. Therefore, this species could be present in the project footprint. Surveys for special-status species, including branched collybia, would be conducted before initiating any project action that could disturb coniferous forest habitats. Surveys for fungi are only effective when fruiting bodies are visible. This species typically fruits in late fall to early winter. The extent to which aboveground fruiting bodies are correlated with the abundance of underground structures is unknown. When a survey does not find the fruiting body, the species could still be present at the site. Because of this detection difficulty, it is important to manage habitat in a state that is suitable for fungi, namely surrounding vegetation, microclimate, and sufficient substrate.

## 7.9 *ERIGERON MISER*, STARVED DAISY

**Status:** Starved daisy is a CRPR 1B.3 species – rare, threatened, or endangered in California and elsewhere (not very endangered in California), and a USFS sensitive plant species. Its blooming period is from June to October.

**Potential to Occur in Project area:** Suitable habitat for starved daisy (i.e., clefts in granite outcrops) is extremely limited in the project area and this species has not been previously documented within 1 mile of the project area. However, potentially suitable habitat exists in remote locations widely dispersed across the 625 Line alternative alignments and existing 625 Line and the survey intensity was not adequate to rule out the possibility for this species to be present. Protocol-level surveys for starved daisy would be conducted before initiating any project action that could disturb granite outcrops.

## 7.10 *ERIOGONUM UMBELLATUM VAR. TORREYANUM*, DONNER PASS BUCKWHEAT

**Status:** Donner Pass buckwheat is a CRPR 1B.2 species – rare, threatened, or endangered in California and elsewhere (fairly endangered in California), and a USFS sensitive plant species. Its blooming period is from July to September.

**Potential to Occur in Project area:** An occurrence of Donner Pass buckwheat was reported from the Truckee area in 1885. The exact location of this observation is unknown and was mapped as a best guess by the CNDDDB in the Truckee vicinity, near the northern terminus of the 650 Line, Segment 650-6. The estimated general location of this mapped occurrence overlaps with the project analysis area (i.e., within 1 mile of the project area). Several other occurrences of Donner Pass Buckwheat have been reported near the project area, but beyond the analysis area. Suitable habitat for Donner Pass buckwheat within the project area occurs primarily in the dry gravelly slopes and ridge top areas. No individuals of Donner Pass buckwheat were observed during the survey.

Potentially suitable habitat for this species (i.e., rock outcrops/scree or talus slopes) is limited within the project area (approximately 4 acres total). Nonetheless, suitable habitat exists in remote locations widely dispersed across the 625 Line alternative alignments and existing 625 Line and the survey intensity was not adequate to rule out the possibility for this species to be present. Protocol-level surveys for Donner Pass buckwheat would be conducted before initiating any project action that could disturb rock outcrops or talus slopes.

## 7.11 *HULSEA BREVIFOLIA*, SHORT-LEAVED HULSEA

**Status:** Short-leaved hulsea is a CRPR 1B.2 species – rare, threatened, or endangered in California and elsewhere (fairly endangered in California), and a USFS sensitive plant species. Its blooming period is from May to August.

**Potential to Occur in Project area:** Suitable habitat for short-leaved hulsea within the project area occurs in coniferous forest. No individuals of short-leaved hulsea have been previously documented within the project area and this species was not found during reconnaissance surveys. However, due to the large amount of potentially suitable habitat available in the project area, the survey intensity was not adequate to rule out the possibility that undetected populations of short-leaved hulsea are present. Protocol-level surveys for short-leaved hulsea would be conducted before initiating any project action that could disturb coniferous forest habitat.

## 7.12 *IVESIA SERICOLEUCA*, PLUMAS IVESIA

**Status:** Plumas ivesia is a CRPR 1B.2 species – rare, threatened, or endangered in California and elsewhere (fairly endangered in California), BLM sensitive, and a USFS sensitive plant species. Its blooming period is from May to October.

**Potential to Occur in Project area:** Several occurrences of Plumas ivesia have been previously documented and were observed during the survey within the project area. A total of 7 occurrences were observed in the project area on Segments 650-4, 650-4A, and 650-4B; a portion of one of these occurrences is located on NFS lands within the TNF parcel adjacent to the North Star Golf Course (see Appendix B, Exhibit 4.2). The mapped area of the Plumas ivesia occurrence within the project area on the TNF parcel is 5.7 acre (out of a total area of approximately 18.7 acres for this occurrence). Suitable habitat for Plumas ivesia within the project area occurs primarily at the edges of wet meadows and in the dry meadows and low sage scrub of Martis Valley

## 7.13 *JUNCUS LUCIENSIS*, SANTA LUCIA DWARF RUSH

**Status:** Santa Lucia dwarf rush is a CRPR-1B.2 – rare, threatened, or endangered in California and elsewhere (fairly endangered in California), BLM sensitive, and a USFS sensitive plant species. Its blooming period is April to July.

**Potential to Occur in project area:** An occurrence has been recorded within 1 mile of Segment 650-4B, between Martis Creek Lake and the Truckee airport. Suitable habitat for Santa Lucia dwarf rush within the project area occurs primarily in riparian areas and meadows.

# 8 EFFECTS OF THE PROPOSED PROJECT

An effects analysis is required in cases where TES plants have been found within or near proposed project areas and/or when there is potential habitat for TES species and surveys have not been conducted in the intensity that is commensurate with the risk to species suspected in the project area (Table 4).

Potential impacts of each action alternative on biological resources were initially identified by overlaying GIS layers of proposed project components on the land cover maps of the project area and maps of TES botanical species. Any natural community that overlapped with an area of proposed modification was considered to be directly affected during project construction. An estimate of the amount of vegetation removal planned for the clearing of the ROWs, work areas, and access ways was determined. Temporary construction impacts would occur where natural vegetation would be removed to construct new features and facilities or modify existing

features, but where project activities would cease and existing biological conditions would be allowed to recover following construction (assumed to be within approximately 5 years following construction). Permanent impacts to biological resources would occur in or adjacent to habitats that would experience a permanent conversion in land use and cover (i.e., conversion of natural vegetation to substations, electric line maintenance ROW, and access ways).

Permanent effect is based on the 40-foot-wide permanent electric line ROW for single-circuit segments and a 65-foot-wide permanent electric line ROW for double-circuit segments that would remain following project completion plus new and improved access roads. Additional temporary effect is the maximum amount, in addition to what would remain as a permanent ROW or access way following project construction, assumed for temporary construction. This is based on a 65-foot-wide construction corridor along the entire length of the electric line alignments, minus the 40-foot-wide permanent maintenance ROW for single-circuit segments. Additional acreage of temporary habitat effects result from vegetation removal at staging areas. These impacts are considered temporary because these areas would be restored and revegetated following construction. Following construction, the 40-foot-wide (or 65-foot wide for double-circuit segments) permanent ROW would be cleared periodically to allow overland travel by line and inspection trucks, but low-growing native plants, such as mule ears, pinemat manzanita and mahala mat would be allowed to establish and the ROW would not be maintained in a barren state or covered by an impervious surface; however, trees and taller shrubs would not be allowed to establish under the electric lines. The existing 625 Line would be decommissioned and native vegetation would be allowed to regenerate within the approximately 20-foot wide corridor that is currently managed to limit vegetation height.

As discussed in Section 4, "Project Description," four action alternatives are being evaluated. The following describes the potential direct, indirect, and cumulative effects of the alternatives.

## 8.1 DIRECT AND INDIRECT EFFECTS

Direct effects occur when TES plants or their potential habitat are physically impacted by activities associated with the proposed action. Direct effects from the proposed project activities may include physically breaking, crushing, or uprooting TES plants by driving over them; covering them with soil or concrete; application of herbicides; or displacing individuals in other ways. Permanent project-related disturbance includes loss of habitat through widening of ROW corridors, installation of new structures, and conversion of any land for widening existing or installing new access ways. Temporary project-related disturbance includes use of lands for logging activities (e.g., fly yards and decking areas); conductor pulling, tensioning, and splicing; and any authorized off-road travel. Damaged plants may experience altered growth and development, or reduced or eliminated seed-set and reproduction. If the disturbance is severe, mortality of individuals or populations can occur. Direct effects to individual plants can negatively affect growth and development, population size, and species' viability across a landscape. Timing of disturbance is important for annual plant species. Construction disturbance that occurs subsequent to seed-set have less of an effect than disturbance prior to seed-set, as the seeds may still have an opportunity to germinate in the future. This may not be true, however, in areas that receive considerable ground disturbance.

Indirect effects on TES plants or their potential habitat are effects that are separated from an action in either time or space. Indirect effects resulting from project implementation may affect the quantity, quality, and distribution of habitats and may have positive or negative effects on TES plant, lichen, bryophyte, and fungi populations. These effects from proposed project activities, which can be beneficial or detrimental to TES species, may include: changes in vegetation composition, particularly the introduction of invasive weed species; changes in fire regimes; changes in hydrologic patterns or soil characteristics necessary for TES plant species habitats; increases in human use patterns; negative effects on pollinators or mycorrhizae associated with TES plant species; reduction of suitable habitat; and fragmentation of habitat. Potential indirect effects could also

result from increased traffic on dirt access roads during construction and grading or other ground disturbances that create dust, which can coat plants nearby, thus reducing their ability to photosynthesize and respire.

The following discusses potential direct and indirect effects of each action alternative on TES plants known or with potential to be affected by the Proposed Project.

### 8.1.1 PEA ALTERNATIVE (ALTERNATIVE 1)

Under Alternative 1 (PEA Alternative), portions of four *Plumas ivesia* occurrences are present within the 650 Line ROW, in Segments 650-3 and 650-4 in the Martis Valley; a portion of one of these occurrences is on a NFS (Tahoe National Forest) parcel adjacent to the North Star Golf Course, in Segment 650-4 (see Appendix B, Exhibit 4.2). Additionally, two *Plumas ivesia* occurrences are present along an existing dirt road that would be used for access but not improved for the project.

Implementing Alternative 1 (PEA Alternative) would result in destruction of *Plumas ivesia* plants during grading and excavation to install poles and string conductor on Segment 640-4. The number of plants that would be affected on NFS lands is unknown; however, the area of the occurrence within the proposed permanent ROW on the TNF parcel is 0.6 acre (out of a total area of approximately 18.7 acres for this occurrence); an additional 0.4 acre of this occurrence is within the proposed temporary construction easement on this parcel. To the extent feasible, plants will be protected *in situ* (in place); however, some individuals may be removed or destroyed, resulting in their mortality. There would also be some temporary degradation of suitable habitat within Segment 650-4, where topsoil would be salvaged and disturbed areas would be restored following construction. In addition to direct removal of individuals and indirect effects to habitat (loss or degradation), plants could suffer other direct physical damage, including breaking, crushing, and burying. Damaged plants may experience altered growth and development, or reduced or eliminated seed-set and reproduction. This may eventually result in individual plant mortality or even loss of the entire occurrence. *Plumas ivesia* occurrences along Segment 650-4 and an existing dirt access road connecting to Segment 650-4, as well as unidentified areas of suitable habitat throughout the project area, could also be indirectly affected by project activities (described below). In addition, the project area is located at the southern edge of the species' range. The loss of *Plumas ivesia* occurrences near the edge of its range may affect genetic diversity, resilience or adaptability to environmental drivers that operate latitudinally (e.g., climate change), and overall distribution.

Occurrences of Galena Creek rockcress have been previously documented north of a potential project access road (Martis Peak Road), north of Segment 625-9 and east and west of the existing electric alignments in Segment 625-3, on NFS lands, but these occurrences are outside of the project area and are not expected to be affected by proposed activities. Plants thought to potentially be Galena Creek rockcress were mapped along the existing 625 Line, in Segment 625-3, during reconnaissance-level surveys conducted in 2007 for the PEA; however, these plants could not be positively identified. During the 2012 reconnaissance field survey, no individuals of Galena Creek rockcress were observed within the Alternative 1 proposed alignment; however, surveys may have been too early to observe fruit (necessary for identification). Protocol-level surveys for Galena Creek rockcress would be conducted prior to ground disturbance, so these potential occurrences will be verified or dismissed prior to implementation. Ground disturbance along the existing 625 Line would be minimized during removal of the existing line because almost all work would be done either from existing access roads or from the air. Existing poles would generally be cut off and air lifted from the site unless the pole was along an existing access road. Some poles may be accessed by foot if they are not accessible from existing roads. If any occurrences are verified, they would be flagged and avoided; therefore, no direct or indirect impacts on Galena Creek rockcress are expected to result from removal of the existing 625 Line.

One occurrence of Mingan moonwort has been previously documented within the project area, in Segment 625-10/650-1, along Griff Creek, on LTBMU property. Suitable habitat for Mingan moonwort within the project area occurs in the wet meadows and riparian areas. No individuals of Mingan moonwort were observed within the

project area during the field survey. The location of the known occurrence along Griff Creek was surveyed during the 2012 reconnaissance and Mingan moonwort was not found, but moonworts do not produce above-ground sporophytes every year and when they do, there are generally no more than a few individuals present. Moonworts are sensitive to drought and often do not appear in dry years such the survey year (2012). Furthermore, these are diminutive plants (approximately 1 inch tall) and the riparian vegetation at this location, mostly alders, is extremely dense and difficult to penetrate. All of these factors increase the difficulty of finding Mingan moonwort even at locations where it has been found previously. Therefore undetected populations could be present within suitable riparian habitats in the project area and this species could be adversely affected by project construction. Protocol-level surveys for moonworts would be conducted before initiating any project actions that could disturb meadow or riparian habitats. The known occurrence of Mingan moonwort would not be affected by implementation of Alternative 1 because the riparian corridor (SEZ) where this species was found would be spanned, resulting in no proposed work in suitable habitat.

As summarized in Table 4, nine other TES plant species, in addition to the known Plumas ivesia and Mingan moonwort, and potential Galena Creek rockcress, could be present in the project area: upswept moonwort, scalloped moonwort, common moonwort, western goblin, Bolander's candle moss, branched collybia, starved daisy, Torrey (Donner Pass) buckwheat, and short-leaved hulsea. Undetected TES plants could be directly removed or physically damaged during construction of Alternative 1.

TES plant species occurring in or near the project area may be indirectly affected by habitat loss or degradation. Other project-related effects, such as introduction of nonnative plant species, altered hydrology, soil compaction, and increased human use in the area can result in habitat degradation or destruction. Increased traffic on dirt access roads during construction and grading or other ground disturbances that create dust, which can coat plants nearby, thus reducing their ability to photosynthesize and respire. These potential effects could also result from routine maintenance activities following project construction.

Implementation of Alternative 1 would result in the removal of up to approximately 160 acres of native vegetation and 16.3 miles of new or improved access ways on NFS lands. Most areas disturbed by the project would be stabilized and revegetated following construction (APM BIO-36). While access ways would be maintained clear of large trees, smaller vegetation and shrubs would be allowed to re-grow. The plant community may return to a similar composition; however access ways would be disturbed by regular line maintenance traffic in high clearance vehicles. As described in the Invasive Plant Risk Assessment (IPRA) prepared for the project, Alternative 1 would have a high risk of introducing or spreading invasive species due to the amount of disturbance and the presence of existing invasive plant infestations. New infestations could develop in disturbed areas and spread to adjacent plant communities, potentially replacing or degrading TES species habitat.

The APMs detailed in Section 4.14, "Applicant Proposed Measures to Minimize Effects," have been incorporated into the project design, and would minimize, avoid, and compensate for potential direct and indirect effects on TES plants. Through implementation of the APMs, Plumas ivesia, Mingan moonwort, and Galena Creek rockcress occurrences would be avoided to the extent feasible, minimization and/or compensatory measures will be established for plants that cannot be avoided, and suitable habitat that is degraded as a result of proposed actions would be restored following disturbance. APM BIO-9 requires CalPeco to first attempt to avoid effects of project implementation on Plumas ivesia and other special-status plants and protect their occurrences *in situ* (i.e., protect in place). Other potential mitigation options for Plumas ivesia, such as relocating plants and/or restoring habitat, have not been tested and their likely success is unknown; no Plumas ivesia transplant experiments are known to have been conducted. Because this species occurs in relatively uncommon habitat (ephemerally vernal pools, moist meadows, and occasionally on alluvial toe slopes of low sagebrush) over a limited geographic distribution (less than 75 miles long [Urie 2009]), the successful selection and location of additional suitable habitat for potential Plumas ivesia transplants is considered unlikely by TNF and LTBMU botanists (S. Urie, pers. comm., 2013). *In situ* conservation is the TNF's interim management prescription for

Plumas ivesia. This species is relatively tolerant of moderate disturbance; therefore, avoiding or temporarily covering plants to reduce impacts during construction is preferable to transplanting (C. Rowe, pers. comm., 2013). However, as described in APM BIO-9, if, through consultation with an occurrence's land manager (e.g., USFS), it is determined that Plumas ivesia plants cannot be avoided or protected *in situ*, then CalPeco will attempt to relocate all Plumas ivesia individuals. Plants that cannot be avoided during construction will be relocated to suitable meadow habitat surrounding the 650 Line. If relocation is unsuccessful, CalPeco will again consult with the CDFW and USFS in order to determine the cause of relocation failure and to establish appropriate corrective remedial measures.

Under Alternative 1, the applicant would be required to identify and avoid TES plants, or minimize and/or compensate for, effects through measures such as salvaging seed and soil, relocating individuals, and restoring habitat to pre-project conditions. Consequently, implementing Alternative 1 would not substantially affect the abundance or distribution, either directly or through habitat modifications, of Plumas ivesia, Mingan moonwort, Galena Creek rockcress, or any other TES botanical species.

### 8.1.2 MODIFIED ALTERNATIVE (ALTERNATIVE 2)

Under Alternative 2 (Modified Alternative), portions of three Plumas ivesia occurrences are present within the 650 Line ROW, on Segments 650-3 and 650-4A in the Martis Valley; none of these occurrences are on NFS land. Implementing Alternative 2 would result in direct removal of Plumas ivesia; however, the alignment would be moved off the TNF parcel containing Plumas ivesia under this alternative so, unlike under Alternative 1, the impact would not occur on NFS lands.

Potential impacts to Galena Creek rockcress and Mingan moonwort would be the same under Alternative 2 as under Alternative 1, Alternative 3, and Alternative 4 because each of these alternatives would involve removal of the existing 625 Line where potential Galena Creek rockcress plants were observed and each of these alternatives would cross through the location of a known Mingan moonwort occurrence on Griff Creek in Segment 650-1/625-10. Under each of these alternatives, the line would span the occupied riparian habitat/SEZ occupied by Mingan moonwort so that impacts to this species would be avoided. As with Alternative 1, undetected TES plants could be directly removed or physically damaged during construction of Alternative 2. Indirect impacts that could result from implementation of Alternative 2 are the same as those described for Alternative 1. However, the disturbance associated with Alternative 2 on NFS lands (up to approximately 140 acres of native vegetation removal and 13.6 miles of new or improved access ways) would be less than Alternative 1. Alternative 2 would also have a high risk of introducing or spreading invasive plants, as described in the IPRA.

The same APMs referenced under Alternative 1 would be incorporated into the project design for Alternative 2 to avoid, minimize, and compensate for potential direct and indirect effects on TES botanical species. Consequently, implementing Alternative 2 would not substantially affect the abundance or distribution, either directly or through habitat modifications, of Plumas ivesia, Mingan moonwort, Galena Creek rockcress, or any other TES botanical species.

### 8.1.3 ROAD FOCUSED ALTERNATIVE (ALTERNATIVE 3)

Under Alternative 3 (Road Focused Alternative), portions of two Plumas ivesia occurrences are present within the 650 Line ROW, on Segments 650-3 and 650-4B in the Martis Valley; none of these occurrences are on NFS land. Implementing Alternative 3 could result in direct removal of Plumas ivesia; however, similar to Alternative 2 but unlike Alternatives 1 and 4, the alignment would be moved off the TNF parcel containing Plumas ivesia under this alternative so the impact would not occur on NFS lands.

Potential impacts to Galena Creek rockcress and Mingan moonwort would be the same under Alternative 3 as under Alternative 1, Alternative 2, and Alternative 4 because each of these alternatives would involve removal of the existing 625 Line where potential Galena Creek rockcress plants were observed and each of these alternatives would cross through the location of a known Mingan moonwort occurrence on Griff Creek in Segment 650-1/625-10. Under each of these alternatives, the line would span the occupied riparian habitat/SEZ occupied by Mingan moonwort so that impacts to this species would be avoided.

Potential impacts to TES plant species would be the same under Alternative 3A (Road Focused Alternative with Double Circuit Option) as under Alternative 3 (Road Focused Alternative), except it would not cross through the location of a known Mingan moonwort occurrence on Griff Creek in Segment 650-1/625-10 because this alternative would eliminate the Segment 650-1/625-10 into a double circuit along SR 267. Alternative 3A is the only action alternative that would not involve a stream crossing in the area where the Mingan moonwort was previously documented; however, it is expected that impacts on the Mingan moonwort population would be avoided by the other action alternatives because the line would span the montane riparian/SEZ habitat where the plants are known to occur. Just as in Alternative 1, undetected TES plants could be directly removed or physically damaged during construction. The types of indirect impacts that could result from implementation of Alternative 3 are the same as those described for Alternative 1. However, Alternative 3 would result in approximately 56 fewer acres of disturbance on NFS lands when compared to Alternative 1. Alternative 3 would disturb up to approximately 104 acres of native vegetation on NFS lands and result in 4.5 miles of new or improved access ways. As described in the IPRA, Alternative 3 would have a moderate risk of introducing or spreading invasive plants.

The same APMs referenced under Alternative 1 would be incorporated into the project design for Alternative 3 or Alternative 3A to avoid, minimize, and compensate for potential direct and indirect effects on TES species. Consequently, implementing Alternative 3 would not substantially affect the abundance or distribution, either directly or through habitat modifications, of *Plumas ivesia*, Mingan moonwort, Galena Creek rockcress, or any other TES botanical species.

## 8.1.4 PROPOSED ALTERNATIVE (ALTERNATIVE 4)

For *Plumas ivesia*, the proposed alternative would result in the same effects discussed above for Alternative 1. Potential impacts to Galena Creek rockcress and Mingan moonwort would also be the same because Alternative 4 also involves removal of the existing 625 Line where potential Galena Creek rockcress plants were observed and would cross through the location of a known Mingan moonwort occurrence on Griff Creek in Segment 650-1/625-10. The line would span the occupied riparian habitat/SEZ occupied by Mingan moonwort so that impacts to this species would be avoided.

Just as in Alternative 1, undetected TES plants could be directly removed or physically damaged during construction. The types of indirect impacts that could result from implementation of Alternative 4 are the same as those described for Alternative 1. However, Alternative would result in up to approximately 106 acres of native vegetation removal (approximately 54 acres fewer than Alternative 1) and 4.5 acres of new or improved access ways. Like Alternative 3 and 3a, Alternative 4 would have a moderate risk of introducing or spreading invasive plants.

The same APMs referenced under Alternative 1 would be incorporated into the project design for Alternative 4 to avoid, minimize, and compensate for potential direct and indirect effects on TES species. Consequently, implementing Alternative 4 would not substantially affect the abundance or distribution, either directly or through habitat modifications, of *Plumas ivesia*, Mingan moonwort, Galena Creek rockcress, or any other TES botanical species.

## 8.2 CUMULATIVE EFFECTS

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).

### 8.2.1 METHODOLOGY

The effects of past and present projects on the environment are reflected by the existing conditions in the project area. In order to understand the contribution of past actions to the cumulative effects of the proposed action and alternatives, this analysis relies on current environmental conditions as a proxy for the impacts of past actions. This is because existing conditions reflect the aggregate impact of all prior human actions and natural events that have affected the environment and might contribute to cumulative effects.

This cumulative effects analysis does not attempt to quantify the effects of past human actions by adding up all prior actions on an action-by-action basis. There are several reasons for not taking this approach. First, a catalog and analysis of all past actions would be impractical to compile and unduly costly to obtain. Current conditions have been impacted by innumerable actions over the last century (and beyond), and trying to isolate the individual actions that continue to have residual impacts would be nearly impossible. Second, providing the details of past actions on an individual basis would not be useful to predict the cumulative effects of the proposed action or alternatives. In fact, focusing on individual actions would be less accurate than looking at existing conditions, because there is limited information on the environmental impacts of individual past actions, and one cannot reasonably identify each and every action over the last century that has contributed to current conditions. Additionally, focusing on the impacts of past human actions risks ignoring the important residual effects of past natural events, which may contribute to cumulative effects just as much as human actions. By looking at current conditions, the residual effects of past human actions and natural events, regardless of which particular action or event contributed those effects, are considered. Finally, the Council on Environmental Quality issued an interpretive memorandum on June 24, 2005 regarding analysis of past actions, which states, “agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions.” For these reasons, the analysis of past actions in this section is based on current environmental conditions.

For the purposes of this cumulative effects analysis, reasonably foreseeable future actions/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.

Appendix C provides the list of probable future projects that meet the requirements stated above; Appendix C also includes a map showing the locations of these projects relative to the project area and the geographic scope of this cumulative effects analysis. Projects that are listed are in the project vicinity and have the possibility of interacting with the proposed project to generate a cumulative impact. 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 Appendix C.

The following briefly summarizes the types of past, present, and foreseeable future actions that have affected or may affect botanical resources within the CalPeco 625 and 650 Electrical Line Upgrade Project area.

## 8.2.2 PAST

The effects of past and present projects on the environment are reflected by the existing conditions in the project area. The general characteristics of past and present projects are discussed further below. Although there was a short lived and unproductive period of silver mining in the project area in the 1860s, a majority of historic environmental effects can be attributed to activities supporting gold mining elsewhere in the Sierra and silver mining in Nevada. The region was heavily logged to provide lumber for the railroads, mining operations, and related development. The demand for commodities from mining operations and other development in the region, and the ability to transport goods via the railroad, supported the establishment of grazing and dairy operations in the project area. Sheep and cattle grazing were prevalent in meadows, grasslands, and other locations where forage was available. Grazing declined into the 20<sup>th</sup> century, although periods of intense logging continued. Although tourism and recreational development were present in the late 19<sup>th</sup> century, these activities did not begin to have a dominant effect on local conditions until the latter half to 20<sup>th</sup> century, transitioning into the recreation/tourism based economy and urban development present today. In part as a response to these cumulative effects from historic activities, in the latter half of the 20<sup>th</sup> century and continuing to the present, habitat restoration projects, vegetation and fuels management projects, and similar activities considered beneficial to natural resources have become more prevalent.

Specific to the CalPeco 625 and 650 Line Upgrade Project, the 650 Line was originally installed in the 1950s and the 625 Line in the 1970s. Infrastructure and ROW established during construction are maintained based on the needs of the utility and current regulatory requirements, with the routes of many aboveground and underground linear utilities in the region visible on the landscape due to the need to prevent establishment of trees in the ROW.

## 8.2.3 PRESENT

Present activities contributing to potential cumulative effects are primarily a continuation of past activities described above for the latter half of the 20<sup>th</sup> century, recreational development and activities, urban development, vegetation and fuels management, aquatic and terrestrial habitat restoration projects, and utility ROW maintenance and operation activities. However, in the more contemporary period, increased land use and environmental regulation has reduced the overall rate of development and the environmental effects of projects while the pace and extent of habitat management and restoration activities have increased.

## 8.2.4 FORESEEABLE FUTURE ACTIONS

Appendix C provides a list and mapped locations of probable future projects. They include recreational development and activities, vegetation and fuels management, urban and commercial development, ROW maintenance and operation activities, and aquatic and terrestrial habitat restoration projects.

## 8.2.5 GENERAL CUMULATIVE EFFECTS

Past and present activities have, to some degree, already altered TES plant occurrences and their habitats. The duration of these impacts may range from short-term (e.g., less than a year), for construction-related effects, to

long-term effects as a result of development and extraction activities. The intensity of effects on TES plants as a result of these actions is largely dependent on the geographic extent and nature of the activity. It would be expected that the intensity of effect from large scale logging activities in the late 1800s and early 1900s (described above) would be high, although there are few scientific records to quantify the effects.

The cumulative environmental effects of past resource extraction and development activities in the project region is reflected in the current conditions, with forest ecosystems expressing the effects of past logging activities, some sensitive habitats showing substantial declines in extent and quality, the increased rarity of some plant and animal species, and the conversion of forest land and other habitat types to other uses.

For all past, present, and foreseeable future actions, effects on TES plants can occur through various mechanisms, including loss or change of suitable habitat by physical disturbance, removal and crushing, introduction of nonnative weed species, changes in vegetation/fire regimes, changes in hydrologic patterns, and adverse effects on pollinators. Alternatively, some of the actions identified might potentially create conditions suitable for TES plants in areas that had not been previously suitable.

As stated previously, future projects can affect TES plants through loss or change of suitable habitat by physical disturbance, removal and crushing, introduction of nonnative weed species, changes in vegetation/fire regimes, changes in hydrologic patterns, and adverse effects on pollinators. Alternatively, some future projects might potentially create conditions suitable for TES species in areas that had not been previously suitable, such as habitat restoration. Implementation of the projects listed in Appendix C, many of which would occur in existing developed areas and would all be subject to environmental review and laws and regulations limiting effects on biological resources, are not expected to result in local extirpation or substantial degradation of special-status plant occurrences, or threaten the species' viability locally or rangewide, individually or cumulatively. All of the projects listed in Appendix C are subject to California Environmental Quality Act (CEQA), TRPA or NEPA review. Under CEQA, any significant direct, indirect, or cumulative impact on special-status species must be mitigated to a less-than-significant level. Similarly, management direction from the applicable NEPA lead agencies (e.g., USFS), and the TRPA Code of Ordinances where applicable, requires analysis and protection of special-status species.

For the proposed action, the entire proposed project area was not surveyed at the intensity of focused protocol-level botanical survey, so risks to TES botanical species were estimated. As discussed previously, some adverse direct or indirect effects are expected as a result of implementation of the proposed CalPeco 625 and 650 Electrical Line Upgrade Project. Construction would decrease the amount of vegetation in the project area, and thereby reduce the overall amount of potential habitat for some TES species. Nonetheless, implementation of applicable APMs are designed to eliminate or reduce possible adverse cumulative impacts by protecting known TES botanical species from direct and indirect impacts by identifying TES occurrences and protecting them *in situ* or, if necessary, compensating for losses by salvaging seed and soil, relocating individuals, and restoring habitat to pre-project conditions. Therefore, in the context of past, present, and future project, the proposed action is not expected to contribute to a loss of species viability for any TES botanical species in the analysis area.

## 8.2.6 CUMULATIVE EFFECTS SPECIFIC TO PLUMAS IVESIA

Calflora (2013) reports approximately 140 total occurrences of *Plumas ivesia* for California, distributed in Plumas, Lassen, El Dorado, Sierra, Nevada, and Placer Counties; however, some of these records may be multiple observations of the same plant populations or duplicate reports from different sources (Calflora 2013). The CNDDDB reports approximately 69 records of *Plumas ivesia* for California. Both of these data sources presumably include historic, nonextant records; therefore, the number of occurrences that are presently extant rangewide and in the analysis area is not clear from these data sources. Urie (2009) recently summarized 59 occurrences of *Plumas ivesia* on National Forest (Tahoe, Plumas, Humboldt-Toiyabe), private, and USACE land, encompassing a total of 1,345 acres and distributed over a range of less than 75 miles. *Plumas ivesia* appears to

be well distributed across its known range; the 59 known occurrences summarized by Urie (2009) are distributed across much of the potential habitat in several of the valleys on the east side of the Sierra Nevada Mountains (Urie 2009).

The general effects discussed above apply to *Plumas ivesia*. In addition, implementing any of the action alternatives could result in loss and disturbance of portions of *Plumas ivesia* occurrences (4 occurrences under Alternatives 1 and 4; 3 occurrences under Alternative 2; and 2 occurrences under Alternative 3) and suitable habitat in the Martis Valley; however, under Alternatives 2 and 3, *Plumas ivesia* would not be affected on NFS lands. Under Alternatives 1 and 2, the area of the *Plumas ivesia* occurrence within the proposed permanent ROW on the TNF parcel is 0.6 acre (out of a total area of approximately 18.7 acres for this occurrence); an additional 0.4 acre of this occurrence is within the proposed temporary construction easement on this parcel. Additionally, two *Plumas ivesia* occurrences are present along an existing dirt road that would be used for access but not improved for the project. The proposed action would disturb portions of 4 known *Plumas ivesia* occurrences; however this represents only 6 percent of the eastern sierra occurrences characterized by Urie (2009). As discussed above, project APMs would be implemented to protect individual plants within the mapped occurrences and to restore disturbed habitat.

One reasonably foreseeable project identified in Appendix C, the Martis Valley Trail, has the potential to also remove or degrade portions of up to approximately five *Plumas ivesia* occurrences in the Martis Valley, as a result of construction activities, hydrologic changes, and off-trail use over the long term. Environmental review completed for that project in 2012 (NFA 2012) concluded that development and use of the Martis Valley Trail would contribute to potential loss of *Plumas ivesia*; however, with implementation of mitigation measures, the project would not contribute to a cumulative loss of *Plumas ivesia*.

Implementation of the projects listed in Appendix C, many of which would occur in existing developed areas and would all be subject to environmental review and laws and regulations limiting effects on biological resources (as discussed previously), are not expected to result in local extirpation or substantial degradation of *Plumas ivesia* or other special-status plant occurrences, or threaten the species' viability locally or rangewide, individually or cumulatively.

## 9 APPLICANT PROPOSED MEASURES

Several APMs have been incorporated into the project design to avoid or minimize potential adverse effects on TES plant species. All applicable APMs are described in Section 3.14, "Applicant Proposed Measures to Minimize Effects," above. The effects analysis and conclusions in this BE assumes implementation of all APMs. APMs will be incorporated into the Mitigation Monitoring, Compliance, and Reporting Program developed for this project, and implementation of the APMs will be monitored in the same fashion as the mitigation measures developed in the EIS/EIS/EIR.

## 10 DETERMINATIONS

The effects determination is based on professional judgment, existing information, including the existing condition of the project area, and the potential impacts of the alternatives. The effects determination is based on an evaluation of all past, present, and foreseeable future actions in combination with the proposed action to determine whether potential direct, indirect, and/or cumulative effects would occur. Even if the potential direct effects are considered negligible, it is possible that the indirect or cumulative effects may influence, to some degree, the viability of affected species.

It is my determination that the CalPeco 625 and 650 Electrical Line Upgrade Project **may affect but is not likely to result in a trend toward Federal listing** or a loss of viability for **Plumas Ivesia** (*Ivesia sericoleuca*). This determination is based on: a) limited but permanent direct effects to known Plumas Ivesia occurrences expected to result from construction of Segments 650-4 and 650-5 through Martis Valley; b) potential indirect effects to suitable habitat along the 650 line; and c) the APMs that would limit impacts to known Plumas Ivesia occurrences and any discovered during construction.

It is my determination that the CalPeco 625 and 650 Electrical Line Upgrade Project **may affect but is not likely to result in a trend toward Federal listing** or a loss of viability for **Galena Creek rockcress** (*Arabis rigidissima* var. *demota*). This determination is based on: a) the presence of known occurrences near Segment 625-9, but outside of the project area; b) potential indirect effects to suitable habitat along the 625 line; and c) the APMs that would limit impacts to any occurrences discovered during construction.

It is my determination that the CalPeco 625 and 650 Electrical Line Upgrade Project **may affect but is not likely to result in a trend toward Federal listing** or a loss of viability for **Mingan moonwort** (*Botrychium minganense*). This determination is based on: a) the presence of a known occurrence in Segment 625-10/650-1 along Griff Creek; and b) the APMs that would limit impacts to any occurrences discovered during construction.

It is my determination that the CalPeco 625 and 650 Electrical Line Upgrade Project **will not affect** the following species:

- ▲ *Botrychium ascendens*, upswept moonwort
- ▲ *Botrychium crenulatum*, scalloped moonwort
- ▲ *Botrychium lunaria*, common moonwort
- ▲ *Botrychium montanum*, western goblin
- ▲ *Bruchia bolanderi*, Bolander's candle moss
- ▲ *Dendrocollybia racemosa*, branched collybia
- ▲ *Erigeron miser*, starved daisy
- ▲ *Eriogonum umbellatum* var. *torreyanum*, Donner Pass buckwheat
- ▲ *Hulsea brevifolia*, short-leaved hulsea
- ▲ *Juncus luciensis*, Santa Lucia dwarf rush

This determination is based on: a) the lack of known occurrences in the project area; b) the negligible probability of affecting suitable habitat; and c) the APMs that would limit impacts to any occurrences discovered during construction.

It is my determination that the CalPeco 625 and 650 Electrical Line Upgrade Project **will not affect any other Threatened, Endangered, Proposed, or Candidate species or any other Region 5 Sensitive species** (other than those discussed above). This determination is based on the lack of occurrences known or expected to occur within the project area and the absence of suitable habitat within the project area.

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# **Appendix A**

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**Plant Species Observed in the  
Project Area  
During 2012 Surveys**

Plant Species Observed along the 625 and 650 Electrical Lines June-July, 2012		
Scientific Name	Common Name	Wetland Indicator Status (USACE 2012)
<i>Abies concolor</i>	White fir	NL
<i>Abies magnifica</i>	Red fir	NL
<i>Acer glabrum</i>	Mountain maple	FACU
<i>Achillea millefolium</i>	Yarrow	FACU
<i>Acmispon americanus</i> ( <i>Lotus purshianus</i> )	Spanish lotus	NL
<i>Acmipson brachycarpus</i> ( <i>Lotus humistratus</i> )	Short-pod lotus	NL
<i>Aconitum columbianum</i>	Columbian monkshood	FACW
<i>Agoseris glauca</i>	Pale dandelion	FAC
<i>Agoseris grandiflora</i>	Large-flowered agoseris	NL
<i>Agoseris heterophylla</i>	Annual mountain dandelion	NL
<i>Agoseris retrorsa</i>	Spearleaf mountain dandelion	NL
<i>Agropyron cristatum</i>	Crested wheat grass	NL
<i>Agrostis exarata</i>	Spike bentgrass	FACW
<i>Agrostis idahoensis</i>	Idaho bentgrass	FACW
<i>Agrostis thurberiana</i>	Thurber's bentgrass	FACW
<i>Allium campanulatum</i>	Sierra onion	NL
<i>Allophyllum divaricatum</i>	Divaricate allophyllum	NL
<i>Alnus incana ssp. tenuifolia</i>	Mountain alder	FACW
<i>Alopecurus pratensis</i>	Meadow foxtail	FAC
<i>Amaranthus albus</i>	Pigweed amaranth	FACU
<i>Ambrosia acanthicarpa</i>	Annual bur sage	NL
<i>Amelanchier alnifolia</i>	Smooth serviceberry	FACU
<i>Amelanchier utahensis</i>	Utah serviceberry	NL
<i>Anaphalis margaritacea</i>	Pearly everlasting	NL
<i>Angelica breweri</i>	Brewer's angelica	NL
<i>Antennaria geyeri</i>	Mountain pussytoes	NL
<i>Apocynum androsaemifolium</i>	Spreading dogbane	FACU
<i>Aquilegia formosa</i>	Crimson columbine	FAC
<i>Arabis sp.<sup>1</sup></i>	Rockcress	NL
<i>Arctostaphylos nevadensis</i>	Pinemat manzanita	NL
<i>Arctostaphylos patula</i>	Greenleaf manzanita	NL
<i>Arctostaphylos viscida</i>	Whiteleaf manzanita	NL
<i>Arceuthobium campylopodon</i>	Western dwarf-mistletoe	NL
<i>Arnica chamissonis</i>	Chamisso arnica	FACW
<i>Arnica cordifolia</i>	Heartleaf arnica	NL
<i>Arnica mollis</i>	Hairy arnica	FAC
<i>Artemisia arbuscula ssp. arbuscula</i>	Low sagebrush	NL
<i>Artemisia cana ssp. bolanderi</i>	silver sagebrush	FACW
<i>Artemisia douglasiana</i>	Mugwort	FACW

Plant Species Observed along the 625 and 650 Electrical Lines June-July, 2012		
Scientific Name	Common Name	Wetland Indicator Status (USACE 2012)
<i>Artemisia tridentata</i>	big sagebrush	NL
<i>Astragalus purshii</i> var. <i>tinctus</i>	Woollypod milkvetch	NL
<i>Balsamorhiza sagittata</i>	Balsamroot	NL
<i>Bistorta bistortoides</i> ( <i>Polygonum bistortoides</i> )	American bistort	FACW
<i>Boechera elkoensis</i> ( <i>Arabis platysperma</i> var. <i>platysperma</i> )	Broad-seeded rockcress	NL
<i>Boechera pendulocarpa</i> <i>Arabis holboellii</i> var. <i>pendulocarpa</i>	Dropseed rockcress	NL
<i>Boechera rectissima</i> ( <i>Arabis rectissima</i> var. <i>rectissima</i> )	Bristly leaf rockcress	NL
<i>Boechera retrofracta</i> ( <i>Arabis holboellii</i> var. <i>retrofracta</i> )	Reflexed rockcress	FACU
<i>Bromus carinatus</i> var. <i>marginatus</i>	Mountain brome	NL
<i>Bromus tectorum</i>	cheatgrass	NL
<i>Calocedrus decurrens</i>	Incense cedar	NL
<i>Calochortus leichtlinii</i>	Leichtlin's mariposa lily	NL
<i>Calyptridium umbellatum</i>	Pussy paws	NL
<i>Cardamine cordifolia</i>	Heartleaf bittercress	FACW
<i>Carex athrostachya</i>	Slender beak sedge	FACW
<i>Carex angustata</i>	widefruit sedge	FACW
<i>Carex nebrascensis</i>	Nebraska sedge	OBL
<i>Carex pellita</i>	Woolly sedge	NL
<i>Carex praegracilis</i>	clustered field sedge	FACW
<i>Carex utriculata</i>	beaked sedge	OBL
<i>Castilleja applegatei</i>	Wavy-leaved paintbrush	NL
<i>Castilleja miniata</i> ssp. <i>miniata</i>	Scarlet Indian paintbrush	FAC
<i>Castilleja pilosa</i>	Parrothead Indian paintbrush	NL
<i>Ceanothus cordulatus</i>	Mountain whitethorn	NL
<i>Ceanothus prostratus</i>	Mahala mat	NL
<i>Ceanothus velutinus</i>	Tobacco brush	NL
<i>Centaurea cyanus</i>	Bachelor's button	FACU
<i>Chaenactis douglasii</i> var. <i>douglasii</i>	Dusty maidens	NL
<i>Chamerion angustifolium</i> ( <i>Epilobium angustifolium</i> )	Fireweed	FACU
<i>Chenopodium album</i>	Lamb's quarters	FACU
<i>Chrysolepis sempervirens</i>	Sierra chinquapin	NL
<i>Chrysothamnus nauseosus</i>	Rubber rabbitbrush	NL
<i>Chrysothamnus viscidiflorus</i>	Stickyleaf rabbitbrush	NL
<i>Cicuta douglasii</i>	Western water hemlock	OBL
<i>Cirsium</i> sp. <sup>1</sup>	thistle	-
<i>Cirsium andersonii</i>	Anderson's thistle	NL

Plant Species Observed along the 625 and 650 Electrical Lines June-July, 2012		
Scientific Name	Common Name	Wetland Indicator Status (USACE 2012)
<i>Cirsium scariosum</i>	Elk thistle	FAC
<i>Cirsium vulgare</i>	Bull thistle	FACU
<i>Collomia grandiflora</i>	Large-flowered collomia	NL
<i>Collomia linearis</i>	Tiny trumpet	FACU
<i>Collomia tinctoria</i>	Staining collomia	NL
<i>Conium maculatum</i>	Poison hemlock	FAC
<i>Convolvulus arvensis</i>	Field bindweed	NL
<i>Cornus sericea</i>	American dogwood	NL
<i>Crepis occidentalis</i>	Western hawksbeard	NL
<i>Cryptantha affinis</i>	Slender cryptantha	NL
<i>Cryptantha echinella</i>	Hedgehog cryptantha	NL
<i>Cytisus scoparius</i>	Scotch broom	NL
<i>Dactylis glomerata</i>	Orchardgrass	FACU
<i>Danthonia unispicata</i>	One spike oatgrass	NL
<i>Delphinium sp.</i> <sup>1</sup>	Larkspur	-
<i>Delphinium depauperatum</i>	Few-flowered larkspur	NL
<i>Delphinium glaucum</i>	Sierra larkspur	FACW
<i>Deschampsia cespitosa ssp. cespitosa</i>	Tufted hairgrass	FACW
<i>Deschampsia danthonioides</i>	Annual hairgrass	FACW
<i>Dodecatheon jeffreyi</i>	Sierra shooting star	FACW
<i>Drymocallis glandulosa</i> ( <i>Potentilla glandulosa</i> )	Sticky cinquefoil	FAC
<i>Drymocallis gracilis</i> ( <i>Potentilla gracilis</i> )	Slender cinquefoil	FAC
<i>Eleocharis acicularis</i>	Needle spikerush	OBL
<i>Eleocharis macrostachya</i>	Common spikerush	NL
<i>Elodea canadensis</i>	Canadian waterweed	OBL
<i>Elymus elymoides</i>	Squirreltail	FACU
<i>Elymus glaucus ssp. glaucus</i>	Blue wildrye	NL
<i>Elymus hispidus</i> ( <i>Elytrigia intermedia</i> )	Intermediate wheatgrass	NL
<i>Elymus trachycaulus</i>	Slender wheatgrass	NL
<i>Epilobium brachycarpum</i>	Tall annual willowherb	NL
<i>Epilobium ciliatum</i>	Fringed willowherb	FACW
<i>Epilobium glaberrimum</i>	Glaucous willowherb	FACW
<i>Epilobium torreyi</i>	Torrey's willowherb	FACW
<i>Equisetum hyemale</i>	Scouringrush horsetail	FACW
<i>Eriogonum heracleoides var. heracleoides</i> <sup>2</sup>	Parsnip-flowered buckwheat	NL
<i>Eriogonum nudum var. nudum</i>	Naked buckwheat	NL
<i>Eriogonum umbellatum var. nevadense</i>	Nevada buckwheat	NL
<i>Eriogonum spergulinum</i>	Redding buckwheat	NL

Plant Species Observed along the 625 and 650 Electrical Lines June-July, 2012		
Scientific Name	Common Name	Wetland Indicator Status (USACE 2012)
<i>Erodium cicutarium</i>	Redstem stork's bill	NL
<i>Erysimum capitatum</i>	Western wallflower	NL
<i>Eucephalus breweri</i> ( <i>Aster breweri</i> )	Brewer's aster	NL
<i>Festuca idahoensis</i>	Idaho fescue	FACU
<i>Fragaria virginiana</i>	Mountain strawberry	FACU
<i>Fritillaria atropurpurea</i>	Mountain fritillary	NL
<i>Galium trifidum</i>	Threepetal bedstraw	FACW
<i>Gayophytum diffusum</i>	Spreading groundsmoke	NL
<i>Geranium californicum</i>	California cranesbill	FAC
<i>Geranium richardsonii</i>	Richardson's geranium	FAC
<i>Geum macrophyllum</i>	Big-leaf avens	FACW
<i>Glyceria borealis</i>	Boreal manna grass	OBL
<i>Glyceria elata</i>	Tall mannagrass	OBL
<i>Gnaphalium palustre</i>	Western marsh cudweed	FACW
<i>Hackelia floribunda</i>	Many flowered stickseed	FACU
<i>Heracleum maximum</i> ( <i>Heracleum lanatum</i> )	Cow parsnip	FAC
<i>Hieracium albiflorum</i>	White-flowered hawkweed	NL
<i>Hordeum brachyantherum</i>	Meadow barley	FACW
<i>Hordeum jubatum</i>	Foxail barley	FACW
<i>Hosackia crassifolia</i> var. <i>crassifolia</i> ( <i>Lotus crassifolius</i> )	Big deervetch	NL
<i>Hosackia oblongifolia</i> var. <i>oblongifolia</i> ( <i>Lotus oblongifolius</i> var. <i>oblongifolius</i> )	Streambank bird's foot trefoil	OBL
<i>Hosackia pinnata</i> ( <i>Lotus pinnatus</i> )	Meadow bird's foot trefoil	FACW
<i>Hypericum formosum</i>	St. Johnswort	NL
<i>Hypericum perforatum</i>	Klamath weed	FACU
<i>Ipomopsis aggregata</i>	Scarlet gilia	NL
<i>Ivesia sericoleuca</i>	Plumas ivesia	FAC
<i>Juncus balticus</i>	Baltic rush	OBL
<i>Juncus bufonius</i>	Toad rush	FACW
<i>Juncus macrandrus</i>	Longanther rush	OBL
<i>Juncus mexicanus</i>	Mexican rush	FACW
<i>Juniperus communis</i>	Dwarf juniper	UPL
<i>Juniperus occidentalis</i>	Western juniper	NL
<i>Kelloggia galioides</i>	Kelloggia	NL
<i>Lactuca serriola</i>	Prickly lettuce	FACU
<i>Lemna</i> sp.	Duckweed	OBL
<i>Lepidium densiflorum</i>	Common pepperweed	FACU
<i>Leptosiphon ciliata</i>	Whiskerbrush	NL

Plant Species Observed along the 625 and 650 Electrical Lines June-July, 2012		
Scientific Name	Common Name	Wetland Indicator Status (USACE 2012)
<i>(Linanthus ciliata)</i>		
<i>Leptosiphon harknessii</i> <i>(Linanthus harknessii)</i>	Harkness' flaxflower	NL
<i>Leucanthemum vulgare</i>	Oxe eye daisy	FACU
<i>Ligusticum grayi</i>	Gray's lovage	FAC
<i>Lilium parvum</i>	Sierra tigerlily	OBL
<i>Linaria vulgaris</i>	Butter and eggs	NL
<i>Lomatium sp.</i> <sup>1</sup>	Lomatium	-
<i>Lotus corniculatus</i>	Bird's foot trefoil	FAC
<i>Lupinus albicaulis</i>	Sickle-keeled lupine	NL
<i>Lupinus argenteus</i>	Silvery lupine	NL
<i>Lupinus lepidus var. sellulus</i>	Dwarf tiny lupine	NL
<i>Lupinus polyphyllus</i>	Bigleaf lupine	FAC
<i>Luzula comosa</i>	Pacific woodrush	FAC
<i>Madia gracilis</i>	Slender madia	NL
<i>Madia glomerata</i>	Mountain tarweed	FACU
<i>Maianthemum racemosus</i> <i>(Smilacina racemosa)</i>	False Solomon's seal	FAC
<i>Maianthemum stellatum</i> <i>(Smilacina stellata)</i>	Starry false lily of the valley	FAC
<i>Melilotus albus</i>	White sweetclover	NL
<i>Melilotus indicus</i>	Sweet clover	FACU
<i>Melilotus officinalis</i>	Yellow sweet clover	FACU
<i>Mentha arvensis</i>	Field mint	FACW
<i>Mentzelia dispersa</i>	Nada stickleaf	NL
<i>Mentzelia montana</i>	Mountain blazing star	NL
<i>Mertensia ciliata</i>	Streamside bluebells	FACW
<i>Microsteris gracilis</i> <i>(Phlox gracilis)</i>	Slender phlox	FACU
<i>Mimulus guttatus</i>	Seep monkeyflower	OBL
<i>Mimulus primuloides</i>	Primrose monkeyflower	OBL
<i>Mimulus torreyi</i>	Torrey's monkeyflower	NL
<i>Monardella odoratissima</i>	Mountain monardella	FACU
<i>Muhlenbergia richardsonis</i>	Mat muhly	FAC
<i>Nasturtium officinale</i>	Watercress	OBL
<i>Navarretia breweri</i>	Brewer's navarretia	FAC
<i>Navarretia intertexta ssp. propinqua</i>	near navarretia	FAC
<i>Navarretia leptalea ssp. leptalea</i>	Bridge's gilia	NL
<i>Osmorhiza berteroi</i>	Sweetcicely	FACU
<i>Paeonia brownii</i>	Brown's peony	NL
<i>Pedicularis semibarbata</i>	Pine lousewort	NL

Plant Species Observed along the 625 and 650 Electrical Lines June-July, 2012		
Scientific Name	Common Name	Wetland Indicator Status (USACE 2012)
<i>Penstemon deustus</i>	Scabland penstemon	NL
<i>Penstemon gracilentus</i>	Slender penstemon	NL
<i>Penstemon heterophyllus</i>	Foothill penstemon	NL
<i>Penstemon laetus</i>	Mountain blue penstemon	NL
<i>Penstemon newberryi</i>	Pride of the mountain	NL
<i>Penstemon rydbergii</i>	Rydberg's penstemon	FACU
<i>Penstemon speciosus</i>	Showy penstemon	NL
<i>Perideridia parishii</i>	Parish's yampah	FAC
<i>Phacelia hastata</i>	Mountain phacelia	NL
<i>Phacelia hydrophylloides</i>	Waterleaf phacelia	NL
<i>Phacelia humilis</i>	Low phacelia	NL
<i>Phleum alpinum</i>	Alpine timothy	FAC
<i>Phlox diffusa</i>	Spreading phlox	NL
<i>Phlox gracilis</i>	Slender phlox	NL
<i>Pinus contorta</i>	Lodgepole pine	NL
<i>Pinus jeffreyi</i>	Jeffrey pine	NL
<i>Pinus lambertiana</i>	Sugar pine	NL
<i>Pinus monticola</i>	Western white pine	FACU
<i>Pinus ponderosa</i>	Ponderosa pine	FACU
<i>Plagiobothrys cusickii</i>	Cusick's popcorn flower	NL
<i>Plantago lanceolata</i>	Narrowleaf plantain	FAC
<i>Platanthera leucostachys</i>	Sierra rein orchid	NL
<i>Poa bulbosa</i>	Bulbous bluegrass	NL
<i>Poa pratensis</i>	Kentucky bluegrass	FAC
<i>Poa secunda</i>	Pine bluegrass	NL
<i>Polemonium occidentale</i>	Western polemonium	OBL
<i>Polygonum arenastrum</i>	Oval-leaf knotweed	FAC
<i>Polygonum douglasii</i>	Douglas' knotweed	FACU
<i>Polygonum polygaloides ssp. kelloggii</i>	Kellogg's knotweed	FACW
<i>Polygonum parryi</i>	Parry's knotweed	FAC
<i>Populus tremuloides</i>	Quaking aspen	FAC
<i>Poteridium annuum</i> ( <i>Sanguisorba occidentalis</i> )	Western burnet	NL
<i>Prunus emarginata</i>	Bitter cherry	FACU
<i>Psilocarphus brevissimus var. brevissimus</i>	Short woollyheads	FACW
<i>Pseudotsuga menziesii</i>	Douglas fir	FAC
<i>Pseudostellaria jamesiana</i>	Sticky starwort	NL
<i>Pteridium aquilinum</i>	Western brackenfern	FACU
<i>Pterospora andromedea</i>	Pine drops	NL
<i>Purshia tridentata</i>	Antelope bitterbrush	NL
<i>Pyrola picta</i>	Wintergreen	NL

Plant Species Observed along the 625 and 650 Electrical Lines June-July, 2012		
Scientific Name	Common Name	Wetland Indicator Status (USACE 2012)
<i>Quercus vaccinifolia</i>	Huckleberry oak	NL
<i>Ranunculus occidentalis</i>	Western buttercup	FACW
<i>Ribes cereum</i>	Wax currant	NL
<i>Ribes nevadense</i>	Sierra currant	FAC
<i>Ribes roezlii</i> var. <i>roezlii</i>	Sierra gooseberry	NL
<i>Rosa woodsii</i>	Wood's rose	FACU
<i>Rubus parviflorus</i>	Thimbleberry	FACU
<i>Rumex crispus</i>	Curly dock	FAC
<i>Rumex salicifolius</i>	Willow dock	FACW
<i>Salix geyeriana</i>	Geyer's willow	FACW
<i>Salix lemmonii</i>	Lemmon's willow	OBL
<i>Salix scouleriana</i>	Scouler's willow	FAC
<i>Sarcodes sanguinea</i>	Snowplant	NL
<i>Scrophularia californica</i>	Bee plant	FAC
<i>Senecio integerrimus</i>	Mountain butterweed	FACU
<i>Senecio triangularis</i>	Arrowleaf ragwort	FACW
<i>Sidalcea glaucescens</i>	Glaucus checker mallow	NL
<i>Sidalcea oregana</i> ssp. <i>spicata</i>	Oregon checkerbloom	OBL
<i>Sisymbrium altissimum</i>	Tumble mustard	FACU
<i>Sisyrinchium bellum</i>	Blue-eyed grass	FACW
<i>Solidago canadensis</i>	Canada goldenrod	NL
<i>Stachys rigida</i>	Rough hedge nettle	FACW
<i>Stellaria longipes</i>	Longstalk starwort	FACW
<i>Stipa occidentalis</i> var. <i>californica</i> ( <i>Achnatherum occidentale</i> ssp. <i>californicum</i> )	California needlegrass	NL
<i>Symphoricarpos mollis</i>	Creeping snowberry	NL
<i>Symphoricarpos rotundifolius</i> var. <i>rotundifolius</i>	Mountain snowberry	NL
<i>Symphyotrichum foliaceum</i> ( <i>Aster foliaceus</i> )	Alpine leafybract aster	NL
<i>Symphoritrichum spathulatum</i> var. <i>spathulatum</i> ( <i>Aster occidentalis</i> var. <i>occidentalis</i> )	Western mountain aster	FAC
<i>Taraxacum officinale</i>	Common dandelion	FACU
<i>Taraxia subacaulis</i> ( <i>Camissonia subacaulis</i> )	Stemless suncup	FACW
<i>Thalictrum fendleri</i>	Fendler's meadow rue	FAC
<i>Thalictrum sparsiflorum</i>	Few-flowered meadow rue	FAC
<i>Tragopogon dubius</i>	Yellow salsify	NL
<i>Trifolium cyathiferum</i>	Bowl clover	FAC
<i>Trifolium longipes</i>	Longstalk clover	FAC
<i>Trifolium monanthum</i>	Mountain carpet clover	FAC

Plant Species Observed along the 625 and 650 Electrical Lines June-July, 2012		
Scientific Name	Common Name	Wetland Indicator Status (USACE 2012)
<i>Trifolium pratense</i>	Red clover	FACU
<i>Trifolium productum</i>	Productive clover	FAC
<i>Trifolium repens</i>	White clover	FAC
<i>Trifolium variegatum</i>	White-tipped clover	FAC
<i>Urtica dioica</i>	Stinging nettle	FACW
<i>Valeriana californica</i>	California valerian	NL
<i>Verbascum thapsus</i>	Woolly mullein	NL
<i>Veratrum californicum</i>	California corn lily	FAC
<i>Veronica americana</i>	American speedwell	OBL
<i>Viola lobata</i>	Pine violet	NL
<i>Viola macloskeyi</i>	Macloskey's violet	OBL
<i>Viola purpurea ssp. purpurea</i>	Goosefoot violet	NL
<i>Wyethia mollis</i>	Woolly mule ears	NL

Source: Ascent 2012, POWER 2012

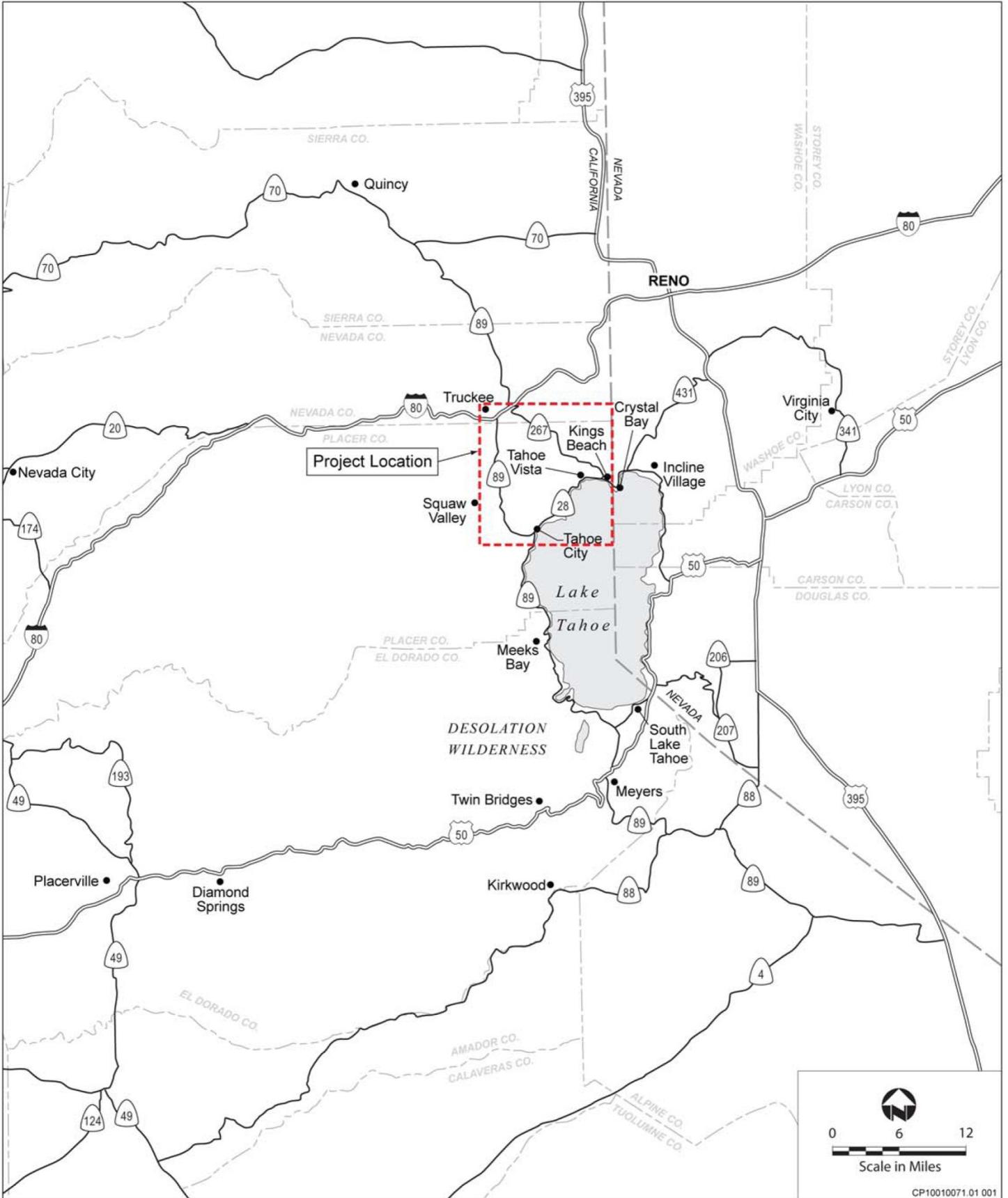
<sup>1</sup> Plants were not flowering at the time of the survey and could not be positively identified.

<sup>2</sup> This species is not previously documented in the Sierra Nevada and is known only from the Warner Mountains where it is locally common. It may have been planted by Caltrans as it was growing along the shoulder of 267.

# **Appendix B**

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**Exhibits and Maps**

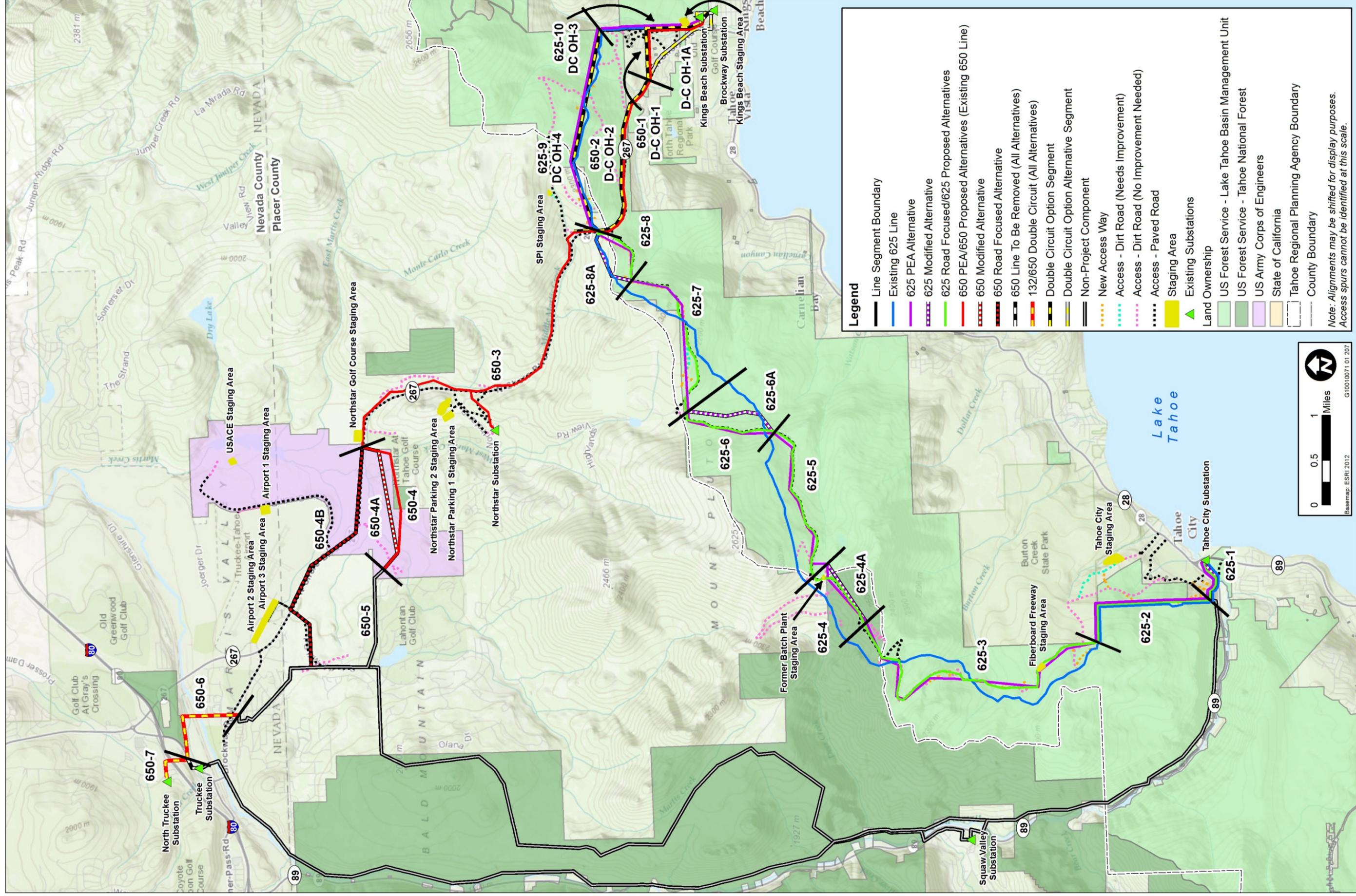


Source: Adapted by Ascent in 2012

**Exhibit 1**

**Project Vicinity**



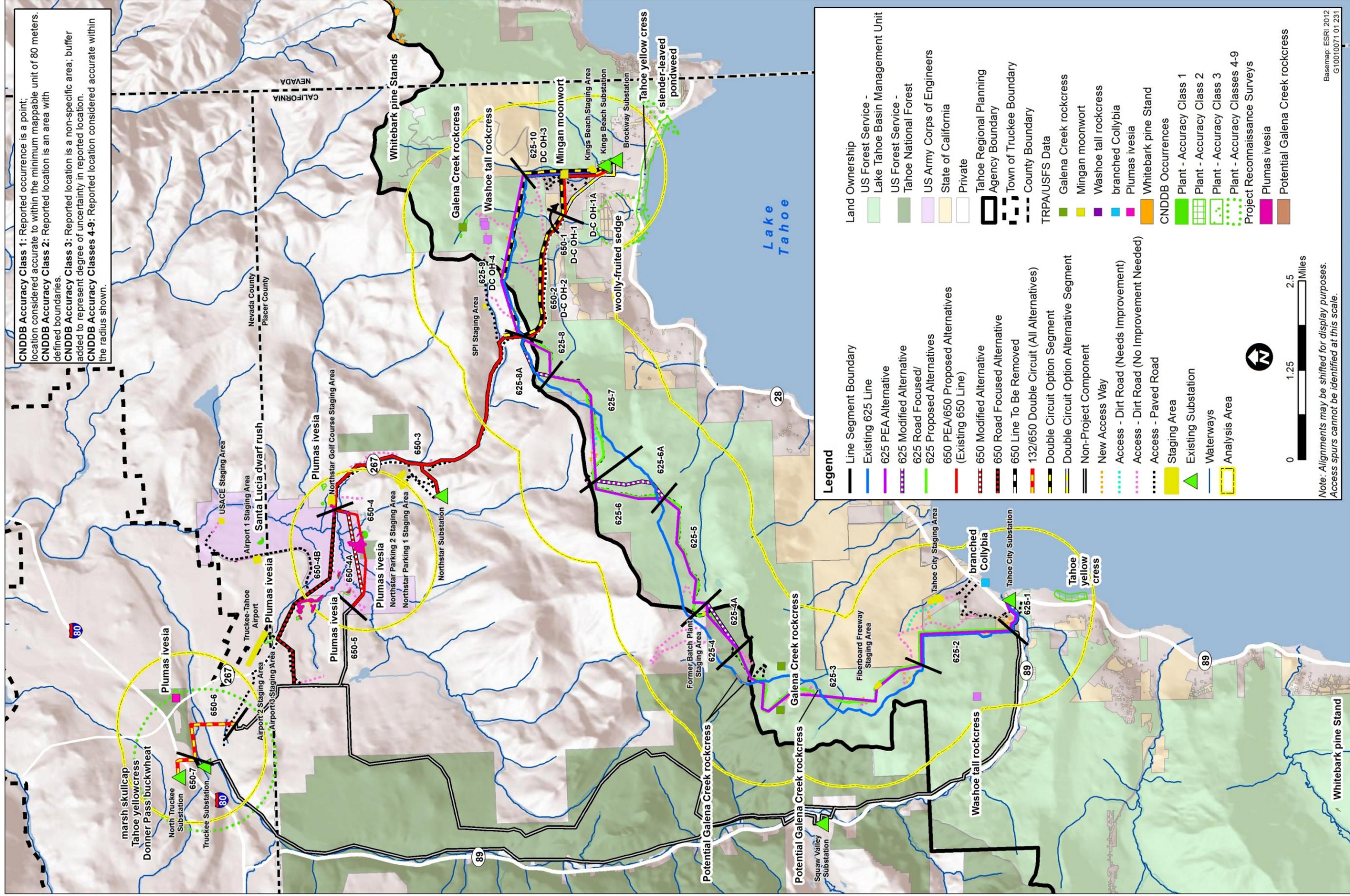


Source: Trisage 2012

Exhibit 2

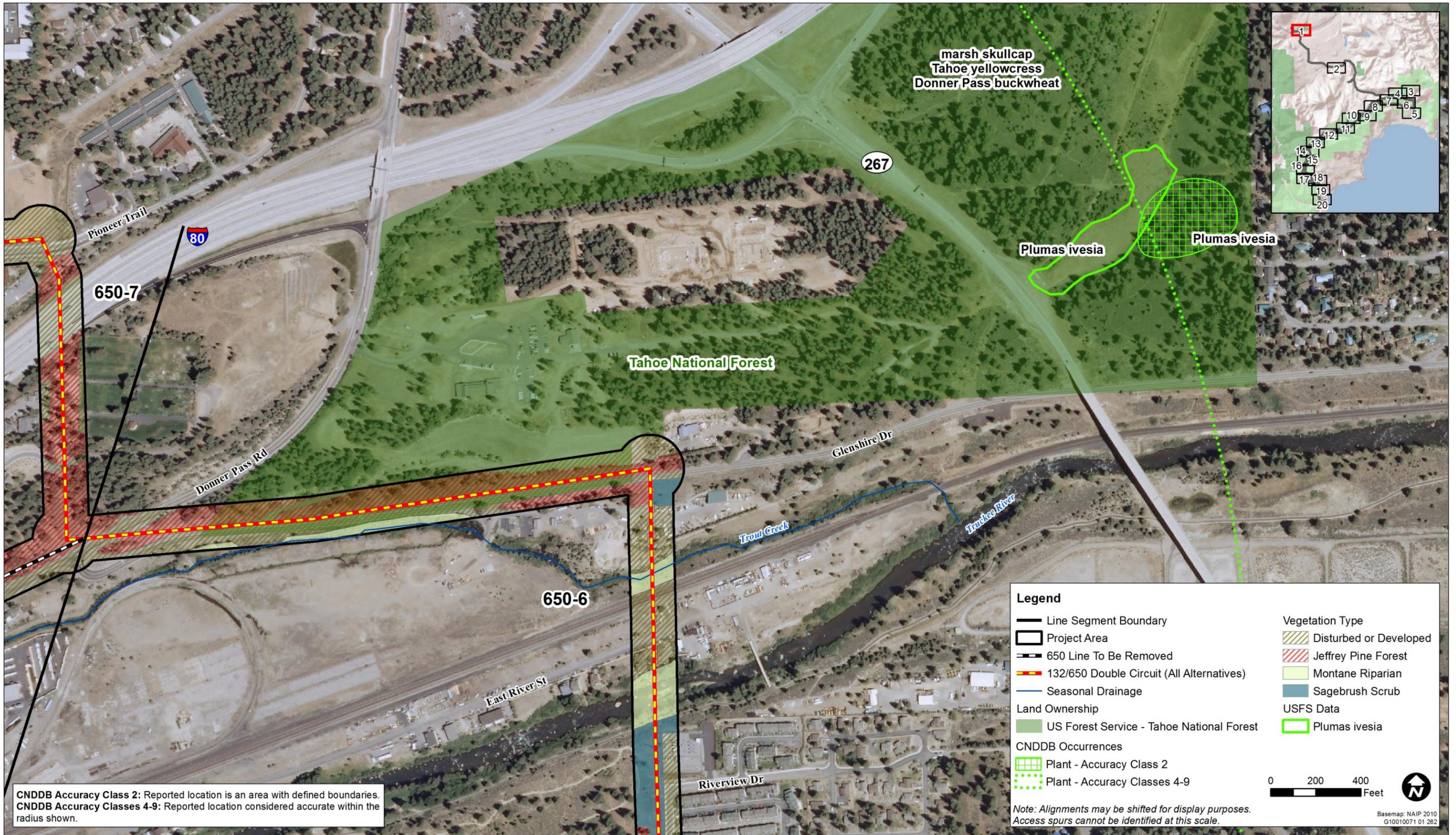
Project Overview Map





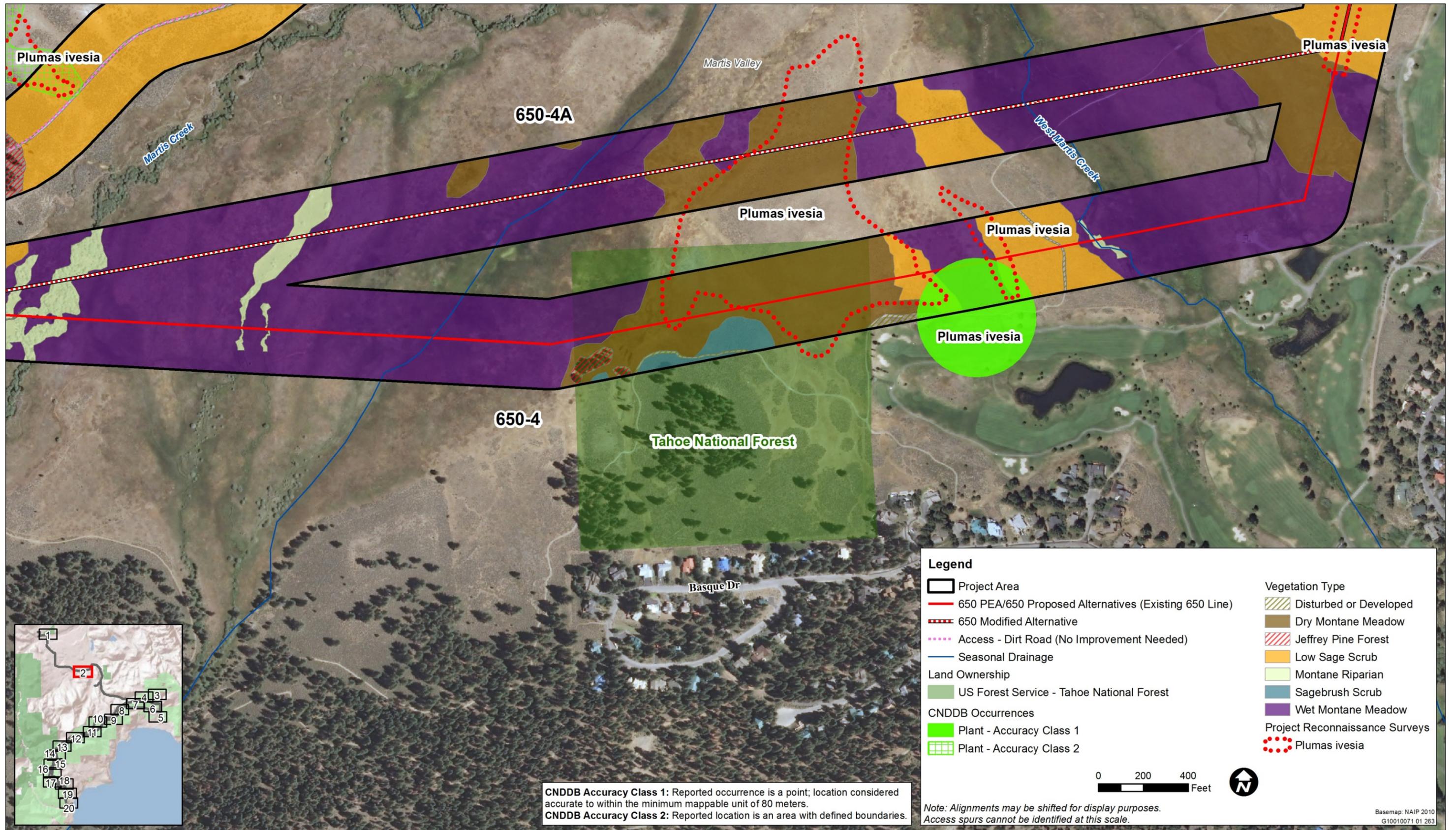
CNDDDB Accuracy Class 1: Reported occurrence is a point; location considered accurate to within the minimum mappable unit of 80 meters.  
 CNDDDB Accuracy Class 2: Reported location is an area with defined boundaries.  
 CNDDDB Accuracy Class 3: Reported location is a non-specific area; buffer added to represent degree of uncertainty in reported location.  
 CNDDDB Accuracy Classes 4-9: Reported location considered accurate within the radius shown.

Source: Data provided by CNDDDB, Insignia Environmental, Placer County, TRPA, and USFS; adapted by Ascent Environmental in 2012



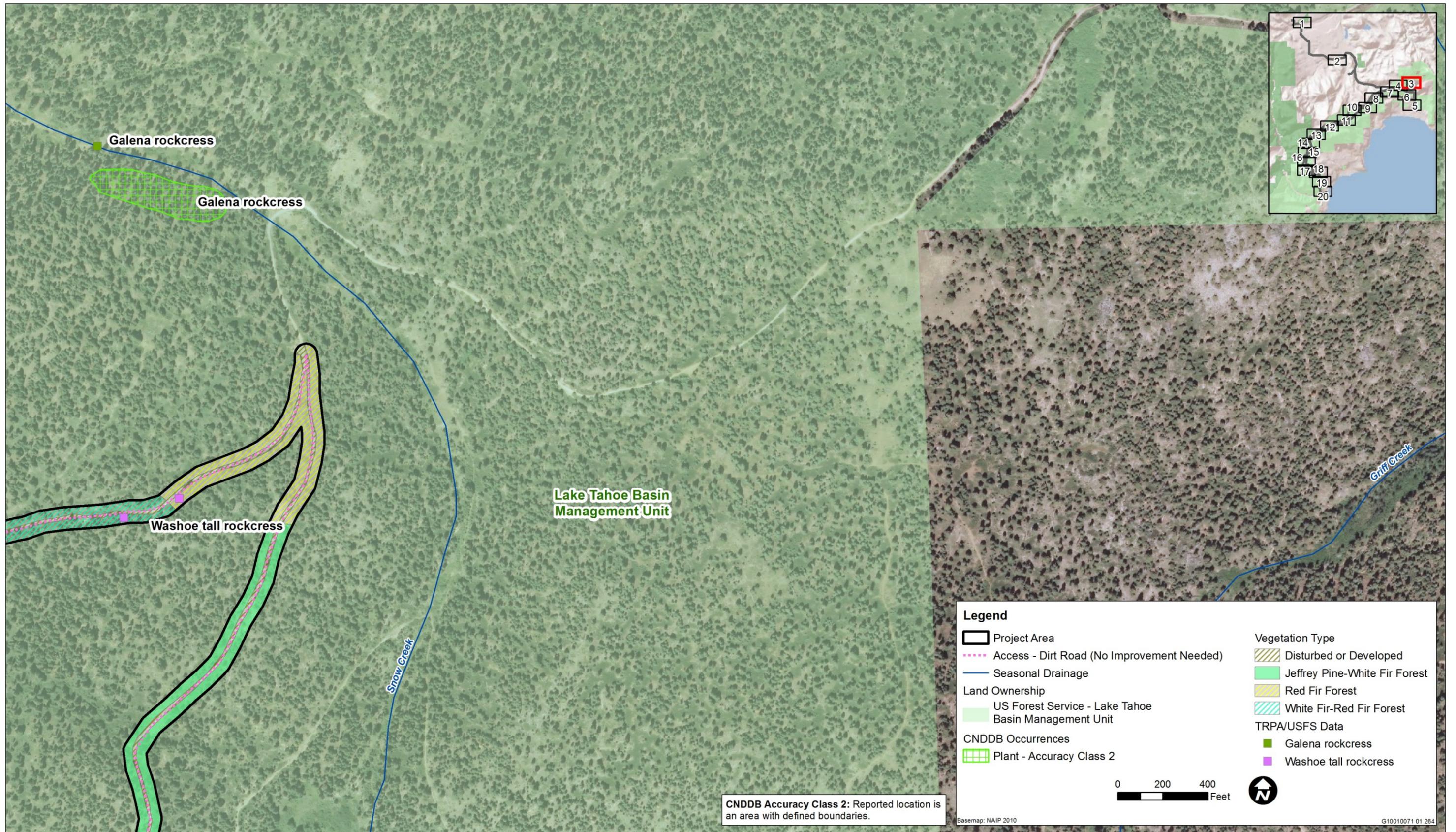
Source: Data provided by Ascent, CNDDB, POWER, TriSage, TRPA, and USFS in 2012; adapted by Ascent Environmental in 2012

Exhibit 4.1



Source: Data provided by Ascent, CNDDDB, POWER, TriSage, TRPA, and USFS in 2012; adapted by Ascent Environmental in 2012

Exhibit 4.2



Source: Data provided by Ascent, CNDDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012

Exhibit 4.3

**Legend**

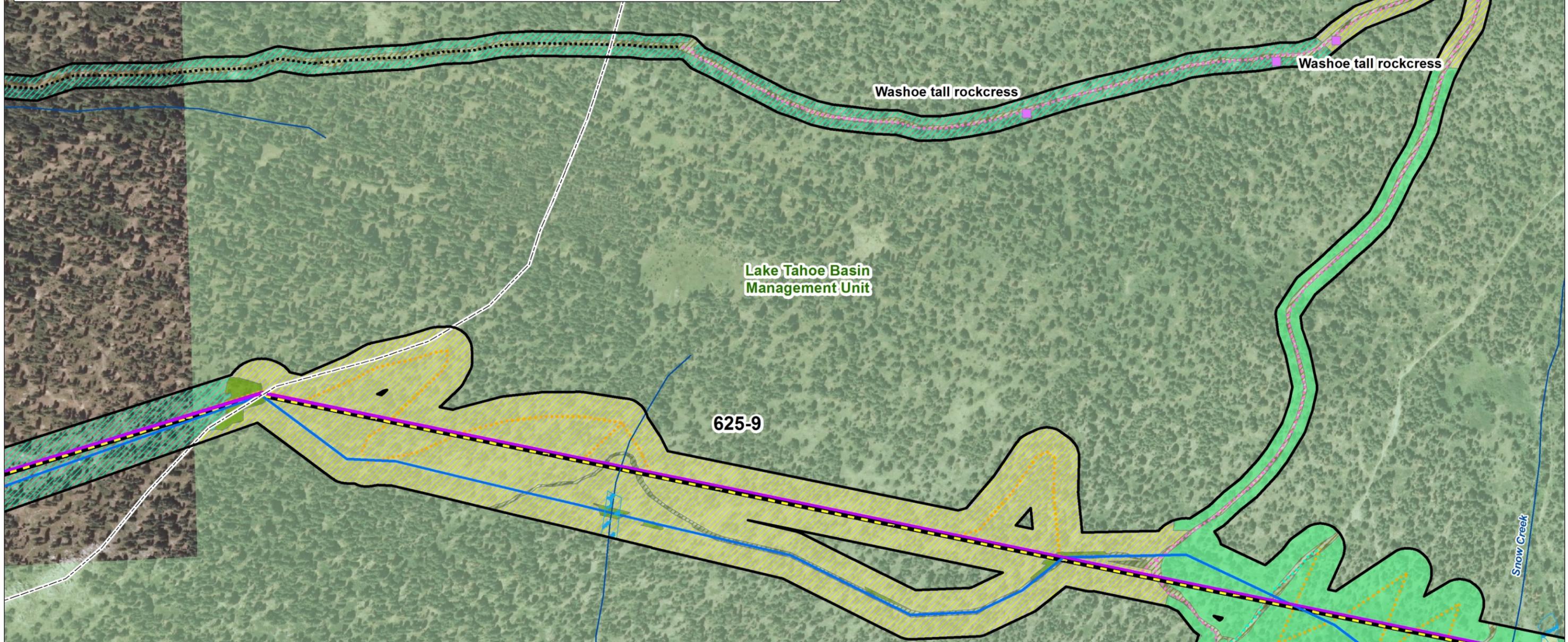
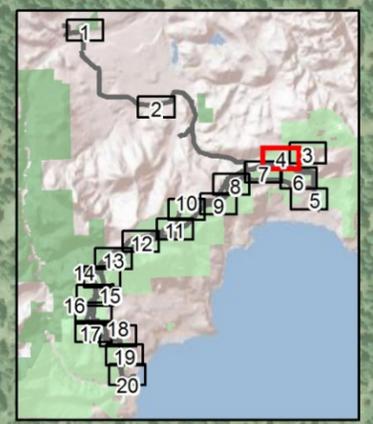
- Project Area
- Existing 625 Line
- 625 PEA Alternative
- Double Circuit Option Segment
- New Access Road
- Access - Dirt Road (Needs Improvement)
- Access - Dirt Road (No Improvement Needed)
- Access - Paved Road
- Seasonal Drainage
- Stream Environment Zone (SEZ)
- Land Ownership
  - US Forest Service - Lake Tahoe Basin Management Unit
  - Tahoe Regional Planning Agency Boundary
- Vegetation Type
  - Disturbed or Developed
  - Jeffrey Pine-White Fir Forest
  - Montane Chaparral
  - Montane Riparian
  - Red Fir Forest
  - White Fir-Red Fir Forest
- TRPA/USFS Data
  - Washoe tall rockcress

0 200 400 Feet

Note: Alignments may be shifted for display purposes.  
Access spurs cannot be identified at this scale.

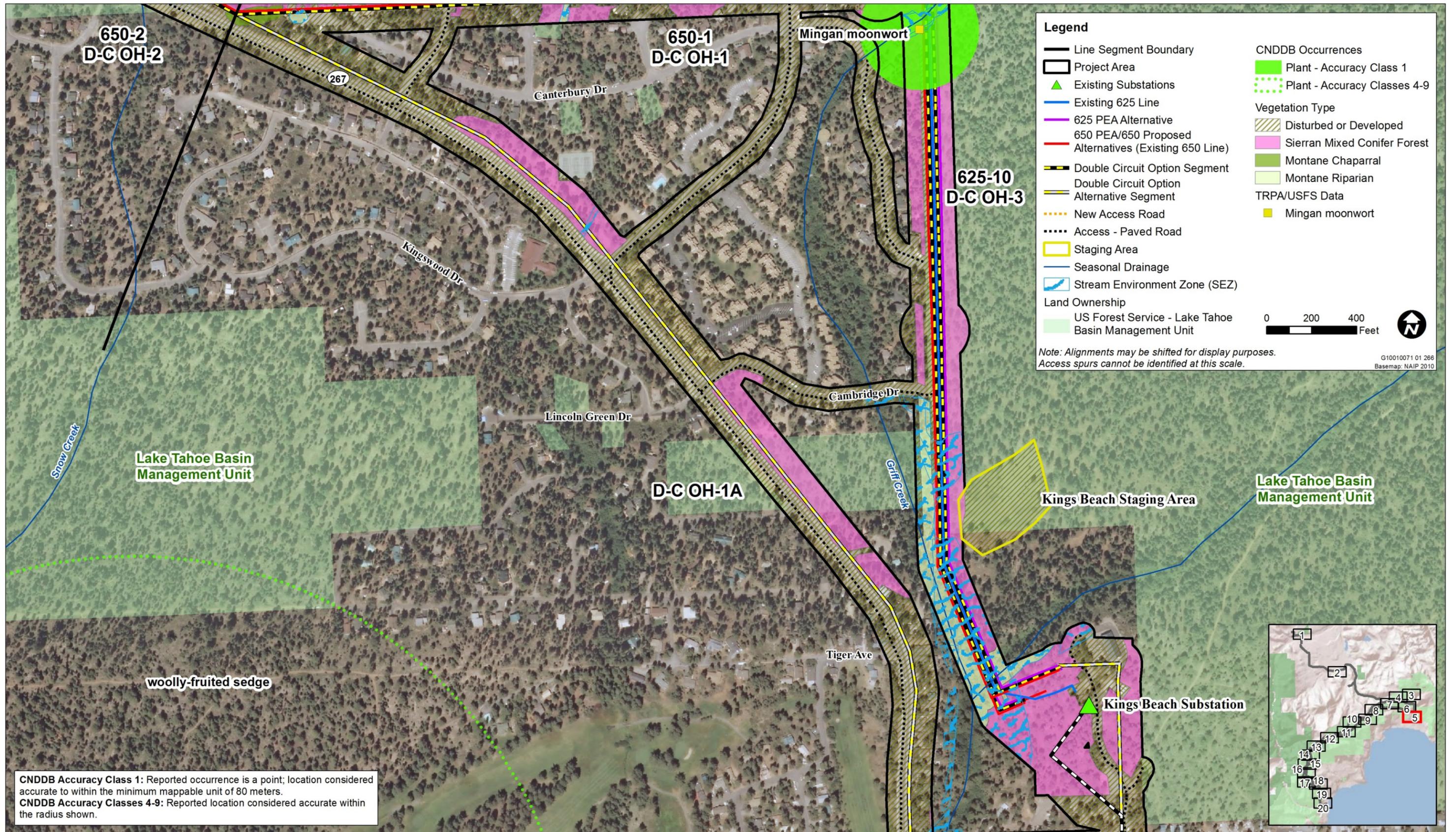
Basemap: NAIP 2010

G10010071 01 265



Source: Data provided by Ascent, CNDDb, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012

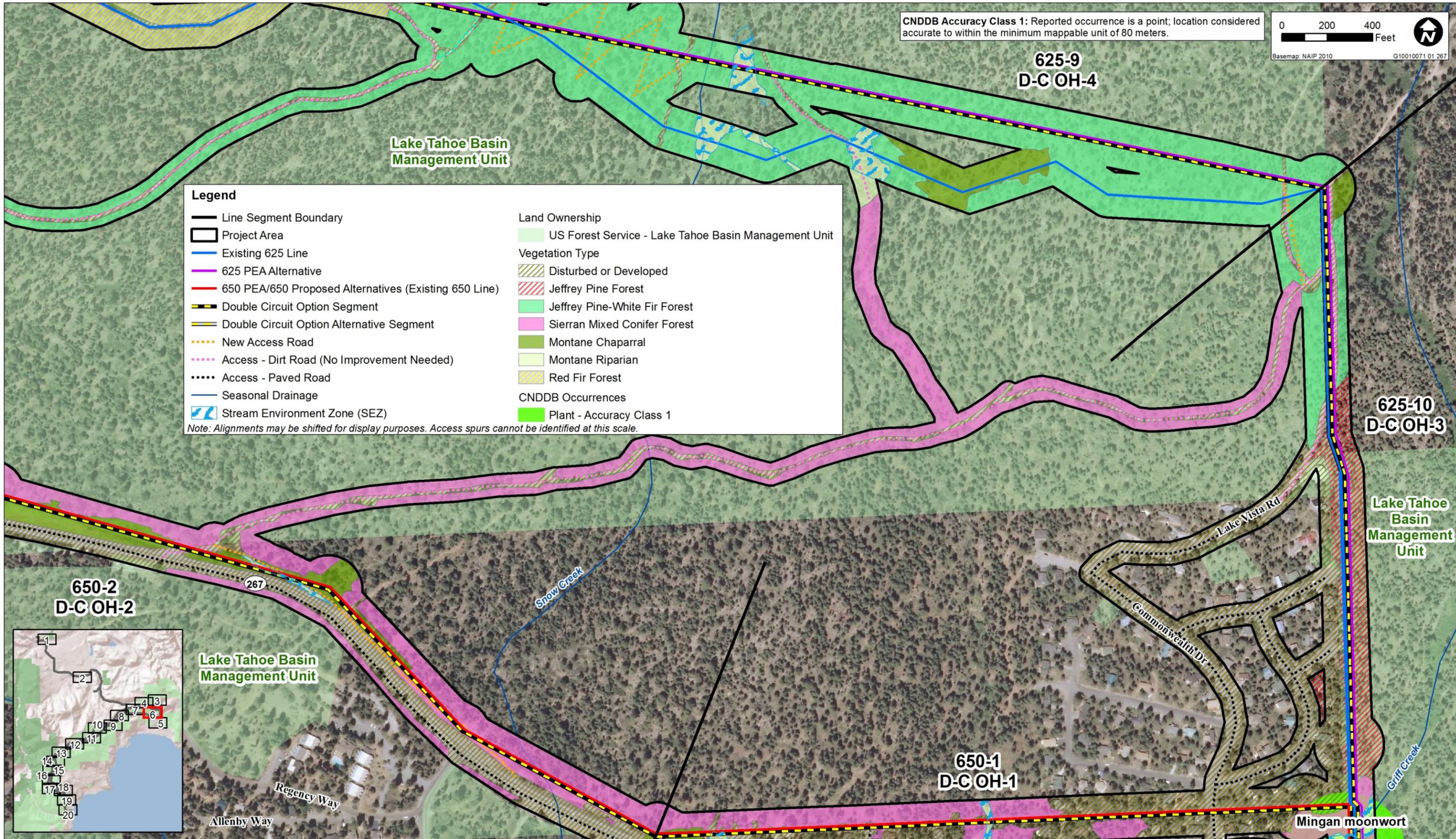




CNDDB Accuracy Class 1: Reported occurrence is a point; location considered accurate to within the minimum mappable unit of 80 meters.  
 CNDDB Accuracy Classes 4-9: Reported location considered accurate within the radius shown.

Source: Data provided by Ascent, CNDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012

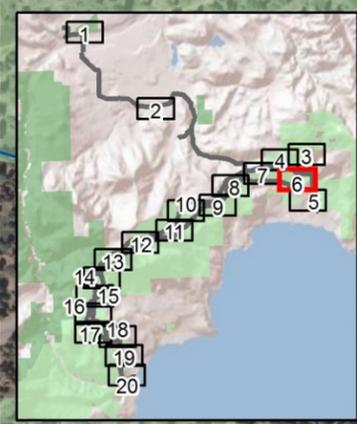
CNDDDB Accuracy Class 1: Reported occurrence is a point; location considered accurate to within the minimum mappable unit of 80 meters.



**Legend**

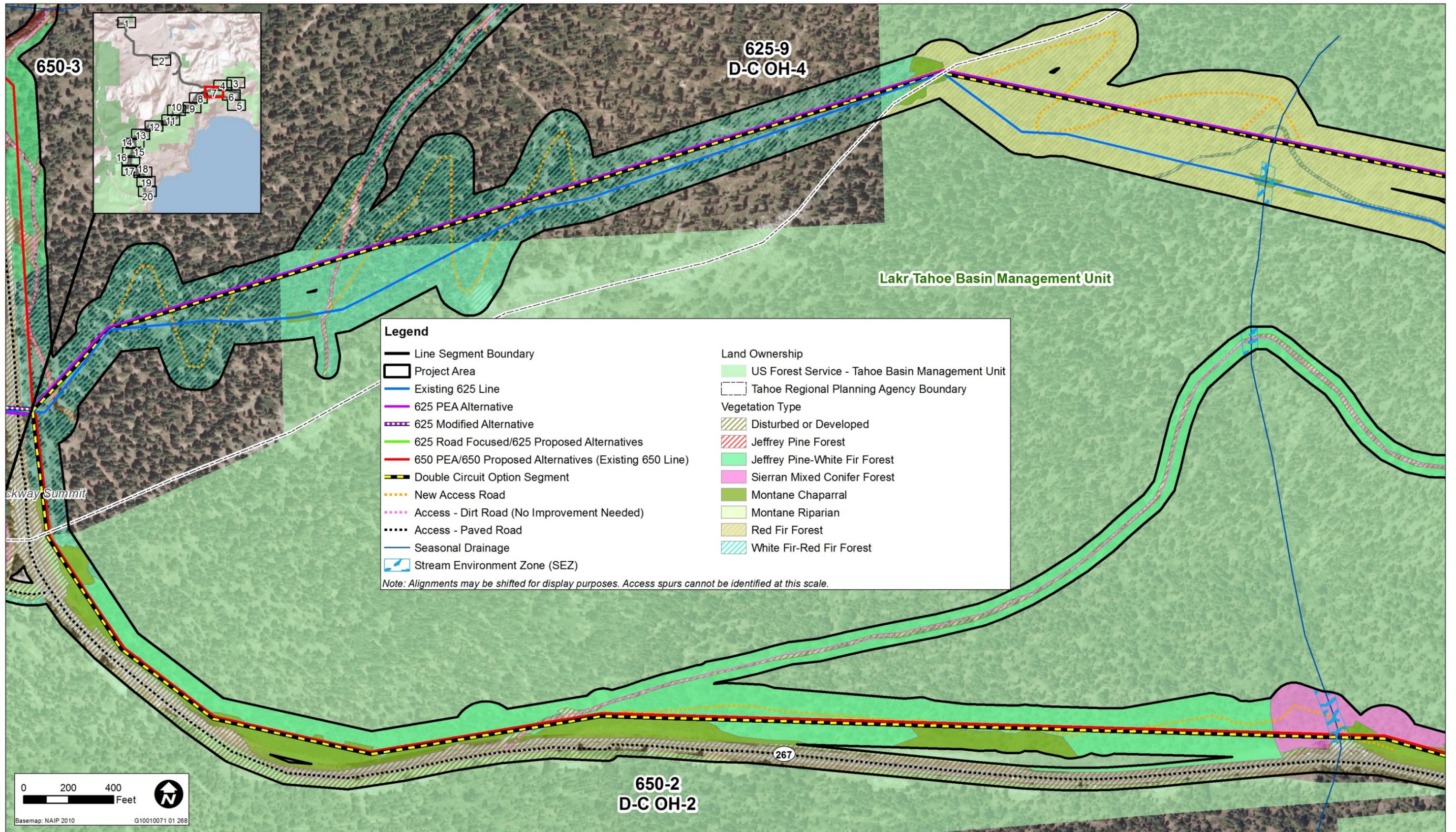
— Line Segment Boundary	Land Ownership
▭ Project Area	US Forest Service - Lake Tahoe Basin Management Unit
— Existing 625 Line	Vegetation Type
— 625 PEA Alternative	Disturbed or Developed
— 650 PEA/650 Proposed Alternatives (Existing 650 Line)	Jeffrey Pine Forest
— Double Circuit Option Segment	Jeffrey Pine-White Fir Forest
— Double Circuit Option Alternative Segment	Sierran Mixed Conifer Forest
— New Access Road	Montane Chaparral
— Access - Dirt Road (No Improvement Needed)	Montane Riparian
— Access - Paved Road	Red Fir Forest
— Seasonal Drainage	CNDDDB Occurrences
— Stream Environment Zone (SEZ)	Plant - Accuracy Class 1

Note: Alignments may be shifted for display purposes. Access spurs cannot be identified at this scale.



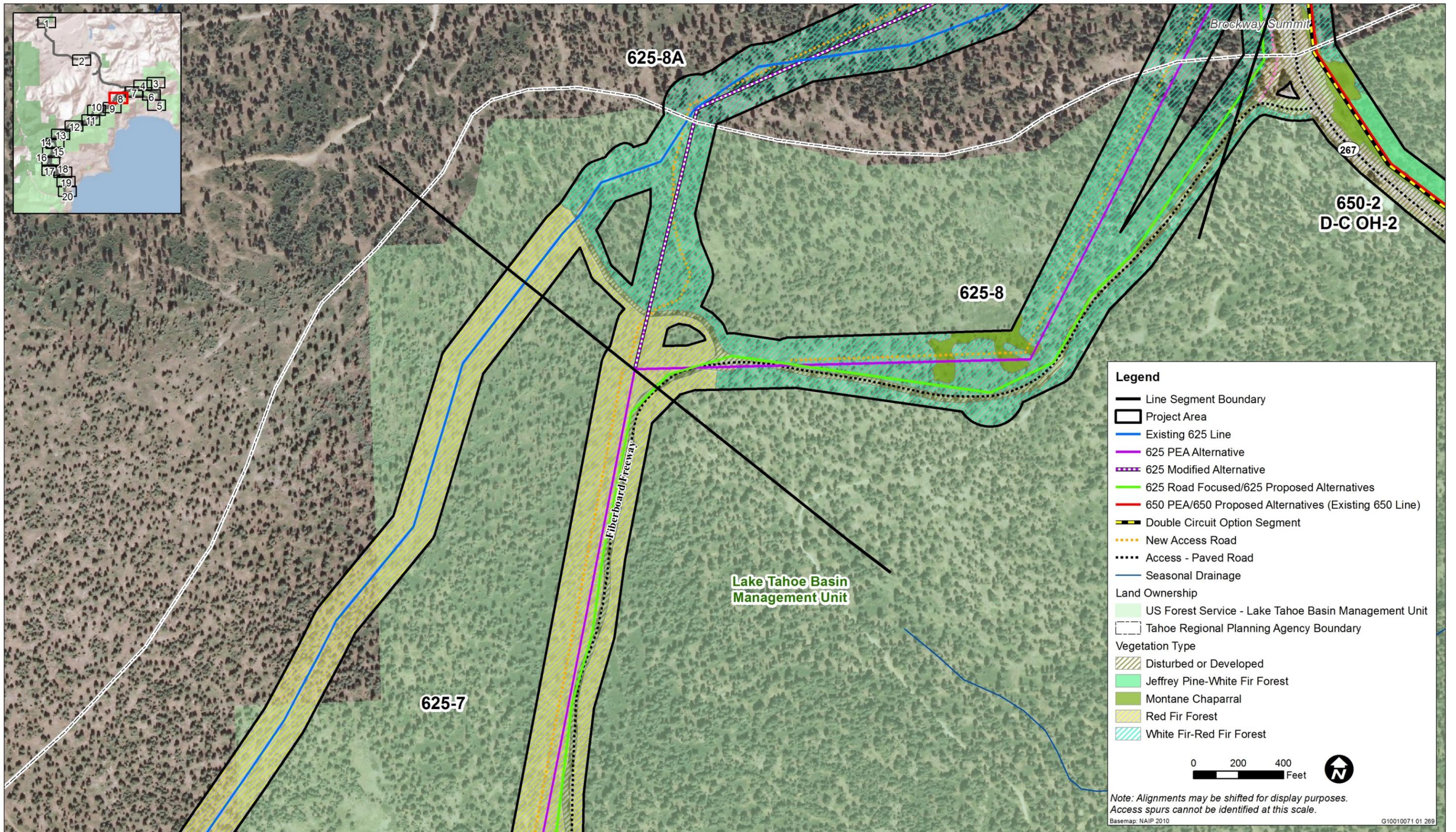
Source: Data provided by Ascent, CNDDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012





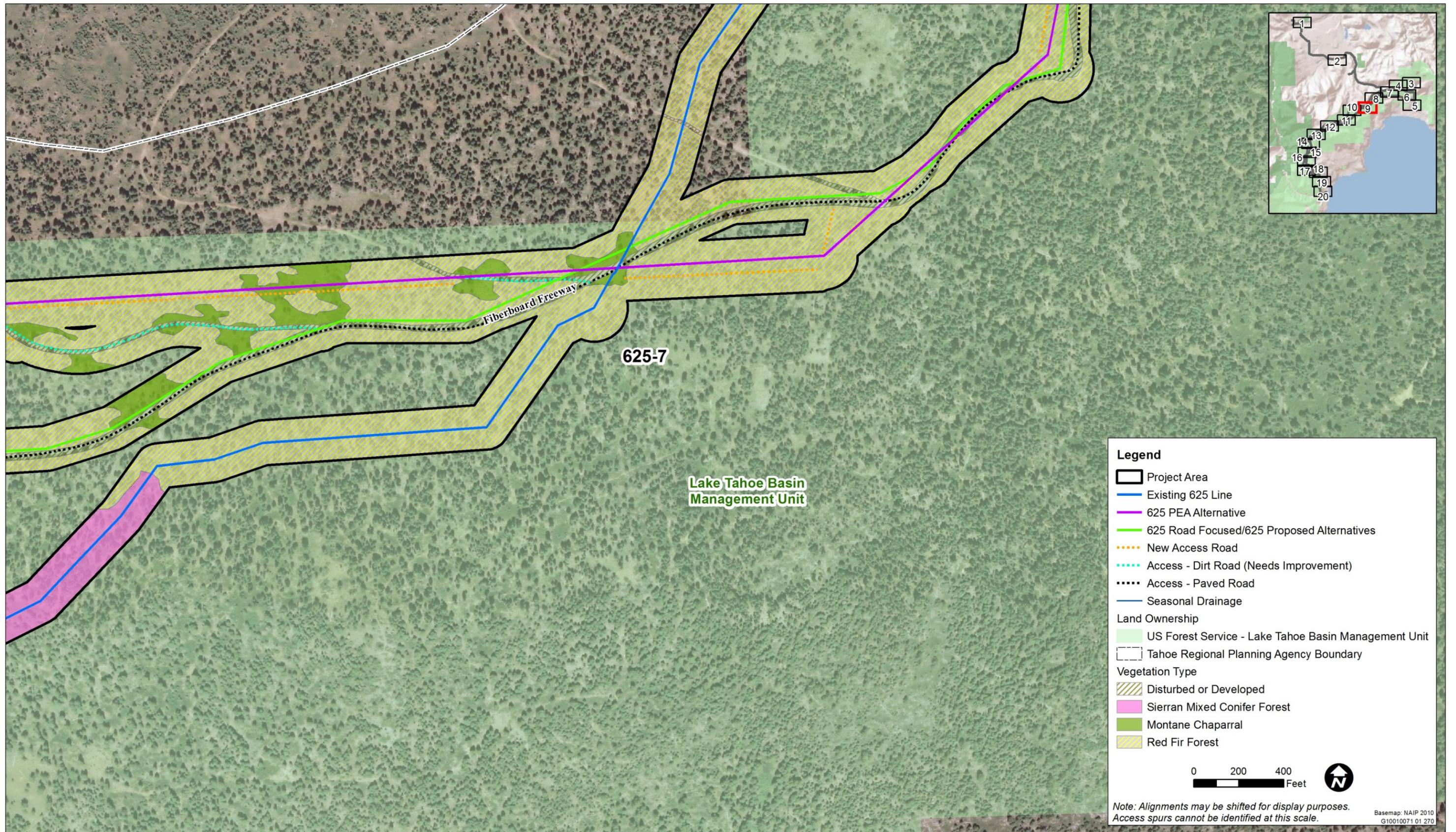
Source: Data provided by Ascent, CNDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012

Exhibit 4.7



Source: Data provided by Ascent, CNDD, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012

Exhibit 4.8



Source: Data provided by Ascent, CNDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012

Exhibit 4.9

Note: Alignments may be shifted for display purposes. Access spurs cannot be identified at this scale.

Basemap: NAIP 2010 G10010071 01 270

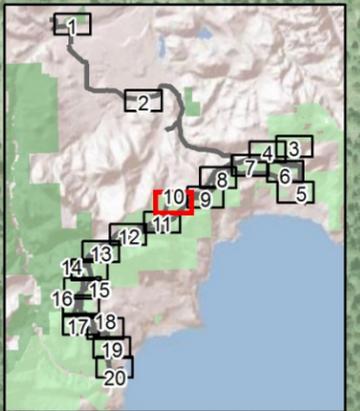
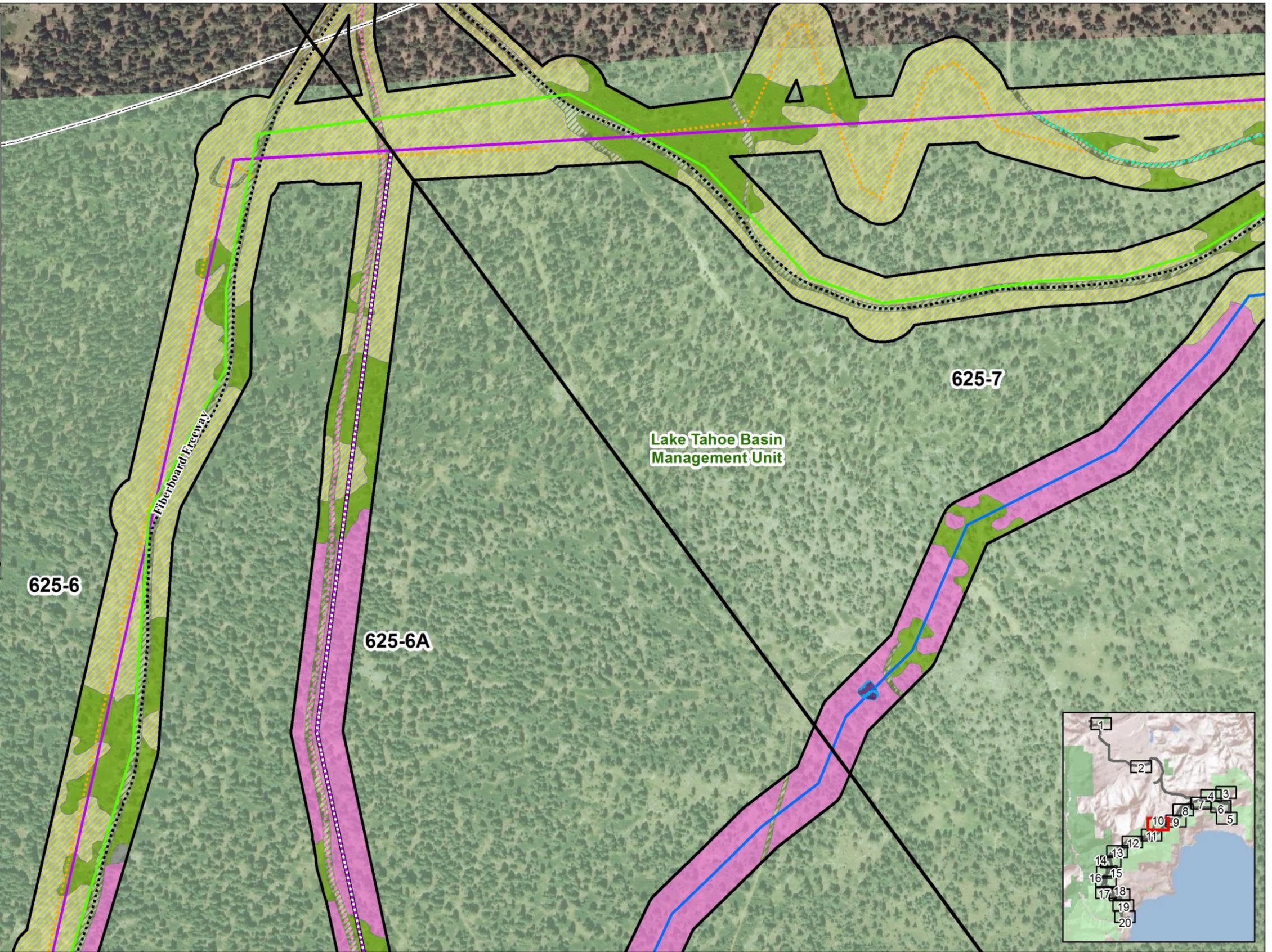
**Legend**

- Line Segment Boundary
- ▭ Project Area
- Existing 625 Line
- 625 PEA Alternative
- 625 Modified Alternative
- 625 Road Focused/625 Proposed Alternatives
- New Access Road
- Access - Dirt Road (Needs Improvement)
- Access - Dirt Road (No Improvement Needed)
- Access - Paved Road
- Seasonal Drainage
- Stream Environment Zone (SEZ)
- Land Ownership
- US Forest Service - Lake Tahoe Basin Management Unit
- Tahoe Regional Planning Agency Boundary
- Vegetation Type
- Disturbed or Developed
- Sierran Mixed Conifer Forest
- Montane Chaparral
- Red Fir Forest
- Rock Outcrop/Barren
- Wet Montane Meadow

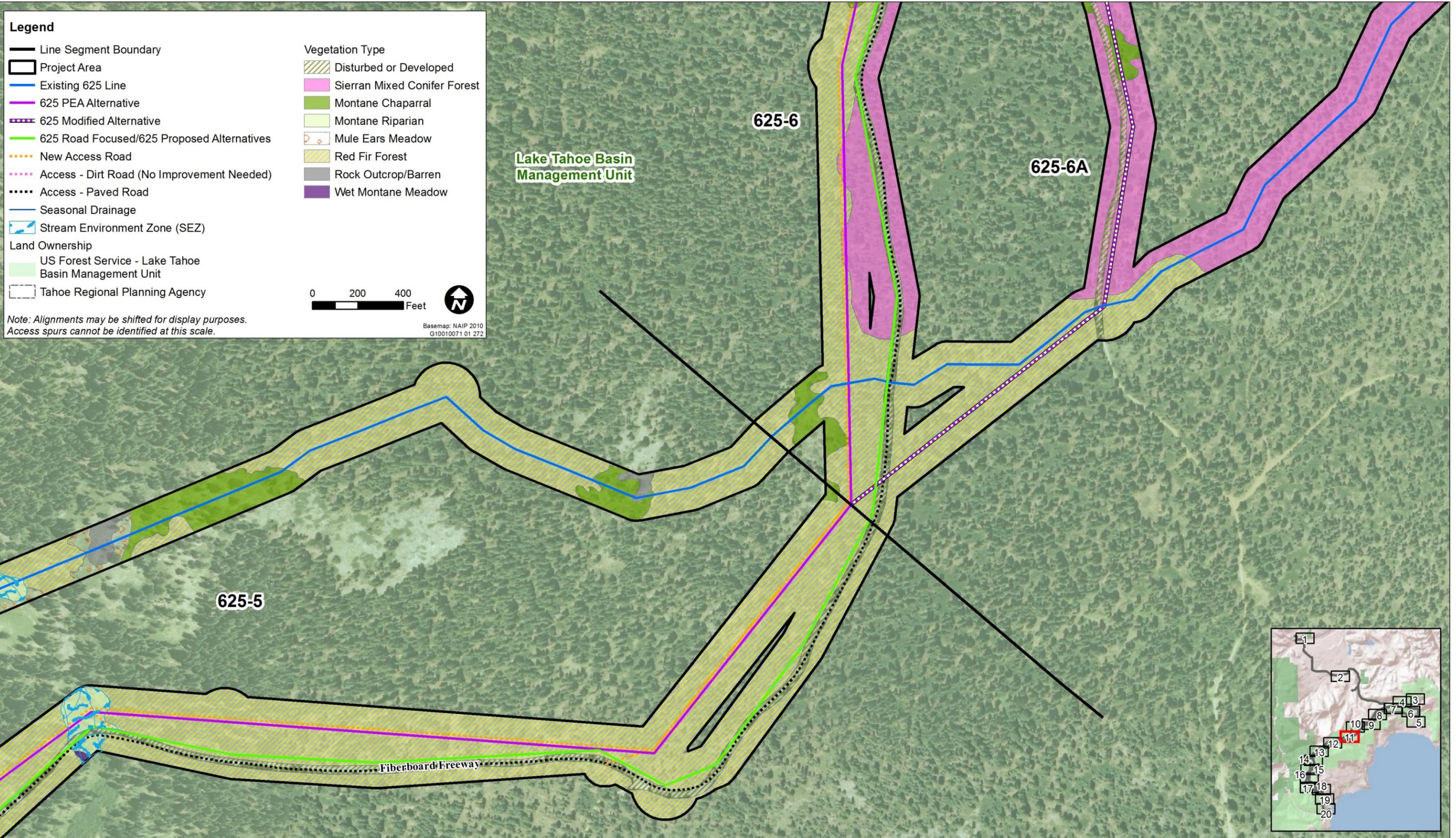
0 200 400 Feet

*Note: Alignments may be shifted for display purposes. Access spurs cannot be identified at this scale.*

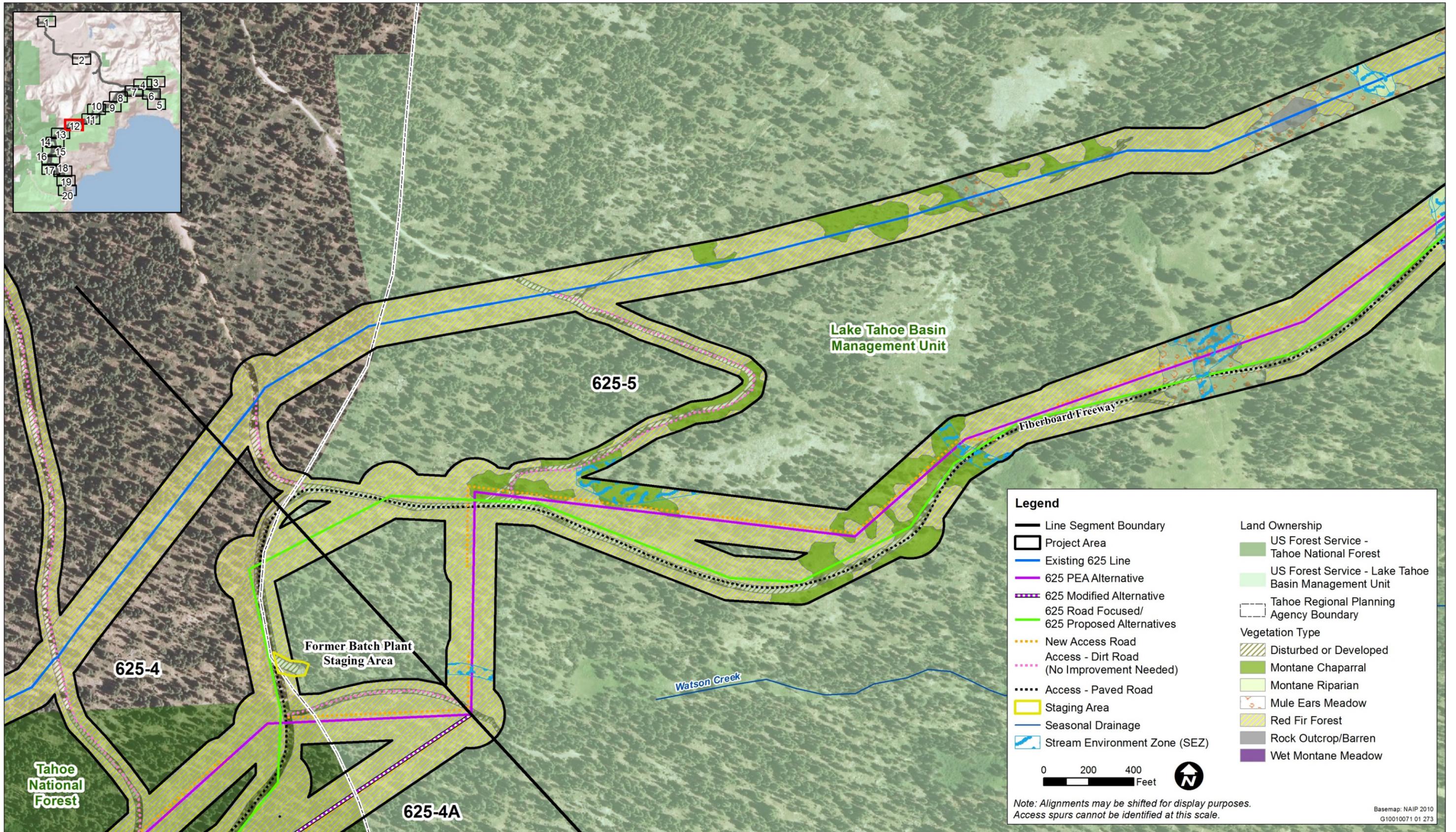
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G10010071 01 271



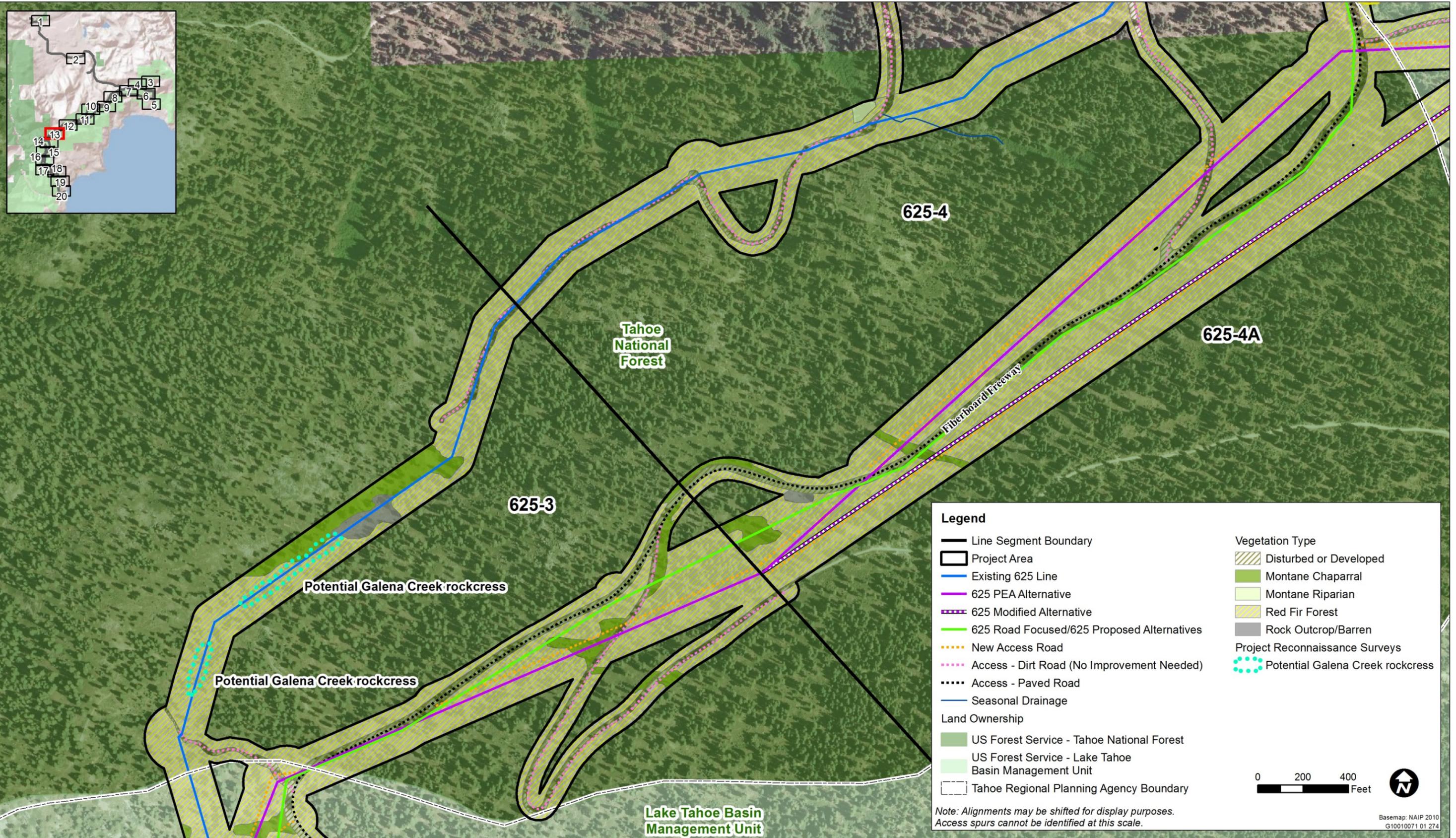
Source: Data provided by Ascent, CNDDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012



Source: Data provided by Ascent, CNDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012



Source: Data provided by Ascent, CNDDb, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012

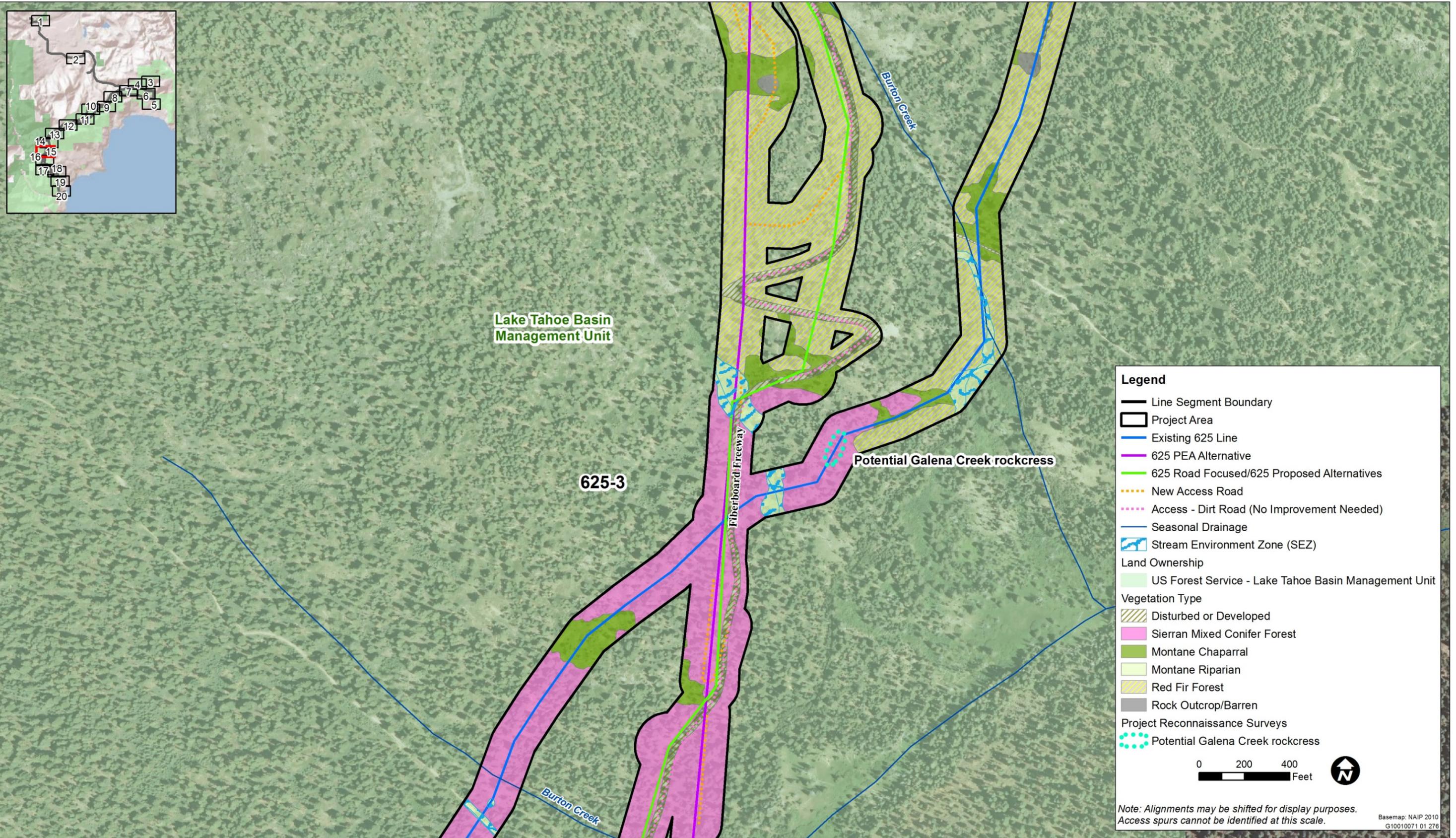


Source: Data provided by Ascent, CNDDb, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012

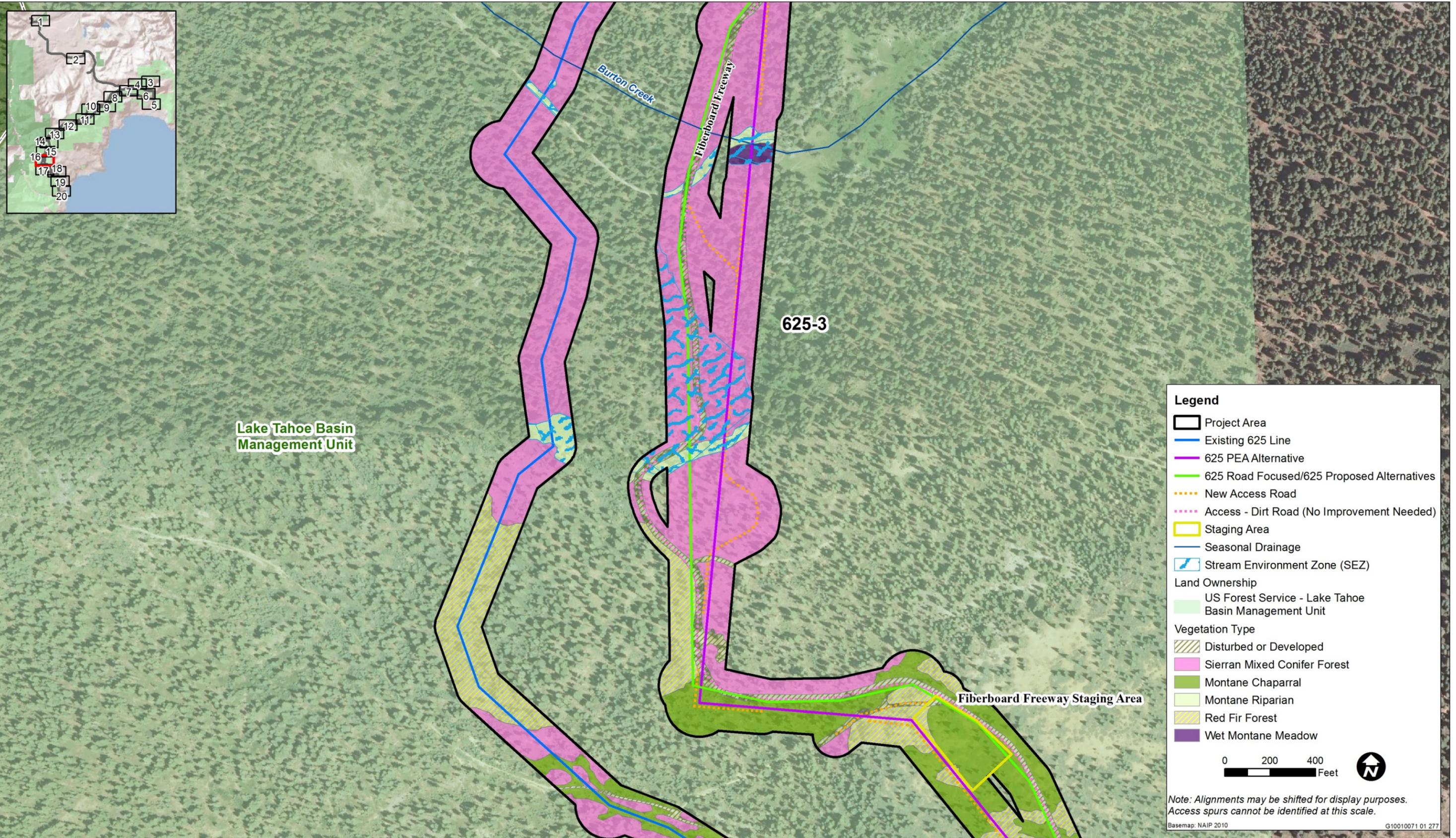


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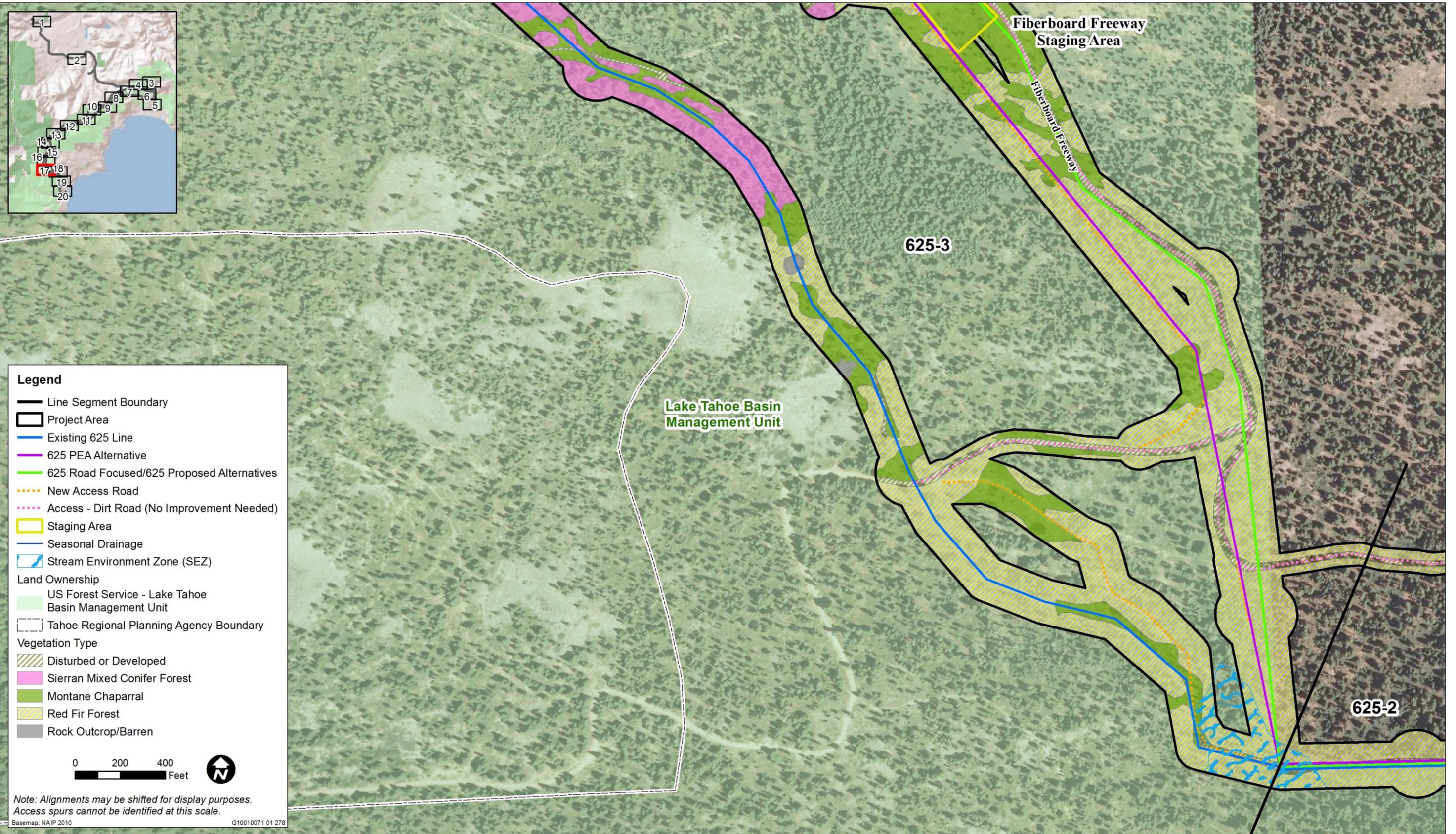
Exhibit 4.14



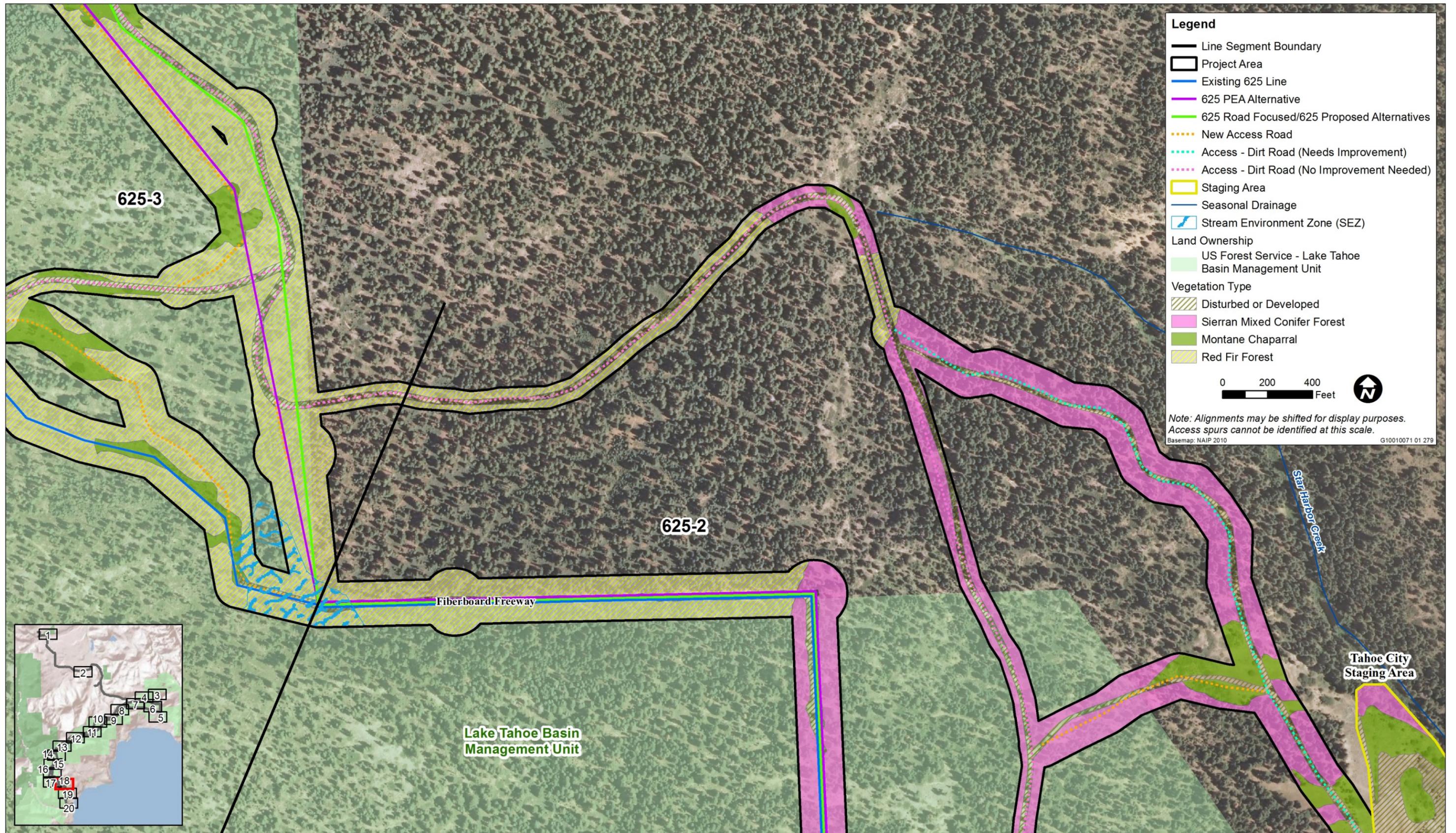
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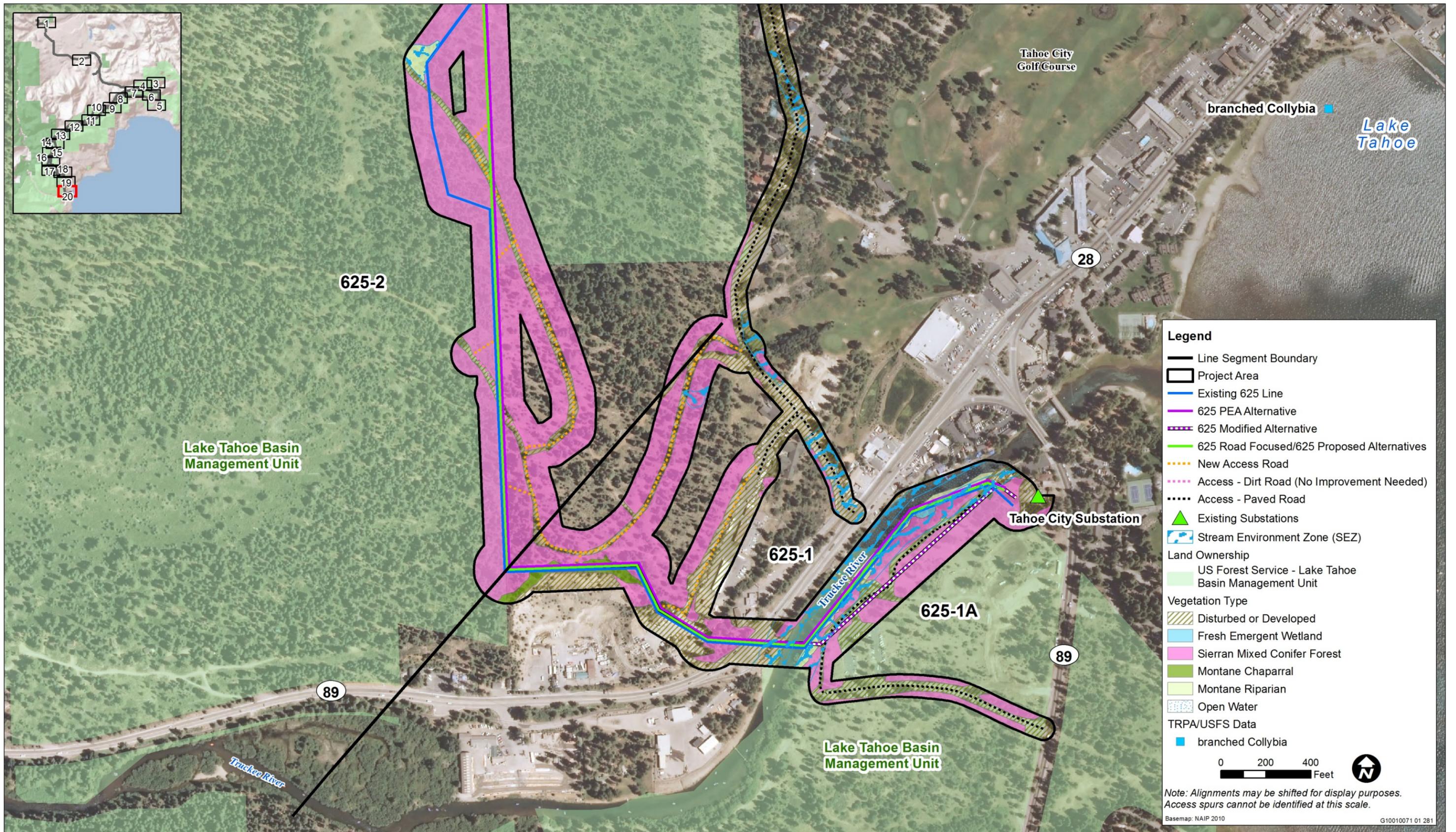
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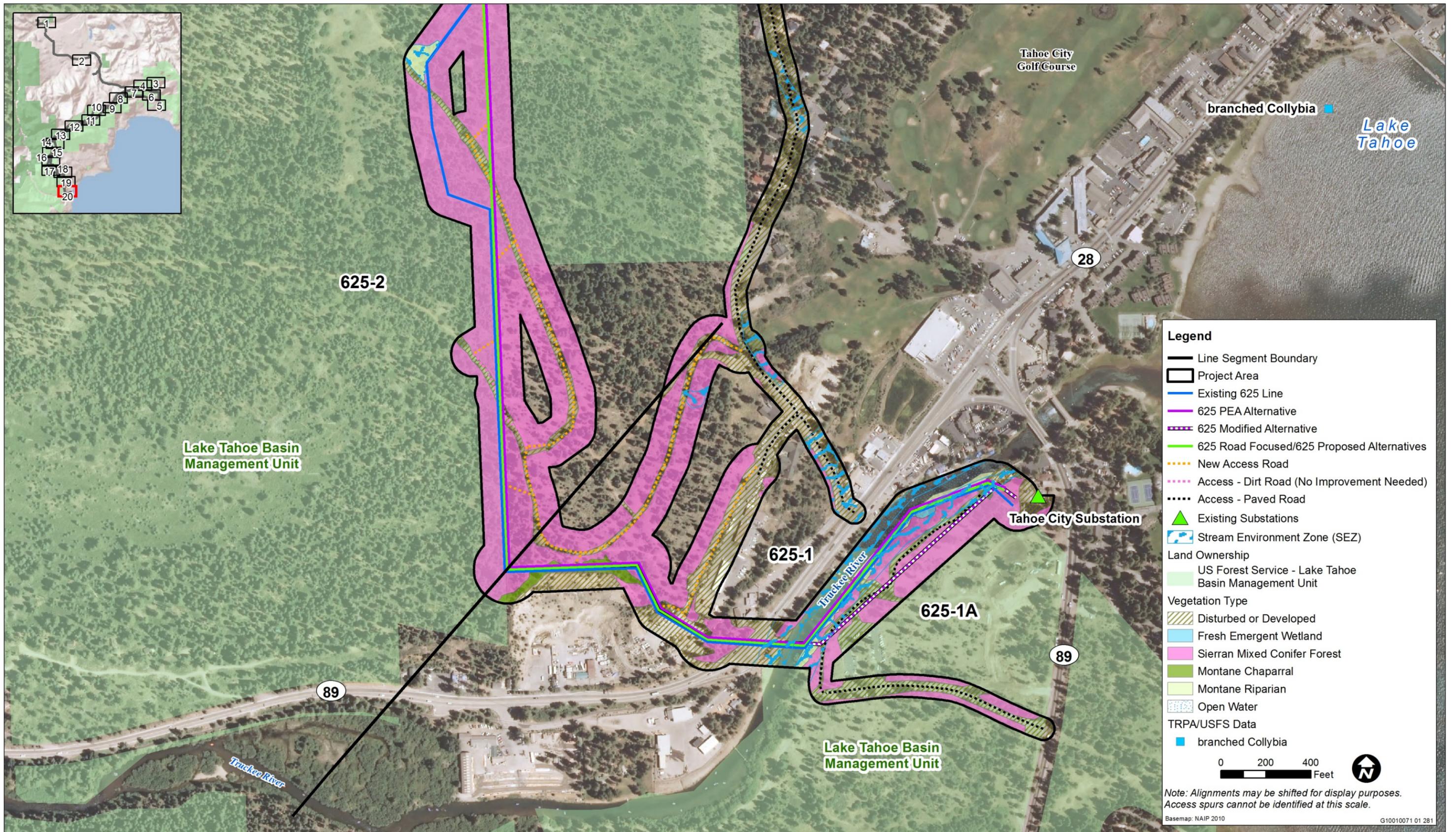
Source: Data provided by Ascent, CNDDb, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012



Source: Data provided by Ascent, CNDDb, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012



Source: Data provided by Ascent, CNDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012



Source: Data provided by Ascent, CNDDB, POWER, TriSage, TRPA and USFS in 2012; adapted by Ascent Environmental in 2012



# **Appendix C**

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## **Cumulative Projects List and Locations**

Table 1 Cumulative Project List				
Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
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.
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.

Table 1 Cumulative Project List				
Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
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. EIR in preparation. Final EIR expected at the end of 2013. 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.
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.

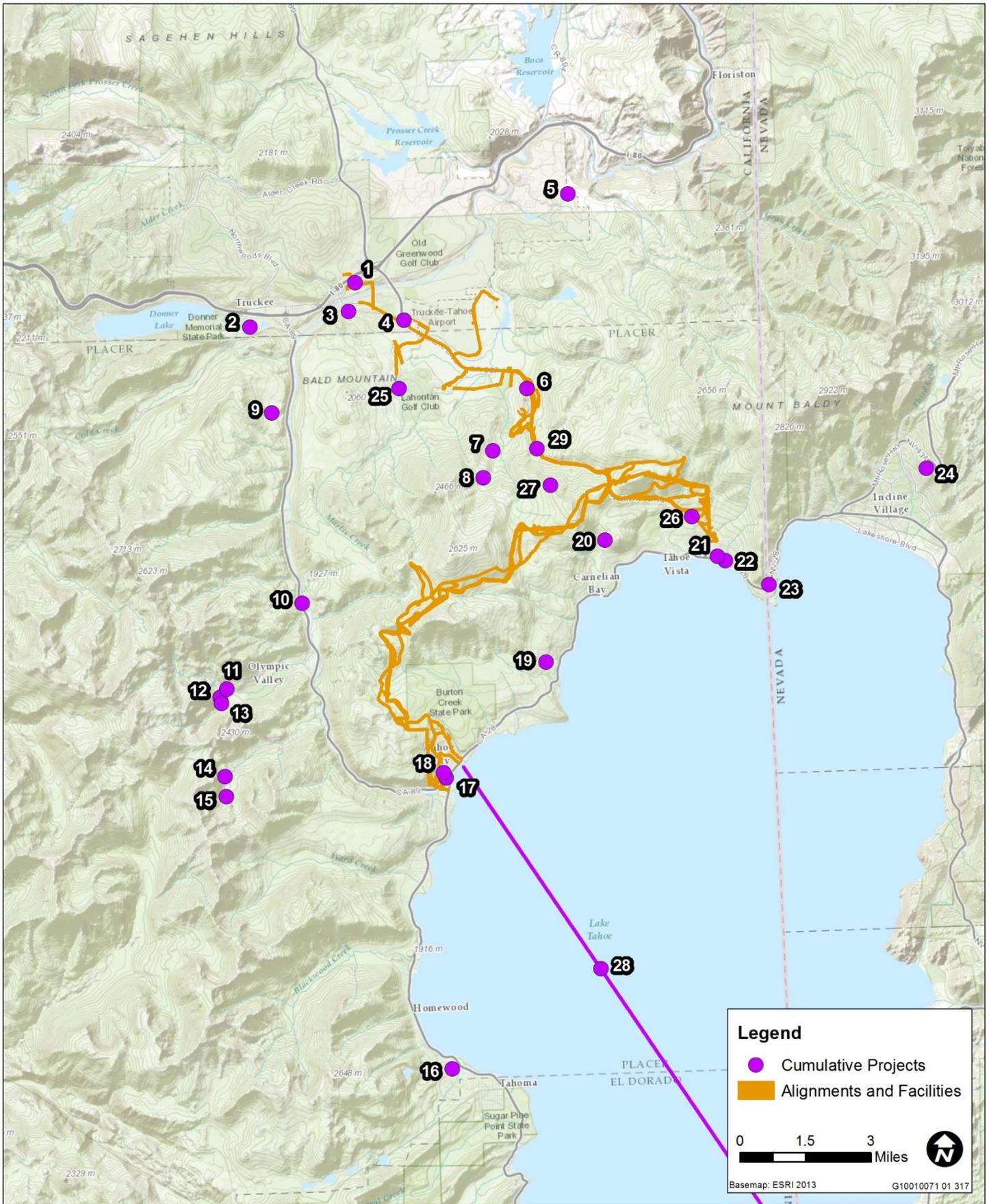
Table 1 Cumulative Project List				
Project Name (Exhibit 4.1-1 Key)	Location	Description	Residential Units and/or Non-Residential Area	Project Status
Squaw Valley Red Dog Lift Replacement (11)	Terminus of Squaw Valley Road, west of State Route 89, Squaw Valley	Replace the existing triple chairlift with 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 2013.

Table 1 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.

<b>Table 1 Cumulative Project List</b>				
<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>
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.	--	Initial study in progress.
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 1 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	Expected submittal of project application to Placer County in fall 2013.

<b>Table 1 Cumulative Project List</b>				
<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>
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, 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

Cumulative Projects



# **Appendix D**

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**USFWS List of Endangered and  
Threatened Species**

**Forest Service List of Sensitive Species**

**U.S. Fish & Wildlife Service**  
**Sacramento Fish & Wildlife Office**  
**Federal Endangered and Threatened Species that Occur in**  
**or may be Affected by Projects in the**  
**Tahoe National Forest**

Database last updated: August 28, 2014

Report Date: August 28, 2014

### Listed Species

*Desmocerus californicus dimorphus* - valley elderberry longhorn beetle (T)  
*Hypomesus transpacificus* - delta smelt (T)  
*Oncorhynchus (=Salmo) clarki henshawi* - Lahontan cutthroat trout (T)  
*Oncorhynchus mykiss* - Central Valley steelhead (T)  
*Oncorhynchus tshawytscha* - Central Valley spring-run chinook salmon (T)  
*Oncorhynchus tshawytscha* - winter-run chinook salmon, Sacramento River (E)  
*Rana draytonii* - California red-legged frog (T)  
*Rana sierrae* - Mountain yellow legged frog (PX)  
*Senecio layneae* - Layne's butterweed (=ragwort) (T)

### Candidate Species

*Ivesia webberi* - Webber's ivesia (C)  
*Martes pennanti* - fisher (C)  
*Rana muscosa* - mountain yellow-legged frog (C)  
*Rorippa subumbellata* - Tahoe yellow-cress (C)

### Species with Critical Habitat Proposed or Designated in this National Forest

California red-legged frog (X)

### Key:

(E) *Endangered* - Listed as being in danger of extinction.  
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.  
(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.  
(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](http://www.nmfs.gov). Consult with them directly about these species.  
*Critical Habitat* - Area essential to the conservation of a species.  
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.  
(C) *Candidate* - Candidate to become a proposed species.  
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.  
(X) *Critical Habitat* designated for this species

# U.S. Fish & Wildlife Service

## Sacramento Fish & Wildlife Office

### Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Lake Tahoe Basin Management Area

Database last updated: August 28, 2014

Report Date: August 28, 2014

#### Listed Species

*Hypomesus transpacificus* - delta smelt (T)

*Oncorhynchus (=Salmo) clarki henshawi* - Lahontan cutthroat trout (T)

*Oncorhynchus mykiss* - Central Valley steelhead (T)

*Rana sierrae* - Mountain yellow legged frog (PX)

#### Candidate Species

*Bufo canorus* - Yosemite toad (C)

*Martes pennanti* - fisher (C)

*Rana muscosa* - mountain yellow-legged frog (C)

*Rorippa subumbellata* - Tahoe yellow-cress (C)

#### Species with Critical Habitat Proposed or Designated in this National Forest

None

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#### Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](http://www.nmfs.gov).  
Consult with them directly about these species.

*Critical Habitat* - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) *Vacated* by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

**TAHOE NATIONAL FOREST**  
**Federally Threatened, Endangered, Proposed, and Candidate, and R5 Forest Service Sensitive**  
**Botanical Species List**

**2014**

<b>Common Name</b>	<b>Scientific Name</b>
<b>U.S. Fish and Wildlife Service Federally Listed Species</b>	
Webber's ivesia (threatened)	<i>Ivesia webberi</i>
Layne's butterweed (threatened)	<i>Packera layneae</i>
<b>Region 5 Forest Service Sensitive Species</b>	
<b>Vascular Plants</b>	
Lemmon's milkvetch	<i>Astragalus lemmonii</i>
Modoc milkvetch	<i>Astragalus pulsiferae</i> var. <i>coronensis</i>
Webber's milkvetch	<i>Astragalus webberi</i>
Carson Range rock cress	<i>Boechera rigidissima</i> var. <i>demota</i>
Upswept moonwort	<i>Botrychium ascendens</i>
Scalloped moonwort	<i>Botrychium crenulatum</i>
Common moonwort	<i>Botrychium lunaria</i>
Mingan moonwort	<i>Botrychium minganense</i>
Western goblin	<i>Botrychium montanum</i>
Clustered lady's slipper	<i>Cypripedium fasciculatum</i>
Mountain lady's slipper	<i>Cypripedium montanum</i>
Starved daisy	<i>Erigeron miser</i>
Donner Pass buckwheat	<i>Eriogonum umbellatum</i> var. <i>torreyanum</i>
Butte County fritillary	<i>Fritillaria eastwoodiae</i>
Sierra Valley ivesia	<i>Ivesia aperta</i> var. <i>aperta</i>
Dog Valley ivesia	<i>Ivesia aperta</i> var. <i>canina</i>
Plumas ivesia	<i>Ivesia sericoleuca</i>
Santa Lucia dwarf rush	<i>Juncus luciensis</i>
Cantelow's lewisia	<i>Lewisia cantelovii</i>
Hutchison's lewisia	<i>Lewisia kelloggii</i> ssp. <i>hutchinsonii</i>
Kellogg's lewisia	<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>
Saw-toothed lewisia	<i>Lewisia serrata</i>
Long-petaled lewisia	<i>Lewisia longipetala</i>
Follett's monardella	<i>Monardella follettii</i>
Close-throated beardtongue	<i>Penstemon personatus</i>
Stebbin's phacelia	<i>Phacelia stebbinsii</i>
Whitebark pine	<i>Pinus albicaulis</i>
Sierra blue grass	<i>Poa sierrae</i>
Sticky pyrrocoma	<i>Pyrrocoma lucida</i>
Howell's tauschia	<i>Tauschia howellii</i>
<b>Non Vascular Plants (Mosses and lichens)</b>	
Bolander's candle moss	<i>Bruchia bolanderi</i>
Blandow's bog-moss	<i>Helodium blandowii</i>
Veined water lichen	<i>Peltigera gowardii</i>
Broad-nerved hump moss	<i>Meesia uliginosa</i>
Elongate Cooper moss	<i>Mielichhoferia elongata</i>
<b>Fungi</b>	
Mountain cudonia	<i>Cudonia monticola</i>
Branched collybia	<i>Dendrocollybia racemosa</i>
Olive phaeocollybia	<i>Phaeocollybia olivacea</i>
False orange peel	<i>Sowerbyella rhenana</i>

LAKE TAHOE BASIN MANAGEMENT UNIT  
2014

**Federally Threatened, Endangered, Proposed, and Candidate, and R5 Forest Service Sensitive  
Botanical Species List**

Scientific Names	Common Name	Legal Status	Suitable habitat characteristics	Known on LTBMU
<i>Boechea rigidissima</i> ( <i>Arabis rigidissima</i> var. <i>demota</i> )	Galena Creek rock cress	FSS	Open, rocky areas along forest edges of conifer and/or aspen stands; usually found on north aspects; 7,500 ft. & above.	X
<i>Boechea tiehmii</i>	Tiehm's rock cress	FSS	Open rocky soils in the Mt. Rose Wilderness; 10,000 ft. & above.	Suitable habitat only
<i>Boechea tularensis</i>	Tulare rockcress	FSS	Shaded, mostly east-facing subalpine rocky areas, including rocky slopes, rock-lined streams and seeps, rocky outcrops, saddles, and canyons; 6,000-11,000 ft.	Known only from herbarium or text records
<i>Botrychium</i> spp.			<i>Botrychium</i> species are found in similar habitat; wet or moist soils such as marshes, meadows, and along the edges of lakes and streams; generally occur with mosses, sedges, rushes, and other riparian vegetation; 2,000-10,000 ft.	
<i>Botrychium ascendens</i>	upswept moonwort	FSS	See <i>Botrychium</i> spp	X
<i>Botrychium crenulatum</i>	scalloped moonwort	FSS		X
<i>Botrychium lineare</i>	slender moonwort	FSS		Suitable habitat only
<i>Botrychium lunaria</i>	common moonwort	FSS		Suitable habitat only
<i>Botrychium minganense</i>	Mingan moonwort	FSS		X
<i>Botrychium montanum</i>	western goblin	FSS		X
<i>Bruchia bolanderi</i>	Bolander's candle moss	FSS		Mainly in montane meadows and stream banks, but also on bare, slightly eroding soil where competition is minimal.
<i>Dendrocollybia racemosa</i> <sup>1</sup>	branched collybia	FSS	On old decayed or blackened mushrooms or occasionally in coniferous duff, usually within old growth stands.	Known only from herbarium or text records
<i>Draba asterophora</i> var. <i>asterophora</i>	Tahoe draba	FSS; TRPA	Rock crevices and open granite talus slopes on north-east slopes; 8,000-10,200 ft.	X
<i>Draba asterophora</i> var. <i>macrocarpa</i>	Cup Lake draba	FSS; TRPA	Steep, gravelly or rocky slopes; 8,400-9,300 ft.	X
<i>Draba cruciata</i>	Mineral King draba	FSS	Subalpine gravelly or rocky slopes, ridges, crevices, cliff ledges, sink holes, boulder and small drainage edges; 7,800-13,000 ft.	Known only from herbarium or text records
<i>Erigeron miser</i>	starved daisy	FSS	Granitic rock outcrops; 6,000 ft & above	Suitable habitat only
<i>Eriogonum luteolum</i> var. <i>saltuarium</i>	goldencarpet buckwheat	FSS	Sandy granitic flats and slopes, sagebrush communities, montane conifer woodlands; 5,600-7,400 ft.	Suitable habitat only
<i>Eriogonum umbellatum</i> var. <i>torreyanum</i>	Donner Pass buckwheat	FSS	Dry gravelly or stony sites; often on harsh exposures (e.g. ridge tops, steep slopes)	Suitable habitat only
<i>Helodium blandowii</i>	Blandow's bog-moss	FSS	Bogs, fens, wet meadows, and along streams under willows.	X
<i>Hulsea brevifolia</i>	short-leaved hulsea	FSS	Red fir forest, but also in mixed conifer forests; found on gravelly soils; 4,900-8,900 ft.	Suitable habitat only

Scientific Names	Common Name	Legal Status	Suitable habitat characteristics	Known on LTBMU
<i>Ivesia sericoleuca</i>	Plumas ivesia	FSS	Vernally wet portions of meadows and alkali flats, vernal pools within sagebrush scrub or lower montane coniferous forest; often on volcanic soils; 4,300-7,200 ft.	Suitable habitat only
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i>	Kellogg's lewisia	FSS	Ridge tops or flat open spaces with widely spaced trees and sandy granitic to erosive volcanic soil; 5,000-7,000 ft.	Suitable habitat only
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>	Kellogg's lewisia	FSS	See <i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i>	Suitable habitat only
<i>Lewisia longipetala</i>	long-petaled lewisia	FSS; TRPA	North-facing slopes and ridge tops where snow banks persist throughout the summer; often found near snow bank margins in wet soils; 8,000-12,500 ft.	X
<i>Meesia uliginosa</i>	broad-nerved hump-moss	FSS	Bogs and fens, but also very wet meadows.	X
<i>Orthotrichum praemorsum</i>	orthotrichum moss	FSS	Shaded, moist habitats of east side of Sierra Nevada rock outcrops; up to 8,200 ft.	Known only from herbarium or text records
<i>Peltigera gowardii</i>	Goward's water fan	FSS	Cold unpolluted streams in mixed conifer forests.	X
<i>Pinus albicaulis</i>	whitebark pine	C; FSS	Subalpine and at timberline on rocky, well-drained granitic or volcanic soils.	X
<i>Rorippa subumbellata</i>	Tahoe yellow cress	C; FSS; TRPA	Endemic to the shore zone of Lake Tahoe, typically in back beach areas between 6,223 and 6,230 ft.	X

Botanical species includes vascular and non-vascular plants, lichen, and fungi.

There are no federally threatened, endangered, or proposed botanical species known to occur or with known suitable habitat within LTBMU.

This list includes all R5 Sensitive botanical species with known occurrences or known suitable habitat on LTBMU.

**Legal status:** C—Candidate for federal listing under the Endangered Species Act; FSS—Forest Service Sensitive (Regional Forester's Sensitive Species List, Region 5); TRPA—Tahoe Regional Planning Commission Sensitive Species (TRPA Code of Ordinances 2012)

<sup>1</sup>For branched collybia, surveys are only effective when fruiting bodies are visible. This species typically fruits in late fall -early winter. The extent to which aboveground fruiting bodies are correlated with the abundance of underground structures is unknown. When a survey does not find the fruiting body, the species could still be present at the site. Because of this detection difficulty, it is important to manage habitat in a state that is suitable for fungi.