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CHAPTER 4 – ENVIRONMENTAL IMPACT ASSESSMENT

4.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☑	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☑	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☑	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

4.4.0 Introduction

This section describes the biological resources in the Sierra Pacific Power Company (SPPCo) 625 and 650 Line Upgrade Project (project) area and identifies potential impacts to habitats and species that could result from construction, operation, and maintenance of the project. Additionally, potential impacts to riparian communities, wetlands, and migratory wildlife corridors are addressed. The biological resources analysis includes a discussion of applicant-proposed measures (APMs). With the implementation of these APMs, potential impacts to biological resources will be less than significant.

4.4.1 Methodology

Research was conducted by reviewing all applicable agency plans; federal, state, and local regulations; and literature regarding sensitive species and biological resources in the project area. Additionally, various resource management plans and resource databases from state and federal agencies with jurisdiction over the project area were reviewed. Once the initial research was conducted, biologists conducted reconnaissance-level surveys of the project area and began two-year protocol-level surveys for both California spotted owl (*Strix occidentalis occidentalis*) and northern goshawk (*Accipiter gentilis*).

Literature Review

A literature review was conducted to identify special-status plants and animals that have the potential to occur in the project area. Lists of United States (U.S.) Department of Agriculture, U.S. Forest Service (USFS) Tahoe National Forest and Lake Tahoe Basin Management Unit sensitive species and management indicator species[1] were obtained and reviewed. Additionally, plant watchlist species were obtained from the Tahoe National Forest, and Tahoe Regional Planning Agency (TRPA) Special Interest Species were noted. The USFS Forest Carnivore in the Pacific States database was reviewed to obtain all recent survey results in the project area. A list of federally endangered species from the U.S. Fish and Wildlife Service's (USFWS) Sacramento office was also generated. Records searches were conducted using the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California database, and the California Natural Diversity Database (CNDDB) and Spotted Owl Database maintained by the California Department of Fish and Game (CDFG). From these sources, records for all known sensitive plants and animals within 5 miles of the project were reviewed. Species were considered sensitive if they met one or more of the following criteria:

- on CNPS List 1B.1, 1B.2, 1B.3, 2.1, 2.2, or 2.3
- federally listed as endangered, threatened, or are a candidate for listing status
- state-listed as endangered or threatened
- listed as a Species of Special Concern, or are fully protected by the CDFG
- designated as a sensitive species or watchlist species by the Tahoe National Forest
- designated as a sensitive species by the Lake Tahoe Basin Management Unit
- designated as a special interest species by the TRPA

[1] Management indicator species are species that have been identified as representative of other species with similar habitat requirements. Impacts to these species are assumed to have similar impacts to other species with the same habitat requirements.

In addition, the USFWS Critical Habitat Portal was used to determine whether any federally designated critical habitat existed in the project area.

General Biological Surveys

General reconnaissance-level surveys for special-status plant and animal species with the potential to occur in the project area were conducted between September 13 and September 26, 2007; October 6 and October 10, 2008; and October 27 and October 28, 2008. Surveys were conducted by walking or driving the project area within an approximate 100-foot-wide corridor centered on the existing 625 Line, new 625 Line, 650 Line, 132/650 Double-Circuit, and the Northstar Tap. In undeveloped areas, the project area was surveyed on foot, and in areas such as Truckee, where development prevented walking the alignment, surveys were conducted by vehicle. With the exception of the Former Batch Plant Staging Area, Sawmill Flat Staging Area, and Fiberboard Highway Staging Area, all access roads and all designated staging areas were surveyed either on foot or by vehicle. The Former Batch Plant Staging Area, Sawmill Flat Staging Area, and Fiberboard Highway Staging Area were not surveyed during the aforementioned survey periods because they were not identified at the time of the surveys. Along the transmission lines, access roads, and staging areas, dominant habitat and general hydrological characteristics were recorded and used to classify the area into different habitat communities. Plant and wildlife species that were observed during the surveys were also recorded. The Former Batch Plant Staging Area and Fiberboard Highway Staging Area were surveyed at a later time and vegetation and hydrology were noted. Dominant habitat and hydrologic characteristics at the Sawmill Flat Staging Area were later identified using aerial photography, topographic maps. In addition, the site was selected based on its previous usage as a construction staging area. Due to its location on private land, the Sawmill Flat Staging Area was not field-verified. This staging area will be surveyed prior to the start of work to ensure that no sensitive resources are present.

Wetland Assessment

During the reconnaissance-level field surveys, biologists also assessed the entire project area for potentially jurisdictional wetlands or waters of the U.S. based on the presence of hydrophytic vegetation, ordinary high water mark, connectivity to blue-line drainages, and hydrology. However, a wetland delineation (in accordance with the 1987 U.S. Army Corps of Engineers [USACE] Wetland Delineation Manual) was not performed. A wetland delineation will be conducted to ensure that all appropriate permitting is in place prior to the start of work.

Protocol-level California Spotted Owl Surveys

Due to the anticipated tree removal within USFS-designated Protected Activity Centers (PACs), Home Range Core Areas (HRCAs), and adjacent suitable habitat, biologists began two-year protocol-level surveys for California spotted owl during the summer of 2009 in order to identify active nesting sites within 0.25 mile of the of the existing 625 Line, new 625 Line, and 650 Line. These surveys were conducted in accordance with the Protocol for Surveying for Spotted Owls in Proposed Management Activity Areas and Habitat Conservation Areas, which was published by the USFS in 1993. Prior to beginning work, a survey plan outlining the planned survey area and methods was prepared and approved by the Lake Tahoe Basin Management Unit and California Public Utilities Commission (CPUC). The second year of this two-year survey will be conducted during the summer of 2010.

Protocol-level Northern Goshawk Surveys

In the summer of 2009, biologists began two-year protocol-level surveys for northern goshawk in order to identify active nesting sites within 0.25 mile of the new 625 Line and 650 Line. Surveys were not conducted along the existing 625 Line after updates to the project description reduced the amount of tree removal associated with its removal. These surveys were conducted in accordance with the Northern Goshawk Inventory and Monitoring Technical Guide, which was published by the USFS in 2006. Prior to beginning work, a survey plan outlining the planned survey area and methods was prepared and approved by the Lake Tahoe Basin Management Unit and CPUC. The second year of this two-year survey will be conducted during the summer of 2010.

4.4.2 Existing Conditions

Regulatory Background

Federal

Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects plants and wildlife that are listed as endangered or threatened by the USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service. The ESA prohibits take of endangered wildlife, where "take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (16 U.S. Code [U.S.C.] §1532(19), 1538). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging-up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S.C. § 1538(c)).

Under Section 7 of the ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or federal funding, could adversely affect a listed species (including plants) or its critical habitat. Through Section 7 consultation and the issuance of a Biological Opinion, the USFWS may issue an incidental take statement, allowing take of the species that is incidental to another authorized activity, provided that the action will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits to private actions that have no federal involvement through the development of a Habitat Conservation Plan (HCP).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) recognizes international treaties between the U.S. and other countries that have been afforded to protect migratory birds and any of their parts, eggs, and nests from activities, such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities:

- Falconry
- Raptor propagation
- Scientific collecting

- Special purposes (rehabilitation, education, migratory game bird propagation, and salvage)
- Take of depredating birds, taxidermy, and waterfowl sale and disposal

The regulations governing migratory bird permits can be found in 50 Code of Federal Regulations (CFR) Part 13 (General Permit Procedures) and 50 CFR Part 21 (Migratory Bird Permits).

Clean Water Act

The purpose of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of fill material into waters of the U.S. without a permit from the USACE. The definition of waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3(b)). The U.S. Environmental Protection Agency also has authority over wetlands and may override an USACE permit.

Substantial impacts to wetlands may require an Individual Permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions. For this project, this certification or waiver will be issued by the Lahontan Regional Water Quality Control Board (RWQCB).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act was established in 1940 to protect bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) from any actions that may take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. Under the Act, take of an eagle is defined as "to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb."

Regional Plan for the Lake Tahoe Basin

The TRPA was created through a bi-state compact between California and Nevada, which was ratified by the U.S. Congress in 1969. The TRPA establishes environmental thresholds, and enforces ordinances in order to achieve these thresholds, within the confines of the Lake Tahoe Basin. These thresholds and ordinances are part of the TRPA's Regional Plan, which has been developed to guide land development and protect the environmental quality of Lake Tahoe. The Code of Ordinances is the most visible of several documents that make up the Regional Plan. The code regulates, among other things, land use, density, rate of growth, land coverage, excavation, water quality, resource protection, and scenic impacts. The regulations are designed to bring the Lake Tahoe region into conformance with the threshold standards established for water quality, air quality, soil conservation, wildlife habitat, fish habitat, vegetation, noise, recreation and scenic resources. Other portions of the Regional Plan include the Goals and

Policies, Water Quality Management Plan, Plan Area Statements, and the Scenic Quality Improvement Plan. Regional Plan policies that are applicable to the project are included in Attachment 4.9-A: Policies Consistency Analysis in Section 4.9 Land Use and Planning.

U.S. Forest Service Land and Resource Management Plans

The project is subject to the management standards and guidelines contained in the Tahoe National Forest Land and Resource Management Plan (Forest Plan) and Lake Tahoe Basin Management Unit Forest Plan. These plans offer forest-wide standards, guidelines, and management practices for the management of forest ecology and objectives within their jurisdiction. The Forest Plans also provide guidelines for the implementation and restoration of projects within forest boundaries. Standards and guidelines that are applicable to the project are included in Attachment 4.9-A: Policies Consistency Analysis. Management indicator species, which help to represent sensitive habitats, are also identified in the Forest Plans. These management indicator species have been included on the lists of the sensitive species in the project area.

The project will require a Special Use Authorization from the USFS for work on Forest lands within the Tahoe National Forest and the Lake Tahoe Basin Management Unit, and a Timber Harvest Plan for the removal of merchantable timber on forest lands, as described further in Chapter 3 – Project Description.

State

California Endangered Species Act

The California Endangered Species Act (CESA), adopted in 1984, generally parallels the main provisions of the ESA. It is comprised of Sections 2050 through 2085 of the Fish and Game Code. Section 2080 of the Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the Fish and Game Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful projects. State lead agencies are required to consult with the CDFG to ensure that any action they undertake is not likely to jeopardize the continued existence of any state-endangered or state-threatened species or result in the destruction or adverse modification of essential habitat.[2]

Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the CESA and the federal ESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, including fish, amphibians, reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the CESA and/or the federal ESA. Fully protected species may not be taken or possessed at any time and incidental take permits cannot be issued (Fish and Game Code §4700).

[2] Essential habitat, as defined by Section 2053 of the CDFG Code, is land where if adverse modification occurred, the existence of the listed species would be jeopardized.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (Fish and Game Code §1900–1913) was created with the intent to "preserve, protect, and enhance rare and endangered plants in this State." The NPPA is administered by the CDFG. The Fish and Game Commission has the authority to designate native plants as "endangered" or "rare" and to protect them from take.

Fish and Game Code Section 1600

Sections 1601 through 1606 of the Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement application be submitted to the CDFG for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFG reviews the proposed actions and, if necessary, submits (to the applicant) a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFG and applicant is the Lake or Streambed Alteration Agreement.

Fish and Game Code Sections 3503, 3513, and 3800

The State of California has incorporated the protection of birds of prey in Sections 3503, 3513, and 3800 of the California Fish and Game Code. These sections protect all nongame bird species, including nests and eggs, from take, possession, or destruction.

Local

General Plans

Local plans with policies applicable to the project include the Placer County General Plan, Placer County's Martis Valley Community Area Plan, and the Town of Truckee General Plan. The Natural Resources and Conservation and Open Space sections of these plans outline the goals and policies of these two agencies regarding the protection of biological and hydrological resources within their jurisdictions. These policies are included in Attachment 4.9-A: Policies Consistency Analysis.

Biological Setting

The project is located in northeastern Placer County and southeastern Nevada County, California, in the eastern Sierra Nevada Mountains. Elevation in the project area ranges in from approximately 5,800 feet near Truckee, to 7,900 feet along the ridgelines north of the Lake Tahoe Basin, and back to 6,225 feet at Lake Tahoe. Following the descriptions outlined in the California Wildlife Habitat Relationships System habitat classification scheme, nine vegetative communities were identified within the project area. These communities include Sierra mixed conifer forest, red fir forest, Jeffrey pine forest, low sage, montane chaparral, wet meadow, montane riparian, fresh emergent wetland, and rock outcrop/barren. The vegetation communities throughout the project area differ with changes in elevation, slope, and aspect, which dictate overall temperatures, sun exposure, and the amount of available water. Though not a vegetative community, disturbed or developed areas were also noted and mapped with the vegetation communities.

Vegetation Communities

Sierra Mixed Conifer Forest

Sierra mixed conifer forest is a community dominated by several conifer species. In the project area, the most common species include white fir (*Abies concolor*), red fir (*Abies magnifica*), Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), and ponderosa pine (*Pinus ponderosa*). Historic burning and logging have created wide variability in stand structure and composition in this community. Canopy cover varies from 100 percent to more sparse cover, with some open areas.

In the project area, the understory consists of a variety shrubs, grasses, and forbs. Common understory shrubs include mahala mat (*Ceanothus prostratus*), mountain whitethorn (*Ceanothus cordulatus*), tobacco brush (*Ceanothus velutinus*), pinemat manzanita (*Arctostaphylos nevadensis*), greenleaf manzanita (*Arctostaphylos patula*), bush chinquapin (*Chrysolepis sempervirens*), huckleberry oak (*Quercus vaccinifolium*), mountain snowberry (*Symphorocarpus rotundifolium*), and several currant species (*Ribes* spp.).

Sierra mixed conifer forest is the most widespread vegetation community in the project area, extending from Kings Beach north to the Brockway Summit area along the existing and new 625 lines and the 650 Line; in the area between Brockway Summit and Northstar-at-Tahoe along the 650 Line; and between Brockway Summit and Tahoe City along the existing and new 625 lines. At higher elevations, the vegetation community transitions from Sierra mixed conifer forest to red fir forest. The majority of Sierra mixed conifer forest habitat in the project area is comprised of mature, even-aged stands of trees due to past logging in the area.

Red Fir Forest

Red fir forest is a community typically dominated by even-aged, monotypic stands of mature red fir (*Abies magnifica*). In the project area, a few scattered lodgepole pines (*Pinus contorta*) and western white pines (*Pinus monticola*) are also present in the red fir forest community. The understory is much more open than the areas of Sierra mixed conifer forest, with the primary understory shrub species being pinemat manzanita. Forb species present include white-veined wintergreen (*Pyrola picta*), Pacific monardella (*Monardella odoratissima*), and a rockcress species (*Arabis* spp.— possibly *A. platysperma* or *A. rigidissima* var. *demota*). A heavy duff layer exists in this community, contributing to the lack of understory diversity. This community is primarily present at the higher elevations along the existing and new 625 lines. As with the majority of conifer forest habitat in the project area, most of the red fir forest habitat is comprised of mature, even-aged stands of trees due to past logging in the area.

Jeffrey Pine Forest

Jeffrey pine is the dominant tree species in this community type. In the project area, lodgepole pine is also present in small numbers within the Jeffrey pine forest community. Canopy cover is less dense than in other forest communities as Jeffrey pine tends to be more scattered throughout the community. This generally allows for the understory of the Jeffrey pine forest to contain plants requiring drier, sunnier conditions than in other conifer communities. These understory plants include big sagebrush (*Artemisia tridentata*), bitterbrush (*Purshia tridentata*), and rabbitbrush (*Chrysothamnus nauseosus*). Jeffrey pine forest is present in the project area along

the 650 Line from Lahontan Drive in the Martis Valley southward to the Northstar-at-Tahoe area, where the Jeffrey pine forest transitions to Sierra mixed conifer forest.

Low Sage

The low sage vegetation community is dominated by low-growing shrubs, typically low sage (*Artemisia arbuscula*), and is often associated with bitterbrush, rabbitbrush, or big sagebrush. Several forb species are present in the low sage community, including lupine (*Lupinus* spp.), buckwheat (*Eriogonum* spp.), and Plumas ivesia (*Ivesia sericoleuca*). The low sage community in the project area exists on the edges of open wet or montane meadow communities. Low sage is present in the Martis Valley area along the 650 Line, the Martis Creek Wildlife Area, the Martis Creek Lake Recreation Area, and within the Joerger Road Staging Area.

Montane Chaparral

Montane chaparral varies markedly throughout California. Species composition changes with elevational and geographical range, soil type, and aspect. Montane chaparral exists in small patches throughout the project area and is characterized by one or more of the following species: mountain whitethorn, tobacco brush, greenleaf manzanita, pinemat manzanita, huckleberry oak, bush chinquapin, and bitter cherry (*Prunus emarginata*). Open areas in the Sierra mixed conifer forest are dominated by this vegetation community. These openings are either natural forest openings or clearings created by disturbances, such as logging, road construction, fire, or utility line clearance. Much of the existing right-of-way (ROW) beneath the existing 625 Line and 650 Line where regular vegetation maintenance occurs is dominated by montane chaparral species.

Wet Meadow

Wet meadow communities may be comprised of a wide variety of plant species. In the project area, these species consist mainly of bentgrass (*Agrostis* spp.), sedges (*Carex* spp.), rushes (*Juncus* spp.), and bulrush (*Scirpus* spp.). A large variety of forb species are also present in the wet meadow community. Wet meadows in the project area are usually associated with an adjacent riparian forest, seep, or waterway. The best examples of this relationship are located along Middle Martis Creek, West Martis Creek, and Martis Creek, where soils are too wet throughout much of the year to support trees. Several small wet meadow communities exist throughout the project area. Additionally, the 650 Line traverses a large wet meadow in the Martis Creek Wildlife Area. Plumas ivesia, a special-status plant, is found in the margins of this large meadow, in the transition to the low sage community.

Montane Riparian

In the project area, characteristic montane riparian species include mountain alder (*Alnus incana* ssp. *tenuifolia*), aspen (*Populus tremuloides*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), dogwood (*Cornus* spp.), and willow (*Salix* spp.). Montane riparian communities vary greatly in vegetative structure and species composition. Many of the montane riparian areas at higher elevations consist of extremely dense, shrub-like mountain alder and willow with no standing or flowing water. Along the Truckee River, large mountain alder, black cottonwood, and willows are the dominant species, with an extensive understory of a wide variety of herbaceous vegetation. Along Middle Martis Creek and Martis Creek, small, shrub-like willows dominate the vegetative community and are surrounded by an expansive wet meadow. Several

montane riparian communities in the project area are not associated with perennial flowing streams or seasonal channels, but instead with wet seeps or small ravines.

Fresh Emergent Wetland

Fresh emergent wetland communities are characterized by saturated or periodically flooded soils supporting several hydrophilic plant species, including sedges, rushes, and on more alkali sites, saltgrass. In wetter areas, cattails and bulrushes are potential dominant species. One small fresh emergent wetland exists in the project area, approximately 40 feet south of the Truckee River near milepost (MP) 15.3 of the existing 625 Line. This small fresh emergent wetland is approximately 20 feet wide and 75 feet long. Emergent vegetation at this location is primarily composed of sedges (*Carex* spp.), with horsetail (*Equisetum* spp.) and black cottonwood growing on the wetland edge.

Rock Outcrop/Barren

Barren habitat is defined by the absence of dominant vegetation. Any habitat with less than 2 percent total vegetation cover by herbaceous, desert, or non-wildland species and less than 10 percent cover by tree or shrub species is defined as barren habitat. Structure and composition of the substrate is largely determined by the region and surrounding environment. Alpine barren habitat includes exposed parent rock, glacial moraines, talus slopes, and any surface permanently covered with snow or ice. In the project area, small patches of barren habitat are best characterized as rock outcrops or talus slopes, with minimal vegetative cover. Rock outcrops are located along ridgelines at high elevations along the existing and new 625 lines.

Disturbed and Developed

Disturbed and developed areas in the project area consist of highways, paved roads, dirt roads, dirt tracks/trails, and road shoulders, as well as housing and commercial developments. These developed areas are generally surrounded by contiguous coniferous forest or other natural vegetation communities. For example, within the community of Kings Beach, the housing developments are surrounded by Sierra mixed conifer forest. Because the 132 Line exists within the town of Truckee, this line is primarily surrounded by disturbed and/or developed areas. Other disturbed or developed areas are located near road crossings and where the alignments enter communities, such as Tahoe City or Kings Beach.

Special-Status Species

Plants

There are 25 sensitive plant species, one lichen species, and two species of fungi that have a moderate potential to occur within the project area; two sensitive plant species that have a high potential to occur within the project area; and 1 sensitive plant species that was observed within the project area during field surveys. Sensitive species that are considered to have a high potential to occur may not have been observed during field surveys, but have been recently recorded within the project ROW. Sensitive species that are considered to have a moderate potential to occur are not known to occur within the project area, but suitable habitat exists and the project is located within the known range of the species. Impacts were not analyzed for species with low potential or no potential to occur in the project area. All sensitive plant species

identified during the literature search are shown in Figure 4.4-1: Species Occurrence Map, and have been included in Table 4.4-1: Sensitive Plant and Fungi Species.

Wildlife

Seven sensitive wildlife species were observed during the reconnaissance-level surveys and protocol-level surveys or are known to be present within the project area. Additionally, four species have a high potential to occur in the project area, and 15 species have a moderate potential to occur. Species that are considered to have a high potential to occur are generally common in the area, or large amounts of preferable or suitable habitat exists. Suitable habitat for sensitive wildlife species with a moderate potential to occur exists in varying quantities in the project area. Impacts were not analyzed for species with low potential or no potential to occur in the project area. A summary of the sensitive species and their habitat requirements is included in Table 4.4-2: Sensitive Wildlife Species. Species-specific impacts resulting from the project are discussed in Attachment 4.4-A: Biological Resources Technical Report.

Protected Activity Centers and Home Range Core Areas

The USFS has designated several 300-acre California spotted owl PACs and 200-acre northern goshawk PACs in the north Lake Tahoe area. Each California spotted owl PAC is contained within larger HRCAs. PACs are delineated to include known and suspected nest stands and encompass the best available habitat in as compact a unit as possible. PACs are maintained regardless of nest occupancy status. USFS-guidelines prohibit vegetation treatments within 0.25 mile of nests during the breeding season (March 1 to August 31 for California spotted owl and February 15 to September 15 for northern goshawk), unless surveys confirm that the birds are not nesting. If the location of a nest site within a PAC is unknown, surveys are required to locate the nest stand and determine nesting status or, as an alternative to surveys, an activity buffer will be applied to a 0.25-mile area surrounding the PAC. Protocol-level surveys are also required for activities likely to reduce habitat quality within suitable nesting habitat that is not within a designated PAC. Additionally, only a total of 5 percent of all California spotted owl PACs may undergo vegetation treatment in a given year and only 10 percent within a decade.

According to the Forest Plans, the activity buffer may be waived for vegetation treatments of limited scope and duration, when a biological evaluation determines that such projects are unlikely to result in breeding disturbance based on the project's intensity, duration, timing and specific location. In situations where a biological evaluation concludes that a nest site will be shielded from planned activities by topographic features that will minimize disturbance, the buffer distance may be modified in coordination with the USFS.

Four designated California spotted owl HRCAs are located in the project area. The PACs of three of these HRCAs are also located in the project area. Three additional HRCAs exist within 0.5 mile of the project area, as shown in Figure 4.4-2: Sensitive Species Designated Areas. Approximately 4 miles of the new 625 Line— MP 0.3 to MP 1, MP 3.9 to MP 5.1, MP 6 to MP 7.9, and MP 13.7 to MP 14—and approximately 3.5 miles of the existing 625 Line—MP 0.3 to MP 1, MP 4.2 to MP 5.3, MP 5.9 to MP 7.4, and MP 13.7 to MP 14—are located within California spotted owl HRCAs. Approximately 1 mile of the new 625 Line—MP 6.5 to MP 7.5—and 0.5 mile of the existing 625 Line—MP 6.5 to MP 7—are located within the PACs of these HRCAs. Additionally, 0.5 mile of the 650 Line runs adjacent to an HRCA—MP 8.3 to

MP 8.8—and 0.25 mile of the associated PAC—MP 8.3 to MP 8.5. Additional California spotted owls or nesting sites are likely to exist in or near the project area on non-USFS lands.

One northern goshawk PAC borders the existing and new 625 lines, as well as the 650 Line near approximate MP 0.5 of the new and existing 625 lines and MP 8.5 of the 650 Line. Two other designated northern goshawk PACs are located within 1 mile of the existing 625 Line between Brockway Summit and Burton Creek State Park. Additional northern goshawks and their nesting sites are likely to exist in or near the project area on non-USFS lands.

Because tree removal will occur within suitable habitat as well as within and adjacent to known PACs, two-year protocol-level surveys for both California spotted owl and northern goshawk began during the summer of 2009. During these surveys, no active nests were identified though several observations of California spotted owl were made. No evidence of northern goshawk was recorded. Additional information regarding the first year of these surveys is included in Attachment 4.4-B: Interim Protocol-Level Survey Reports.

Riparian and Other Sensitive Habitat

No sensitive habitat areas, as designated by the CDFG, are located within the project area. However, the project components cross approximately 40 creeks and drainages, and the majority of them have associated riparian areas. Vegetation types in these riparian areas are previously described and all aquatic features in the project area are shown in Table 4.8-1: Hydrologic Features Map in Section 4.8 Hydrology and Water Quality. No USFWS-designated critical habitat exists within 10 miles of the project area.

Wetlands

In addition to drainages, creeks, and rivers, wetlands are present within the project area in the form of fresh emergent wetlands and wet meadows. One fresh emergent wetland is located between MP 15.2 and MP 15.3 beneath the existing 625 Line—also part of the new 625 Line—in Tahoe City near the Truckee River. Many wet meadows also exist throughout the project area, with the largest located within Martis Valley surrounding the confluences of Middle Martis Creek, West Martis Creek, and Martis Creek. The 650 Line crosses this large wet meadow complex between MP 0.2 and MP 1.7. The Northstar Golf Course Staging Area will also be located adjacent to this large meadow complex. Several other wet meadows exist along the new and existing 625 lines, in places where drainages or intermittent creeks fan out over larger, flatter areas, creating breaks in coniferous forest habitat where conditions are too wet for trees. These wet meadows are generally identified by a lack of tree cover, hydric soils throughout the summer and potentially fall months, or the presence of hydrophytic plants including cattails (*Typha* spp.), willow (*Salix* spp.) or rushes (*Juncas* spp.). These features are described further in Section 4.8 Hydrology and Water Quality.

broad-nerved hump moss
broad-nerved hump moss
Plumas ivesia
northern goshawk
Plumas ivesia
California wolverine
Constance's sedge
common moonwort
Sierra Nevada red fox
Plumas ivesia
Plumas ivesia
willow flycatcher
Sierra Nevada red fox
marsh skullcap
Plumas ivesia
Tahoe yellow cress
Plumas ivesia
Donner Pass buckwheat
Sierra Nevada
snowshoe hare
willow flycatcher
Joerger Road Staging Area
Truckee
yellow warbler
80
alder buckthorn
Truckee-Tahoe Airport
Lahontan cutthroat trout
Nevada County
Placer County
Plumas ivesia
Plumas ivesia
Plumas ivesia
osprey
bald eagle
89
267
Martis Valley
Lahontan cutthroat trout
Northstar Golf Course Staging Area
Plumas ivesia

Figure 4.4-1: Species Occurrence Map 1 of 3

625 and 650 Line Upgrade Project

New 625 Line
Existing 625 Line
625/629 Double-Circuit
650 Line to be Rebuilt
650 Line Previously Upgraded
132/650 Double-Circuit to be Rebuilt
650 Line to be Removed
Northstar Fold
Milepost (Color Coded by Line)
Staging Area
CDFG Spotted Owl Database - Historic Nest Site

Field Observation
Plant Occurrence
Animal Occurrence

CNDDB Search Results
CNDDB Plant Occurrence
CNDDB Wildlife Occurrence

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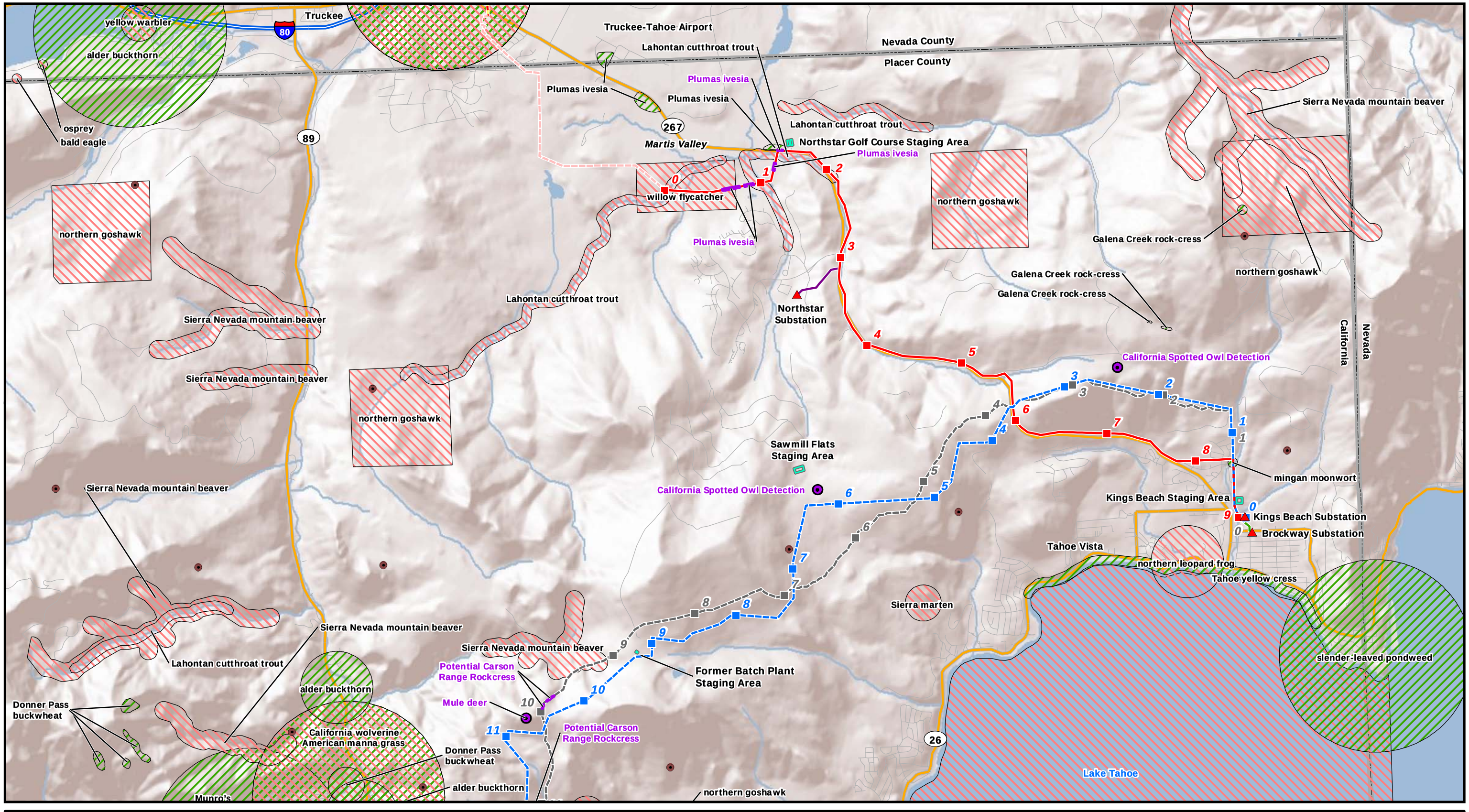

Figure 4.4-1: Species Occurrence Map 2 of 3

625 and 650 Line Upgrade Project

- New 625 Line
- Existing 625 Line
- 625/629 Double-Circuit
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double-Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Milepost (Color Coded by Line)
- Staging Area
- CDFG Spotted Owl Database - Historic Nest Site

Field Observation
- Plant Occurrence
- Animal Occurrence

CNDDB Search Results
- CNDDB Plant Occurrence
- CNDDB Wildlife Occurrence

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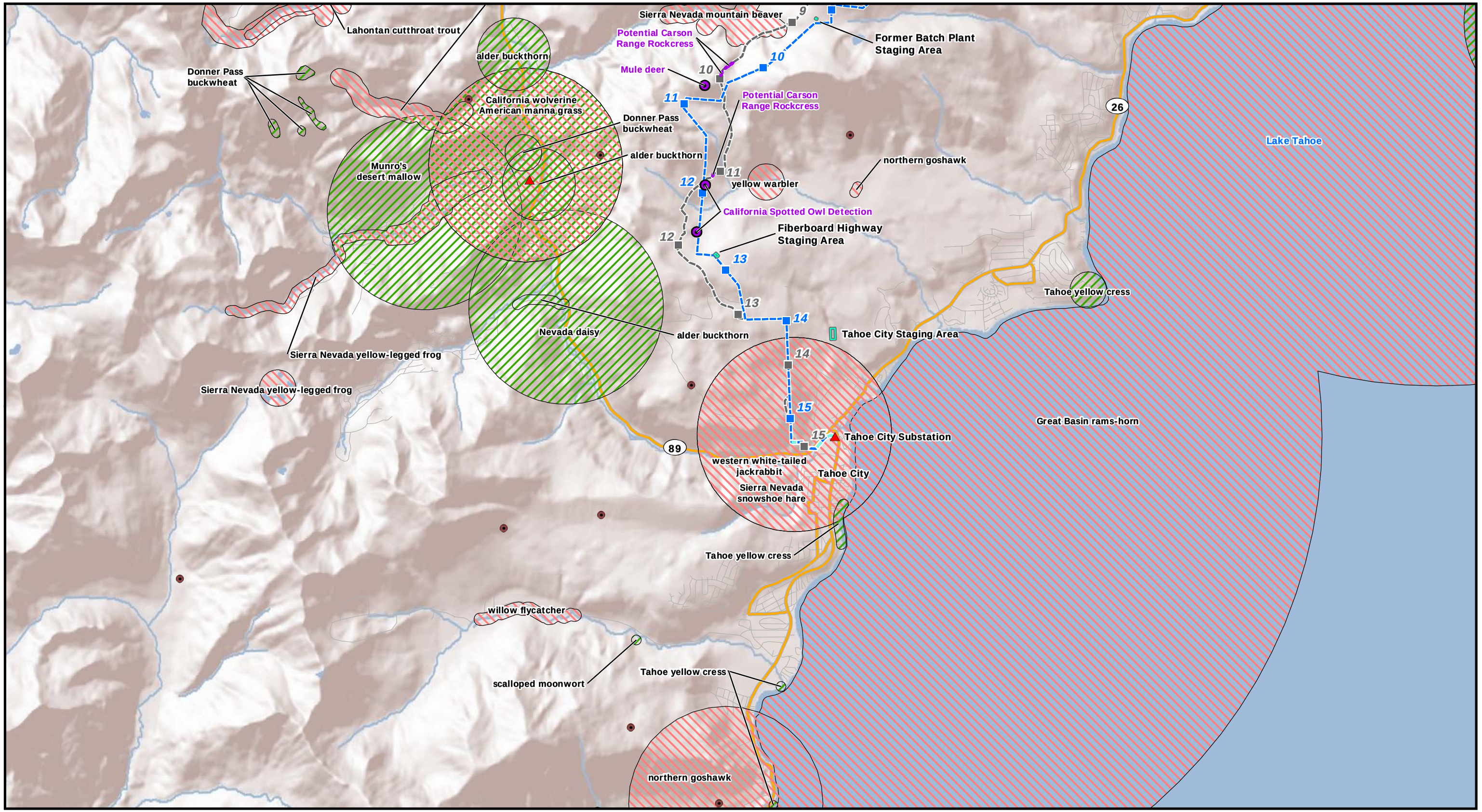

Figure 4.4-1: Species Occurrence Map 3 of 3

625 and 650 Line Upgrade Project

- New 625 Line
- Existing 625 Line
- 625/629 Double-Circuit
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double-Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Milepost (Color Coded by Line)
- Staging Area
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Field Observation
- Plant Occurrence
- Animal Occurrence

CNDDB Search Results
- CNDDB Plant Occurrence
- CNDDB Wildlife Occurrence

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Table 4.4-1: Sensitive Plant and Fungi Species

Species Name	Listing Status[3]	Habitat Requirements	Potential to Occur
Washoe tall rockcress (*Arabis rectissima simulans*)	SI	Occurs in Jeffrey pine forests in disturbed areas and on sandy granitic or andesitic soils from 7,000 to 10,000 feet in elevation. Blooms from June to July.	Suitable habitat exists along the 650 Line, south of Martis Valley in Jeffrey pine forests. This species is known only from accounts in Washoe and Douglas counties, Nevada, though it is believed that additional populations may exist in the surrounding area. **Moderate Potential**
Carson Range rockcress (Galena Creek rockcress) (*Arabis rigidissima* var. *demota*)	1B.2 TNF LTBMU	Occurs in sandy to rocky soils or outcrops derived from granitic or volcanic materials, mostly on moderate to steep slopes with northerly aspects. Often occurs in drainages near meadow edges or in other moisture-accumulating microsites. Occurs in broad-leaved upland forest and upper montane coniferous forest from 7,500 to 8,500 feet in elevation. Blooms in August.	Two known CNDDB occurrences were noted near Martis Peak (0.75 mile and 2 miles northeast of the 650 Line). Suitable habitat exists in several locations scattered throughout the project area. Several potential Carson Range rockcress individuals were observed during September 2007 reconnaissance-level surveys. **High Potential**
Tiehm's rockcress (*Arabis tiehmii*)	1B.3 LTBMU	Occurs in boulder fields and rock outcrops above 9,700 feet in elevation. Blooms from July to August.	No known occurrences have been recorded in Nevada County or Placer County. The project alignment is located below the elevation range of the species. **No Potential**
Webber's milkvetch (*Astragalus webberi*)	1B.2 TNF	Occurs in open, brushy slopes and flats in xeric pine forest or mixed pine oak forest from 2,700 to 4,000 feet in elevation. Blooms from May to June.	The project is located outside of the species' elevation range. **No Potential**
Trianglelobe moonwort (*Botrychium ascendens*)	2.3 TNF LTBMU	Occurs in grassy fields, coniferous woods near streams, and near springs in lower montane coniferous forest over 4,000 feet in elevation. This species is fertile in July and August.	Scattered suitable habitat is distributed throughout the new 625 Line, existing 625 Line, and 650 Line near riparian or wet meadow habitat types. **Moderate Potential**
Scalloped moonwort (*Botrychium crenulatum*)	2.2 LTBMU TNF	Occurs in swamps, bogs, and seeps below coniferous forests from 4,100 to 10,700 feet in elevation. Prefers highly saturated soils. Produces spore-bearing bodies typically between June and September.	Limited coniferous swamp or bog habitat is present within the project area. **Low Potential**
Slender moonwort (*Botrychium lineare*)	1B.3 LTBMU	Occurs in upper montane coniferous forests around 8,500 feet in elevation. Likely produces spore-bearing body during spring or summer after the snowmelt.	This species is known from only one record located outside of the Lake Tahoe area. This record was recorded outside of the elevation range of the project and there are no known records in Nevada County or Placer County. **No Potential**

[3] Explanation of state and federal listing codes:

Federal listing codes:

-FC: Candidate for Federal listing
-TNF: Tahoe National Forest sensitive species
-WS-T: Tahoe National Forest watchlist species
-LTBMU: Lake Tahoe Basin Management Unit sensitive species
-SI: Tahoe Regional Planning Agency special interest species

California listing codes:

-CE: State-listed as Endangered

CNPS lists:

-1B.1: Rare, threatened or endangered in California or elsewhere; seriously threatened in California
-1B.2: Rare, threatened or endangered in California or elsewhere; fairly threatened in California
-1B.3: Rare, threatened or endangered in California or elsewhere; not very threatened in California
-2.1: Rare, threatened or endangered in California only; seriously threatened in California
-2.2: Rare, threatened or endangered in California only; fairly threatened in California
-2.3: Rare, threatened or endangered in California only; not very threatened in California
-3.2: Additional information is needed by the CNPS; fairly threatened in California
-3.3: Additional information is needed by the CNPS; not very threatened in California
-4.2: Plants of limited distribution placed on watch list; fairly threatened in California
-4.3: Plants of limited distribution placed on watch list; not very threatened in California

Source: Tibor, 2001; CDFG, 2009; Escobeda, 2008; Hickman, 1993; Reed 2008; USFWS, 2009; USFS, 2007; USFS, 2006

Species Name	Listing Status[3]	Habitat Requirements	Potential to Occur
Common moonwort (*Botrychium lunaria*)	2.3 LTBMU TNF	Occurs in meadows or seeps within lower and upper montane coniferous forests between 7,500 and 11,100 feet in elevation. Produces spore-bearing bodies in August.	Limited, marginally suitable habitat is located within the project area due to the limited amount of suitable wet meadow habitat located within the high elevation range of the species. **Low Potential**
Mingan moonwort (*Botrychium minganense*)	2.2 LTBMU TNF	Found along creek banks in mixed coniferous forest over 4,000 feet in elevation. Fertile from July to September.	Suitable habitat is scattered throughout the project area. One CNDDB occurrence, recorded in 2005, exists along Griff Creek in Kings Beach beneath the existing 625 Line, new 625 Line, and 650 Line. Suitable habitat is present along the existing 625 Line and new 625 Line within montane riparian habitats and especially near the headwaters to Deer Creek. **High Potential**
Western goblin (*Botrychium montanum*)	2.1 TNF LTBMU	Occurs along creek banks in old-growth coniferous forest over 4,000 feet in elevation. Fertile from July to August.	Suitable habitat is scattered throughout the project area along Griff Creek, Burton Creek, headwaters to Deer Creek, and other montane riparian and wet meadow habitat located within large conifer forest habitat along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
Bolander's candle moss (*Bruchia bolanderi*)	2.2 LTBMU TNF	Occurs in very damp coniferous forests from 5,500 to 9,200 feet in elevation. Produces spore-bearing bodies during the summer months.	Suitable habitat is scattered throughout the red fir and Sierra mixed conifer forests along the existing 625 Line, new 625 Line, and 650 Line, especially in north-facing or flatter areas. **Moderate Potential**
Constance's sedge (*Carex constancea*)	1B.1	Grows in duff on the floor of mixed conifer forests at an elevation of approximately 6,000 feet. Blooming period is unknown.	Though this species is known from only one occurrence, similar habitat to that of the record is present within the within the Sierra mixed conifer forest located along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
Clubhair mariposa lily (*Calochortus clavatus* var. *avius*)	1B.2 TNF	Prefers silty, volcanically derived soils in montane coniferous forest below 5,500 feet in elevation. Commonly found in rocky areas. Blooms from May to July.	No suitable habitat exists because the project is located outside of the elevation range of the species. **No Potential**
Brandegee's fairyfan (*Clarkia biloba* ssp. *brandegeae*)	1B.2 TNF	Found in foothill chaparral habitats, often growing in road cuts below 3,000 feet in elevation. Blooms from May to June.	The project area is located outside of the known range of the species. **No Potential**
Cudonia monticola	TNF	Typically found in conifer needle litter. Produces fruiting bodies after snowmelt between August and November.	Suitable habitat is scattered along the existing 625 Line, new 625 Line, and 650 Line in damp parts of Sierra mixed conifer, red fir, and Jeffrey pine forests with deep needle litter. **Moderate Potential**
Clustered lady's slipper (*Cypripedium fasciculatum*)	TNF 4.2	Occurs in serpentine seeps and moist stream banks in montane coniferous forests from 500 to 7,200 feet in elevation. Blooms from March to July.	Suitable habitat is scattered throughout the project area along Griff Creek, Burton Creek, headwaters to Deer Creek, and other montane riparian and wet meadow habitat, located within large conifer forest habitats along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
Mountain lady-slipper orchid (*Cypripedium montanum*)	TNF 4.2	Occurs on dry, undisturbed slopes in montane coniferous and upland broad-leaved forest habitats from 600 to 7,500 feet in elevation. Blooms from March to August.	Suitable habitat exists in the drier portions of Sierra mixed conifer and Jeffrey pine forests along the 650 Line between Kings Beach and Martis Valley and along the existing 625 Line and new 625 Line between Kings Beach and Brockway Summit. **Moderate Potential**
Branched collybia (*Dendrocollybia racemosa*)	LTBMU TNF	Occurs in old-growth coniferous forests near decaying trees. Typically feeds off of other fungi. Fertile between May and August.	Suitable habitat is scattered within the old-growth red fir and mixed conifer forests along the existing 625 Line and new 625 Line between Brockway Summit and Tahoe City. **Moderate Potential**

Species Name	Listing Status[3]	Habitat Requirements	Potential to Occur
Tahoe draba (*Draba asterophora asterophora*)	1B.2 LTBMU SI	Occurs in boulder fields within subalpine coniferous forests from 8,200 to 11,500 feet in elevation. Blooms from July to August and occasionally in September.	Very limited habitat exists within the elevation range of the species. **Low Potential**
Cup Lake draba (*Draba asterophora macrocarpa*)	1B.1 LTBMU SI	Occurs in rocky subalpine coniferous forests from 8,200 to 9,100 feet in elevation. Blooms from July to August.	Limited habitat exists within the elevation range of the species. No species have been recorded within Placer County or Nevada County. **Low Potential**
English sundew (*Drosera anglica*)	2.3 WS-T	Occurs in bogs, fens, or wet meadows from 4,200 to 6,500 feet in elevation. Blooms from June to September.	Potential habitat is scattered throughout the wet meadow habitat of Martis Valley along the 650 Line and within the Northstar Golf Course Staging Area. **Moderate Potential**
Subalpine fireweed (*Epilobium howellii*)	1B.3 TNF LTBMU	Found in wet meadows and mossy seeps in montane coniferous forest habitats from 6,000 to 9,000 feet in elevation. Blooms from July to August.	Suitable habitat is scattered along the existing 625 Line and the new 625 Line within montane riparian and wet meadow habitat types. **Moderate Potential**
Oregon fireweed (*Epilobium oreganum*)	1B.2	Occurs in and near springs and bogs and occasionally on serpentine soils in montane coniferous forests from 1,500 to 8,000 feet in elevation. Blooms from June to September.	Suitable habitat is scattered along the existing 625 Line and the new 625 Line within montane riparian and wet meadow habitat types. **Moderate Potential**
Starved daisy (*Erigeron miser*)	1B.3 TNF LTBMU	Occurs on rocky, granitic outcrops in montane coniferous forests above 6,000 feet in elevation. Blooms from June to October.	A very small amount of rocky outcrops were noted during the 2007 and 2008 surveys. The species was not observed within these areas during the reconnaissance-level surveys conducted in September of 2007 or October of 2008, which fell within the blooming period of the species. **Low Potential**
Nevada daisy (*Erigeron nevadincola*)	2.3	Occurs in montane coniferous forests, Great Basin scrub, and pinyon-juniper woodlands from 4,200 to 8,700 feet in elevation. Blooms from May to July.	Suitable habitat exists within the low sage and Jeffrey pine forest habitats along the 650 Line north of Northstar Drive and within the Joerger Road Staging Area. **Moderate Potential**
Northern Sierra daisy (*Erigeron petrophyllus sierrensis*)	4.3 WS-T	Occurs in lodgepole pine, yellow pine, and red fir forests from 1,000 to 6,800 feet in elevation. Blooms from June to October.	Suitable habitat exists throughout the project area, with the exception of the Martis Valley and areas outside of the elevation range. **Moderate Potential**
Donner Pass buckwheat (*Eriogonum umbellulatum* var. *torreyanum*)	1B.2 TNF LTBMU	Occurs on steep slopes and ridgetops, in rocky, volcanic soils. Usually occurs in bare, sparsely vegetated or chaparral, unstable areas from 6,000 to 8,000 feet in elevation. Blooms from July to September.	Suitable habitat is scattered in small barren or dry chaparral areas along the existing 625 Line, new 625 Line, and 650 Line south of Brockway Summit. **Moderate Potential**
Brooks pocket moss (*Fissidens aphlelotaxfolius*)	2.2 TNF	Occurs in rocky, cold, clear stream channels or waterfalls in montane coniferous forests where large amounts of water vapor are produced. The timing of the spore-bearing period is not known.	No rocky, perennial stream channels representing preferable habitat were noted within the project area. **Low Potential**
Butte County missionbells (*Fritillaria eastwoodiae*)	TNF 3.2	Found in chaparral and lower montane coniferous forests below 5,000 feet in elevation. Typically grows in full to partial sun, usually on dry slopes, in serpentine, red clay, or sandy loam. Blooms from March to May.	The project location is outside of the species' elevation range. **No Potential**
American manna grass (*Glyceria grandis*)	2.3	Found in wet meadows, ditches, streams, and ponds in valleys and lower elevations in the mountains (below 6,000 feet in elevation). Blooms from June to August.	One historical CNDDB occurrence, in 1934, was recorded along the Truckee River approximately 4 miles downstream from the Tahoe City area. The project area is at the upper limits of the species' known elevation range. **Low Potential**

Species Name	Listing Status[3]	Habitat Requirements	Potential to Occur
Blandow's bog moss (*Helodium blandowii*)	2.3 TNF	Occurs on damp soil in meadows and seeps above 6,500 feet in elevation. Fertile in August.	Suitable habitat exists within the wet meadow habitats along the new and existing 625 lines. **Moderate Potential**
Short-leaved hulsea (*Hulsea brevifolia*)	1B.2 LTBMU	Occurs in montane coniferous forests with granite or volcanic soils from 4,900 to 10,500 feet in elevation. Blooms from May to August.	Suitable habitat is present throughout the red fir, Sierra mixed conifer, and Jeffrey pine forests along the existing 625 Line, new 625 Line, Northstar Fold, and 650 Line. **Moderate Potential**
Aquatic lichen (*Hydrothyria venosa*)	TNF	Found on rocks in streams with clear, cold water below 7,000 feet in elevation.	Suitable habitat is present in Griff Creek, Truckee River, and Middle Martis Creek along the 650 Line and existing 625 Line. **Moderate Potential**
Sierra Valley mousetail (*Ivesia aperta* var. *aperta*)	1B.2 TNF	Usually found in volcanically derived, loamy soil in grassy areas within sagebrush scrub communities from 4,500 to 7,500 feet in elevation. Blooms from June to September.	Known species distribution is limited to the Sierra Valley, in Plumas and Sierra counties. **No Potential**
Dog Valley mousetail (*Ivesia aperta* var. *canina*)	1B.1 TNF	Found in shallow, rocky, volcanic soils in montane meadow and montane coniferous forest habitats from 4,500 to 7,500 feet in elevation. Blooms from June to August.	Known species distribution is limited to the Dog Valley in Sierra County. **No Potential**
Plumas ivesia (*Ivesia sericoleuca*)	1B.2 TNF	Found in the vernally wet parts of meadows and alkali flats and in vernal pools. Usually occurs on volcanic substrates from 4,500 to 7,500 feet in elevation. Blooms from May to September.	A robust population—greater than 100 individuals—was observed along the 650 Line during the 2007 and 2008 reconnaissance-level surveys in the Martis Creek Wildlife Area and the Martis Creek Lake Recreation Area between MP 0.3 and MP 1.9. Additionally, individuals were noted within and adjacent to the western side of the Northstar Golf Course Staging Area. CNDDB records indicate that this species has been previously identified in the project area on the north side of State Route (SR) 267 in the Martis Creek Lake Recreation Area. **Present**
Webber's ivesia (*Ivesia webberi*)	1B.1 TNF	Found in rocky, volcanic soils in Great Basin scrub and montane coniferous forests on the eastern side of the Sierra Nevada Mountains from 4,500 to 7,500 feet in elevation. Blooms from May to July.	Suitable habitat exists in the project area north of Brockway Summit along the Northstar Fold, 650 Line north of Brockway Summit, and within the Joerger Road Staging Area. **Moderate Potential**
Cantelow's lewisia (*Lewisia cantelovii*)	1B.2 TNF	Found on mesic rock outcrops and wet cliffs, usually in moss or clubmoss below 4,500 feet in elevation. Blooms from May to October.	The project area is outside of the species' range. **No Potential**
Hutchinson's lewisia (*Lewisia kelloggii hutchisonii*)	3.3 LTBMU TNF	Found in open patches of montane coniferous forests in rocky, slate areas from 4,600 to 7,000 feet in elevation. Blooms from June to August.	Suitable habitat is scattered within the red fir and Sierra mixed conifer forests along the existing 625 Line, new 625 Line, and 650 Line below 7,000 feet in elevation. **Moderate Potential**
Kellogg's lewisia (*Lewisia kelloggii kelloggii*)	LTBMU TNF	Found in open patches of montane coniferous forest in rocky, slate areas from 6,200 to 9,500 feet in elevation. Blooms from June to August.	Suitable habitat is scattered within the red fir and Sierra mixed conifer forests along the existing 625 Line, new 625 Line, and 650 Line below 9,500 feet in elevation. **Moderate Potential**
Long-petaled lewisia (*Lewisia longipetala*)	1B.3 TNF LTBMU SI	Occurs in mesic, rocky sites and in cracks of granite or gravelly volcanic soils between 8,100 and 9,600 feet in elevation. Blooms from July to August.	The project is outside of the species' range. **No Potential**
Saw-toothed lewisia (*Lewisia serrata*)	1B.1 TNF	Found on shaded, moss-covered, north-facing, metamorphic rock cliffs and outcrops between 3,000 and 5,000 feet in elevation. Blooms from May to June.	The project is outside of the species' range. **No Potential**

Species Name	Listing Status[3]	Habitat Requirements	Potential to Occur
Quincy lupine (*Lupinus dalesiae*)	TNF 4.2	Found on dry open or shaded slopes, summits, and trails. Often found in disturbed soils in montane coniferous forests between 3,000 and 8,000 feet in elevation. Blooms from May to August.	Suitable habitat is scattered within the red fir and Sierra mixed conifer forests along the existing 625 Line, new 625 Line, and 650 Line, especially along the Mount Watson Road and other USFS roads where previous ground disturbance has occurred. **Moderate Potential**
Long-stalked hump moss (*Meesia longiseta*)	SI	Occurs in high-elevation bogs or swamps and is generally rare in California.	Limited high elevation swamp habitat exists along the highest elevation portions of the project. Because the species rarely occurs within California, it is unlikely to be present within the project area. **Low Potential**
Three-ranked hump moss (*Meesia triquetra*)	TNF 4.2	Found in wet areas, fens, bogs, and seeps between 4,200 and 8,200 feet in elevation.	Suitable habitat exists along the 650 Line in Martis Valley and within the Northstar Golf Course Staging Area. Additional wet meadow habitat is present along the existing 625 Line and new 625 Line. **Moderate Potential**
Broad-nerved hump moss (*Meesia uliginosa*)	2.2 TNF	Found in wet areas, fens, bogs, and seeps between 4,200 and 8,200 feet in elevation.	Suitable habitat exists along the 650 Line in Martis Valley and within the Northstar Golf Course Staging Area. Additional wet meadow habitat is present along the existing 625 Line and new 625 Line. **Moderate Potential**
Elongate copper moss (*Mielichhoferia elongata*)	2.2 TNF	Found in cismontane woodlands from 1,600 to 4,200 feet in elevation.	The project is located outside of the elevation range of the species. **No Potential**
Follett's monardella (*Monardella folletti*)	1B.2 TNF	Found on open, rocky, serpentine slopes in lower montane coniferous woodlands between 2,000 and 6,500 feet in elevation. Blooms from June to September.	The project is located outside of the species' range. **No Potential**
Myurella moss (*Myurella julacia*)	2.3 SI	Occurs in boulder fields within subalpine coniferous forest from 8,800 to 11,500 feet in elevation.	No potential habitat exists because the project falls outside of the elevation range of the species. **No Potential**
Orthotrichum moss (*Orthotrichum praemorsum*)	SI	Found on shaded or moist rock outcrops up to 8,000 feet in elevation.	Limited marginal habitat exists within the project area. All large rock outcrops encountered during the 2007 and 2008 surveys were located on exposed ridge tops. **Low Potential**
Shevock's moss (*Orthotrichum shevockii*)	1B.3 SI	Occurs in Joshua tree and pinyon-juniper woodlands with granite or rocky soils from 2,000 to 6,800 feet in elevation.	No suitable habitat types are present throughout the project. **No Potential**
Spjut's bristlemoss (*Orthotrichum spjutii*)	1B.3 SI	Occurs in montane coniferous and pinyon-juniper forests from 6,800 to 7,800 feet in elevation.	No records of the species exist in the Lake Tahoe area or Placer or Nevada counties. The nearest record of the species exists in Tuolumne County. **Low Potential**
Closed-throated beardtongue (*Penstemon personatus*)	1B.2 TNF	Usually found in partial sun on north-facing slopes growing in metavolcanic soils between 4,500 and 6,500 feet in elevation. Blooms from June to September.	Suitable habitat is located primarily along the 650 Line, north of the Brockway Summit where the slopes are north-facing. Some scattered north-facing slopes exist south of the Brockway Summit along the new 625 Line, existing 625 Line, and the 650 Line. **Moderate Potential**
Veined water lichen (*Petigera hydrothyria*)	LTBMU	Found in cold, clear streams with clean granitic or other rock substrates up to 7,000 feet in elevation.	No suitable stream habitat exists within the elevation range of the species. **No Potential**
Stebbins' phacelia (*Phacelia stebbinsii*)	1B.2 TNF	Found in open areas among rocks and rubble on metamorphic rock benches on the western slopes of the Sierra Nevada Mountains between 3,000 and 6,000 feet in elevation. Blooms from June to July.	The project is located outside of the species' range. **No Potential**

Species Name	Listing Status[3]	Habitat Requirements	Potential to Occur
Tundrae thread moss (*Pohlia tundrae*)	2.3 SI	Occurs in boulder fields within subalpine coniferous forest from 8,800 to 9,800 feet in elevation. Timing of spore production unknown.	The elevation range of the species falls outside of the project area. **No Potential**
Olive phaeocollybia (*Phaeocollybia olivacea*)	TNF	Occurs in older stands of mixed coniferous forest at a variety of elevations. Timing of fruit production unknown.	There are no known occurrences of this species in Placer County, Nevada County, or the Lake Tahoe Basin area. **Low Potential**
Slender-leaved pondweed (*Potamogeton filiformis*)	2.2	Found in shallow, clear water of lakes and drainage channels below 7,600 feet in elevation. Blooms from May to July.	One historical CNDDB occurrence, in 1931, exists in Lake Tahoe approximately 2 miles from the project area in Mink Harbor. No suitable habitat exists in the project area. **Low Potential**
Sticky goldenweed (*Pyrrocoma lucida*)	1B.2 TNF	Occurs in wet meadows and alkali flats on the east side of the Sierra Nevada Mountains below 6,000 feet in elevation. Blooms from July to October.	The project area is located outside of the species' range. **No Potential**
Alderleaf buckthorn (*Rhamnus alnifolia*)	2.2	Occurs in montane forests, wet meadows, seeps, and montane riparian habitats between 4,500 and 7,000 feet in elevation. Blooms from May to July.	There are several known occurrences within 5 miles of the project, both within the Lake Tahoe Basin and in the Truckee area. Most local occurrences were recorded near water features such as Donner Lake or perennial streams. Suitable habitat is located throughout the project area where riparian thickets and seeps exist. **Moderate Potential**
Tahoe yellow cress (*Rorippa subumbellulata*)	FC CE 1B.1 LTBMU SI	Primarily located on sandy beaches and the margins of Lake Tahoe on decomposed granite sand. Occasionally located in riparian areas near the lake margins. Blooms from May to September.	Two CNDDB occurrences are located approximately 0.5 mile from the project area, along the shores of Lake Tahoe in Kings Beach, and just south of Tahoe City. No suitable habitat exists within the project area. **No Potential**
American scheuchzeria (*Scheuchzeria palustris* ssp. *americana*)	2.1 TNF	Occurs in sphagnum bogs and on lake margins from 4,400 to 6,500 feet in elevation. Blooms in July.	No known occurrences of this species lie within Placer County or Nevada County, with the nearest occurrence located in Sierra County. **Low Potential**
Marsh skullcap (*Scutellaria galericulata*)	2.2	Occurs in open, wet habitats and cannot grow in the shade. Generally found in meadows and seeps below 7,000 feet in elevation. Blooms from July to September.	Suitable habitat exists in patches throughout the project area. **Moderate Potential**
Sphagnum moss (*Sphagnum* spp.)	SI	Common genus of mosses. Can be found in many different types of habitats around the world. Generally dominates the plant communities in swamps, fens, and bogs.	No sphagnum habitat was observed during the field surveys. Limited suitable habitat exists in the project area. **Low Potential**
Munro's desert mallow (*Sphaeralcea munroana*)	2.2	Occurs in Great Basin scrub habitats. Blooms from May to June.	One historical CNDDB occurrence, in 1922, was recorded along Squaw Creek approximately 5.5 miles northeast of Truckee along the Truckee River. No suitable habitat exists in the project area. **No Potential**
Howell's umbrellawort (*Tauschia howellii*)	1B.3 TNF	Found in subalpine fir or yellow pine forests from 5,600 to 8,200 feet in elevation in granitic rocky soils. Blooms from June to August.	Suitable habitat exists in patches throughout the project area. No known occurrences lie within Placer or Nevada counties. **Low Potential**
Cusick's speedwell (*Veronica cusickii*)	WS-T 4.3	Found in forest openings, meadows in higher elevation, and coniferous forests between 7,000 and 9,800 feet in elevation. Blooms from July to August.	Suitable habitat exists in patches throughout the project area, primarily along the existing and new 625 Line alignments. **Moderate Potential**

Table 4.4-2: Sensitive Wildlife Species

Species Name	Listing Status[4]	Habitat Requirements	Potential to Occur
Invertebrates			
Great Basin rams-horn (*Helisoma newberryi newberryi*)	TNF LTBMU	Inhabits larger lakes and slow rivers, including larger spring sources and spring-fed creeks, where it burrows into soft mud.	This species is known to occur in Lake Tahoe. Potential habitat exists in the slow moving sections of the Truckee River, downstream from the project area. **Low Potential**
California floater (*Anodonta californiensis*)	TNF	Inhabits slow-moving rivers or lakes with soft silty, sandy, or muddy substrates into which it can burrow. Generally found at lower elevations.	Though believed to occur only in lower elevations, one historic record of the species exists in Donner Lake, west of the project area. This species is not known to occur within the Lake Tahoe Basin. It is believed to occur within the Truckee River in the State of Nevada, though the species is believed to be extirpated throughout most of California. Only one location within Truckee represents historically marginal habitat. **Low Potential**
Fish			
Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*)	FT	Historically inhabited all accessible cold waters of the Lahontan Basin in a wide variety of water temperatures and conditions. Requires gravel riffles in streams for spawning.	This species is known to have occurred in Martis Creek, Middle Martis Creek, and East Martis Creek until the mid-1990s. All pure populations likely have been extirpated, though hybrid populations may still exist. **Moderate Potential**
Lahontan Lake tui chub (*Gila bicolor pectinifer*)	CSC TNF LTBMU	Inhabits large, deep lakes. Able to tolerate a wide range of physiochemical water conditions. Spawns in near-shore, shallow areas over beds of aquatic vegetation.	Because no work will occur within Lake Tahoe, there is no potential for this species to occur within the project area. **No Potential**
Hardhead (*Mylopharodon conocephalus*)	CSC TNF	Inhabits low to mid-elevation areas in the Sacramento-San Joaquin drainage systems and is also present in the Russian River.	The project is located outside of the species' range. **No Potential**
Amphibians			
Foothill yellow-legged frog (*Rana boylii*)	CSC TNF	Inhabits partly-shaded, shallow, slow, gravelly streams and rivers with sunny banks in a wide variety of habitats below 6,700 feet in elevation. Requires cobble-sized substrate for egg-laying.	The project is located outside of the species' range. **No Potential**

[4] Explanation of state and federal listing codes

Federal listing codes:

-FT: Federally listed as Threatened
-FC: Candidate for Federal listing
-TNF: Tahoe National Forest Sensitive Species
-LTBMU: Lake Tahoe Basin Management Unit Sensitive Species
-MIS-T: Management Indicator Species for the Tahoe National Forest
-MIS-L: Management Indicator Species for the Lake Tahoe Basin Management Unit

California listing codes:

-CE: State listed as Endangered
-CT: State listed as Threatened
-CC: Candidate for State listing
-CSC: California Species of Special Concern
-FP: Fully Protected Species

CDFG, 2009; CDFG, 2007; Escobeda, 2008; Shuford, 2008; USFWS, 2009; USFS, 2009; USFWS, 1995; USFS, 2007; USFS, 2008

Species Name	Listing Status[4]	Habitat Requirements	Potential to Occur
Sierra Nevada yellow-legged frog (*Rana sierrae*)	FC CSC TNF LTBMU	Inhabits lakes, meadow streams, isolated pools, and sunny riverbanks in the Sierra Nevada Mountains from 1,000 to 12,000 feet in elevation. Always encountered within a few feet of water. Requires between 2 and 4 years to complete aquatic development.	Suitable habitat exists in the project area, most notably Watson Lake along the existing 625 Line and new 625 Line. CNDDB records also indicate that this species is present in the Squaw Creek area, approximately 2 miles west of the project area. **Moderate Potential**
Northern leopard frog (*Rana pipiens*)	CSC LTBMU	Inhabits lakes, meadow streams, isolated pools, and sunny riverbanks throughout portions of California. Generally requires a permanent water source.	Areas of suitable habitat exist in the project area, most notably the Truckee River and Watson Lake along the existing 625 Line and new 625 Line, and Middle Martis Creek and Martis Creek along the 650 Line. **Moderate Potential**
Pacific tree frog (*Pseudacris regilla*)	MIS-L MIS-T	Found throughout California in a variety of habitats, including wet meadow, coniferous forest, oak woodland, and riparian streams. Considered a management indicator species for wet meadow habitats.	Suitable habitat exists throughout the project area, with the exception of the barren, low sage, or disturbed habitats. **Moderate Potential**
Reptiles			
Northwestern pond turtle (*Actinemys marmorata marmorata*)	CSC TNF	Inhabits permanent or nearly permanent bodies of water in a wide variety of habitats from sea level to 4,700 feet in elevation. Requires basking sites. May nest up to 0.3 mile from water.	The project is located above the elevation range of the species. **No Potential**
Birds			
Northern goshawk (*Accipiter gentilis*)	CSC TNF LTBMU	Inhabits coniferous forests, and usually nests on north-facing slopes. Typically nests in red fir, lodgepole pine, Jeffrey pine, or aspen trees. Nests from February to September.	Multiple CNDDB records indicate the presence of this species in the North Lake Tahoe area. Data obtained from the USFS indicates that one known northern goshawk PAC is located directly adjacent to the 650 Line, existing 625 Line, and new 625 Line north of the Kings Beach Substation. The new 625 Line will also parallel this PAC. Suitable nesting habitat exists throughout the red fir, Sierra mixed conifer, Jeffrey pine, and montane riparian habitat types. No northern goshawks were observed during the first year of northern goshawk protocol-level surveys. **Present**
Sooty (blue) grouse (*Dendragapus obscurus*)	MIS-L MIS-T	Inhabits coniferous forests and aspens woodlands. Prefers forest ecotones[5] where nesting can occur in heavier brush and foraging can occur in more old-growth areas. Nests generally from May to July. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats.	Suitable habitat for this species is scattered throughout the project area, particularly along the existing 625 Line where ROW tree removal has promoted montane chaparral foliage to grow more densely. **Moderate Potential**
Yellow warbler (*Dendroica petechia brewsteri*)	CSC MIS-L MIS-T	Inhabits oak woodlands, montane and coniferous forests, and desert lowlands. Nests in dense, brushy riparian vegetation or shrubby montane vegetation. Nests from April to August. Considered to be a management indicator species for montane riparian habitats.	This species is known to breed in Burton Creek State Park. One individual was observed along Griff Creek in Kings Beach during the September 2007 reconnaissance-level survey. Suitable nesting habitat is scattered throughout the project area amongst the montane riparian habitat along the existing 625 Line, new 625 Line, and 650 Line. **Present**
Willow flycatcher (*Empidonax traillii*)	CE TNF LTBMU	Inhabits extensive thickets of low, dense willows on the edge of wet meadows, ponds, or backwaters from 2,000 feet to 8,000 feet in elevation. Breeds from April to August.	Individuals were observed during the 2007 reconnaissance surveys. Suitable nesting habitat for this species exists in Martis Valley within the willow thickets surrounding Middle Martis Creek and Martis Creek. This species is known to nest in the Martis Creek Wildlife Area along Martis Creek and in Middle Martis Creek. **Present**

[5] An ecotone is an area of transition between two differing habitat types.

Species Name	Listing Status[4]	Habitat Requirements	Potential to Occur
Greater sandhill crane (*Grus Canadensis tabida*)	CT FP TNF	Breeds in wetland habitats in northeastern California and winters in the Central Valley. Prefers grain fields within 4 miles of a shallow water body and breeds from April to August.	No CNDDB records for this species exist within 5 miles of the project area. This species was not observed in the project area during the 2007 or 2008 surveys. **Low Potential**
Bald eagle (*Haliaeetus leucocephalus*)	CE FP LTBMU TNF	Inhabits ocean shores, lake margins, and rivers for nesting and wintering. Usually nests within 1 mile of water in large, old-growth, or dominant live trees with open branches, especially pines. Breeds from March to August.	Suitable nesting and wintering habitat for this species is scattered throughout the project area. CNDDB records indicate the presence of breeding and wintering of bald eagles in the Lake Tahoe basin. **Moderate Potential**
Mountain quail (*Oreortyx pictus*)	MIS-L MIS-T	Inhabits coniferous or oak woodlands as well as chaparral habitat types generally between 2,200 and 9,800 feet in elevation. Prefers habitats with dense shrub cover. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats. Breeds between April and August.	Several individuals were observed during the 2008 reconnaissance surveys. Suitable habitat for this species exists throughout the project area, with the exception of the Martis Valley and Truckee areas. Preferable habitat exists in areas where tree removal has occurred, promoting the growth of dense shrubs, such as manzanita or tobacco brush. The existing 625 Line ROW supports this habitat. **Present**
Osprey (*Pandion haliaetus*)	TNF	Inhabits woodlands and adjacent habitat near large waterbodies and rivers. Nests in treetops or man-made structures near open water. Breeds from March to September.	Suitable nesting habitat exists along the Lake Tahoe shoreline and surrounding area, including near Kings Beach and Tahoe City along the existing 625 Line, new 625 Line, and 650 Line. **High Potential**
Fox sparrow (*Passerella iliaca*)	MIS-T	Inhabits montane chaparral and chamise-redshank chaparral habitats in the western Sierra Nevada Mountains. Breeds from spring to summer.	The project area is outside of the range of the species. No chamise-redshank chaparral habitat exists in the project area. Limited suitable naturally occurring montane chaparral habitat occurs within the project area. **Low Potential**
Black-backed woodpecker (*Picoides arcticus*)	MIS-L MIS-T	Inhabits coniferous forest throughout North America. Prefers areas of recent wildfires. Breeds from May to July. Considered to be a management indicator species for medium or large snags in burned coniferous forest habitats.	Suitable habitat is scattered throughout the project area, in particular, areas that have recently been subject to USFS controlled burns along the existing 625 Line and new 625 Line. **Moderate Potential**
Hairy woodpecker (*Picoides villosus*)	MIS-L MIS-T	Widespread throughout western North America. Inhabits oak or coniferous woodlands and riparian areas. Breeds during the spring, preferring to nest in deciduous trees. Considered to be a management indicator species for medium or large snags in conifer habitats.	Suitable habitat is scattered throughout the red fir, Sierra mixed conifer, and Jeffrey pine forests along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
Great gray owl (*Strix nebulosa*)	CE TNF LTBMU	Inhabits mixed conifer or red fir forests. Nests in large-diameter snags in forests with a high percentage of canopy closure. Breeds from March to August.	Suitable nesting and foraging habitat is scattered throughout the red fir, Sierra mixed conifer, and Jeffrey pine forests, especially along ecotones with meadows and other open areas along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
California spotted owl (*Strix occidentalis occidentalis*)	CSC TNF LTBMU MIS-T	Inhabits mixed conifer forests, often with an understory of deciduous hardwoods, with a canopy cover of greater than 40 percent. Most often found in deep, shaded canyons, on north-facing slopes, and within 930 feet of water. Breeds March to August. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats.	Data from the CDFG and the USFS indicates that four known nesting territories exist within the Lake Tahoe basin along the existing 625 Line, new 625 Line, and 650 Line. Two additional known nesting territories exist approximately 0.5 mile from the project area. Suitable nesting and foraging habitat is scattered throughout the project area. During the summer of 2009, the USFS identified two active nests, each approximately 1 mile from the new 625 Line. Two observations were made during the 2009 protocol-level California spotted owl survey, though no nests could be identified. **Present**

Species Name	Listing Status[4]	Habitat Requirements	Potential to Occur
Mammals			
Pallid bat (*Antrozous pallidus*)	CSC TNF	Inhabits deserts, grasslands, shrublands, woodlands, and forests. Most commonly found in open, dry habitats with rocky areas. Roosts in rocky outcrops, snags, and abandoned manmade structures.	Suitable habitat for this species is scattered throughout the project area along all components of the project where suitable roosting areas may exist. **Moderate Potential**
Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	CSC	Inhabits the Sierra Nevada Mountains in dense growths of small deciduous trees and shrubs, with wet soil and an abundance of forbs. Requires dense understory for foraging and cover and an abundant supply of water. Builds large networks of underground burrows for denning and rearing young.	CNDDB records indicate the presence of the species in the project area between MP 9.1 and MP 9.5 along the existing 625 Line at the upper headwaters of Deer Creek. Additional CNDDB records indicate this species is present in suitable habitat within 2 miles of the project site. Suitable habitat is scattered throughout the project area. **High Potential**
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSC TNF LTBMU	Found throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings of caves and abandoned structures. Highly sensitive to human disturbance, deterring them from roosting in areas frequented by people.	Due to the project's close proximity to areas heavily used by people and vehicles, as well as the requirements for an adequate roosting area, it is unlikely that roosting sites are present within the project area. **Low Potential**
Northern flying squirrel (*Glaucomys sabrinus*)	MIS-L MIS-T	Inhabits coniferous and mixed hardwood forests. More common in old-growth coniferous forests with well-developed canopies. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats.	Suitable habitat is scattered throughout the forested habitats along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
California wolverine (*Gulo gulo luteus*)	CT TNF LTBMU FP	Inhabits the mountains of the north coast and Sierra Nevada Mountains in a wide variety of high elevation habitats. Uses caves, logs, and burrows for denning and cover. Hunts in open areas.	Suitable habitat occurs throughout the red fir, Sierra mixed conifer, and Jeffrey pine habitats within the project area. One historical CNDDB occurrence, in 1953, is located approximately 1.5 miles west of the project area near the mouth of Squaw Creek. Recent sightings were made in 2008, north of Truckee. **Moderate Potential**
Western red bat (*Lasiurus blossevillii*)	CSC TNF	Inhabits forest habitats from sea level up to approximately 6,000 feet. Prefers ecotones. Roosts primarily in trees that are protected from above and open below.	Suitable habitat is scattered throughout the project area along the existing 625 Line, new 625 Line, and 650 Line within Sierra mixed conifer, red fir, and Jeffrey pine forests. **Moderate Potential**
Sierra Nevada snowshoe hare (*Lepus americanus tahoensis*)	CSC	Inhabits boreal riparian areas in the Sierra Nevada Mountains. Prefers thickets of riparian, deciduous trees, and thickets of young conifers.	One historical CNDDB record, in 1929, was recorded in the Tahoe City area. Suitable habitat is scattered throughout the project area. Suitable habitat exists within the montane riparian habitat along the existing 625 Line, new 625 Line, and 650 Line. Thickets of young conifers are also present within portions of the existing 625 Line ROW. **High Potential**
Western white-tailed jackrabbit (*Lepus townsendii*)	CSC	Inhabits sagebrush, subalpine conifer, juniper, alpine dwarf shrub, and perennial grassland habitats. Prefers open areas with scattered shrubs and exposed flat-topped hills with open stands of trees, brush, and herbaceous cover.	One historical CNDDB record, in 1920, was recorded in the Tahoe City area. Suitable habitat exists throughout the project area, especially within the Northstar Golf Course Staging Area, Joerger Road Staging Area, and along the 650 Line north of Brockway Summit within Jeffrey pine and low sage habitats. **Moderate Potential**

Species Name	Listing Status[4]	Habitat Requirements	Potential to Occur
American pine marten (*Martes americana*)	TNF LTBMU MIS-T	Inhabits mixed evergreen forests with more than 40 percent crown closure. Requires a variety of different-aged stands, particularly old-growth conifers and snags, which provide cavities for denning. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats.	Suitable habitat is scattered throughout project area, especially north of Tahoe City, along the border of Burton Creek State Park. One CNDDB record indicates that this species is present to the northwest of Carnelian Bay, approximately 0.75 mile south of the existing 625 Line. **High Potential**
Pacific fisher (*Martes pennanti pacifica*)	FC CC CSC TNF	Inhabits intermediate to large-tree stages of coniferous forests and riparian areas with a high percentage of canopy closure. Uses cavities, logs, and rocky areas for denning and cover and requires large areas of mature, dense forest.	Pacific fishers are believed to be extirpated from the majority of their historic range. Only two populations, one in the coast range near the border with Oregon and the other in the southern Sierra Nevada Mountains, are believed to remain. No Pacific fishers are believed to exist in the Tahoe area. **Low Potential**
Mule deer (*Odocoileus hemionus*)	MIS-T	Inhabits meadows, grasslands, and forest throughout western North America. Prefers to forage in grassy open areas and to seek cover in forests. Considered to be a management indicator species for montane hardwood forests.	Suitable habitat exists throughout the project area along the existing 625 Line, new 625 Line, 650 Line, and Northstar Fold. Several individuals were observed during the 2007 and 2008 surveys. **Present**
Sierra Nevada red fox (*Vulpes vulpes necator*)	CT TNF LTBMU	Inhabits a variety of habitats in the Cascade and Sierra Nevada Mountains. Uses dense vegetation and rocky areas for cover and denning. Prefers forests interspersed with meadows or alpine fell-fields.	One CNDDB record indicates the presence of this species approximately 3 miles north of Truckee along State Route 89. Suitable habitat is scattered throughout the existing 625 Line, new 625 Line, and 650 Line areas. **Moderate Potential**

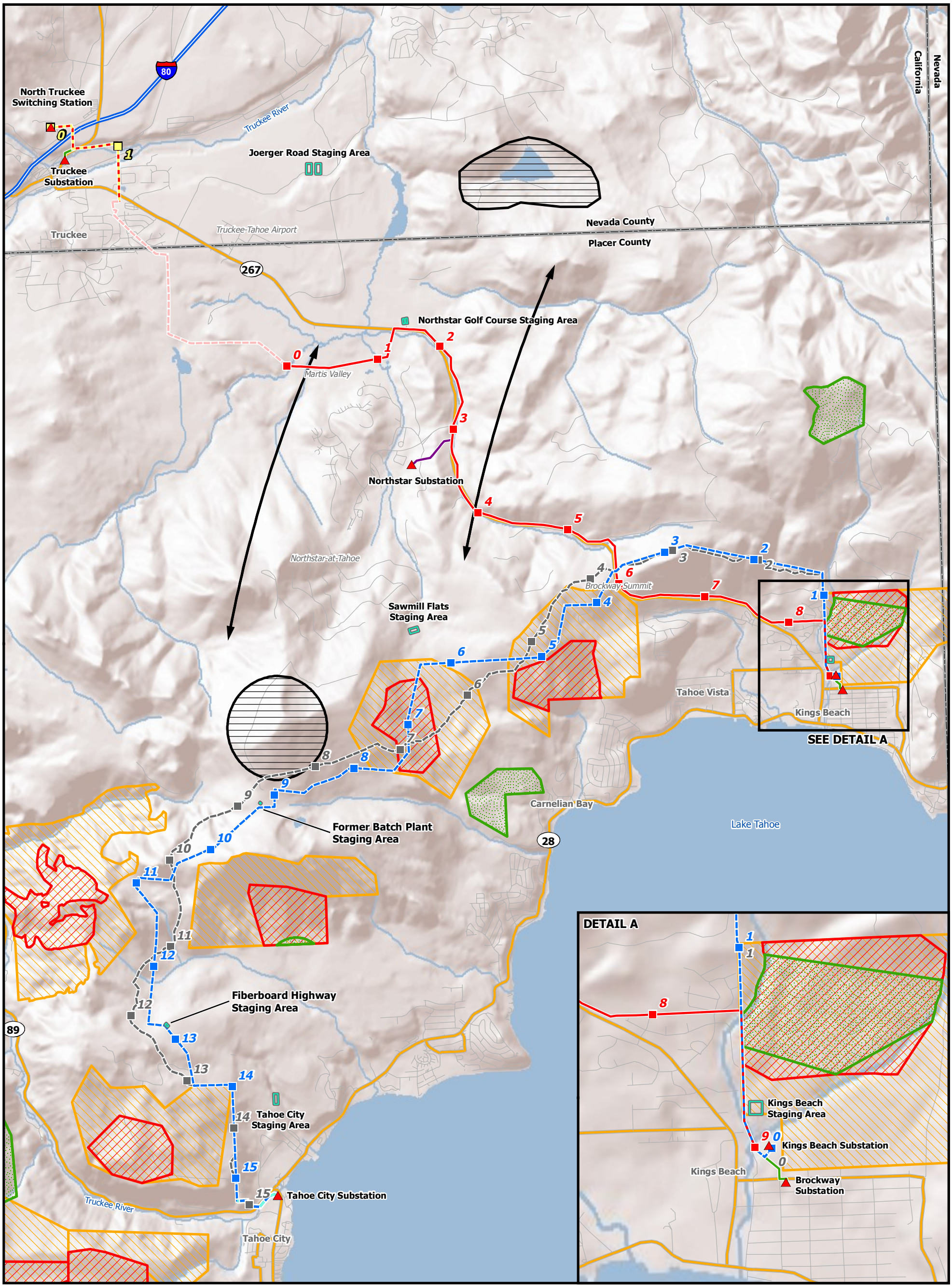

Figure 4.4-2: Sensitive Species Designated Areas

625 and 650 Line Upgrade Project

- 650 Line to be Removed
- Northstar Fold
- New 625 Line
- Existing 625 Line
- 625/629 Double-Circuit
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double-Circuit to be Rebuilt
- Milepost (Color Coded by Line)
- Substation/Switching Station
- Staging Area
- Spotted Owl Protected Activity Center (PAC)
- Spotted Owl Home Range Core Area (HRCA)
- Northern Goshawk PAC
- Loyalton-Truckee Deer Herd Known Critical Fawning Area
- Loyalton-Truckee Deer Herd Migratory Corridor

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Migratory Corridors and Nursery Sites

The Verdi sub-unit of the Loyalton-Truckee Deer Herd migrates from the eastern Sierra Nevada Mountain foothills outside of Reno, Nevada, southwest into eastern Sierra, Nevada, and Placer counties during the spring and summer months. Historic migratory corridors of the deer herd in the project area follow the Truckee River into Martis Valley before diverging into the Donner Lake and west Lake Tahoe areas. With the expansion of Interstate 80 (I-80), it is believed that there is limited movement across the highway. The most recent management plan for the herd (1982) is fairly outdated due to the growth experienced in the region since that time. Currently, the deer migrate along the southern side of I-80 into Martis Valley before following several riparian corridors into the Lake Tahoe Basin. From the north, migratory corridors intersect the project area near the Joerger Road Staging Area before crossing SR 267 and the 650 Line and following Martis Creek and West Martis Creek southward. Migrating deer then move through the Northstar-at-Tahoe Resort to a known critical fawning area located near Mt. Pluto. Approximately 0.4 mile of the existing 625 Line runs through the southern edge of this area and the Northstar Fold is located approximately 1 mile northwest of the area. Because of increasing recent development within the Northstar-at-Tahoe Resort, migratory and fawning patterns in the area may be in flux.

Several waterways within the project area are known or potential migratory pathways and spawning areas for fish in the area, including Lahontan cutthroat trout, brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), and kokanee salmon (*Oncorhynchus nerka*). These waterways include the Truckee River, Griff Creek, Middle Martis Creek, and Martis Creek. Fish can be present within these waterways year round, though the primary spawning runs occur in the fall for kokanee salmon and brown trout and the spring for rainbow trout and Lahontan cutthroat trout. Lahontan cutthroat trout has been extirpated from the Truckee River and Lake Tahoe, but may potentially still exist in the Martis Creek Reservoir. In addition, brown trout and rainbow trout are also present within these waters. Brown trout, rainbow trout, and kokanee salmon are present in Lake Tahoe and the surrounding tributaries, including the Truckee River and Griff Creek.

Noxious Weeds

Noxious weeds are designated by a federal, state, or county agency as injurious to public health, agriculture, recreation, wildlife or property. They are often very competitive and quite persistent in the environment, spreading easily and quickly. Noxious weeds can impact natural communities by out-competing native plant species for light, water, or other resources. This can lead to the reduction of available food and habitat for wildlife species in the area, ultimately altering the natural communities. Noxious weeds are often spread by accidental introduction in seed mixes or by vehicles or animals. Existing weed populations can also be spread by mud-caked tires on construction equipment or by relocating soils containing weeds or weed-seeds. Noxious weeds commonly revegetate disturbed areas faster than native populations, and as a result, are a concern for construction projects. No noxious weed populations were identified within the project area during field surveys, though a complete noxious weed inventory will be necessary during the proper blooming period to confirm these findings.

Existing Conservation Plans

No adopted HCPs, Natural Community Conservation Plans (NCCPs), or other approved local, regional, or state HCPs were identified in the project area.

4.4.3 Impacts

Significance Criteria

Standards of impact significance were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Under these Guidelines, the project may have a potentially significant impact if it will:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, or other wetland areas) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP

Direct take of a federally or state-listed species would be considered a significant impact. Temporary and/or permanent habitat loss is not considered a significant impact to sensitive species (other than for listed or candidate species under the ESA) unless a significant percentage of total suitable habitat throughout the species' range is degraded or somehow made unsuitable, or areas supporting a large proportion of the species population are substantially and adversely impacted.

Potential impacts to nesting bird species would be considered significant due to their protection under the MBTA; such impacts would need to be avoided. Because the project area has a relatively small amount of wetland and riparian features, a permanent loss of 0.5 acre of wetland or riparian features would be considered a significant impact; such impacts would need to be avoided, minimized, or compensated for.

Impacts considered to be within the project area are those that may occur to the extent of the temporary ROW, within the boundary of existing or temporary access roads, or within the boundary of the temporary staging areas. In addition to the project components, several additional staging or temporary work areas will be used to facilitate construction of the project. These include the Tahoe City Staging Area, Kings Beach Staging Area, Joerger Road Staging Area, Northstar Golf Course Staging Area, Fiberboard Highway Staging Area, Former Batch Plant Staging Area, Sawmill Flat Staging Area, and a temporary work area adjacent to the south side of the Tahoe City Substation. Many of these features are located in areas of little biological significance due to previous disturbance or location, and therefore are not included in the following impacts discussion. Where impacts may occur in these areas, they will be analyzed with the nearest project component.

Question 4.4a – Sensitive Species

Construction – Less-than-Significant Impact

Existing 625 Line

Sensitive Plants and Fungi

Removal of the existing 625 Line will impact approximately 30.3 acres of Sierra mixed conifer forest, 39.5 acres of red fir forest, 2.9 acres of montane chaparral habitat, 2.4 acres of montane riparian habitat, and less than 0.04 acre of wet meadow habitat. These acreage impacts represent a worst-case scenario. In addition, the temporary work areas and conductor pulling locations will not require the removal of all vegetation within these sites. Because several project components overlap, the sum of the individual component vegetation impacts is not reflective of the total vegetation impacts. A total assessment of the estimated vegetation impacts as a result of the project has been provided in Table 4.4-3: Total Vegetation Impacts.

Table 4.4-3: Total Vegetation Impacts

Vegetation Community	Approximate Impact (acres)	
	Temporary and Permanent	Permanent
Jeffrey Pine Forest	13.7	0.8
Mixed Conifer Forest	97.1	18.3
Red Fir	130.8	44.1
Montane Chaparral	12.8	1.8
Low Sage	15.7	0.9
Rock Outcrop/Barren	1.0	0.0
Wet Meadow	13.5	0.001
Fresh Emergent Wetland	0.1	0.0
Montane Riparian	11.6	0.003
Total	**296.3**	**68.2**

Many sensitive plant and fungi species identified during the literature review have the potential to occur along the alignment. Temporary impacts to sensitive plants or fungi could occur during vegetation clearing along the ROW, within work areas and conductor pulling locations, and along access roads. The construction or upgrade of access roads may require grading in some areas, which could further impact dormant species and underground fungi. Additional ground-disturbing impacts could result from activities associated with the removal of trees and existing poles, including skidding, along the ROW or access roads. Other impacts could result from increased competition for resources with noxious weeds spread by construction vehicles and equipment.

No sensitive plant species were identified along the existing 625 Line with the exception of a potential Carson Range rockcress, which could not be positively identified due to the timing of the surveys. Exclusionary buffers will be placed around all potential individuals, unless floristic surveys conducted by a qualified botanist during the appropriate blooming period determine that the individuals are not Carson Range rockcress. All construction-related impacts are anticipated to be temporary because the line will be removed and all work areas will be replanted with trees, as described in APM-BIO-37. With the implementation of APM-BIO-02 through APM-BIO-10, APM-BIO-21, APM-BIO-23, APM-BIO-24, APM-BIO-26, APM-BIO-35, which include floristic surveys, noxious weed control measures, salvaging of topsoil, and on-site biological monitoring, as described in Section 4.4.4 Applicant-Proposed Measures, impacts to sensitive plants and fungi will be less than significant.

Sensitive Fish and Amphibians

Suitable habitat for sensitive fish is generally found in streams and creeks surrounded by montane riparian or wet meadow habitat. Suitable habitat for sensitive amphibians is generally found in creeks, streams, and ponds, as well as in upland areas adjacent to montane riparian, fresh emergent wetland, and wet meadow habitat. A summary of these areas along the existing 625 Line is provided in Table 4.8-1: Hydrologic Features Map in Section 4.8 Hydrology and Water Quality. Maps of these features are also provided in the Biological Resources Technical Report, which has been included as Attachment 4.4-A: Biological Resources Technical Report. Lahontan cutthroat trout, federally listed as threatened, is the only sensitive fish species historically found in the project area. However, they have been extirpated from the Truckee River near Lake Tahoe and no other suitable habitat exists along the existing 625 Line; therefore, no impact to Lahontan cutthroat trout is anticipated. While no sensitive amphibians were observed during biological surveys and no CNDDB records exist within 1 mile of the alignment, the project has the potential to impact northern leopard frog, Pacific tree frog, and Sierra Nevada yellow-legged frog, if present. Potential impacts to amphibians could result from impacts to wet meadow or riparian habitat, and include vegetation removal, pole removal, and access road construction. Additional impacts could arise from direct mortality caused by vehicle or equipment collisions, as well as accidental contamination of aquatic features from hazardous materials spills or other sources. No permanent impact is anticipated because the line will be permanently removed.

To minimize impacts, SPPCo will conduct preconstruction surveys, which are described in APM-BIO-17. SPPCo will also limit vehicle and equipment usage near aquatic resources as described in APM-BIO-28 through APM-BIO-32, APM-HYD-05, and APM-HYD-06. In

addition, SPPCo will employ best management practices (BMPs) as outlined in the Stormwater Pollution Prevention Plan (SWPPP), to prevent construction materials from entering or otherwise affecting waterways. Additionally, all construction-related impacts will be temporary. As a result, impacts will remain less than significant.

Sensitive Avian and Bat Species

Many sensitive avian and bat species have the potential to occur along the existing 625 Line, and several species, including yellow warbler, were observed during general reconnaissance-level biological surveys. Impacts to avian and bat species could result from temporary habitat loss due to vegetation removal and disruption of normal behavior caused by increased noise and human presence in the area. These impacts could potentially be more significant if they were to occur during the breeding season—generally February to September. Though only limited tree removal will be required in order to clear access roads and the existing ROW, avian and bat species have the potential to be nesting or roosting in these areas if the work occurs during the nesting or breeding season. Additional tree removal will occur within temporary conductor pulling sites which may impact roosting sites. There is also potential for sensitive species, such as osprey, to nest on anthropogenic structures, such as transmission poles. Additional impacts may result from the use the use of helicopters during the removal of the existing poles or trees as this could result in a disturbance to normal foraging or nesting behavior. Direct mortality as a result of vehicle or helicopter collisions could occur, though for bats this is unlikely as bats are nocturnal and will not be active during normal work hours. Because the line is being removed and the ROW will be abandoned, construction-related impacts will be temporary. In addition, the impact to avian species as a result of collisions with the existing lines and electrocution will be eliminated with the removal of the transmission line.

Vegetation removal and other work activities will be required within designated California spotted owl and northern goshawk PACs and HRCAs. These activities have the potential to temporarily impact nesting and fledglings if work is conducted during the breeding season (March 1 to August 31 for California spotted owl and February 15 to September 15 for northern goshawk). While the line will be removed and abandoned and SPPCo will minimize the removal of old-growth trees, there is the potential that some permanent tree removal will be necessary within designated PACs or other suitable habitat areas. Because the majority of trees requiring removal will be located within the existing ROW, it is assumed that most trees will be under 10 inches in diameter as a result of previous vegetation management. To minimize potential impacts to nesting California spotted owls and northern goshawks, SPPCo will implement APM-BIO-11 through APM-BIO-13, APM-BIO-21, and APM-BIO-27 which include protocol-level surveys, full-time biological monitoring, and helicopter restrictions.

All active nest sites will be avoided, unless topographical conditions are such that impacts will be minimized as described further in APM-BIO-12. Permanent impacts to PACs and HRCAs will be mitigated for by conducting additional protocol-level surveys in support of the USFS's goal of designating new PACs and HRCAs in the project area as described further in APM-BIO-13. To minimize impacts to nesting birds other than California spotted owl and northern goshawk, SPPCo will implement APM-BIO-18 and APM-BIO-19, as described in Section 4.4.4 Applicant-Proposed Measures. These measures include nesting bird surveys and the incorporation of avian protection measures into the transmission line design. To minimize

impacts to bats, SPPCo will implement APM-BIO-20 and APM-BIO-21, as described in Section 4.4.4 Applicant-Proposed Measures, to identify and avoid bat roosting areas as well as provide full-time biological monitoring during all work activities. With the implementation of these measures, impacts to sensitive avian species and bats will be less than significant.

Other Sensitive Mammals

Construction activities may potentially impact sensitive mammal species, including Sierra Nevada snowshoe hare, Sierra Nevada mountain beaver, and western white-tailed jackrabbit, for which CNDDB records exist in the project area. Additional sensitive mammals that could be impacted, if present, include American pine marten, Sierra Nevada red fox, northern flying squirrel, wolverine, and mule deer. Potential impacts to mammal species include the temporary loss of approximately 75.9 acres of suitable habitat, disturbance due to an increase in vehicle and equipment use and human presence, and possible direct morality from construction vehicles and equipment. In addition, temporary impacts may also result from the increased helicopter activity involved in the removal of trees and poles. These impacts would likely result only in a disruption to normal behavior, primarily to arboreal species. No permanent impacts from construction are anticipated, as the line is being permanently removed and the ROW and temporary access roads will be abandoned and allowed to revegetate naturally.

SPPCo will implement APM-BIO-01, APM-BIO-15, APM-BIO-16, APM-BIO-22, APM-BIO-25, and APM-BIO-34, which include the implementation of an environmental training program, preconstruction surveys, burrow protection measures, and the prohibition of pets on site, as described in Section 4.4.4 Applicant-Proposed Measures, to reduce potential impacts to the less-than-significant level.

New 625 Line

Sensitive Plants and Fungi

Construction of the new 625 Line will impact approximately 43.3 acres of Sierra mixed conifer forest, 88.3 acres of red fir forest, 3.2 acres of montane chaparral habitat, 4.5 acres of montane riparian habitat, and 0.3 acre of wet meadow habitat. Additionally, approximately 0.3 acre of rock outcrop/barren habitat is crossed by the line, though no impacts are anticipated as these areas will largely be avoided due to their inaccessibility and will be spanned by the transmission line. The total estimated vegetation impact as a result of the project has been included in Table 4.4-3: Total Vegetation Impacts.

Overall, permanent vegetation impacts from the new 625 Line—approximately 54.8 acres—will be minimal when compared to the surrounding area of similar habitat within the Lake Tahoe Basin, which comprises approximately 125,000 acres. In addition, construction of the new 625 Line will be partially offset by the abandonment and replanting of the existing 625 Line ROW. This will result in a small addition to the area of SPPCo-managed ROW in the north Lake Tahoe area, totaling approximately 1.9 acres.

Many sensitive plant and fungi species identified during the records search have the potential to occur along the alignment. As previously described for the existing 625 Line, impacts to sensitive plants or fungi could occur during vegetation clearing along the ROW, at work sites

and conductor pulling locations, and along access roads. Additional ground-disturbing impacts could result from skidding trees. Grading of work areas and access roads and excavation for pole installation may impact dormant species and underground fungi. Impacts could also result from increased competition for resources with noxious weeds spread by construction vehicles and equipment. Permanent impacts as a result of construction will occur as a result of habitat loss along the new permanent ROW.

No sensitive plant species were identified along the new 625 Line, with the exception of a few scattered potential Carson Range rockcress individuals, which could not be positively identified due to the timing of the surveys. All potential individuals will be flagged and avoided unless floristic surveys conducted by a qualified botanist during the appropriate blooming period determine that the individuals are not Carson Range rockcress. The implementation of APM-BIO-02 through APM-BIO-10, APM-BIO-21, APM-BIO-23, APM-BIO-24, APM-BIO-26, and APM-BIO-35, which include floristic surveys, rare plant protection measures, noxious weed control measures, and the salvaging of topsoil, will reduce impacts to sensitive plants to the less-than-significant level. In addition, the existing 625 Line will be abandoned and allowed to revegetate, which will partially compensate for the permanent impacts associated with vegetation and habitat removal along the new, permanent ROW required for the new 625 Line. Through a combination of the previously described APMs and the abandonment of the existing 625 Line ROW, temporary and permanent impacts from the construction of the new 625 Line will be less than significant.

Sensitive Fish and Amphibians

Suitable habitat for sensitive fish is generally found in streams and creeks surrounded by montane riparian or wet meadow habitat. Suitable habitat for sensitive amphibians is generally found in creeks, streams, and ponds, as well as upland areas adjacent to montane riparian, fresh emergent wetland, and wet meadow habitat types. A summary of these habitat types along the new 625 Line is shown in Table 4.8-1: Hydrologic Features Map in Section 4.8 Hydrology and Water Quality. These features are also mapped in Attachment A of the Biological Resources Technical Report, which has been included as Attachment 4.4-A: Biological Resources Technical Report. Lahontan cutthroat trout, federally listed as threatened, is the only sensitive fish species historically found in the project area. However, they have been extirpated from the Truckee River near Lake Tahoe and no other suitable habitat exists along the existing 625 Line; therefore, no impacts to Lahontan cutthroat trout are anticipated. While no sensitive amphibians were observed during biological surveys and no CNDDB records exist within 1 mile of the alignment, this work has the potential to impact northern leopard frog, Pacific tree frog, and Sierra Nevada yellow-legged frog, if present. Potential impacts to amphibians could result from impacts to wet meadow or riparian habitat, including vegetation removal, pole installation, and access road construction. Additional impacts could arise from direct mortality caused by vehicle or equipment collisions, as well as accidental contamination of aquatic features from hazardous materials spills or other sources. Because only a small number of poles will be placed within wet meadows or below the ordinary high water mark of the Truckee River, impacts to aquatic resources, riparian areas, and wet meadows are anticipated to be less than significant.

To minimize impacts to aquatic species, SPPCo will conduct preconstruction surveys, as described in APM-BIO-17. To protect aquatic habitat, SPPCo will implement APM-BIO-28

through APM-BIO-32, which include restrictions on work within aquatic habitat and screening all dewatering pump intakes. In addition, SPPCo will employ BMPs as outlined in the SWPPP, to prevent construction materials from entering or otherwise affecting waterways.

Sensitive Avian and Bat Species

Many sensitive avian and bat species have the potential to occur along the new 625 Line. Impacts to avian and bat species could result from temporary habitat loss due to vegetation removal and disruption of normal behavior caused by increased noise and human presence in the area. In particular, disturbance may result from the use of helicopters to remove trees or deliver poles. These impacts will be most significant to species that inhabit the forest canopy or if these activities were to occur during the breeding season—generally February to September. Permanent impacts will result from tree removal to establish a new permanent ROW. Since the ROW will need to be maintained in an herbaceous state, this tree removal represents a permanent loss of nesting habitat.

Direct mortality of individuals may result from collisions with the conductor and electrocution. Bird collisions with existing transmission facilities typically occur to migratory bird species and are generally due to poor visibility of electrical lines. Factors leading to avian collisions with existing transmission lines include a lack of visual cues that make the lines stand out against the surrounding environment. Most bird electrocutions occur on distribution systems at lower voltages due to the closer spacing between conductors. The closer spacing is more of a potential hazard to raptors and other large birds because their body size and wingspan are large enough to span the distance between the wires, completing the electrical circuit. SPPCo plans to minimize these potential impacts through the implementation of APM-BIO-19, which will incorporate avian protection measures into the project design. Mortality may also result from vehicle collisions, though vehicle collisions are less likely for bats and nocturnal birds because they will be less active during normal work hours.

Transmission lines and other structures also provide potential perching opportunities for raptor species, which can increase the potential for predation of wildlife by raptors. In areas where current perching sites are few or rare, the construction of a new transmission line may increase the potential for raptors perching and hence, predation opportunities in the area. The Sierra Nevada snowshoe hare, western white-tailed jackrabbit, and yellow warbler are sensitive species that could potentially serve as prey to raptors. However, because the new 625 Line is being constructed within areas where trees are common, no increases in predation efficiency are anticipated. In addition, the new 625 Line is being constructed using tubular steel poles, which have reduced perching potential when compared to wooden poles or lattice towers.

Vegetation removal and other work activities will be required within designated California spotted owl and northern goshawk PACs and HRCAs, which have the potential to temporarily impact nesting and fledglings if work is conducted during the breeding season (March 1 to August 31 for California spotted owl and February 15 to September 15 for northern goshawk). Construction of the new 625 Line will result in a temporary impact to approximately 34.0 acres of California spotted owl HRCAs and approximately 9.7 acres of associated PACs. In addition, approximately 0.6 acres of northern goshawk PACs will be temporarily impacted. While SPPCo intends to minimize tree removal in old-growth forests and designated PACs and HRCAs,

establishing a new permanent ROW for the new 625 Line will result in a permanent loss of approximately 14.6 acres of forest within California spotted owl HRCAs, 4.6 acres of which are located within associated California spotted owl PACs. No permanent impacts to northern goshawk PACs are anticipated. These permanent impacts to PACs and HRCAs are included within a total loss of approximately 54.7 acres of mixed conifer and red fir forest within which additional suitable habitat may exist.

Potential impacts from the construction of the new 625 Line will be partially compensated for by the removal and abandonment of the existing 625 Line. To further minimize potential impacts to nesting birds and bats, SPPCo will implement APM-BIO-01, APM-BIO-18, APM-BIO-20, and APM-BIO-21 as described in Section 4.4.4 Applicant-Proposed Measures, which include nesting bird surveys, identification and avoidance of bat roosting areas, and full-time biological monitoring. Additionally, in compliance with APM-BIO-11, two-year protocol-level surveys for California spotted owl and northern goshawk were initiated during the summer of 2009, as further described in Attachment 4.4-B: Interim Protocol-Level Survey Reports. In order to mitigate for permanent losses to PACs and HRCAs, SPPCo proposes to conduct additional protocol-level surveys to assist the USFS in achieving their goal of establishing additional PACs and HRCAs in the project area, as described in APM-BIO-13. To minimize permanent impacts to raptors, new poles will be constructed to conform to those practices described in the Suggested Practices for Avian Protection on Power Lines Manual developed by the Avian Power Line Interaction Committee, as described in APM-BIO-19. These standards will minimize the potential to cause direct mortality to individuals as a result of electrocution. With the implementation of these measures, impacts to sensitive avian species and bats will be less than significant.

Other Sensitive Mammals

Construction activities may potentially impact sensitive mammal species, including Sierra Nevada snowshoe hare, Sierra Nevada mountain beaver, and western white-tailed jackrabbit, for which CNDDB records exist in the project area. Additional sensitive mammals that could be impacted, if present, include American pine marten, northern flying squirrel, Sierra Nevada red fox, wolverine, and mule deer. Potential impacts to mammal species include the temporary loss of approximately 140.0 acres of suitable habitat, disturbance due to an increase in vehicle and equipment use and human presence, and possible direct morality from construction vehicles and equipment. Permanent impacts will result from the loss of approximately 54.8 acres of habitat along the new permanent ROW.

SPPCo will implement APM-BIO-01, APM-BIO-15, APM-BIO-16, APM-BIO-21, APM-BIO-22, APM-BIO-25, APM-BIO-26, and APM-BIO-33 through APM-BIO-35, as described in Section 4.4.4 Applicant-Proposed Measures, which include conducting environmental training, preconstruction surveys, monitoring, and agency consultation, as appropriate, to reduce potential impacts to the less-than-significant level. In addition, the permanent loss of habitat along the new 625 Line ROW will be partially compensated for by the abandonment and natural revegetation of the existing 625 Line ROW.

650 Line

Sensitive Plants and Fungi

Construction of the 650 Line will impact approximately 19.3 acres of Sierra mixed conifer forest, 7.3 acre of Jeffrey pine forest, 2.1 acres of red fir forest, 6.1 acre of low sage, 5.1 acres of montane chaparral habitat, 5.0 acres of montane riparian habitat, and 10.8 acres of wet meadow habitat. The total estimated vegetation impact as a result of the project has been included in Table 4.4-3: Total Vegetation Impacts.

Overall, permanent vegetation impacts from the construction of the 650 Line are anticipated to be minor, as the alignment will be generally reconstructed within the existing easement. This existing easement, which has an average width of approximately 30 feet, will be widened to approximately 40 feet for the project. Expanding the easement will permanently impact approximately 15.9 acres of habitat, more specifically approximately 7.0 acres of Sierra mixed conifer forest, 0.8 acre of Jeffrey pine forest, 0.6 acre of red fir forest, 0.9 acre of low sage, 1.8 acres of montane chaparral habitat, 0.003 acre of montane riparian habitat, and 0.001 acre of wet meadow habitat. In addition to improving the easement to a width of approximately 40 feet, construction of the line will require the installation of new poles within wet meadow habitat in Martis Valley. These new poles will represent a minimal additional permanent loss of habitat—approximately 0.001 acres—when compared to the overall size of the contiguous wet meadow complex, which is approximately 286.2 acres.

Many sensitive plant and fungi species identified during the literature review have the potential to occur along the alignment. Temporary impacts to sensitive plants or fungi could occur during vegetation clearing along the ROW, within conductor pulling locations, and along access roads. Additional ground-disturbing impacts could result from skidding trees. Grading of work sites and access roads and the excavation for pole installation may impact dormant species and underground fungi. Impacts could also result from increased competition for resources with noxious weeds spread by construction vehicles and equipment. Permanent impacts as a result of construction will be minor as the line will be generally rebuilt within the existing easement and many of the access roads are pre-existing. One sensitive species, Plumas ivesia, was identified in several clusters along the 650 Line between MP 0.3 and MP 1.8, as well as within the Northstar Golf Course Staging Area, as shown in Figure 4.4-1: Species Occurrence Map.

To minimize temporary and permanent impacts, a complete floristic survey will be conducted prior to construction to identify any sensitive plant or fungi species located within the work areas, as described further in APM-BIO-02 in Section 4.4.4 Applicant-Proposed Measures. Dependent upon the results of the survey, SPPCo will avoid sensitive plant and/or noxious weed populations or consult with appropriate agencies as specified in APM-BIO-03 through APM-BIO-10, APM-BIO-21, APM-BIO-23, APM-BIO-24, APM-BIO-28, and APM-BIO-35, as described in Section 4.4.4 Applicant-Proposed Measures. As a result, impacts will be less than significant.

Sensitive Fish and Amphibians

The 650 Line spans two hydrologic areas with suitable habitat for sensitive amphibians and fish—Griff Creek and the adjacent tributaries, and Martis Valley wet meadow complex. These

areas provide suitable habitat for northern leopard frog, Pacific tree frog, and/or Sierra Nevada yellow-legged frog. In addition, Middle Martis Creek and Martis Creek are historic Lahontan cutthroat trout habitat, though it is believed that they have been extirpated from the area or that any trout found have been hybridized. Because non-hybridized individuals have the potential to exist, SPPCo will implement APM-BIO-01, APM-BIO-21, APM-BIO-28 through APM-BIO-32, and APM-HYD-01 in order to ensure that no impacts result, if these species are present. These measures include the implementation of an environmental training program for all crewmembers, on-site biological monitoring during construction activities, the minimization of work within waterways and riparian areas, protective measures during dewatering activities, and implementing all refueling away from aquatic features.

While no sensitive amphibians were observed during the biological surveys and no CNDDB records exist within 1 mile of the alignment, impacts could result from the degradation of water quality from the introduction of sediment or hazardous materials. Impacts to amphibians could also result from direct mortality as a result of vehicle and equipment collisions. With the implementation of APM-BIO-01, APM-BIO-16, APM-BIO-21, APM-BIO-22, APM-BIO-28 through APM-BIO-32, and APM-HYD-01, impacts to sensitive fish and amphibians will be less than significant. These measures include the implementation of an environmental training program for all crewmembers, preconstruction surveys, on-site biological monitoring during construction activities, the minimization of work within waterways and riparian areas, protective measures during dewatering activities, and implementing all refueling away from aquatic features. Though the new steel poles will replace existing wood poles within an existing ROW, permanent impacts and associated habitat loss as a result of the new, larger-diameter poles is anticipated to be less than significant. In addition, SPPCo plans to relocate several poles currently located within Middle Martis Creek near approximate MP 3.8 to adjacent areas above the high water mark.

Sensitive Avian and Bat Species

Many sensitive avian and bat species have the potential to occur along the 650 Line. Impacts to avian and bat species could result from temporary habitat loss due to vegetation removal and disruption of normal behavior caused by increased noise and human presence in the area. These impacts could potentially be more significant if they were to occur during the breeding season—generally February to September. Direct mortality of individuals could also occur as a result of collisions with the conductor and electrocution. However, because the 650 Line is an existing line, and will be rebuilt in conformance with the Suggested Practices for Avian Protection on Power Lines Manual developed by the Avian Power Line Interaction Committee, the occurrence of electrocutions may be reduced as a result of the project. Mortality may also result from vehicle collisions, though vehicle collisions are less likely for bats because they are nocturnal and will be less active during normal work hours. Impacts to willow flycatcher may occur if vegetation clearing occurs within the willow-dominated montane riparian habitat of Martis Valley during the breeding season.

Additionally, vegetation removal and other work activities will be required within designated California spotted owl and northern goshawk PACs and HRCAs, which have the potential to temporarily impact nesting and fledgling periods if work is conducted during the breeding season (March 1 to August 31 for California spotted owl and February 15 to September 15 for northern

goshawk). Rebuilding of the 650 Line will result in temporary impacts to approximately 1.5 acres of California spotted owl HRCAs and approximately 0.6 acre of associated PACs. In addition, approximately 0.4 acre of northern goshawk PACs will be temporarily impacted. Because the permanent ROW does not cross any PACs or HRCAs, no permanent impacts to HRCAs or PACs are anticipated.

To minimize potential impacts to nesting birds and bats, SPPCo will implement APM-BIO-01 and APM-BIO-18 through APM-BIO-21 as described in Section 4.4.4 Applicant-Proposed Measures, which include nesting bird surveys, identification and avoidance of bat roosting areas, and full-time biological monitoring. Additionally, protocol-level surveys will be conducted for willow flycatcher if work is to be conducted during the breeding season within suitable habitat, as described in APM-BIO-14. In compliance with APM-BIO-11 and APM-BIO-12, two-year protocol-level surveys for California spotted owl and northern goshawk were initiated in the summer of 2009 along portions of the alignment containing suitable habitat for each species. In order to mitigate for permanent losses to PACs and HRCAs, SPPCo proposes to conduct additional protocol-level surveys to assist the USFS in achieving their goal of establishing additional PACs and HRCAs in the project area, as described in APM-BIO-13. SPPCo will also ensure that the new poles are spatially configured and designed in accordance with the Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines in order to minimize the potential for avian electrocutions, as described APM-BIO-19 in Section 4.4.4 Applicant-Proposed Measures. These standards will minimize the potential to cause direct mortality to individuals as a result of electrocution. As a result, impacts will be less than significant.

Other Sensitive Mammals

Construction activities may potentially impact sensitive mammal species, including Sierra Nevada snowshoe hare, western white-tailed jackrabbit, northern flying squirrel, Sierra Nevada red fox, wolverine, and mule deer. Potential impacts to mammal species include the temporary loss of approximately 55.6 acres of suitable habitat, disturbance due to an increase in vehicle and equipment use and human presence, and possible direct morality from construction vehicles and equipment. In addition, approximately 11.2 acres of suitable habitat will be permanently impacted due to the improvement of the existing easement from an average width of approximately 30 feet to 40 feet. Because this line closely parallels SR 267 for the majority of the alignment, the work areas for the 650 Line represent less suitable habitat for many forest-obligate species and species that are sensitive to disturbance, such as American pine marten. SPPCo will implement the APM-BIO-01, APM-BIO-15, APM-BIO-16, APM-BIO-21, APM-BIO-22, APM-BIO-25, APM-BIO-26, and APM-BIO-33 through APM-BIO-35 as listed in Section 4.4.4 Applicant-Proposed Measures, which include conducting environmental training, preconstruction surveys, monitoring, and agency consultation, as appropriate, to reduce the potential impact to a less-than-significant level.

The Joerger Road Staging Area may represent suitable habitat for western white-tailed jackrabbit and mule deer. However, no individuals were observed during field surveys. SPPCo will implement similar methods for the protection of sensitive mammals during vegetation clearing at the Joerger Road Staging Area as for work along the 650 Line.

132/650 Line Double-Circuit

Sensitive Plants and Fungi

Because the 132/650 Line Double-Circuit is located in a highly disturbed area within the Town of Truckee, very little natural habitat exists along the alignment. Due to the low quality of habitat, impacts to sensitive plants and fungi are not anticipated.

Sensitive Fish and Amphibians

The 132/650 Line Double-Circuit crosses two aquatic resources, the Truckee River and a small man-made retention pond, which represent marginally suitable habitat for northern leopard frog and Pacific tree frog. Impacts to these species, if present, could result from contamination of these features by sediment or other construction-related contaminants, or through direct mortality as a result of vehicle and equipment collisions. The Truckee River is considered historic Lahontan cutthroat trout habitat, though it is believed that they have been extirpated from the area or that any trout found have been hybridized. Because no work is planned below the ordinary high water mark of the river and there will be no impediments to flow, there will be no disruption to natural migratory or movement patterns even if species are present. SPPCo will implement APM-BIO-01, APM-BIO-21, APM-BIO-28, and APM-BIO-29, APM-BIO-31, APM-BIO-32, and APM-HYD-01, to control construction-related runoff and contamination of suitable habitat. With the implementation of the above APMs, no impacts to sensitive amphibians or fish are anticipated.

Sensitive Avian and Bat Species

Only a minimal amount of suitable nesting, roosting, or foraging habitat for sensitive avian species or bats—approximately 6.0 acres of Jeffrey pine forest—is located along the 132/650 Line Double-Circuit. Because these areas are highly fragmented, there is little to no potential that sensitive avian and bat species will occur in the area. With the implementation of APM-BIO-18 and APM-BIO-21, impacts from construction of the 132/650 Line Double-Circuit will be less than significant.

Other Sensitive Mammals

Because the 132/650 Line Double-Circuit is surrounded by developed and disturbed areas and does not represent suitable habitat for most sensitive mammal species, no impacts to sensitive mammals are anticipated.

Northstar Fold

Sensitive Plants and Fungi

The Northstar Fold crosses through one natural vegetation community—mixed conifer forest—within which approximately 3.5 acres will be temporarily disturbed by construction activities. The total estimated vegetation impact as a result of the project has been included in Table 4.4-3: Total Vegetation Impacts. No sensitive plants were identified during the general reconnaissance-level biological surveys, though these surveys were not conducted during the appropriate blooming period. Impacts to sensitive plants could occur as a result of vegetation clearing and grading to establish a temporary construction ROW and conductor pulling site. A limited number of access roads will need to be constructed or upgraded, as there are many pre-existing

Northstar-at-Tahoe Resort roads along the alignment. Permanent impacts as a result of construction will be minimal as the line will be primarily rebuilt within the existing ROW and will use several existing access roads.

To minimize impacts, a complete floristic survey will be conducted prior to construction to identify any sensitive plant or fungi species located within the work areas, as described in APM-BIO-02. In addition, SPPCo will implement APM-BIO-01, APM-BIO-03 through APM-BIO-10, and APM-BIO-21, in Section 4.4.4 Applicant-Proposed Measures, which include environmental training, biological monitoring, and noxious weed control, as appropriate, to reduce the potential impacts to the less-than-significant level.

Sensitive Fish and Amphibians

The Northstar Fold does not cross any suitable fish or amphibian habitat. Middle Martis Creek is located adjacent to the interconnection of the Northstar Fold and the 650 Line. Temporary impacts could result from construction-related runoff, which could degrade water quality and result in impacts to sensitive species in Middle Martis Creek. To minimize impacts, SPPCo will control construction-related runoff with the implementation of the project's SWPPP, and will implement APM-BIO-01, APM-BIO-21, APM-BIO-22, APM-BIO-31, APM-BIO-32, and APM-HYD-01. As a result, impacts will be less than significant.

Sensitive Avian and Bat Species

A minimal amount of suitable nesting, roosting, or foraging habitat—approximately 3.5 acres of mixed conifer forest—is located along the Northstar Fold. Temporary impacts could occur during tree removal to establish a temporary construction ROW if the species are nesting or roosting. Construction will also result in a temporary loss of foraging, nesting, and roosting habitat. Permanent impacts are not anticipated because no new permanent ROW will be required, the temporary construction ROW will be restored to preconstruction conditions following construction, and no new permanent access roads will be constructed. To minimize potential impacts, SPPCo will implement APM-BIO-01, APM-BIO-18, APM-BIO-19, APM-BIO-20, and APM-BIO-21, which include nesting bird surveys, bat surveys, and biological monitoring. In addition, due to the line's length—only approximately 0.5 mile long—and location in close proximity to several existing roads, buildings, and other developed areas, the work area is not anticipated to provide high-quality habitat to sensitive species. As a result, impacts will be less than significant.

Other Sensitive Mammals

Other sensitive mammals with the potential to occur along the Northstar Fold include wolverine, Sierra Nevada snowshoe hare, western white-tailed jackrabbit, and mule deer. Although there is a potential for these species to occur, their presence is not anticipated because the Sierra mixed conifer forests along the alignment are fragmented by existing roads. Temporary impacts could result from vegetation clearing along the temporary ROW and at conductor pulling locations. Permanent impacts are not anticipated because no new permanent ROW will be required, the temporary construction ROW will be restored to preconstruction conditions following construction, and no new permanent access roads will be constructed. To minimize potential impacts, SPPCo will implement APM-BIO-01, APM-BIO-15, APM-BIO-16, APM-BIO-21,

APM-BIO-22, APM-BIO-25, APM-BIO-26, APM-BIO-33, and APM-BIO-35, which include preconstruction surveys and construction monitoring, to reduce impacts to a less-than-significant level.

Substations and Switching Stations

With the exception of the Kings Beach Switching Station and Tahoe City Substation, the upgrades and modifications to the existing substations and switching stations will take place within the facilities' existing fence lines. To upgrade the Kings Beach Switching Station to a substation, work will take place outside of the existing facility's fence line. This expansion area will be located in a previously disturbed area on land already owned by SPPCo. At the Tahoe City Substation, a temporary workspace adjacent to the south side of the substation will be required to place temporary transformers during construction. This workspace will be located in a previously disturbed area on land managed by the USFS. Work at the existing substations and switching stations—excluding the Kings Beach Switching Station—will not impact sensitive species, as the work will occur within the existing fences or in previously disturbed areas devoid of biological resources. At the Kings Beach Switching Station, some work will be required adjacent to the existing fence line. Through the implementation of APM-BIO-15 and APM-BIO-22, SPPCo will ensure that no sensitive species are located within this work area. As a result, no impacts to sensitive species will occur.

Operation and Maintenance – Less-than-Significant Impact

Existing 625 Line

No impact to sensitive species will occur as a result of operation and maintenance of the existing 625 Line because the line will be removed and the ROW will be abandoned. No further operation or maintenance activities will take place and the ROW will be allowed to revegetate naturally. As a result, there will be a beneficial impact to sensitive species present in this area.

New 625 Line

Operation and maintenance activities along the new 625 Line will not differ significantly from the practices currently employed along the existing 625 Line. Impacts to sensitive species during the operation and maintenance phase could result from periodic disruption to species due to the presence of SPPCo personnel, as well as direct mortality from collisions with maintenance vehicles and equipment. Because SPPCo personnel will use existing access roads to access the line and generally conduct inspections annually, these impacts are anticipated to be minimal. Ongoing vegetation management along the new permanent ROW will occur annually in order to remove tree limbs encroaching on the ROW, trees growing beneath the conductors, or hazard trees adjacent to the line. These activities are anticipated to have a less-than-significant impact on sensitive species because they will only occur on an annual basis and under the supervision of a registered forester. In addition, the new 625 Line will more closely parallel Mount Watson Road and it is likely that species will be more accustomed to human presence and vehicular traffic. In addition, it is also anticipated that sensitive species will avoid areas that are used more frequently by humans. As a result, impacts to sensitive species as a result of operation and maintenance will be less than significant.

650 Line

Because operation and maintenance activities along the 650 Line will not change from the activities already occurring along the line there will be no impacts to sensitive species.

132/650 Line Double-Circuit

Because operation and maintenance activities along the 132/650 Line Double-Circuit will not change from the practices already occurring and the line is located within an urban area, there will be no impacts to sensitive species.

Northstar Fold

Because operation and maintenance activities along the Northstar Fold will not change from the practices already occurring for the Northstar Tap and because the line is located within a highly utilized area with many existing roads and sources of existing disturbance, there will be no impacts to sensitive species.

Substations and Switching Stations

Because all operation and maintenance activities will take place within the fence lines of the existing facilities, there will be no impacts to sensitive species.

Question 4.4b – Sensitive Natural Communities

Construction – Less-than-Significant Impact

No sensitive natural communities designated by the CDFG are located within the project area. Several areas of montane riparian, fresh emergent wetland, and wet meadow habitat are located along the existing and new 625 lines, 650 Line, and 132/650 Line Double-Circuit, and are identified in Table 4.8-1: Hydrologic Resources of Section 4.8 Hydrology and Water Quality. The Northstar Fold, substations, and switching stations do not cross or otherwise impact any sensitive riparian or wet meadow habitat. Impacts to these sensitive natural areas could occur during vegetation removal in order to establish access to the transmission lines and work sites. Dewatering may also be required during excavation for pole installation along the new 625 Line near the Truckee River and 650 Line in the Martis Valley within the large wet meadow complex at the confluence of Martis Creek, Middle Martis Creek and West Martis Creek. Dewatering and equipment operation has the potential to impact these sensitive areas by degrading water quality and contributing sediment and hazardous materials to the waters. Permanent impacts to 0.003 acre of riparian habitat may result from the installation of new poles along the new 625 Line. Since the new poles along the 650 Line will be replacing the existing wood poles, the permanent impact associated with the larger-diameter steel poles will be negligible.

To minimize impacts to these sensitive natural areas, SPPCo will employ BMPs outlined in the project's SWPPP. In addition, SPPCo will implement APM-BIO-29, APM-BIO-30, APM-HYD-05, and APM-HYD-06, which include felling all poles and trees away from streams and other aquatic resources, where feasible; avoiding skidding of trees through aquatic resources unless the channel is dry or lined with snow; installing timber mats to support vehicles and equipment working in saturated soil conditions; and scheduling construction activities during the dry season

to the greatest extent possible. With the implementation of these APMs, impacts to sensitive habitat communities will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

Operation and maintenance activities along the new 625 Line will include vegetation management in approximately 0.15 mile of riparian area along the new permanent ROW near the Truckee River. Crews will access this area on foot or use existing roads to access the transmission line in this location. Because the new 625 Line will be constructed adjacent to the existing 625 Line along the Truckee River, impacts to sensitive natural communities will not differ significantly from those currently occurring for the existing 625 Line. Because the existing 625 Line does not require significant vegetation management in this area, it is anticipated the vegetation management along the new 625 Line will be minimal. As a result, impacts to sensitive natural communities, including riparian areas, will be less than significant.

Operation and maintenance along the 650 Line and 132/650 Line Double-Circuit will not change significantly from the practices already occurring along the transmission lines. The impacts along the existing 650 Line in the Martis Valley will be reduced, as the rebuilt line will be relocated from the Middle Martis Creek to above the ordinary high water mark. The Northstar Fold, substations, and switching stations do not cross or otherwise impact riparian areas or other sensitive habitat areas. Therefore, operation and maintenance of these components will have no additional impacts on sensitive natural communities.

Question 4.4c – Effects on Wetlands

Construction – Less-than-Significant Impact

Existing 625 Line

Removal of the existing 625 Line has the potential to temporarily impact approximately 2.5 acres of wetlands, as defined by Section 404 of the CWA. Potential wetland impacts include increased sedimentation as a result of the ground-disturbing activities required to remove the poles and conductors and the installation of temporary access roads. Temporary impacts may also occur along the Truckee River between MP 15.1 and MP 15.3, where SPPCo will remove existing poles located adjacent to a fresh emergent wetland. Because the poles are being removed, no permanent fill, hydrological alteration, or removal of wetlands will occur.

To minimize potential wetland impacts, SPPCo will utilize existing crossings where possible to minimize the need for temporary culverts, and will implement the project's SWPPP. SPPCo will also coordinate with the USACE, Lahontan RWQCB, and CDFG to obtain all necessary permits for working in and around waters of the U.S. and state. In addition, SPPCo will implement APM-BIO-21, APM-BIO-28, APM-BIO-29, APM-BIO-36, APM-HYD-05, and APM-HYD-06, which include minimizing vegetation removal near waters of the U.S., biological monitoring, and recontouring and revegetating temporarily disturbed areas to preconstruction conditions. With the implementation of the above APMs, wetland impacts will be less than significant.

New 625 Line

Approximately 5.1 acres of wetlands, as defined by Section 404 of the CWA, may be temporarily impacted during construction of the new 625 Line. Temporary wetland impacts

include disturbance due to the installation of cofferdams during dewatering activities, and the potential introduction of sediment due to ground-disturbing work involved with access road construction and excavation for pole installation. Additional temporary impacts may occur if trees are skidded through wetland areas. Permanent impacts will be reduced, as temporary access roads will be reclaimed following construction.

To minimize impacts, SPPCo will locate new poles outside of wetlands and above the ordinary high water mark of waters of the U.S. to the greatest extent possible, except along the Truckee River in Tahoe City. In addition to the implementation of the project SWPPP, SPPCo will implement APM-BIO-21, APM-BIO-28, APM-BIO-29, APM-BIO-36, APM-HYD-05, APM-HYD-06, which include minimizing vegetation removal near waters of the U.S., biological monitoring, and recontouring and revegetating temporarily disturbed areas to preconstruction conditions. With the implementation of the above APMs, impacts will be less than significant. SPPCo will also coordinate with the USACE, Lahontan RWQCB, and CDFG to obtain all necessary permits for working in and around waters of the U.S. and state. As a result, impacts to wetlands will be less than significant.

650 Line

The 650 Line crosses several wetland features, as defined under Section 404 of the CWA, and outlined in Table 4.8-1: Hydrologic Resources in Section 4.8 Hydrology and Water Quality. Approximately 12.4 acres of wet meadow habitat may be temporarily impacted during the construction of the 650 Line. Temporary impacts to wet meadow habitat could result from the removal of existing poles and vehicle and equipment access along the portion of the alignment in the Martis Valley. In this area, SPPCo will utilize existing roads to access the ROW to avoid streams to the extent possible, though access along the alignment will be required between streams. Additional temporary impacts could occur during pole installation, which will involve cofferdam installation, dewatering, foundation excavation, and the pouring of concrete. Although the new steel poles will replace existing poles, the existing poles will be cut to ground level and left in place. Thus the project will result in approximately 0.001 acre of new permanent wetland impacts as a result of the larger-diameter steel poles, which individually will occupy an additional approximately 6.87 square feet. It is anticipated that approximately 12 poles will be placed in wetlands, though a wetland delineation has yet to be conducted to confirm this. In order to mitigate for temporary and permanent impacts to waters of the U.S. and state, SPPCo will work closely with the USACE, Lahontan RWQCB, and CDFG to obtain the appropriate permits and to ensure that adequate compensation for permanent wetland losses is achieved. Temporary wetland impacts will be minimized through the implementation of APM-BIO-28, APM-BIO-29, APM-BIO-30, and APM-BIO-36, which include working during the dry season—September until the first rain/snow—and installing timber mats along all vehicle and equipment access routes to minimize rutting, minimizing vegetation removal near waters of the U.S., biological monitoring, and recontouring and revegetating temporarily disturbed areas to preconstruction conditions. If access across a stream channel is necessary, SPPCo will schedule construction for low-flow conditions and install timber mats, or other materials suitable for a temporary bridge. If a bridge is required, all attempts will be made to span the channel. Dewatering activities will be conducted overland in accordance with project permits and overland to the extent possible in order to allow sediment to settle (APM-HYD-03). SPPCo will also implement the project's

SWPPP. With the implementation of the above APMs, wetland impacts will be less than significant.

132/650 Line Double-Circuit

Temporary impacts to wetlands along the 132/650 Line Double-Circuit are anticipated to be minimal because the alignment only crosses wetlands over short distances, negating the need to work within these areas. No permanent impacts are anticipated, as all new poles will be located outside of wetlands. Impacts could result from construction-related runoff and associated sedimentation; however, with the implementation of the BMPs outlined in the project SWPPP, the impact will be less than significant.

Northstar Fold

Because the Northstar Fold does not cross any wetlands as defined by Section 404 of the CWA, there will be no wetland impacts.

Substations and Switching Stations

Because all substation and switching station work will occur within the facilities' existing fence lines and/or in areas outside of wetlands as defined by Section 404 of the CWA, there will be no wetland impacts.

Operation and Maintenance – Less-than-Significant Impact

Existing 625 Line

Because the existing 625 Line is being removed, the ROW is being abandoned, and operation and maintenance activities will cease, there will be no wetland impacts.

New 625 Line

Operation and maintenance of the new 625 Line will take place from existing roads to avoid wetlands. Because poles will not be placed within wetlands, to the extent possible, wetland impacts as a result of operation and maintenance will be less than significant.

650 Line

While new, larger steel poles will be installed within the large wet meadow complex in the Martis Valley, operation and maintenance activities will not differ from those already occurring for the existing transmission line. Therefore, there will be no impact.

132/650 Line Double-Circuit

No new poles will be placed in wetland areas, and operation and maintenance activities will not differ from those already occurring for the existing transmission line. Therefore, there will be no impact.

Northstar Fold

No new poles will be placed in wetland areas and operation and maintenance activities will not differ from those already occurring for the Northstar Tap. Therefore, there will be no impact.

Substations and Switching Stations

Because the operation and maintenance of substations and switching stations will occur within the facilities' fence lines and outside of wetland areas, there will be no impact.

Question 4.4d – Interfere with Native Wildlife Movement

Construction – Less-than-Significant Impact

Existing 625 Line

The existing 625 Line crosses through the southern extent of the migratory path of the Loyalton-Truckee deer herd. Deer were observed during the 2008 surveys along the alignment. Because the line is located near the southern terminus of the migration corridor where the migration is sparse, impacts to migratory movement are anticipated to be minimal. Approximately 0.4 mile of the line crosses through a known critical fawning area near Mt. Pluto. Impacts to fawning or migrating deer could occur as a result of increased noise and human presence in the area. However, due to the large amount of suitable habitat adjacent to the project area, it can be assumed that nearby deer would move out of active construction areas and into adjacent habitat. In addition, SPPCo will not work within known critical fawning areas during the summer season (May 15 to August 15), as described APM-BIO-25 in Section 4.4.4 Applicant-Proposed Measures. As a result, the impact to migrating or fawning deer will be less than significant.

The Truckee River also serves as a migratory pathway for several species of trout and salmon. Because work will only occur on the bank of the river and will not impede flow, there will be no disruption to natural migratory or movement patterns. As a result, no impact is anticipated. Though several poles are being replaced within the Truckee River, they will be placed along the top of the ordinary high water mark in areas only flooded during high flow, and therefore have a minimal effect on fish, which tend to navigate through deeper areas away from the shore. As a result, there will be no impact.

New 625 Line

Similar to the existing 625 Line, the new 625 Line crosses through the southern extent of the migratory path of the Loyalton-Truckee deer herd. As mentioned previously, impacts to the deer herd are anticipated to be minimal due to the line's location at the southern terminus of the migration corridor, away from the denser regions of the migration corridor. A known critical fawning area is located 0.25 mile north of the line near Mt. Pluto. Impacts to fawning or migrating deer could occur as a result of increased noise and human presence in the area. However, due to the large amount of suitable habitat adjacent to the project area, nearby deer will likely move out of active construction areas and into adjacent habitat. In addition, the line parallels Mount Watson Road for much of its length. The noise along this roadway likely serves as a partial deterrent to deer. If it is determined that work is being conducted in an active fawning area, the environmental monitor may halt or redirect work to avoid impacts to fawns (APM-BIO-25). As a result, impacts to migrating or fawning deer will be less than significant. Because the new 625 Line will be located along the same relative corridor as the existing 625 Line, which will be removed, there will be no additional permanent impacts.

The Truckee River also serves as a migratory pathway for several species of trout and salmon. Because work will only occur on the river bank and will be scheduled during low-flow conditions, work will not impede flow and there will be no disruption to natural migratory or movement patterns. In addition, SPPCo will implement APM-BIO-31 and APM-BIO-32. As a result, no impacts are anticipated.

650 Line

The 650 Line crosses through Martis Valley, which serves as a migratory corridor and critical fawning area for the Loyalton-Truckee deer herd. Deer have the potential to migrate through the project area between MP 0.0 and MP 1.6 as they move into the Lake Tahoe Basin along Martis Creek and West Martis Creek. Rebuilding of the line has the potential to temporarily impact migrating or fawning deer due to increased noise and human presence, as well as the temporary loss of vegetation within the work areas. However, due to the large amount of suitable habitat adjacent to the project area, nearby deer will likely move out of active construction areas and into adjacent Jeffrey pine and low sage habitat. No permanent barriers to movement will be installed, and because the line is being rebuilt, it can be assumed that deer have become accustomed to its presence in the natural environment. In addition, SPPCo will implement APM-BIO-25 to further reduce potential impacts. As a result, impacts are anticipated to be less than significant.

The 650 Line also crosses Middle Martis Creek and Martis Creek, which are historic Lahontan cutthroat trout habitat. With the construction of the Martis Creek dam, connectivity to the Truckee River has been eliminated, leaving individuals land-locked within the Martis Creek Reservoir. Due to the presence of brown trout and rainbow trout in the reservoir, which have historically depleted Lahontan cutthroat trout populations throughout the Great Basin, Lahontan cutthroat trout are not likely to exist in the project area. SPPCo will implement APM-BIO-31 and APM-BIO-32 to further reduce potential impacts while working near aquatic features. As a result, impacts will be less than significant.

132/650 Line Double-Circuit

Because the 132/650 Line Double-Circuit is located within the Town of Truckee, no overland wildlife migratory corridors or nursery areas exist in the project area. The line does cross the Truckee River, which serves as spawning habitat to trout and salmon. However, no work will be conducted in the Truckee River. There is a potential for sediment and other construction-related runoff to enter the river; however, through the implementation of measures outlined in the SWPPP, these impacts will be minimized. Thus, impacts to migratory corridors or nursery sites will be less than significant.

Northstar Fold

The Northstar Fold lies near migratory corridors for the Loyalton-Truckee deer herd. Because the line lies within an area of heavy human disturbance—the Northstar-at-Tahoe Resort and State Route 267—deer are not likely to migrate through this alignment. In addition, because the work involves the upgrade of an existing line, there will be no permanent impacts to nearby migratory corridors or individuals in the area. No work is anticipated to occur within any known fish migratory corridors. As a result, there will be no impact.

Substations and Switching Stations

No substations are located within known wildlife migration or movement corridors. Also, because all substation and switching stations currently exist, no impact to natural wildlife movement or migration will occur.

Operation and Maintenance – Less-than-Significant Impact

Because the existing 625 Line will be permanently removed, no future operation or maintenance of the line will occur. Operation and maintenance activities along the 650 Line, 132/650 Line Double-Circuit, Northstar Fold, and at the substations will not differ from those already occurring for the existing facilities. Subsequently, no impact to migratory corridors will occur.

Due to the new 625 Line's location, roughly paralleling Mount Watson Road, any deer in this area are likely accustomed to noise and human presence. In addition, operation and maintenance activities are typically conducted on an annual basis, last only a few days at a time, and are conducted from existing access roads. With the large amount of suitable habitat adjacent to the alignment, it is assumed that deer will temporarily move out of the area and into adjacent habitat while work is conducted. No impacts to migratory fish are anticipated as operation and maintenance work will not be required within the Truckee River. As a result, impacts will be less than significant.

Question 4.4e – Conflict with Local Policies – *No Impact*

As discussed in Attachment 4.9–A: Policies Consistency Analysis in Section 4.9 Land Use and Planning, construction, operation, and maintenance of the project will not conflict with federal, regional, or local plans or policies. Thus, no impact will occur.

Question 4.4f – Conflict with Conservation Plan – *No Impact*

Because no HCPs or NCCPs exist within the project area, construction, operation, and maintenance of the project will not conflict with any conservation plans or policies.

4.4.4 Applicant-Proposed Measures

The following APMs will be implemented to ensure that any impacts to biological resources remain less than significant.

- APM-BIO-01: Prior to construction, all SPPCo, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including appropriate wildlife avoidance measures; impact minimization procedures; the importance of sensitive resources, and the purpose and methods for protecting such resources. Among other topics, the training will also include a discussion of BMPs to reduce the potential for erosion and sedimentation during construction.

- APM-BIO-02: SPPCo will conduct a complete floristic survey, including surveys for all rare plants, fungi, and invasive weeds, 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. Populations of rare plants or fungi 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.

- APM-BIO-03: As stated in the USFS Manual 2080 Noxious Weed Management, SPPCo will complete a noxious weed risk assessment for all areas to be temporarily impacted, including the ROW, access roads that require improvement, staging areas, and pull sites.

- APM-BIO-04: Before construction activities begin, SPPCo will employ conventional or mechanical methods to remove noxious weed species where appropriate, depending on the time of year and ecology of the weed species. Herbicides may be used in project areas outside of the Lake Tahoe Basin. In areas where treatment is not feasible, SPPCo will clearly flag or fence noxious weed areas in order to clearly delineate work exclusion.

- APM-BIO-05: Equipment will arrive at the project area clean and weed-free. Equipment will be inspected by the on-site environmental monitor prior to use in the project area to ensure that no mud or other signs that weed seeds could be present exist. If the equipment is not clean, the monitor will deny entry to the ROW and other work areas.

- APM-BIO-06: Vehicles and equipment will be cleaned using high-pressure water or air at designated weed-cleaning stations after exiting a weed-infested area, as specified by the Noxious Weed Risk Assessment. Cleaning stations will be designated by a botanist or noxious weed specialist and located away from aquatic resources.

- APM-BIO-07: Only certified weed-free construction materials, such as sand, straw, or fill, will be used throughout the project.

- APM-BIO-08: If designated weed-infested areas are unavoidable, the plants may be cut and disposed of in a landfill in sealed bags or disposed of or destroyed in another manner acceptable to the USFS, TRPA, or other agency as appropriate. Layers of mulch, degradable geotextiles, or similar materials may be placed over the infestation area to minimize the spread of seeds and plant materials by equipment and vehicles during construction. These materials will be secured so they are not blown or washed away.

- APM-BIO-09: If possible, exclusion zones will be established around any identified rare plants. In the event that a rare plant may be impacted by construction activities, all attempts to relocate individuals will be made. If possible, SPPCo will collect any mature seeds from the relocated plants and store them at an appropriate native plant nursery or comparable facility. Upon the completion of work, SPPCo will redistribute the seeds within the original location of the population. SPPCo will also monitor and document the success rate of the transplanted individuals until the arrival of the first

snow. In instances where take or relocation may occur, appropriate notifications will be made to the CPUC, CDFG, TRPA, and/or USFS, as applicable depending on the species listing status. SPPCo will attempt to relocate all Plumas ivesia individuals along the 650 Line to avoid take. If relocation is not possible or unsuccessful, SPPCo will consult with the CDFG in order to establish appropriate mitigation measures.

- APM-BIO-10: Any rare plants identified during the floristic surveys will be documented, photographed, and submitted to the CNDDB.

- APM-BIO-11: SPPCo will conduct protocol-level surveys prior to construction to determine whether northern goshawk or California spotted owl are nesting in work areas within suitable habitat along the new 625 Line, existing 625 Line, and 650 Line, including USFS-designated PACs or HRCAs.

- APM-BIO-12: No vegetation management or treatment will occur within 0.25 mile of active California spotted owl nests during the breeding season (March 1 to August 31) or within 0.25 mile of active northern goshawk nests during the breeding season (February 15 to September 15), unless surveys confirm that the birds are not nesting. A qualified biologist will have the ability to amend the start and end dates of these breeding seasons with concurrence from appropriate agencies if it can be determined that breeding has not started or that fledglings have left the nest. If the location of a nest site within a PAC is unknown, either surveys are required to locate the nest stand and determine nesting status or, as an alternative to surveys, an activity buffer will be applied to the 0.25-mile area surrounding the PAC. The activity buffer may be waived for vegetation treatments of limited scope and duration, when a biological evaluation determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location. Where a biological evaluation concludes that a nest site will be shielded from planned activities by topographic features that will minimize disturbance, the buffer distance may be modified in coordination with the USFS.

- APM-BIO-13: To offset permanent removal of old-growth trees within designated PACs and HRCAs, SPPCo will conduct protocol-level surveys in an area of similar size to the area impacted by permanent old-growth tree removal within PACs and HRCAs in support of the USFS's goal of locating the best suitable habitat in the area for the establishment of additional California spotted owl and northern goshawk PACs and HRCAs. SPPCo will coordinate with the USFS prior to conducting these surveys to identify areas of interest and existing surveys in these areas, if any. As an alternative, SPPCo proposes to provide in-lieu fee compensation in the amount of 500 dollars per acre of lost HRCA or PAC habitat to be used to support further survey efforts, habitat restoration, or habitat protection.

- APM-BIO-14: SPPCo will conduct protocol-level surveys for willow flycatcher along the 650 Line between MP 0.2 and MP 0.3, MP 1.1 to MP 1.2, and MP 1.5 to MP 1.6 due to sightings during the 2007 field surveys and recent CNDDB records. If nesting willow flycatchers are discovered within the survey area, 250-foot exclusionary

buffer zones will be established to exclude work during the breeding season—June through August—or until young have fledged the nest. If an area is given clearance to proceed with construction and nesting activities subsequently occur, it will be assumed that the nesting pair is acclimated to the ongoing disturbance of construction. If circumstances exist such that future activities may result in the abandonment or failure of the nest, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by SPPCo, in coordination with the CDFG, to protect nesting birds.

- APM-BIO-15: Preconstruction biological surveys will be conducted no more than 30 days prior to construction activities to identify biological resources, including burrows, which could be impacted by construction activities. All burrows will be inspected for use by sensitive mammals, and buffers may be established based on burrow occupation. If an area is given clearance to proceed with construction and burrowing activities subsequently occur, it will be assumed that the individuals are acclimated to the ongoing disturbance of construction. If circumstances exist such that future activities may result in the abandonment of the burrow, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by SPPCo, in coordination with CDFG and, if necessary, the USFWS.

- APM-BIO-16: If a potentially active sensitive mammal burrow is unavoidable, SPPCo will employ den-dusting or scoping to determine the species and reproductive status of the animal. If the burrow is determined to be active and does not contain young, SPPCo will excavate the burrow by hand or block the entrance to prevent re-entry until after the completion of work. If the animal is determined to be raising young, SPPCo will establish a 200-foot exclusionary buffer surrounding the burrow until it is determined that the young have left the den. After it is determined that young have left the den, SPPCo will commence hand excavation. SPPCo will contact CDFG and/or USFS prior to any den-dusting, scoping, or burrow excavation.

- APM-BIO-17: Concurrent with the preconstruction surveys described in APM-BIO-15, surveys will be conducted for sensitive amphibians at aquatic habitat crossed by the project. These features will be evaluated for sensitive amphibians, including eggs or juveniles. If adults, juveniles, or eggs of sensitive amphibians are discovered, a permitted specialist will relocate the individuals to suitable habitat outside of the construction area. If sensitive amphibians are discovered in the construction area after the start of work, the environmental monitor will allow the individuals to leave under their own volition. As an alternative, an agency-approved biologist may relocate the individuals from the project area to similar, suitable habitat. SPPCo will coordinate with the CDFG, USFWS, and/or USFS prior to relocating any individuals.

- APM-BIO-18: Nesting bird surveys will be conducted no more than 30 days prior to construction activities if work is scheduled to occur during the breeding season—February to September. These surveys may utilize helicopters if it is deemed beneficial to the results. Exclusionary buffer zones (to be determined based on species-specific needs) will be created surrounding any active nests along the project

alignment. Buffers will be established by a qualified biologist prior to the start of construction. If an area is given clearance to proceed with construction and nesting subsequently occurs, it will be assumed that the individuals are acclimated to the ongoing disturbance of construction. If circumstances exist such that future activities may result in the abandonment or failure of the nest, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by SPPCo in coordination with the CDFG.

- APM-BIO-19: Transmission poles will be constructed to conform to the practices described in the Suggested Practices for Avian Protection on Power Lines Manual developed by the Avian Power Line Interaction Committee.

- APM-BIO-20: Bat surveys will be conducted in the spring, no more than 30 days prior to the start of construction, in order to identify active bat roosting sites, such as snags or dense trees. All potential roosting sites will be surveyed by a qualified biologist in order to determine usage. All non-active roosting sites will be trimmed within 30 days of the surveys in order to prevent new roosts from being established. If it is determined that an active roosting site will be impacted, SPPCo will consult with the CDFG and/or USFS in order to acquire appropriate authorizations to remove the roosting sites. All active non-maternity roosting sites will be fitted with passive exclusion devices, such as one-way doors, and all bats will be allowed to leave voluntarily. Once it is confirmed that all bats have left the roost, crews will be allowed to continue work in the area. If a maternity roosting site is discovered, SPPCo will consult with the CDFG and/or USFS in order to establish appropriate exclusionary buffers until all young are determined to be volant by a qualified biologist. Once it is determined that all young are volant, passive exclusion devices will be installed and all bats will be allowed to leave voluntarily. Once it is determined by a qualified biologist that all bats have left the roost, crews will be allowed to work within the buffer zone.

- APM-BIO-21: Environmental monitors will be present with each crew during all vegetation-removal activities to 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 ensure the protection of resources and compliance with all permits.

- APM-BIO-22: An environmental monitor will inspect all pole excavations and areas of active construction on a daily basis for trapped wildlife. Wildlife found in active construction areas will be allowed to passively leave the site. If necessary, wildlife may be relocated by a qualified biologist. The construction foreman will notify the environmental monitor immediately if any wildlife enters or becomes trapped in the work area.

- 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. 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 where permanent facilities are planned or where operation and maintenance activities preclude the establishment of vegetation.

- APM-BIO-24: If noxious weed populations are later identified throughout the course of construction in staging areas, parking areas, or access routes, they will be treated according to APM-BIO-04.

- APM-BIO-25: If the environmental monitor determines that construction is occurring in an active mule deer fawning area, they will have the authority to temporarily halt or relocate work until the fawns move out of the project area. In addition, helicopter flight paths may be rerouted to avoid these areas if it is determined that helicopter use may impact fawns.

- 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 the CPUC will be obtained prior to the commencement of activities. USFS approval will also be obtained in additional work areas are required on forest lands.

- APM-BIO-27: Helicopters will be used, where necessary, to avoid impacts to waterways or in areas of rough terrain. Appropriate measures, including regular watering, will be implemented at landing zones in order to control dust. Helicopter use within HRCAs and PACs will be prohibited if vegetation treatment restrictions are concurrently in place.

- APM-BIO-28: SPPCo will minimize vegetation and tree removal to only the areas necessary for construction, especially in riparian areas.

- APM-BIO-29: Skidding of trees will be avoided in waters of the U.S., including wetlands, unless the channel is dry or lined with snow. In addition, an environmental monitor will be present, as described in APM-HYD-05.

- APM-BIO-30: 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. Disturbed wetland areas will be restored to preconstruction conditions and seeded with a native annual species to stabilize the soils and minimize the introduction of noxious weeds, as specified by the USACE and RWQCB. In accordance with the USACE “no net loss” policy, all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio. This mitigation will come in the form of either contributions to a USACE-approved wetland mitigation bank or through the

development of a Compensatory Mitigation and Monitoring Plan aimed at creating or restoring wetlands in the surrounding area.

- APM-BIO-31: Visibility permitting, all excavations will be inspected for sensitive aquatic wildlife prior to dewatering. Wildlife found in excavations will be allowed to leave passively or will be relocated by a qualified biologist.

- APM-BIO-32: All dewatering pump intakes will be fitted with filter screening to prevent impacts to aquatic wildlife that may accidentally enter excavations.

- APM-BIO-33: All trash and food will be removed from the site at the end of each workday in order to deter wildlife from entering the site.

- APM-BIO-34: No pets or firearms will be allowed in the project area.

- 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, SPPCo will develop a Restoration Plan that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. On USFS land, SPPCo will coordinate with the USFS to determine an appropriate seed mix. On private land, SPPCo will coordinate with the landowner and/or provide the landowner with a suggested seed mix based on agency consultation. The plan will include approved seed mixes, application rates, and application methods. If broadcast seeding is determined to be the most feasible application method, seeding rates will be doubled and the seeding method rationale will be explained. The plan will also include long-term erosion and sediment control measures, slope stabilization, and monitoring procedures.

- APM-BIO-37: SPPCo will offset the permanent loss of trees along the new 625 Line ROW by replanting the existing 625 Line ROW with mixed conifer species similar the surrounding area at a ratio of between 250 and 435 trees per acre. The density of planting will be dependent on surrounding habitat characteristics, including slope, aspect, soil type, vegetation, and elevation. SPPCo will employ a certified arborist to oversee all replanting activities.

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ATTACHMENT 4.4-A: BIOLOGICAL RESOURCES TECHNICAL REPORT

EXECUTIVE SUMMARY

Sierra Pacific Power Company (SPPCo) is proposing to upgrade several components of their existing north Lake Tahoe electric transmission system in order to provide increased reliability of service to the area. These upgrades include reconfiguring, rebuilding, and relocating several transmission lines running between Truckee and Kings Beach and between Kings Beach and Tahoe City, as well as modifications to seven substations and switching stations. This report describes the biological resources known to occur within the 625 and 650 Line Upgrade Project (project) study area and identifies potential impacts to habitats and species that could result from construction, operation, and maintenance of the project.

The project is located in primarily undeveloped areas containing large amounts of conifer forests and montane meadows. Several sensitive species, including Plumas ivesia, California spotted owl, northern goshawk, willow flycatcher, mule deer, mountain quail, and yellow warbler, were observed during reconnaissance-level surveys conducted in the fall of 2007 and 2008 or are known to be present in the area. Additionally, two sensitive plants and four sensitive animals have a high potential to occur in the project area; and 27 sensitive plants, fungi, and lichen, and 15 sensitive animals have a moderate potential to occur in the project area. The greatest potential impacts to these species will likely be associated with tree removal and other vegetation-clearing activities within the transmission line rights-of-way and temporary construction areas. In addition to the plant and wildlife species observed or known to occur in the area, a total of 44 perennial and intermittent aquatic features, including Griff Creek, Truckee River, Middle Martis Creek, Martis Creek, wet meadows, ponds, and other drainages, were identified within the project area.

SPPCo intends to minimize impacts to these resources through avoidance where feasible, or through the implementation of various resource-specific applicant-proposed measures, compensation, and best management practices, as described further herein. With the proper implementation of these measures, impacts to sensitive resources in the project area will be minimized.

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1 – INTRODUCTION

This Biological Resources Technical Report (BTR) describes the existing biological resources located near the Sierra Pacific Power Company (SPPCo) 625 and 650 Line Upgrade Project (project), assesses potential impacts to sensitive habitats and species, and presents applicant-proposed measures (APMs) to reduce such impacts. The project involves several components, including relocating, reconductoring, and/or reconfiguring several portions of the existing transmission system in the north Lake Tahoe area. The existing transmission system is a loop, comprised of a series of 60-kilovolt (kV) and 120-kV transmission lines—the 132 Line, which runs from Truckee to Squaw Valley; the 625 Line, which runs from Tahoe City to Kings Beach; and the 650 Line, which runs from Kings Beach back to Truckee. The purpose of the project is to maintain a safe and reliable transmission system for the north Lake Tahoe area, while accommodating current and projected future growth. Project construction is scheduled to begin in 2011, and it is anticipated the project will be completed by 2013.

1.0 PROJECT COMPONENTS

For the purposes of this document and to better describe the project's location, the project is divided into the following six components:

1. Removing the existing 625 Line
2. Constructing the new, rerouted 625 Line
3. Rebuilding the 650 Line and rerouting the northern portion to terminate at the North Truckee Switching Station
4. Rebuilding the Northstar Tap into the Northstar Fold
5. Reconfiguring the 132 Line to include a double-circuit configuration with the rerouted portion of the 650 Line
6. Upgrading and modifying seven substations and switching stations

Project activities will generally occur within existing SPPCo rights-of-way (ROW), with the exception of the new 625 Line, which will require a new permanent easement. The project crosses federal lands administered by the United States (U.S.) Forest Service (USFS) Tahoe National Forest, USFS Lake Tahoe Basin Management Unit, and U.S. Army Corps of Engineers (USACE), as well as private lands within unincorporated sections of Placer County and the communities of Kings Beach, Truckee, and Tahoe City. Figure 1: Project Location Map depicts the location of the project.

All substation work is planned to occur within existing substation fences or directly adjacent to them within previously disturbed areas of no biological significance, with the exception of the Kings Beach Substation. At all other substations, it is assumed that there will be no biological impacts associated with substation work. The work adjacent to the Kings Beach Substation also coincides with work associated with the 650 Line and new 625 Line, and will therefore be analyzed under those headings. Subsequently, substation work will not be discussed within the BTR.

1.0.0 Existing 625 Line

The existing 625 Line originates at the Kings Beach Switching Station in Kings Beach and generally follows a northwesterly direction to Brockway Summit before heading southwest. It terminates at the Tahoe City Substation located on the west side of SR 89 across from the Truckee River Outlet (Fanny Bridge). SPPCo is proposing to remove the existing single-circuit, 60-kV 625 Line in its entirety. This process will involve the removal of approximately 341 existing wood structures, 214 anchors[1], and 15 miles of conductor.

1.0.1 New 625 Line

SPPCo is planning to reroute the 625 Line so that its alignment will more closely follow the existing roadways in the project area. More specifically, approximately 10 miles of the new 625 Line will be built generally parallel to Mount Watson Road (otherwise known as the Fiberboard Highway) in order to facilitate access during construction and maintenance activities. The new alignment will originate at the Kings Beach Switching Station and follow a northwesterly path, generally paralleling the existing 625 Line. From Brockway Summit, the line will generally follow Mount Watson Road southwest towards Tahoe City. It will terminate at the Tahoe City Substation located on the west side of SR 89, across from the Truckee River Outlet (Fanny Bridge). Construction of the new 625 Line will include approximately 300 steel poles and involve an approximately 16-mile-long and 65-foot-wide temporary construction ROW and a new 40-foot-wide permanent easement.

1.0.2 650 Line

SPPCo is planning to upgrade approximately 10 miles of the 650 Line, which originates at the Truckee Substation located in the town of Truckee. The line generally travels in a southeasterly direction, paralleling SR 267, before entering the unincorporated community of Kings Beach and terminating at the Brockway Substation. The existing 650 Line is comprised of approximately 225 wood structures, 21 span guy poles[2], and 72 anchors. The new steel poles will be located within approximately 10 feet of the existing wood structure locations. This rebuild effort will upgrade the line from 60 kV to 120 kV, involve the replacement of all structures, and reroute the terminal ends of the line from the Brockway Substation and the Truckee Substation to the new Kings Beach Substation and the North Truckee Switching Station, respectively.

Approximately 0.2 mile of the existing 650 Line—from the Truckee Substation to the intersection with the 132 Line—will be relocated along the existing 132 Line. The four structures that carry the 650 Line circuit to the Truckee Substation also carry a distribution underbuild. The 650 Line conductor will be removed and the four structures will be topped,[3] leaving the distribution line intact. As a result, no structures will be removed or replaced along this section.

[1] Anchors are situated in the ground adjacent to the tower—from these anchors, guy wires are run to the wood poles to secure them to the ground.

[2] Span guy poles allow guy wires to span additional objects—roads, railroads, and water features—located between the anchor point and the supported structure.

[3] Topping a pole involves removing the existing transmission conductor, disassembling the hardware associated with the transmission circuit, and trimming the pole to leave the underbuilt distribution line in place.

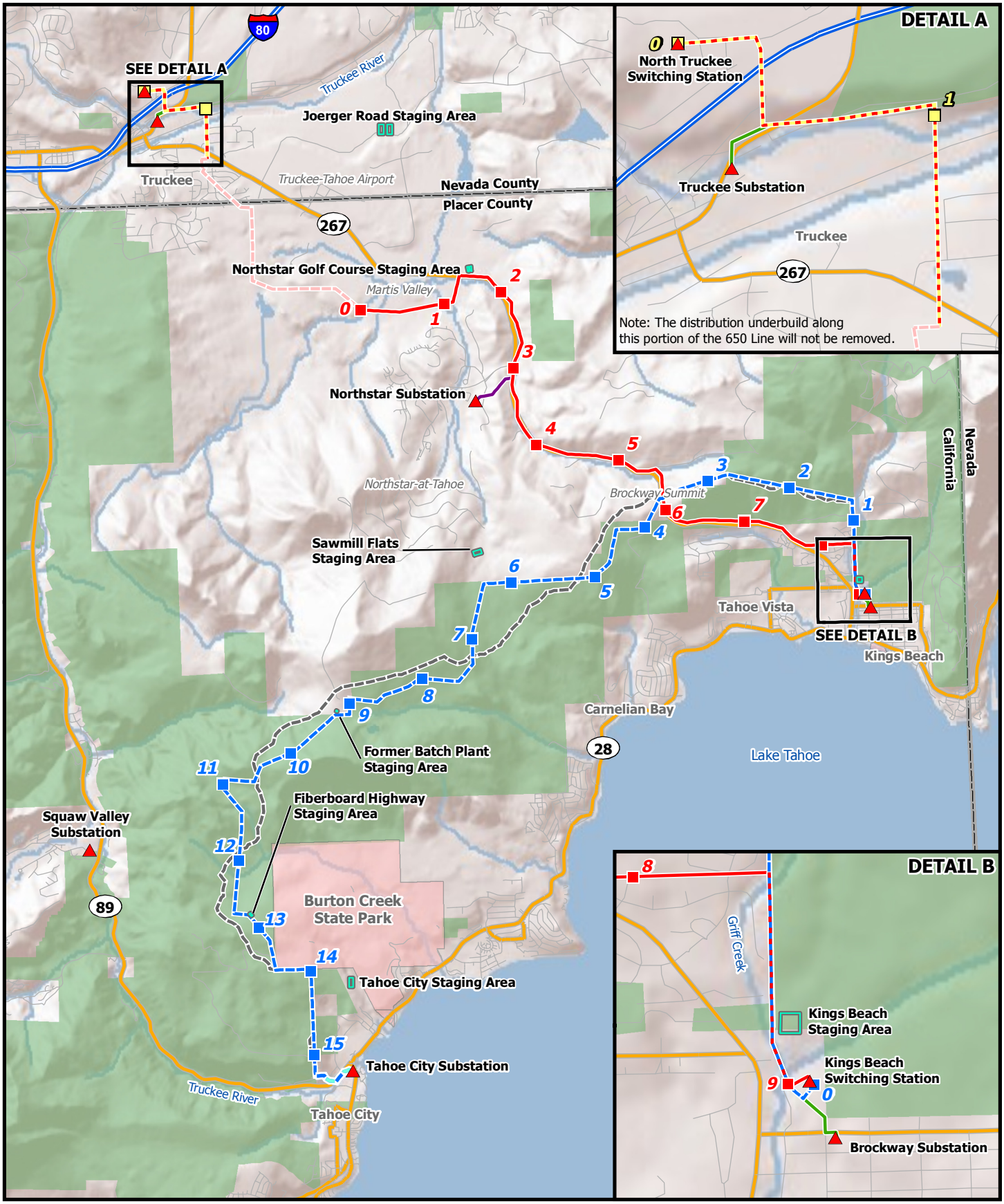

Figure 1: Project Location Map

625 and 650 Line Upgrade Project

- New 625 Line
- Existing 625 Line
- 625/629 Double-Circuit
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double-Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Substation/Switching Station
- Staging Area
- Milepost (Color Coded by Line)

Sierra Pacific™

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In the 1990s, approximately 3.0 miles of the 650 Line were upgraded to 120 kV as the result of multiple construction projects. In addition to the voltage upgrade, portions of this 4.3-mile-long section were converted from an overhead to an underground configuration. As a result, this previously upgraded section is not part of the current project.

1.0.3 Northstar Fold

The Northstar Tap originates approximately 0.2 mile south of the intersection of SR 267 and Northstar Drive at Pole 1078 of the 650 Line. The line spans SR 267 and heads west, terminating at the Northstar Substation, located at the end of Stable Road. The 0.5-mile tap will be rebuilt in place, replacing 14 existing wood poles with steel poles, to operate as a 120-kV fold.

1.0.4 132 Line

Approximately 30 wood poles along the 132 Line will be replaced with steel poles, and the line will be reconfigured to allow a double-circuit configuration with the 650 Line and operation at 120 kV. The new steel poles will be located approximately 10 feet from the current wood pole locations.

1.1 RIGHT-OF-WAY REQUIREMENTS

1.1.0 Temporary

The existing 625 and 650 lines are located within an existing easement that average approximately 40 feet wide and 30 feet wide, respectively. To accommodate construction, a temporary ROW will be established for the new 625 Line, 650 Line, Northstar Fold, and 132 Line. The temporary ROW requirements for construction of the project have been summarized in Table 1: Temporary ROW Requirements. All work associated with the existing 625 Line will be conducted within the existing 40-foot-wide ROW. No additional temporary ROW will be required. All disturbance created outside of the existing easements will be temporary and disturbed areas will be returned to their original conditions following construction, unless otherwise requested by the landowner or land management agency.

Table 1: Temporary ROW Requirements

Project Component	Approximate Length (miles)	Approximate Total Width (feet)	Approximate Area (acres)
New 625 Line	16	65	126.1
650 Line	10	65	78.8
Northstar Fold	0.5	65	3.9
132 Line	1.6	65	12.6
Total	**28.1**	**65**	**221.4**

1.1.1 Permanent

SPPCo currently holds easements from the USFS, Placer County, and various private landowners whose properties are crossed by the existing 650 Line, 132 Line, and Northstar Fold. The widths of the existing easements on these lands vary, but on average are approximately 40 feet. The Northstar Fold's easement expands from 40 feet to 95 feet between the last pole and the

Northstar Substation due to the divergence of the separate circuits. These easements will be maintained for the 650 Line, 132 Line, and Northstar Fold.

After construction has been completed, SPPCo will require a new permanent easement that is 40 feet wide for operation and maintenance of the new 625 Line. The transmission line easements will remain the same length as the temporary ROWs provided in Table 1: Temporary ROW Requirements. SPPCo will negotiate with the existing landowners in order to obtain a similar easement for the new 625 Line.

1.2 WORKSPACE REQUIREMENTS

Transmission line construction will require the use of various temporary work areas, including staging areas, pole work areas, stringing sites, and crossing structure areas. The size and number of these temporary work areas is shown in Table 2: Temporary Workspace Requirements. Some vegetation removal and blading may be required to accommodate equipment and material and to provide level work areas to ensure safe equipment operation at these locations. Where topsoil is present, it will be salvaged from areas to be bladed whenever possible. Following construction, each work site will be restored to preconstruction conditions to the extent practical. Work areas located on USFS land will be reseeded following guidelines outlined in USFS Manual 2080: Noxious Weed Management. SPPCo will follow Tahoe Regional Planning Agency (TRPA) guidelines regarding restoration or reseeding when applicable.

1.2.0 Staging Areas

To support construction, SPPCo is proposing to use seven staging areas within the project area. Staging areas have generally been situated in areas with preexisting soil disturbance; however, some sites will require vegetation removal and grading. These staging areas are depicted in Table 3: Staging Area Summary. All staging areas will be restored as necessary following construction.

1.2.1 Pole Work Areas

To accommodate construction equipment and activities at each pole site, work areas surrounding each pole location will be established. Installation of angle-poles will require approximately 0.5 acre and installation of the tangent-poles will require approximately 0.25 acre. Pole work areas will typically be accessed by truck using existing access roads and new spur roads.[4] In areas where the terrain is too rugged to be accessible by truck, crews will use all-terrain vehicles, helicopters, or will hike in by foot to access the poles. Pole work areas will be restored and revegetated at the end of construction.

[4] Spur roads are short access routes that connect existing access roads to specific areas of construction.

Table 2: Temporary Workspace Requirements

Project Component	Workspace Description[5]	Quantity	Required Improvements	Approximate Dimensions/Size per Site	Approximate Area (acres)
Existing 625 Line	Tangent Pole Work Areas	182	Grading and vegetation clearing	0.25 acre	45.5
	Angle Pole Work Areas	159		0.5 acre	79.5
	Crossing Structures	4	Excavation, and vegetation clearing	0.25 acre	1.0
	Conductor Removal Sites	22	Vegetation clearing	Partial 300-foot-diameter circles	35.7
New 625 Line	Tangent Pole Work Areas	283	Excavation, grading, and vegetation clearing	0.25 acre	70.75
	Angle Pole Work Areas	17		0.5 acre	8.5
	Crossing Structures[6]	4	Excavation, and vegetation clearing	0.25 acre	1.0
	Stringing Sites	30	Grading and vegetation clearing	Partial 300-foot-diameter circles	48.7
650 Line	Tangent Pole Work Areas	157	Excavation, grading, and vegetation clearing	0.25 acre	39.25
	Angle Pole Work Areas	68		0.5 acre	34.0
	Crossing Structures	2	Excavation, and vegetation clearing	0.25 acre	0.5
	Stringing Sites	18	Grading and vegetation clearing	Partial 300-foot-diameter circles	29.2

[5] Additional work areas to accommodate the installation of anchors and guy wires outside of the temporary ROW may be required. These work areas will be approximately 15 feet wide and may extend up to 50 feet from the edge of the temporary ROW. The location and quantity of anchors that will be installed outside of the temporary ROW will not be determined until the final engineering phase of the project. As a result, they have not been included in this table.

[6] Crossing structures for the new and existing 625 lines will be installed in the same locations; therefore, the acreage associated with these work sites has only been accounted for once.

Project Component	Workspace Description[5]	Quantity	Required Improvements	Approximate Dimensions/Size per Site	Approximate Area (acres)
Northstar Fold	Tangent Pole Work Areas	8	Excavation, grading, and vegetation clearing	0.25 acre	2.0
	Angle Pole Work Areas	6		0.5 acre	3.0
	Crossing Structures	2	Excavation, and vegetation clearing	0.25 acre	0.5
	Stringing Sites	2	Grading and vegetation clearing	Partial 300-foot-diameter circles	3.2
132/650 Line Double-Circuit	Tangent Pole Work Areas	24	Excavation, grading, and vegetation clearing	0.25 acre	6.0
	Angle Pole Work Areas	6		0.5 acre	3.0
	Crossing Structures	8	Excavation, and vegetation clearing	0.25 acre	4.0
	Stringing Sites	6	Grading and vegetation clearing	Partial 300-foot-diameter circles	9.7
Tahoe City Substation	Temporary Transformer Location, Pole Work Areas, Crossing Structures	1	Grading, excavation, and vegetation clearing	1 acre	1.0
Total					**426.0**

Table 3: Staging Area Summary

Staging Area	Purpose	Required Improvements	Approximate Dimensions (feet)	Approximate Area (acres)
Joerger Road	Material storage and helicopter landing, storage, and refueling	Vegetation clearing and temporary construction fencing installed	600 by 200	2.8
Northstar Golf Course	Material and equipment storage and staging	Vegetation clearing, minor road improvements, and temporary construction fencing installed	300 by 300	2.1
Kings Beach	Material and equipment storage and staging	Vegetation clearing, tree removal, road improvements, and temporary construction fencing installed	300 by 300	2.1
Sawmill Flats	Material and equipment storage and staging and logging activities	Temporary construction fencing installed	500 by 260	3.0
Former Batch Plant	Material and equipment storage and staging and logging activities	Vegetation clearing, tree removal, and temporary construction fencing installed	120 by 80	0.2
Fiberboard Highway	Material and equipment storage and staging and logging activities	Vegetation clearing, tree removal, and temporary construction fencing installed	200 by 100	0.5
Tahoe City	Helicopter landing and material and equipment storage and staging	Temporary construction fencing installed	600 by 250	3.4
Total				**14.1**

1.2.2 Crossing Structure Work Areas

Prior to the installation or removal of conductor, temporary crossing structures—constructed of wood poles and netting—will be installed at road crossings and/or other locations where the conductor could come into contact with existing electrical or communications facilities or vehicular and/or pedestrian traffic (e.g., SR 267 and SR 89) if the line were to accidentally fall. Each crossing structure work area may involve up to approximately 0.25 acre of temporary disturbance. Crossing structure locations will be accessed in a similar manner to the pole work areas and restored at the end of construction. Because crossing structures are designed to protect existing anthropogenic features, they are generally installed in areas of minimal biological sensitivity, such as road shoulders.

1.2.3 Stringing Site Work Areas

Up to 65 stringing sites will be required during the removal and installation of the conductors. In general, stringing sites will be approximately 300 feet in diameter. Stringing sites will require a relatively flat surface; therefore, these areas will need to be cleared and may need to be graded to allow for safe equipment operation. Site preparation will require heavy equipment for removing obstacles (e.g., large rocks, trees, brush). Vegetation will be removed, as necessary, to provide safe and efficient work areas. Mowing is the preferred method for clearing vegetation; however, tree clearing may be required depending on final site locations. Similar to pole work areas, stringing sites will be restored and revegetated at the end of construction.

1.3 ACCESS

1.3.0 Access Roads and Spur Roads

The transmission line corridors will primarily be accessed through the use of existing paved and dirt access roads, which vary in width from approximately 8 to 10 feet. Some new access roads and spur roads will also be established, as necessary, to facilitate access from the existing roads to the pole work areas. These access roads are depicted in Attachment A: Vegetation Communities Maps. New access roads will be graded to level and will generally be 12 feet wide for straight sections and up to 25 feet wide at curves to safely allow movement of construction equipment and vehicles to each site. In areas of steep terrain, the access roads may be leveled at two separate heights to minimize the amount of material removed. A list of the types of access roads that will be used on this project is provided in Table 4: Project Access Roads.

1.3.1 Helicopter Access

SPPCo is proposing to remove the existing 625 Line structures by helicopter where access is unavailable. In addition, SPPCo plans to utilize helicopters to deliver and remove construction materials to and from areas with rugged terrain where overland access is not feasible.

Two helicopter landing zones will be utilized during construction of the project. One landing zone will be located at the Joerger Road Staging Area. The helicopters will be refueled and stored at this location overnight. The second landing zone will be located at the Tahoe City Staging Area just north of Tahoe City. These landing zones will be accessed using existing paved and dirt access roads. Because these landing zones will be located in previously disturbed areas, no additional grading will be required.

1.4 CONSTRUCTION METHODS

This section includes an overview of the typical methods used for removing and installing electrical transmission poles and conductors.

Table 4: Project Access Roads

Type of Road	Description	Approximate Length of Roads (miles)	Approximate Area of New Temporary Disturbance (acres)
Existing Dirt Road	Existing dirt roads will not require any improvement or ground disturbance.	17.3	0.0
Existing Dirt Roads Needing Improvement	Existing dirt access roads may be improved and widened to between 12 and 25 feet in some areas. Some grading and vegetation clearing may be required.	4.7	8.5
New Temporary Spur Road	New roads will be built from access roads to pole locations. These 12-foot-wide roads may require grading and vegetation clearing. These roads will be reclaimed upon the completion of construction.	0.4	0.6
Existing Paved Road	Existing paved roads will not require any improvement or ground disturbance.	32.6	0.0
Total		**55.0**	**9.1**

1.4.0 Vegetation Clearing

Brush Clearing

In order to prepare the ROW and work areas for construction activities, approximately 365.7 acres of existing native vegetation will need to be cleared. Mowers, excavators, front-end loaders, and bulldozers will be used to clear these sites. During clearing activities, vegetation will be mowed, leaving root systems intact wherever possible to encourage resprouting and minimize erosion. Brush and shrubs that must be removed will be placed at the edge of the ROW or moved to an approved staging area. During reclamation activities, salvaged brush may be respread in disturbed areas after seeding to encourage revegetation, where approved by landowner and agency agreements.

Tree Removal

Trees will be felled and delimbed within the ROW, skidded to the nearest access road, and loaded onto trailers for further processing at the logging area located at the Fiberboard Highway Staging Area. Chain saws and other mechanized tree clearing equipment will be used to fell and delimb trees. Log loaders, log trailers, chippers, and chip vans will be used to transport and process cleared trees. In areas of rough terrain, trees may be cut by hand and then removed using helicopters. Processed trees will be transported to the Sierra Pacific Industries (SPI) mill located in Lincoln, California. Excess slash will be chipped and either stored on the ROW to be respread during reclamation or blown into trucks where it will be transported to the SPI cogeneration plant in Loyalton, California.

In addition to trees within the ROW, trees deemed to be “hazard trees,” which are located outside of the ROW but have the potential to fall and damage the transmission lines, will also be

removed. Tree limbs within 10 feet of the outside conductor will also be trimmed in accordance with California Public Utilities Commission (CPUC) General Order No. 95D.

1.4.1 Pole Installation and Removal

Excavation

Pole installation will begin by preparing a hole by auger or track-mounted hoe, approximately 3 feet in diameter, in which the new pole will be buried. The depth of the hole will be determined by the height of the pole. The poles will range in height from approximately 50 to 80 feet, requiring holes between 7 and 10 feet deep. Where self-supporting steel poles will be used, larger holes between 6 and 8 feet in diameter and 20 to 30 feet deep will be excavated, and concrete foundations will be poured. Chemical cracking may be required in rocky areas where normal excavation methods are unable to meet project excavation specifications. As a safety precaution, excavations will be covered, flagged, or temporarily fenced during periods of inactivity. Excavated spoil will be removed from the ROW by dump truck and stored at the staging areas. Excess spoil not used for backfilling or restoration efforts will be removed from the project site and sent to an approved landfill for reuse or disposal. Topsoil for excavations and grading will be stored separately and utilized during project restoration.

Additionally, holes for guy wire anchors will be excavated at pole sites where required. Anchors are typically located at a distance equal to the total pole height away from the pole's base. After installation, each anchor will be compacted and tested using a large bulldozer and winch lines or with specific anchor-testing equipment.

Assembly and Erection

Once excavation activities have been completed, materials, including poles, insulators, and hardware, will be delivered to the site, assembled, and attached to the new poles to form a complete unit. The assembled poles will then be placed into the excavated holes using cranes. Direct-buried poles will be buried in the ground, and native soil will be used to fill the holes (imported soil will be used if native material is unsuitable for compaction). Up to 1 cubic yard of soil will be mounded around the base of the newly installed poles. Self-supporting steel poles will be placed onto concrete foundations using cranes and will be secured using the appropriate hardware.

Helicopters may be used to deliver material to the ROW and install poles as necessary in areas of rough terrain or in areas otherwise inaccessible to ground crews and other construction equipment. Poles to be placed by helicopters will be assembled at the helicopter landing zones and transported and placed in the excavated holes with assistance from ground crews.

Pole Removal

Following the installation of the new, steel poles and removal of the conductor, the hardware on the old poles will be dismantled using cranes and bucket trucks. The old poles will be cut off at ground level and transported off site by truck for disposal at an approved facility. The remaining underground-portion of the pole will be buried. Crews will access pole work areas by truck using existing access roads and new spur roads. In areas where the terrain is too rugged for truck access, crews will use all-terrain vehicles or will hike in by foot to access the poles. Helicopters

will then transport the old poles to the Tahoe City and Kings Beach staging areas. The poles will be dismantled, loaded onto trucks, and disposed of at an approved facility. The existing pole work areas will then be restored as necessary.

1.4.2 Conductor Installation and Removal

Installation of Crossing Structures

Prior to conductor installation or removal, temporary crossing structures, constructed of wood poles and netting, will be installed at road crossings, transmission or distribution line crossings, and/or other locations. An auger or backhoe will excavate the holes for the crossing structures and a crane will lift the structures into place. An approximately 0.25 acre temporary workspace will be cleared of vegetation at each crossing structure location prior to installation. The temporary crossing structures will be removed after the completion of conductor stringing and the holes will be backfilled with excavated soils.

Traveler Installation

Conductor pulling begins with the installation of travelers (rollers) on the bottom of each of the insulators using helicopters or aerial lift trucks (bucket trucks). The travelers allow the conductor to be pulled through each pole until the entire line is ready to be pulled up to the final tension position. Travelers will be installed onto the poles prior to their erection.

Sock Line Installation

Conductor-stringing operations begin by pulling a sock line (a small cable used to pull the conductor) onto the travelers from pole to pole using aerial lift trucks or a construction vehicle traveling along access roads. Once the sock line is installed, it will be attached to reels of conductor at an adjacent stringing site.

Conductor Installation

After the sock line is installed, the conductor will be attached to the sock line and pulled back through each pole to the next conductor-stringing site. After the conductor reaches the stringing site, it will be correctly sagged and tensioned. The line will be installed with a minimum ground clearance of 25 feet where there are no obstructions, 30 feet where the line crosses roads, and 35 feet for any railroad crossings. The new conductor will then be clipped into the end of each insulator on each pole, the travelers will be removed, and vibration dampers and other hardware will be installed.

Conductor Removal

The conductor will be removed by the use of conventional tractor-trailer pulling equipment. One side of the existing conductor will be attached to pulling equipment located at a stringing site. The conductor will be pulled through each pole under a controlled tension to keep it elevated and away from obstacles. During the pull, the conductor forces at the poles located at each end of the pull sections will be transferred to trucks, tensioners, and pullers. The existing conductor will be placed in a hoist and attached at one end to the pole to support the down-strain load, removing load on the existing insulator. The removed conductor will be collected on reel trucks and taken to an existing SPPCo storage facility or recycled as appropriate.

Dewatering

Dewatering may be required in work areas where high amounts of groundwater infiltration may potentially fill pole excavations with water. This will typically be required when working in wet meadows or adjacent to large perennial water features. Examples of areas where dewatering will likely be needed include Martis Valley and areas adjacent to the Truckee River. Once excavations have been drilled, a reduced amount of groundwater will likely infiltrate if excavations remain unfilled for extended periods of time. If groundwater enters excavations, it will be pumped out and dispersed over land in order to allow sediment to settle.

1.4.3 Cleanup and Restoration

Surplus material, equipment, and construction debris will be removed at the completion of construction activities. All man-made construction debris will be removed and recycled or disposed of at permitted landfill sites, as appropriate. Cleared vegetation will either be shredded and stored on the ROW for later use during reclamation or disposed of off-site, depending on landowner and agency agreements.

The areas that are temporarily disturbed around each pole, as well as areas used for conductor stringing and staging areas will be restored to preconstruction conditions, to the extent practicable, following construction. This will include returning areas to their original contours, respreading topsoil where salvaged, and reseeding in accordance with private landowner stipulations, or USFS or TRPA guidelines where necessary. Existing access roads that have been widened will be returned to their preconstruction widths and USFS-approved seed mixes will be applied to disturbed areas. SPPCo will attempt to close or restrict vehicle access to areas that have been seeded until the reclamation success criteria have been achieved. Rocks removed during access road grading and foundation excavation will be redistributed over the ROW to resemble adjacent site conditions.

1.5 OPERATION AND MAINTENANCE

The SPPCo North Lake Tahoe District Office operations personnel patrol the lines on an annual basis. Separately from these yearly patrols, SPPCo's vegetation management staff, in conjunction with a California Registered Forester, conducts an annual hazard tree inspection. SPPCo's operations staff also patrols the lines in the event of unexplained outages or significant natural incidents, such as fire, flood, or electrical storms, to inspect and repair damage on an as-needed basis. Inspections are conducted using helicopters, all-terrain vehicles, and/or line trucks.

The inspections 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 include tree and vegetation trimming or removal to maintain the 40-foot-wide easement in accordance with CPUC General Order No. 95, Rule 35 and California Public Resources Code (PRC) Section 4293. Hazard trees (dead, dying, diseased, decaying, or bug-infested trees) are also to be removed as part of these vegetation-management activities.

In addition to the annual inspections, SPPCo operation and maintenance personnel generally conduct pole-climbing inspections every 5 years. These inspections include accessing each

transmission pole site using four-wheel-drive vehicles on existing dirt access roads. SPPCo personnel climb each pole to inspect the integrity and condition of the hardware and insulators.

SPPCo personnel also require access to the line in the event of an emergency situation or if maintenance of a transmission pole is necessary. Under these circumstances, the transmission line is accessed by line trucks using existing dirt access roads, snowcats if appropriate, by helicopter and/or by a centerline travel route.

2 – METHODOLOGY

2.0 LITERATURE SEARCH

Research was conducted by reviewing all applicable agency plans and literature regarding sensitive species and biological resources in the project area. Additionally, various resource management plans and resource databases were reviewed from state and federal agencies with pertinent jurisdiction over the project area. A summary of the applicable plans, sources of species information, and agency correspondence regarding species in the project area follows.

2.0.0 Review of Applicable Plans

Several resource conservation, resource management, and local government plans applicable to the project area were reviewed, including:

- USFS Tahoe National Forest, Forest Plan
- USFS Tahoe National Forest, Land and Resource Management Plan
- USFS Lake Tahoe Basin Management Unit, Forest Plan
- USFS Sierra Nevada Forest Plan and Amendment[7]
- Burton Creek State Park General Plan
- Placer County General Plan
- Town of Truckee General Plan
- TRPA Regional Plan

Because the project does not traverse any unincorporated areas of Nevada County, the Nevada County General Plan is not applicable to the project, and therefore, was not reviewed. In addition to the above plans, the recovery plan for the Lahontan cutthroat trout (*Onchorhynchus clarkii henshawi*) and the conservation strategy for the Tahoe yellow cress (*Rorippa subumbellulata*) were reviewed due to known records of the species in the surrounding area.

2.0.1 Sensitive Species Lists

Prior to conducting field surveys, target lists were prepared of special-status plants and animals with the potential to occur in the project area. Lists of Tahoe National Forest and Lake Tahoe

[7] The Sierra Nevada Forest Plan is applicable to both the Tahoe National Forest and the Lake Tahoe Basin Management Unit.

Basin Management Unit sensitive species and management indicator species[8] were obtained and reviewed. Additionally, plant watchlist species were obtained from the Tahoe National Forest and TRPA Special Interest Species were noted. The USFS Forest Carnivore in the Pacific States database was reviewed to find all recent survey results in the project area. A list of federally endangered species from the U.S. Fish and Wildlife Service (USFWS) Sacramento office was also generated. Records searches were conducted using the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California, and the California Natural Diversity Data Base (CNDDB) and Spotted Owl Database maintained by the California Department of Fish and Game (CDFG). From these sources, records for all known sensitive plants and animals within 5 miles of the project were reviewed. Species were considered sensitive if they were:

- on CNPS List 1B.1, 1B.2, 1B.3, 2.1, 2.2, or 2.3;
- federally listed as endangered, threatened, or are a candidate for listing status;
- state-listed as endangered, threatened, a Species of Special Concern, or fully protected;
- designated as a sensitive species or watchlist species by the Tahoe National Forest;
- designated as a sensitive species by the Lake Tahoe Basin Management Unit; or
- designated as a special interest species by the TRPA.

Results from these records searches are shown in Figure 2: Species Occurrence Map.

2.0.2 USFWS Critical Habitat

A search was conducted to determine whether the project area is located within any USFWS-designated critical habitat areas. No designated critical habitat areas are located within 10 miles of the project area.

2.1 AGENCY CORRESPONDENCE

On September 12 and 18, 2007, Insignia Environmental (Insignia) biologist Larry Butcher contacted wildlife biologists with the USFS Truckee Ranger District and Lake Tahoe Basin Management Unit regarding the documented presence of California spotted owl (*Strix occidentalis occidentalis*) and northern goshawk (*Accipiter gentilis*) in the project area. The USFS has designated Protected Activity Centers (PACs)[9] for both species, and Home Range Core Areas (HRCAs)[10] for the California spotted owl. Data showing the location of these areas was transmitted to Insignia and is shown in Figure 3: Sensitive Species Designated Areas.

[8] Management indicator species are species that have been identified as representative of other species with similar habitat requirements. Impacts to these species are assumed to have similar impacts to other species with the same requirements.

[9] PACs are delineated surrounding each territorial owl activity center to protect nesting sites for both the northern goshawk and the California spotted owl.

[10] HRCAs encompass the best available California spotted owl habitat in the closest proximity to the owl activity center and consist of the following five characteristics: 1) at least two tree canopy layers, 2) at least 24 inch-diameter breast height in dominant and co-dominant trees, 3) a number of very large (greater than 45 inches diameter breast height) old trees, 4) at least 50 to 70 percent canopy cover, and 5) higher than average levels of snags and down woody material.

broad-nerved hump moss
broad-nerved hump moss
Plumas ivesia
northern goshawk
Plumas ivesia
California wolverine
Constance's sedge
common moonwort
Sierra Nevada red fox
Plumas ivesia
Plumas ivesia
willow flycatcher
Sierra Nevada red fox
marsh skullcap
Plumas ivesia
Tahoe yellow cress
Plumas ivesia
Donner Pass buckwheat
Sierra Nevada
snowshoe hare
willow flycatcher
Joerger Road Staging Area
Truckee
yellow warbler
80
Truckee-Tahoe Airport
alder buckthorn
Lahontan cutthroat trout
Nevada County
Placer County
Plumas ivesia
Plumas ivesia
Plumas ivesia
osprey
bald eagle
89
267
Lahontan cutthroat trout
Martis Valley
Northstar Golf Course Staging Area
Plumas ivesia

Figure 2: Species Occurrence Map 1 of 3

625 and 650 Line Upgrade Project

New 625 Line
Existing 625 Line
625/629 Double-Circuit
650 Line to be Rebuilt
650 Line Previously Upgraded
132/650 Double-Circuit to be Rebuilt
650 Line to be Removed
Northstar Fold
Milepost (Color Coded by Line)
Staging Area
CDFG Spotted Owl Database - Historic Nest Site

Field Observation
Plant Occurrence
Animal Occurrence

CNDDB Search Results
CNDDB Plant Occurrence
CNDDB Wildlife Occurrence

Sierra Pacific
INSIGNIA ENVIRONMENTAL

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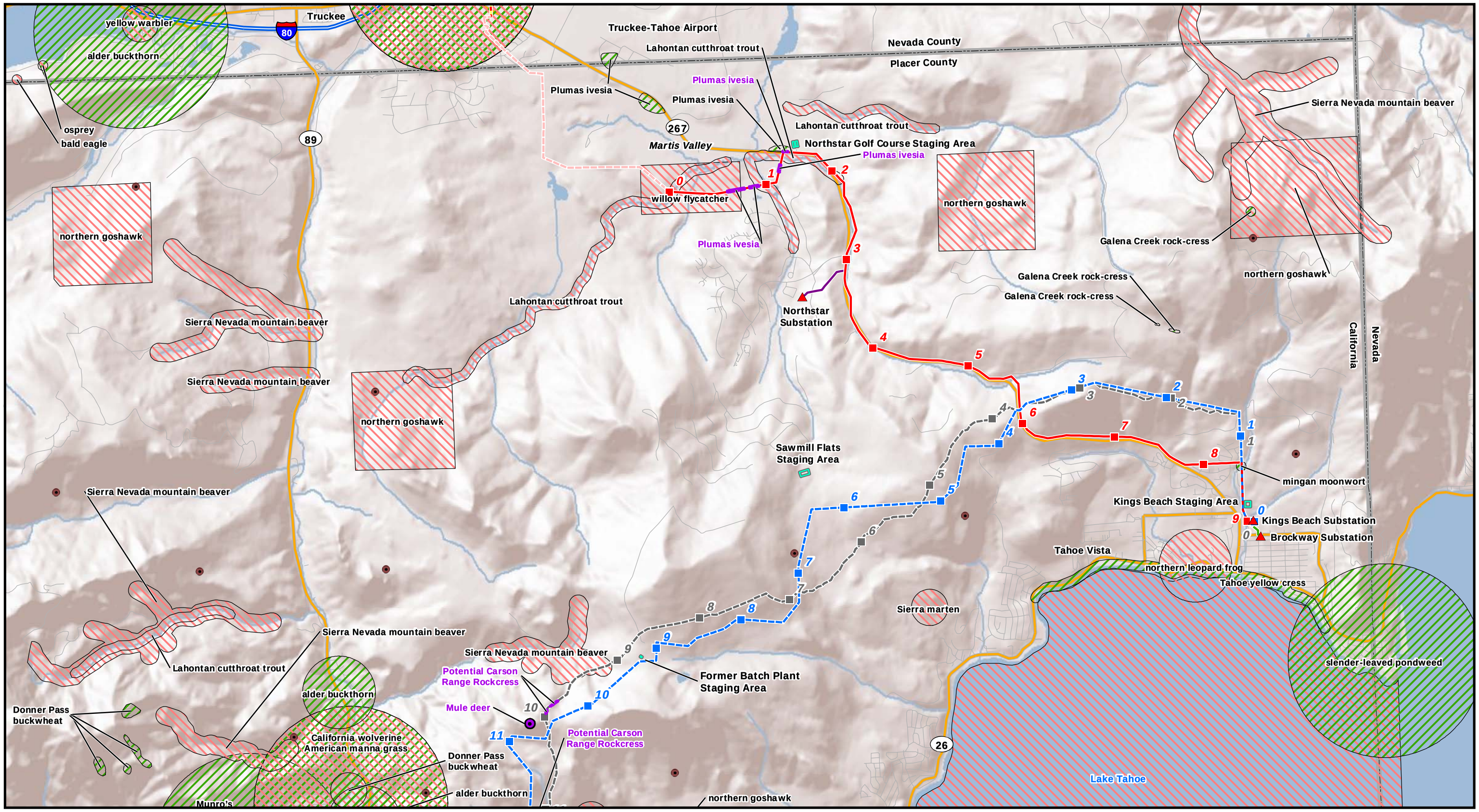
Figure 2: Species Occurrence Map 2 of 3

625 and 650 Line Upgrade Project



- New 625 Line
- Existing 625 Line
- 625/629 Double-Circuit
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double-Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Milepost (Color Coded by Line)
- Staging Area
- CDFG Spotted Owl Database - Historic Nest Site

Field Observation
- Plant Occurrence
- Animal Occurrence

CNDDB Search Results
- CNDDB Plant Occurrence
- CNDDB Wildlife Occurrence

Sierra Pacific™ | INSIGNIA ENVIRONMENTAL

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Lahontan cutthroat trout
Donner Pass buckwheat
alder buckthorn
California wolverine
American manna grass
Donner Pass buckwheat
alder buckthorn
Munro's desert mallow
Nevada daisy
alder buckthorn
Sierra Nevada yellow-legged frog
Sierra Nevada yellow-legged frog
Sierra Nevada mountain beaver
Potential Carson Range Rockcress
Mule deer
Potential Carson Range Rockcress
yellow warbler
northern goshawk
Former Batch Plant Staging Area
Fiberboard Highway Staging Area
Tahoe City Staging Area
Tahoe yellow cress
Lake Tahoe
Great Basin rams-horn
Tahoe City Substation
western white-tailed jackrabbit
Tahoe City
Sierra Nevada snowshoe hare
Tahoe yellow cress
willow flycatcher
scalloped moonwort
Tahoe yellow cress
northern goshawk
9
10
10
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26
89

Figure 2: Species Occurrence Map 3 of 3

625 and 650 Line Upgrade Project

- New 625 Line
- Existing 625 Line
- 625/629 Double-Circuit
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double-Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Milepost (Color Coded by Line)
- Staging Area
- CDFG Spotted Owl Database - Historic Nest Site

Field Observation
- Plant Occurrence
- Animal Occurrence

CNDDB Search Results
- CNDDB Plant Occurrence
- CNDDB Wildlife Occurrence

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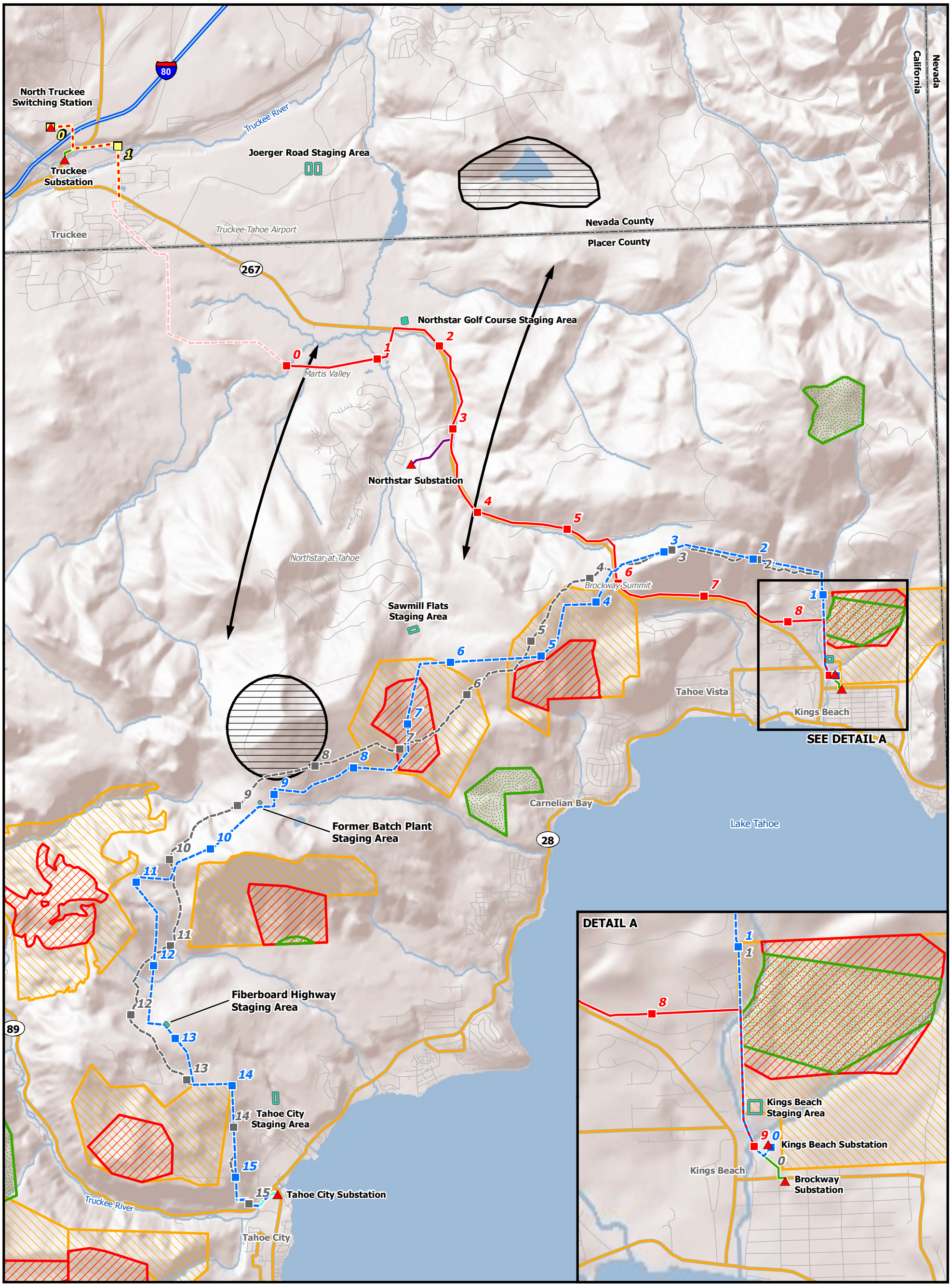

Figure 3: Sensitive Species Designated Areas

625 and 650 Line Upgrade Project

- 650 Line to be Removed
- Northstar Fold
- New 625 Line
- Existing 625 Line
- 625/629 Double-Circuit
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double-Circuit to be Rebuilt
- Milepost (Color Coded by Line)
- Substation/Switching Station
- Staging Area
- Spotted Owl Protected Activity Center (PAC)
- Spotted Owl Home Range Core Area (HRCA)
- Northern Goshawk PAC
- Loyalton-Truckee Deer Herd Known Critical Fawning Area
- Loyalton-Truckee Deer Herd Migratory Corridor

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INSIGNIA ENVIRONMENTAL

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Additionally, the Tahoe National Forest and Lake Tahoe Basin Management Unit were contacted on March 5, 2009 in order to determine whether any known ungulate migratory corridors exist within the project area. The Loyalton-Truckee Deer Heard Management Plan was obtained from the USFS, and reviewed for existing deer migratory corridors and fawning areas near the project. Identified migratory corridors and fawning areas are shown in Figure 3: Sensitive Species Designated Areas.

The USACE manager for the Martis Creek Lake Recreation Area and Martis Creek Wildlife Area was contacted on October 2, 2007 regarding the availability of any environmental documents that may be applicable to these areas. No such documents exist.

2.2 SURVEY METHODOLOGY

General reconnaissance-level surveys for special-status plant and animal species with the potential to occur in the project area were conducted between September 13 and September 26, 2007; October 6 and 10, 2008; and October 27 and 28, 2008. Surveys were conducted by walking or driving all areas within an approximate 100-foot-wide corridor centered on the existing 625 Line, new 625 Line, 650 Line, 132/650 Line Double-Circuit, and the Northstar Fold. Additionally, all existing access roads and four currently designated staging areas were surveyed by driving and/or on foot—the Joerger Road Staging Area, Northstar Golf Course Staging Area, Kings Beach Staging Area, and Tahoe City Staging Area. Because the Fiberboard Highway Staging Area, Sawmill Flat Staging Area, and Former Batch Plant Staging Area had not yet been identified, these areas were not surveyed at the time. The Former Batch Plant and Fiberboard Highway staging areas were subsequently surveyed at a later date. The Sawmill Flat Staging Area was not surveyed due to access restrictions, but will be surveyed prior to the start of work. Due to its previous use as a staging area for other local projects, no sensitive resources are anticipated to be present at this site.

Along the transmission lines, access roads, and staging areas, dominant habitat and general hydrological characteristics were recorded. Plant and wildlife species that were observed during the surveys were also recorded. The surveys were not floristic in nature due to the timing of the surveys, and several potential special-status plant species were not in bloom during the survey periods. Protocol-level wildlife surveys were started during the summer of 2009 and will be completed during the summer of 2010. The results of these surveys will be documented in separate reports following their completion. Drainage areas were identified and assessed for their potential as jurisdictional waters/wetlands; however, wetland delineations were not conducted for these features.

2.3 IMPACT DETERMINATION

Potential impacts associated with the project can be classified as either temporary or permanent. Temporary impacts generally include impacts associated with construction activities, including the use of vehicles or helicopters, storage of construction materials and equipment, or vegetation removal in areas that will be restored once construction is complete. Permanent impacts generally include impacts associated with permanent tree removal for the establishment of a new ROW or vehicular use associated with increased operation and maintenance activities resulting

from the project. Impacts to sensitive species may occur either through temporary or permanent habitat loss, interruption of normal species routines, or through direct mortality.

Potential impacts to sensitive species associated with the project were determined by analyzing specific species requirements, including necessary vegetative habitat, elevational range, foraging needs, denning or breeding requirements, migratory trends, current ranges, and known occurrences or records to determine the potential for the species to occur within the project area. Once the species and habitats were identified, impacts from project activities were analyzed. Additionally, an estimate of the amount of vegetation removal planned for the clearing of the ROWs, work areas, and access roads was determined.

Impacts to aquatic resources were determined by the proximity of these resources to project work areas, taking into account the construction needs within those areas. Flow characteristics and vegetation were also considered.

3 – RESULTS

3.0 GENERAL VEGETATION AND WILDLIFE

In general, the project area ranges in elevation from approximately 5,800 feet in the town of Truckee to almost 7,900 feet along the existing 625 Line and new 625 Line alignments. The southern portions of the project all exist at or near the elevation of Lake Tahoe at 6,225 feet.

A wide variety of plant and wildlife species were observed during the September 2007 and October 2008 reconnaissance-level surveys. Typical plant species observed have been identified in Section 3.1 Vegetation Communities. Many common Sierra Nevada wildlife species were encountered during the surveys. Mammalian species observed included coyote (*Canis latrans*), American mink (*Mustela vison*), golden-mantled ground squirrel (*Spermophilus lateralis*), Douglas squirrel (*Tamiasciurus douglasii*), and chipmunks (T*amias* spp.). Signs of the presence of black bears (*Ursus americanus*) were observed on multiple occasions throughout the project area. Commonly observed avian species included red-tailed hawk (*Buteo jamaicensis*), mountain chickadee (*Poecile gambeli*), Steller's jay (*Cyanocitta stelleri*), dark-eyed junco (*Junco hyemalis*), American robin (*Turdus migratorius*), yellow-rumped warbler (*Dendroica coronata*), white-headed woodpecker (*Picoides albolarvatus*), northern flicker (*Colaptes auratus*), Clark's nutcracker (*Nucifraga columbiana*), and red-breasted nuthatch (*Sitta canadensis*). Kokanee salmon (*Oncorhynchus nerka*), Mackinaw trout (*Salvelinus namaycush*), and crayfish (*Pacifastacus leniusculus*) were also observed in the Truckee River.

3.1 VEGETATION COMMUNITIES

Nine vegetative communities were identified within the project area using the California Wildlife Habitat Relationships System habitat classification scheme. These communities are shown in Attachment A: Vegetation Communities Map and are described in detail as follows. Photographs of the project area have been included in Attachment B: Representative Photographs. Though not a vegetative community, disturbed or developed areas were also noted.

3.1.0 Sierra Mixed Conifer Forest

Sierra mixed conifer forest is a community dominated by several conifer species. In the project area, the most common species consist of white fir (*Abies concolor*), red fir (*Abies magnifica*), Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), incense cedar (*Calocedrus decurrens*), and ponderosa pine (*Pinus ponderosa*). Historic burning and logging have created wide variability in stand structure and composition in this community. Canopy cover varies from 100 percent to more sparse cover, with some open areas.

In the project area, the understory consists of a variety shrubs, grasses, and forbs. Common understory shrubs include mahala mat (*Ceanothus prostratus*), mountain whitethorn (*Ceanothus cordulatus*), tobacco brush (*Ceanothus velutinus*), pinemat manzanita (*Arctostaphylos nevadensis*), greenleaf manzanita (*Arctostaphylos patula*), bush chinquapin (*Chrysolepis sempervirens*), huckleberry oak (*Quercus vaccinifolium*), mountain snowberry (*Symphorocarpus rotundifolium*), and several currant species (*Ribes* spp.).

Sierra mixed conifer forest is the most widespread vegetation community in the project area, extending from Kings Beach north to the Brockway Summit area along the existing 625 Line, new 625 Line, and 650 Line; in the area between Brockway Summit and Northstar-at-Tahoe along the 650 Line; and between Brockway Summit and Tahoe City along the new 625 Line and existing 625 Line. At the higher elevation areas, the vegetation community transitions from Sierra mixed conifer forest to red fir forest.

3.1.1 Red Fir Forest

Red fir forest is a community typically dominated by even-aged, monotypic stands of mature red fir (*Abies magnifica*). In the project area, a few scattered lodgepole pines (*Pinus contorta*) and western white pines (*Pinus monticola*) were also present in the red fir forest. The understory is much more open than the areas of Sierra mixed conifer forest, with the primary understory shrub species being pinemat manzanita. Forb species present included white-veined wintergreen (*Pyrola picta*), Pacific monardella (*Monardella odoratissima*), and a rockcress species (*Arabis* spp., possibly *A. platysperma* or *A. rigidissima* var. *demota*). A heavy duff layer exists in this community, contributing to the lack of understory diversity. This community is primarily present at the higher elevations along the existing 625 Line and new 625 Line alignments.

3.1.2 Jeffrey Pine Forest

Jeffrey pine is the dominant tree species in this community type. In the project area, lodgepole pine is also present in small numbers within the Jeffrey pine forest. Canopy cover is less dense than in other forest communities as Jeffrey pine tends to be more scattered throughout the community. This generally allows for the understory of the Jeffrey pine forest to contain plants requiring drier, sunnier conditions than in other conifer communities. These understory plants include big sagebrush (*Artemisia tridentata*), bitterbrush (*Purshia tridentata*), and rabbitbrush (*Chrysothamnus nauseosus*). Jeffrey pine forest is present in the project area along the 650 Line from Lahontan Drive in Martis Valley southward to the Northstar-at-Tahoe area, where the Jeffrey pine forest transitions to Sierra mixed conifer forest.

3.1.3 Low Sage

The low sage vegetation community is dominated by low-growing shrubs, typically low sage (*Artemisia arbuscula*), often in association with bitterbrush, rabbitbrush, or big sagebrush. In the project area, low sagebrush is the dominant species. Several forb species are present in the low sage community, including lupine (*Lupinus* spp.), buckwheat (*Eriogonum* spp.), and Plumas ivesia (*Ivesia sericoleuca*). The low sage community in the project area exists on the edges of open wet or montane meadow communities. Low sage is present in Martis Valley area along the 650 Line, in the Martis Creek Wildlife Area, the Martis Creek Lake Recreation Area, and within the Joerger Road Staging Area.

3.1.4 Montane Chaparral

Montane chaparral varies markedly throughout California. Species composition changes with elevational and geographical range, soil type, and aspect. Montane chaparral exists in small patches throughout the project area and is characterized by one or more of the following species: mountain whitethorn, tobacco brush, greenleaf manzanita, pinemat manzanita, huckleberry oak, bush chinquapin, and bitter cherry (*Prunus emarginata*). Open areas in the Sierra mixed conifer forest are dominated by this vegetation community. These openings are either natural forest openings or clearings created by disturbances, such as logging, road construction, fire, or utility line clearance. Much of the existing ROW beneath the existing 625 Line and 650 Line where regular vegetation maintenance occurs is dominated by montane chaparral species.

3.1.5 Wet Meadow

Wet meadow communities may be comprised of a wide variety of plant species. In the project area, these species consist mainly of bentgrass (*Agrostis* spp.), sedges (*Carex* spp.), rushes (*Juncus* spp.), and bulrush (*Scirpus* spp.). A large variety of forb species are also present in the wet meadow community. Wet meadows in the project area are usually associated with an adjacent riparian forest, seep, or waterway, such as Middle Martis Creek, West Martis Creek, or Martis Creek, where soils are too wet throughout much of the year to support trees. Several small wet meadow communities exist throughout the project area. Additionally, the 650 Line traverses a large wet meadow in the Martis Creek Wildlife Area. Plumas ivesia, a special-status plant species, is found around the margins of this large meadow area, in the transition to the low sage vegetation community.

3.1.6 Montane Riparian

In the project area, characteristic montane riparian species include mountain alder (*Alnus incana* ssp. *tenuifolia*), aspen (*Populus tremuloides*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), dogwood (*Cornus* spp.), and willow (*Salix* spp.). Montane riparian communities vary greatly in vegetative structure and species composition. Many of the montane riparian areas at higher elevations consist of extremely dense, shrub-like mountain alder and willow, with no standing or flowing water. Along the Truckee River, large mountain alder, black cottonwood, and willows are the dominant species, with an extensive understory of a wide variety of herbaceous vegetation. Along Middle Martis Creek and Martis Creek, small, shrub-like willows dominate the vegetative community and are surrounded by an expansive wet meadow. Several montane riparian communities in the project area are not associated with perennial flowing streams or seasonal channels, but instead with wet seep areas or small ravines.

3.1.7 Fresh Emergent Wetland

Fresh emergent wetland communities are characterized by saturated or periodically flooded soils supporting several hydrophilic plant species including sedges, rushes, and on more alkali sites, saltgrass. On wetter sites, cattails and bulrushes are potential dominant species. One small fresh emergent wetland exists in the project area, approximately 40 feet south of the Truckee River between Poles 2002 and 2003 of the existing 625 Line near approximate MP 15.2. This small fresh emergent wetland is approximately 20 feet wide and 75 feet long. Emergent vegetation at this location is primarily composed of sedges (*Carex* spp.), with horsetail (*Equisetum* spp.), and black cottonwood growing on the shoreline.

3.1.8 Rock Outcrop/Barren

Barren habitat is defined by the absence of dominant vegetation. Any habitat with less than 2-percent total vegetation cover by herbaceous, desert, or non-wildland species and less than 10-percent cover by tree or shrub species is defined as barren habitat. Structure and composition of the substrate is largely determined by the region of the state and surrounding environment. Alpine barren habitat includes exposed parent rock, glacial moraines, talus slopes, and any surface permanently covered with snow or ice. In the project area, small patches of barren habitat are best characterized as rock outcrops or talus slopes, with minimal vegetative cover. Rock outcrop areas are located along ridgelines at high elevations along the new 625 Line and existing 625 Line.

3.1.9 Disturbed and Developed

Disturbed and developed areas in the project area consist of highways, paved roads, dirt roads, dirt tracks/trails, and road shoulders, as well as housing and commercial developments. These developed areas are generally surrounded by contiguous coniferous forest or other natural vegetation communities. For example, within the community of Kings Beach, the housing developments are surrounded by Sierra mixed conifer forest. Because the 132 Line exists within the town of Truckee, this line is primarily surrounded by disturbed and/or developed areas. Other disturbed or developed areas in the project area are located along the new 625 Line, existing 625 Line, 650 Line, and Northstar Fold near road crossings, as well as where the alignments enter communities such as Tahoe City or Kings Beach.

3.2 SENSITIVE PLANT SPECIES

There are 28 sensitive plant species, one lichen species, and two species of fungi that have a moderate potential to occur within the project area; two sensitive plant species that have a high potential to occur within the project area; and one sensitive plant species that was observed within the project area during field surveys. Sensitive species that are considered to have a high potential to occur may not have been observed during field surveys, but have been recently recorded within the project ROW. Sensitive species that are considered to have a moderate potential to occur are not known to occur within the project area, but suitable habitat exists and the project is located within the known range of the species.

The following sensitive plant species are known to occur or have a high or moderate potential to occur within the project area, and therefore warrant further discussion. All sensitive plant species

identified during the literature search have been included in Table 5: List of Potential Sensitive Plant Species.

3.2.0 Species Present in the Project Area

Plumas Ivesia

Plumas ivesia is present in the Martis Creek Wildlife Area and the Martis Creek Lake Recreation Area between Poles 1018 and 1022; 1023 and 1025; 1032 and 1033; and 1036 and 1037 of the 650 Line (approximate MP 0.5 to 1.5). Several hundred individuals were located in the survey area along the 650 Line, as shown in Figure 2: Species Occurrence Map. Many individuals were located within 2 feet of existing structures. Many individuals were also observed within the Northstar Golf Course Staging Area growing within the dry, rocky areas of the wet meadow, and in the transition into low sage vegetation communities. They do not exist at high densities within the low sage community. Plumas ivesia is considered a sensitive species by the Tahoe National Forest and is on the CNPS List 1B.2.[11]

3.2.1 Species with a High Potential to Occur

Carson Range Rockcress

Many individuals that are either broad-seeded rock cress (*Arabis platysperma*) or Carson Range rock cress (*Arabis rigidissima* var. *demota*) were observed to the west of Brockway Summit, as shown in Figure 2: Species Occurrence Map. A positive identification was not possible due to the floristic conditions at the time of the September 2007 and October 2008 reconnaissance-level surveys. Additional surveys should be conducted during the appropriate blooming period—August—to determine the correct taxonomy of these individuals. The individuals observed were located in red fir forest communities above 7,000 feet in elevation along the existing 625 Line alignment. This species is listed as a sensitive species by the Tahoe National Forest and the Lake Tahoe Basin Management Unit and is on the CNPS List 1B.2.

Mingan Moonwort

Mingan moonwort (*Botrychium minganense*) is a very small, perennial fern with a single aboveground frond terminating in a cluster of sporangia.[12] The sterile blade is dull green in color. Mingan moonwort is found along creek banks in mixed coniferous forests at elevations over 4,000 feet and is fertile between July and August. Leaves appear in late spring to midsummer. The species was not observed during reconnaissance-level surveys but has a high potential to occur because of suitable habitat in the project area. There is also a recent CNDDB record of this species in Kings Beach within the existing 625, new 625, and 650 Line alignments along Griff Creek and the surrounding tributaries. Similar suitable habitat exists along tributaries and drainages near Tahoe City along the new and existing 625 line alignments. This species is listed as a sensitive species by the Lake Tahoe Basin Management Unit and is on the CNPS List 2.2.[13]

[11] Species on CNPS List 1B.2 are considered fairly threatened in California and elsewhere.
[12] Sporangia are tiny, ball-like structures that resemble a bunch of grapes.
[13] Species on CNPS List 2.2 are considered fairly threatened in California only.

Table 5: List of Potential Sensitive Plant Species

Species Name	Listing Status[14]	Habitat Requirements	Potential to Occur
Washoe tall rockcress (*Arabis rectissima simulans*)	SI	Occurs in Jeffrey pine forests in disturbed areas and on sandy granitic or andesitic soils from 7,000 to 10,000 feet in elevation. Blooms from June to July.	Suitable habitat exists along the 650 Line, south of Martis Valley in Jeffrey pine forests. This species is known only from accounts in Washoe and Douglas counties, Nevada, though it is believed that additional populations may exist in the surrounding area. **Moderate Potential**
Carson Range rockcress (Galena Creek rockcress) (*Arabis rigidissima* var. *demota*)	1B.2 TNF LTBMU	Occurs in sandy to rocky soils or outcrops derived from granitic or volcanic materials, mostly on moderate to steep slopes with northerly aspects. Often occurs in drainages near meadow edges or in other moisture-accumulating microsites. Occurs in broad-leaved upland forest and upper montane coniferous forest from 7,500 to 8,500 feet in elevation. Blooms in August.	Two known CNDDB occurrences were noted near Martis Peak (0.75 mile and 2 miles northeast of the 650 Line). Suitable habitat exists in several locations scattered throughout the project area. Several potential Carson Range rockcress individuals were observed during September 2007 reconnaissance-level surveys. **High Potential**
Tiehm's rockcress (*Arabis tiehmii*)	1B.3 LTBMU	Occurs in boulder fields and rock outcrops above 9,700 feet in elevation. Blooms from July to August.	No known occurrences have been recorded in Nevada County or Placer County. The project alignment is located below the elevation range of the species. **No Potential**
Webber's milkvetch (*Astragalus webberi*)	1B.2 TNF	Occurs in open, brushy slopes and flats in xeric pine forest or mixed pine oak forest from 2,700 to 4,000 feet in elevation. Blooms from May to June.	The project is located outside of the species' elevation range. **No Potential**
Trianglelobe moonwort (*Botrychium ascendens*)	2.3 TNF LTBMU	Occurs in grassy fields, coniferous woods near streams, and near springs in lower montane coniferous forest over 4,000 feet in elevation. This species is fertile in July and August.	Scattered suitable habitat is distributed throughout the new 625 Line, existing 625 Line, and 650 Line near riparian or wet meadow habitat types. **Moderate Potential**
Scalloped moonwort (*Botrychium crenulatum*)	2.2 LTBMU TNF	Occurs in swamps, bogs, and seeps below coniferous forests from 4,100 to 10,700 feet in elevation. Prefers highly saturated soils. Produces spore-bearing bodies typically between June and September.	Limited coniferous swamp or bog habitat is present within the project area. **Low Potential**
Slender moonwort (*Botrychium lineare*)	1B.3 LTBMU	Occurs in upper montane coniferous forests around 8,500 feet in elevation. Likely produces spore-bearing body during spring or summer after the snowmelt.	This species is known from only one record located outside of the Lake Tahoe area. This record was recorded outside of the elevation range of the project and there are no known records in Nevada County or Placer County. **No Potential**
Common moonwort (*Botrychium lunaria*)	2.3 LTBMU TNF	Occurs in meadows or seeps within lower and upper montane coniferous forests between 7,500 and 11,100 feet in elevation. Produces spore-bearing bodies in August.	Limited, marginally suitable habitat is located within the project area due to the limited amount of suitable wet meadow habitat located within the high elevation range of the species. **Low Potential**

[14] Explanation of state and federal listing codes:

Federal listing codes:

-FC: Candidate for Federal listing
-TNF: Tahoe National Forest sensitive species
-WS-T: Tahoe National Forest watchlist species
-LTBMU: Lake Tahoe Basin Management Unit sensitive species
-SI: Tahoe Regional Planning Agency special interest species

California listing codes:

-CE: State-listed as Endangered

CNPS lists:

-1B.1: Rare, threatened or endangered in California or elsewhere; seriously threatened in California
-1B.2: Rare, threatened or endangered in California or elsewhere; fairly threatened in California
-1B.3: Rare, threatened or endangered in California or elsewhere; not very threatened in California
-2.1: Rare, threatened or endangered in California only; seriously threatened in California
-2.2: Rare, threatened or endangered in California only; fairly threatened in California
-2.3: Rare, threatened or endangered in California only; not very threatened in California
-3.2: Additional information is needed by the CNPS; fairly threatened in California
-3.3: Additional information is needed by the CNPS; not very threatened in California
-4.2: Plants of limited distribution placed on watch list; fairly threatened in California
-4.3: Plants of limited distribution placed on watch list; not very threatened in California

Source: Tibor, 2001; CDFG, 2009; Escobeda, 2008; Hickman, 1993; Reed 2008; USFWS, 2009; USFS, 2007; USFS, 2006

Species Name	Listing Status[14]	Habitat Requirements	Potential to Occur
Mingan moonwort (*Botrychium minganense*)	2.2 LTBMU TNF	Found along creek banks in mixed coniferous forest over 4,000 feet in elevation. Fertile from July to September.	Suitable habitat is scattered throughout the project area. One CNDDB occurrence, recorded in 2005, exists along Griff Creek in Kings Beach beneath the existing 625 Line, new 625 Line, and 650 Line. Suitable habitat is present along the existing 625 Line and new 625 Line within montane riparian habitats and especially near the headwaters to Deer Creek. **High Potential**
Western goblin (*Botrychium montanum*)	2.1 TNF LTBMU	Occurs along creek banks in old-growth coniferous forest over 4,000 feet in elevation. Fertile from July to August.	Suitable habitat is scattered throughout the project area along Griff Creek, Burton Creek, headwaters to Deer Creek, and other montane riparian and wet meadow habitat located within large conifer forest habitat along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
Bolander's candle moss (*Bruchia bolanderi*)	2.2 LTBMU TNF	Occurs in very damp coniferous forests from 5,500 to 9,200 feet in elevation. Produces spore-bearing bodies during the summer months.	Suitable habitat is scattered throughout the red fir and Sierra mixed conifer forests along the existing 625 Line, new 625 Line, and 650 Line, especially in north-facing or flatter areas. **Moderate Potential**
Constance's sedge (*Carex constancea*)	1B.1	Grows in duff on the floor of mixed conifer forests at an elevation of approximately 6,000 feet. Blooming period is unknown.	Though this species is known from only one occurrence, similar habitat to that of the record is present within the within the Sierra mixed conifer forest located along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
Clubhair mariposa lily (*Calochortus clavatus* var. *avius*)	1B.2 TNF	Prefers silty, volcanically derived soils in montane coniferous forest below 5,500 feet in elevation. Commonly found in rocky areas. Blooms from May to July.	No suitable habitat exists because the project is located outside of the elevation range of the species. **No Potential**
Brandegee's fairyfan (*Clarkia biloba* ssp. *brandegeae*)	1B.2 TNF	Found in foothill chaparral habitats, often growing in road cuts below 3,000 feet in elevation. Blooms from May to June.	The project area is located outside of the known range of the species. **No Potential**
Cudonia monticola	TNF	Typically found in conifer needle litter. Produces fruiting bodies after snowmelt between August and November.	Suitable habitat is scattered along the existing 625 Line, new 625 Line, and 650 Line in damp parts of Sierra mixed conifer, red fir, and Jeffrey pine forests with deep needle litter. **Moderate Potential**
Clustered lady's slipper (*Cypripedium fasciculatum*)	TNF 4.2	Occurs in serpentine seeps and moist stream banks in montane coniferous forests from 500 to 7,200 feet in elevation. Blooms from March to July.	Suitable habitat is scattered throughout the project area along Griff Creek, Burton Creek, headwaters to Deer Creek, and other montane riparian and wet meadow habitat, located within large conifer forest habitats along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
Mountain lady-slipper orchid (*Cypripedium montanum*)	TNF 4.2	Occurs on dry, undisturbed slopes in montane coniferous and upland broad-leaved forest habitats from 600 to 7,500 feet in elevation. Blooms from March to August.	Suitable habitat exists in the drier portions of Sierra mixed conifer and Jeffrey pine forests along the 650 Line between Kings Beach and Martis Valley and along the existing 625 Line and new 625 Line between Kings Beach and Brockway Summit. **Moderate Potential**
Branched collybia (*Dendrocollybia racemosa*)	LTBMU TNF	Occurs in old-growth coniferous forests near decaying trees. Typically feeds off of other fungi. Fertile between May and August.	Suitable habitat is scattered within the old-growth red fir and mixed conifer forests along the existing 625 Line and new 625 Line between Brockway Summit and Tahoe City. **Moderate Potential**
Tahoe draba (*Draba asterophora asterophora*)	1B.2 LTBMU SI	Occurs in boulder fields within subalpine coniferous forests from 8,200 to 11,500 feet in elevation. Blooms from July to August and occasionally in September.	Very limited habitat exists within the elevation range of the species. **Low Potential**
Cup Lake draba (*Draba asterophora macrocarpa*)	1B.1 LTBMU SI	Occurs in rocky subalpine coniferous forests from 8,200 to 9,100 feet in elevation. Blooms from July to August.	Limited habitat exists within the elevation range of the species. No species have been recorded within Placer County or Nevada County. **Low Potential**
English sundew (*Drosera anglica*)	2.3 WS-T	Occurs in bogs, fens, or wet meadows from 4,200 to 6,500 feet in elevation. Blooms from June to September.	Potential habitat is scattered throughout the wet meadow habitat of Martis Valley along the 650 Line and within the Northstar Golf Course Staging Area. **Moderate Potential**
Subalpine fireweed (*Epilobium howellii*)	1B.3 TNF LTBMU	Found in wet meadows and mossy seeps in montane coniferous forest habitats from 6,000 to 9,000 feet in elevation. Blooms from July to August.	Suitable habitat is scattered along the existing 625 Line and the new 625 Line within montane riparian and wet meadow habitat types. **Moderate Potential**

Species Name	Listing Status[14]	Habitat Requirements	Potential to Occur
Oregon fireweed (*Epilobium oreganum*)	1B.2	Occurs in and near springs and bogs and occasionally on serpentine soils in montane coniferous forests from 1,500 to 8,000 feet in elevation. Blooms from June to September.	Suitable habitat is scattered along the existing 625 Line and the new 625 Line within montane riparian and wet meadow habitat types. **Moderate Potential**
Starved daisy (*Erigeron miser*)	1B.3 TNF LTBMU	Occurs on rocky, granitic outcrops in montane coniferous forests above 6,000 feet in elevation. Blooms from June to October.	A very small amount of rocky outcrops were noted during the 2007 and 2008 surveys. The species was not observed within these areas during the reconnaissance-level surveys conducted in September of 2007 or October of 2008, which fell within the blooming period of the species. **Low Potential**
Nevada daisy (*Erigeron nevadincola*)	2.3	Occurs in montane coniferous forests, Great Basin scrub, and pinyon-juniper woodlands from 4,200 to 8,700 feet in elevation. Blooms from May to July.	Suitable habitat exists within the low sage and Jeffrey pine forest habitats along the 650 Line north of Northstar Drive and within the Joerger Road Staging Area. **Moderate Potential**
Northern Sierra daisy (*Erigeron petrophyllus sierrensis*)	4.3 WS-T	Occurs in lodgepole pine, yellow pine, and red fir forests from 1,000 to 6,800 feet in elevation. Blooms from June to October.	Suitable habitat exists throughout the project area, with the exception of the Martis Valley and areas outside of the elevation range. **Moderate Potential**
Donner Pass buckwheat (*Eriogonum umbellulatum* var. *torreyanum*)	1B.2 TNF LTBMU	Occurs on steep slopes and ridgetops, in rocky, volcanic soils. Usually occurs in bare, sparsely vegetated or chaparral, unstable areas from 6,000 to 8,000 feet in elevation. Blooms from July to September.	Suitable habitat is scattered in small barren or dry chaparral areas along the existing 625 Line, new 625 Line, and 650 Line south of Brockway Summit. **Moderate Potential**
Brooks pocket moss (*Fissidens aphlelotaxfolius*)	2.2 TNF	Occurs in rocky, cold, clear stream channels or waterfalls in montane coniferous forests where large amounts of water vapor are produced. The timing of the spore-bearing period is not known.	No rocky, perennial stream channels representing preferable habitat were noted within the project area. **Low Potential**
Butte County missionbells (*Fritillaria eastwoodiae*)	TNF 3.2	Found in chaparral and lower montane coniferous forests below 5,000 feet in elevation. Typically grows in full to partial sun, usually on dry slopes, in serpentine, red clay, or sandy loam. Blooms from March to May.	The project location is outside of the species' elevation range. **No Potential**
American manna grass (*Glyceria grandis*)	2.3	Found in wet meadows, ditches, streams, and ponds in valleys and lower elevations in the mountains (below 6,000 feet in elevation). Blooms from June to August.	One historical CNDDB occurrence, in 1934, was recorded along the Truckee River approximately 4 miles downstream from the Tahoe City area. The project area is at the upper limits of the species' known elevation range. **Low Potential**
Blandow's bog moss (*Helodium blandowii*)	2.3 TNF	Occurs on damp soil in meadows and seeps above 6,500 feet in elevation. Fertile in August.	Suitable habitat exists within the wet meadow habitats along the new and existing 625 lines. **Moderate Potential**
Short-leaved hulsea (*Hulsea brevifolia*)	1B.2 LTBMU	Occurs in montane coniferous forests with granite or volcanic soils from 4,900 to 10,500 feet in elevation. Blooms from May to August.	Suitable habitat is present throughout the red fir, Sierra mixed conifer, and Jeffrey pine forests along the existing 625 Line, new 625 Line, Northstar Fold, and 650 Line. **Moderate Potential**
Aquatic lichen (*Hydrothyria venosa*)	TNF	Found on rocks in streams with clear, cold water below 7,000 feet in elevation.	Suitable habitat is present in Griff Creek, Truckee River, and Middle Martis Creek along the 650 Line and existing 625 Line. **Moderate Potential**
Sierra Valley mousetail (*Ivesia aperta* var. *aperta*)	1B.2 TNF	Usually found in volcanically derived, loamy soil in grassy areas within sagebrush scrub communities from 4,500 to 7,500 feet in elevation. Blooms from June to September.	Known species distribution is limited to the Sierra Valley, in Plumas and Sierra counties. **No Potential**
Dog Valley mousetail (*Ivesia aperta* var. *canina*)	1B.1 TNF	Found in shallow, rocky, volcanic soils in montane meadow and montane coniferous forest habitats from 4,500 to 7,500 feet in elevation. Blooms from June to August.	Known species distribution is limited to the Dog Valley in Sierra County. **No Potential**
Plumas ivesia (*Ivesia sericoleuca*)	1B.2 TNF	Found in the vernally wet parts of meadows and alkali flats and in vernal pools. Usually occurs on volcanic substrates from 4,500 to 7,500 feet in elevation. Blooms from May to September.	A robust population—greater than 100 individuals—was observed along the 650 Line during the 2007 and 2008 reconnaissance-level surveys in the Martis Creek Wildlife Area and the Martis Creek Lake Recreation Area between MP 0.3 and MP 1.9. Additionally, individuals were noted within and adjacent to the western side of the Northstar Golf Course Staging Area. CNDDB records indicate that this species has been previously identified in the project area on the north side of SR 267 in the Martis Creek Lake Recreation Area. **Present**

Species Name	Listing Status[14]	Habitat Requirements	Potential to Occur
Webber's ivesia (*Ivesia webberi*)	1B.1 TNF	Found in rocky, volcanic soils in Great Basin scrub and montane coniferous forests on the eastern side of the Sierra Nevada Mountains from 4,500 to 7,500 feet in elevation. Blooms from May to July.	Suitable habitat exists in the project area north of Brockway Summit along the Northstar Fold, 650 Line north of Brockway Summit, and within the Joerger Road Staging Area. **Moderate Potential**
Cantelow's lewisia (*Lewisia cantelovii*)	1B.2 TNF	Found on mesic rock outcrops and wet cliffs, usually in moss or clubmoss below 4,500 feet in elevation. Blooms from May to October.	The project area is outside of the species' range. **No Potential**
Hutchinson's lewisia (*Lewisia kelloggii hutchisonii*)	3.3 LTBMU TNF	Found in open patches of montane coniferous forests in rocky, slate areas from 4,600 to 7,000 feet in elevation. Blooms from June to August.	Suitable habitat is scattered within the red fir and Sierra mixed conifer forests along the existing 625 Line, new 625 Line, and 650 Line below 7,000 feet in elevation. **Moderate Potential**
Kellogg's lewisia (*Lewisia kelloggii kelloggii*)	LTBMU TNF	Found in open patches of montane coniferous forest in rocky, slate areas from 6,200 to 9,500 feet in elevation. Blooms from June to August.	Suitable habitat is scattered within the red fir and Sierra mixed conifer forests along the existing 625 Line, new 625 Line, and 650 Line below 9,500 feet in elevation. **Moderate Potential**
Long-petaled lewisia (*Lewisia longipetala*)	1B.3 TNF LTBMU SI	Occurs in mesic, rocky sites and in cracks of granite or gravelly volcanic soils between 8,100 and 9,600 feet in elevation. Blooms from July to August.	The project is outside of the species' range. **No Potential**
Saw-toothed lewisia (*Lewisia serrata*)	1B.1 TNF	Found on shaded, moss-covered, north-facing, metamorphic rock cliffs and outcrops between 3,000 and 5,000 feet in elevation. Blooms from May to June.	The project is outside of the species' range. **No Potential.**
Quincy lupine (*Lupinus dalesiae*)	TNF 4.2	Found on dry open or shaded slopes, summits, and trails. Often found in disturbed soils in montane coniferous forests between 3,000 and 8,000 feet in elevation. Blooms from May to August.	Suitable habitat is scattered within the red fir and Sierra mixed conifer forests along the existing 625 Line, new 625 Line, and 650 Line, especially along Mount Watson Road and other USFS roads where previous ground disturbance has occurred. **Moderate Potential**
Long-stalked hump moss (*Meesia longiseta*)	SI	Occurs in high-elevation bogs or swamps and is generally rare in California.	Limited high elevation swamp habitat exists along the highest elevation portions of the project. Because the species rarely occurs within California, it is unlikely to be present within the project area. **Low Potential**
Three-ranked hump moss (*Meesia triquetra*)	TNF 4.2	Found in wet areas, fens, bogs, and seeps between 4,200 and 8,200 feet in elevation.	Suitable habitat exists along the 650 Line in Martis Valley and within the Northstar Golf Course Staging Area. Additional wet meadow habitat is present along the existing 625 Line and new 625 Line. **Moderate Potential**
Broad-nerved hump moss (*Meesia uliginosa*)	2.2 TNF	Found in wet areas, fens, bogs, and seeps between 4,200 and 8,200 feet in elevation.	Suitable habitat exists along the 650 Line in Martis Valley and within the Northstar Golf Course Staging Area. Additional wet meadow habitat is present along the existing 625 Line and new 625 Line. **Moderate Potential**
Elongate copper moss (*Mielichhoferia elongata*)	2.2 TNF	Found in cismontane woodlands from 1,600 to 4,200 feet in elevation.	The project is located outside of the elevation range of the species. **No Potential**
Follett's monardella (*Monardella folletti*)	1B.2 TNF	Found on open, rocky, serpentine slopes in lower montane coniferous woodlands between 2,000 and 6,500 feet in elevation. Blooms from June to September.	The project is located outside of the species' range. **No Potential**
Myurella moss (*Myurella julacia*)	2.3 SI	Occurs in boulder fields within subalpine coniferous forest from 8,800 to 11,500 feet in elevation.	No potential habitat exists because the project falls outside of the elevation range of the species. **No Potential**
Orthotrichum moss (*Orthotrichum praemorsum*)	SI	Found on shaded or moist rock outcrops up to 8,000 feet in elevation.	Limited marginal habitat exists within the project area. All large rock outcrops encountered during the 2007 and 2008 surveys were located on exposed ridge tops. **Low Potential**
Shevock's moss (*Orthotrichum shevockii*)	1B.3 SI	Occurs in Joshua tree and pinyon-juniper woodlands with granite or rocky soils from 2,000 to 6,800 feet in elevation.	No suitable habitat types are present throughout the project. **No Potential**
Spjut's bristlemoss (*Orthotrichum spjutii*)	1B.3 SI	Occurs in montane coniferous and pinyon-juniper forests from 6,800 to 7,800 feet in elevation.	No records of the species exist in the Lake Tahoe area or Placer or Nevada counties. The nearest record of the species exists in Tuolumne County. **Low Potential**

Species Name	Listing Status[14]	Habitat Requirements	Potential to Occur
Closed-throated beardtongue (*Penstemon personatus*)	1B.2 TNF	Usually found in partial sun on north-facing slopes growing in metavolcanic soils between 4,500 and 6,500 feet in elevation. Blooms from June to September.	Suitable habitat is located primarily along the 650 Line, north of the Brockway Summit where the slopes are north-facing. Some scattered north-facing slopes exist south of the Brockway Summit along the new 625 Line, existing 625 Line, and the 650 Line. **Moderate Potential**
Veined water lichen (*Petigera hydrothyria*)	LTBMU	Found in cold, clear streams with clean granitic or other rock substrates up to 7,000 feet in elevation.	No suitable stream habitat exists within the elevation range of the species. **No Potential**
Stebbins' phacelia (*Phacelia stebbinsii*)	1B.2 TNF	Found in open areas among rocks and rubble on metamorphic rock benches on the western slopes of the Sierra Nevada Mountains between 3,000 and 6,000 feet in elevation. Blooms from June to July.	The project is located outside of the species' range. **No Potential**
Tundrae thread moss (*Pohlia tundrae*)	2.3 SI	Occurs in boulder fields within subalpine coniferous forest from 8,800 to 9,800 feet in elevation. Timing of spore production unknown.	The elevation range of the species falls outside of the project area. **No Potential**
Olive phaeocollybia (*Phaeocollybia olivacea*)	TNF	Occurs in older stands of mixed coniferous forest at a variety of elevations. Timing of fruit production unknown.	There are no known occurrences of this species in Placer County, Nevada County, or the Lake Tahoe Basin area. **Low Potential**
Slender-leaved pondweed (*Potamogeton filiformis*)	2.2	Found in shallow, clear water of lakes and drainage channels below 7,600 feet in elevation. Blooms from May to July.	One historical CNDDB occurrence, in 1931, exists in Lake Tahoe approximately 2 miles from the project area in Mink Harbor. No suitable habitat exists in the project area. **Low Potential**
Sticky goldenweed (*Pyrrocoma lucida*)	1B.2 TNF	Occurs in wet meadows and alkali flats on the east side of the Sierra Nevada Mountains below 6,000 feet in elevation. Blooms from July to October.	The project area is located outside of the species' range. **No Potential**
Alderleaf buckthorn (*Rhamnus alnifolia*)	2.2	Occurs in montane forests, wet meadows, seeps, and montane riparian habitats between 4,500 and 7,000 feet in elevation. Blooms from May to July.	There are several known occurrences within 5 miles of the project, both within the Lake Tahoe Basin and in the Truckee area. Most local occurrences were recorded near water features such as Donner Lake or perennial streams. Suitable habitat is located throughout the project area where riparian thickets and seeps exist. **Moderate Potential**
Tahoe yellow cress (*Rorippa subumbellulata*)	FC CE 1B.1 LTBMU SI	Primarily located on sandy beaches and the margins of Lake Tahoe on decomposed granite sand. Occasionally located in riparian areas near the lake margins. Blooms from May to September.	Two CNDDB occurrences are located approximately 0.5 mile from the project area, along the shores of Lake Tahoe in Kings Beach, and just south of Tahoe City. No suitable habitat exists within the project area. **No Potential**
American scheuchzeria (*Scheuchzeria palustris* ssp. *americana*)	2.1 TNF	Occurs in sphagnum bogs and on lake margins from 4,400 to 6,500 feet in elevation. Blooms in July.	No known occurrences of this species lie within Placer County or Nevada County, with the nearest occurrence located in Sierra County. **Low Potential**
Marsh skullcap (*Scutellaria galericulata*)	2.2	Occurs in open, wet habitats and cannot grow in the shade. Generally found in meadows and seeps below 7,000 feet in elevation. Blooms from July to September.	Suitable habitat exists in patches throughout the project area. **Moderate Potential**
Sphagnum moss (*Sphagnum* spp.)	SI	Common genus of mosses. Can be found in many different types of habitats around the world. Generally dominates the plant communities in swamps, fens, and bogs.	No sphagnum habitat was observed during the field surveys. Limited suitable habitat exists in the project area. **Low Potential**
Munro's desert mallow (*Sphaeralcea munroana*)	2.2	Occurs in Great Basin scrub habitats. Blooms from May to June.	One historical CNDDB occurrence, in 1922, was recorded along Squaw Creek approximately 5.5 miles northeast of Truckee along the Truckee River. No suitable habitat exists in the project area. **No Potential**
Howell's umbrellawort (*Tauschia howellii*)	1B.3 TNF	Found in subalpine fir or yellow pine forests from 5,600 to 8,200 feet in elevation in granitic rocky soils. Blooms from June to August.	Suitable habitat exists in patches throughout the project area. No known occurrences lie within Placer or Nevada counties. **Low Potential**
Cusick's speedwell (*Veronica cusickii*)	WS-T 4.3	Found in forest openings, meadows in higher elevation, and coniferous forests between 7,000 and 9,800 feet in elevation. Blooms from July to August.	Suitable habitat exists in patches throughout the project area, primarily along the existing and new 625 Line alignments. **Moderate Potential**

3.2.2 Species with a Moderate Potential to Occur

Washoe Tall Rockcress

Washoe tall rockcress is known from a limited number of closely located populations in Washoe County and Douglas County in the eastern Lake Tahoe Basin. While no populations have been discovered outside of the eastern Lake Tahoe Basin, it is believed that additional populations may exist. Populations are known to occur in Jeffrey pine forest, favoring areas such as campground and picnic areas where previous ground disturbance has occurred. These types of areas are present near the 650 Line along abandoned access roads and roadcuts east of State Route (SR) 267 between Northstar Drive and Martis Valley. Washoe tall rockcress is a TRPA special-interest species.

Trianglelobe Moonwort

Trianglelobe moonwort (*Botrychium ascendens*) is a small, perennial fern with a single aboveground frond terminating in a cluster of sporangia. The sterile blade is bright yellow-green and shiny, and the surface of the frond is somewhat crinkled. Trianglelobe moonwort is found in grassy fields and in coniferous forests near streams and springs in lower montane regions. It is found at elevations over 4,000 feet and is fertile in July and August. Leaves appear in late spring to midsummer. Suitable habitat exists along riparian areas and seeps beneath Sierra mixed conifer and red fir forests. This species was not found during reconnaissance-level surveys, but has a moderate potential to occur due to scattered suitable habitat distributed throughout the new 625 Line, existing 625 Line, and 650 Line alignments. This species is listed as a sensitive species by the Tahoe National Forest and Lake Tahoe Basin Management Unit. It is on the CNPS List 2.3.[15]

Western Goblin

Western goblin (*Botrychium montanum*) is a very small perennial fern with a single aboveground frond terminating in a cluster of sporangia. The sterile blade is glaucous or covered with a grayish waxy coating. Western goblin is found along creek banks in late seral coniferous forests. It is found at elevations over 4,000 feet and is fertile in July and August. Leaves appear in late spring to midsummer. Suitable habitat for this species exists along the existing 625 Line along Griff Creek in Kings Beach, Burton Creek near Tahoe City, and in other scattered riparian habitat areas. This species was not found during reconnaissance-level surveys, but has a moderate potential to occur because scattered suitable habitat is distributed throughout the project area. This species is listed as a sensitive species by the Tahoe National Forest and Lake Tahoe Basin Management Unit. It is on the CNPS List 2.1.[16]

Bolander's Candle Moss

Bolander's candle moss (*Bruchia bolanderi*) is a small perennial fern easily distinguished by its pear-shaped fruiting bodies, which hang upside down from the small fronds. Bolander's candle moss is found along creek banks in coniferous forests and intermixed with grasses within wet meadows. It is found at elevations from 5,500 feet to 9,200 feet and is fertile during the summer months. This species tolerates disturbance well and is commonly found growing in recently

[15] Species on CNPS List 2.3 are considered to be rare but not very threatened in California only.
[16] Species on CNPS List 2.1 are considered to be seriously threatened in California.

eroded stream banks. This species was not found during reconnaissance-level surveys, but has a moderate potential to occur because scattered suitable habitat is distributed throughout the new 625 Line, existing 625 Line, and 650 Line alignments. Specifically, suitable habitat includes areas along Middle Martis Creek and other intermittent drainages and seeps. This species is listed as a sensitive species by the Lake Tahoe Basin Management Unit and is on the CNPS List 2.2.

Constance's Sedge

Constance's sedge (*Carex constanceana*) is a perennial monocot that is found in mesic/shady areas of subalpine coniferous forest. This species was not found during reconnaissance-level surveys, but has a moderate potential to occur because suitable habitat is scattered throughout the project area. However, this species is only known in California from a single occurrence in the Sagehen Creek Experimental Forest in Nevada County, located north of the project area at an elevation of 6,562 feet. This species is on the CNPS List 1B.1.[17]

Cudonia Monticola

Cudonia monticola produces fruiting bodies from August to September, generally following the seasonal snowmelt. It is found in moist coniferous forests, generally arising from dense, damp pine needle litter. Suitable habitat is located along the new 625 Line, existing 625 Line, and 650 Line alignments near Tahoe City and Kings Beach in wetter, flatter areas. *Cudonia monticola* is a Tahoe National Forest sensitive species.

Clustered Lady's Slipper

Clustered lady's slipper (*Cypripedium fasciculatum*) is a perennial monocot[18] that is found throughout Oregon, Washington, Idaho, California, Montana, Colorado, and Wyoming in serpentine seeps and moist streambanks within montane coniferous forests from 5,000 to 7,200 feet in elevation. Clustered lady's slipper is a small plant with two broad opposing leaves. This species produces a stem that can bear up to nine purple-green drooping flowers and blooms from March to July. This plant has a moderate potential to occur within the project area. Suitable habitat is located around intermittent drainages and seeps beneath conifer forests along the new 625 Line, existing 625 Line, and 650 Line alignments. Clustered lady's slipper is considered to be a sensitive species by the Tahoe National Forest.

Mountain Lady-Slipper Orchid

Mountain lady-slipper orchid (*Cypripedium montanum*) is a perennial monocot that is found on dry, undisturbed slopes of montane coniferous and upland broadleaved forest habitats from 600 to 7,500 feet in elevation. It generally prefers semi-shady to open conifer forests. It is found throughout Canada, Alaska, California, Montana, and Wyoming. The mountain lady-slipper orchid grows individually or in clumps, and the stem can have up to five leaves. The mountain lady-slipper orchid bears one to three deep magenta flowers with a white lip and blooms from March to August. Suitable habitat exists along the new 625 Line, existing 625 Line, and 650

[17] Species on CNPS List 1B.1 are considered to be rare and seriously threatened in California and elsewhere.
[18] Monocots are flowering plants that contain one embryonic leaf and parallel leaf veins.

Line alignments within the Sierra mixed conifer and red fir forest habitats. The mountain lady-slipper is considered to be a sensitive species by the Tahoe National Forest.

Branched Collybia

Branched collybia (*Dendrocollybia racemosa*) is a saprophytic[19] fungi found in old-growth conifer forests throughout the Pacific Northwest. It typically feeds off of other decaying fungi. The cap can be up to 1 centimeter across and is a smooth gray to grayish brown with a paler margin. The stem is often grayish or brownish in color and can grow up to 8 centimeters long with most of the stem buried. This species is easily identified by the branched fruiting bodies and asexual buds that protrude from the stems. Scattered suitable habitat is distributed along the new 625 Line, existing 625 Line, and 650 Line alignments within areas of old-growth or undisturbed conifer forests. Branched collybia is considered to be a sensitive species by Tahoe National Forest and the Lake Tahoe Basin Management Unit.

English Sundew

English sundew (*Drosera anglica*) is a perennial dicot[20] that occurs in bogs, fens, or wet meadows from 4,200 to 6,500 feet in elevation throughout the northern United States and Canada. English sundew forms clumps or rosettes of leaves covered with sticky red hairs used for capturing insects and blooms from June to September. Potential habitat is scattered throughout Martis Valley along the 650 Line within wet meadow habitat.

Subalpine Fireweed

Subalpine fireweed (*Epilobium howellii*) is a dichotomous, perennial herb that is only found in California within wet meadows and mossy seeps in montane coniferous forest habitats from 6,000 to 9,000 feet in elevation. It blooms from July to August. Scattered suitable habitat exists along the new 625 Line, existing 625 Line, and 650 Line alignments in wet meadow habitat surrounded by red fir or Sierra mixed conifer forests. This species is on the CNPS List 1B.3[21] and is considered to be a sensitive species by both the Tahoe National Forest and the Lake Tahoe Basin Management Unit.

Oregon Fireweed

Oregon fireweed (*Epilobium oreganum*) is a dichotomous, perennial herb that is found in and near springs and bogs, and occasionally on serpentine soils in montane coniferous forests from 1,500 to 8,000 feet in elevation throughout North America. Oregon fireweed bears one lavender-colored flower per stem and blooms from June through September. Scattered suitable habitat exists along the new 625 Line, existing 625 Line, and 650 Line alignments in wet meadow habitat surrounded by red fir or Sierra mixed conifer forests. Oregon fireweed is on the CNPS List 1B.2.

[19] Saprophytic describes an organism that feeds off of other dead or decaying organic matter.
[20] Dichotomous plants, sometimes referred to as dicots, are flowering plants that have two embryonic leaves and branching leaf veins.
[21] Species on CNPS List 1B.3 are considered to be rare but not very threatened in California or elsewhere.

Nevada Daisy

Nevada daisy (*Erigeron nevadincola*) is a dichotomous, perennial herb found in montane coniferous forests, Great Basin scrub, and pinyon-juniper woodlands from 4,200 to 8,700 feet in elevation. This plant blooms from May to July, producing one white flower per stem. Suitable habitat exists within the Joerger Road Staging Area and along the 650 Line north of the Brockway Summit within Sierra mixed conifer forest, Jeffrey pine forest, and low sage habitat types. Nevada daisy is on the CNPS List 2.3.

Northern Sierra Daisy

Northern Sierra daisy (*Erigeron petrophilus sierrensis*) is a perennial herb with dense, glandular stems that stand almost fully upright with yellow blooms. It blooms from June to October and can be found in lodgepole pine, yellow pine, and red fir forests between elevations of 1,000 feet and 6,800 feet. The species has the potential to occur in habitats throughout the project area, except in Martis Valley or where the project falls outside of the species' elevational range. No individuals were observed during the 2007 or 2008 surveys, which occurred during its blooming period. The Northern Sierra daisy is a Tahoe National Forest watchlist species.

Donner Pass Buckwheat

Donner Pass buckwheat (*Eriogonum umbellatum torreyanum*) is a dichotomous, perennial herb found on steep slopes and ridgetops growing in rocky, volcanic soils. The species grows in sparsely vegetated, unstable areas from 6,000 to 8,000 feet in elevation. Bright yellow flowers are produced from July to September and are 7 to 10 millimeters in diameter. Suitable habitat is scattered throughout the project area in primarily barren/rock outcrop habitat types along the existing 625 Line, new 625 Line, and a portion of the 650 Line near Brockway Summit. Donner Pass buckwheat is on the CNPS List 1B.2 and is considered to be a sensitive species by both the Tahoe National Forest and the Lake Tahoe Basin Management Unit.

Blandow's Bog Moss

Blandow's bog moss (*Helodium blandowii*) is a bryophyte[22] that grows in damp or saturated soils in meadows and seeps above 6,500 feet in elevation. The plant is short-growing and deep green in color. Suitable habitat is scattered along the new and existing 625 Line and 650 Line alignments, primarily within wet meadow or riparian habitat types. Blandow's bog moss is on the CNPS List 2.3 and is considered to be a sensitive species by the Tahoe National Forest.

Short-Leaved Hulsea

Short-leaved hulsea (*Hulsea brevifolia*) is a perennial herb with sparse, wool-like hairs on the stems. A yellow flower is produced during the blooming period from May to August. Short-leaved hulsea can be found between elevations of 4,900 feet and 10,500 feet in montane coniferous forests with granite or volcanic soils. The species has a moderate potential to occur throughout Sierra mixed conifer, Jeffrey pine, and red fir forests in the project area. This species is considered to be a sensitive species by the Lake Tahoe Basin Management Unit and is on the CNPS List 1B.2.

[22] Bryophytes are non-vascular, non-flowering, and non-seed producing primitive plants that include mosses and liverworts.

Aquatic Lichen

Aquatic lichen (*Hydrothyria venosa*) is a purple branching algae-fungal symbiote that can be found on rocks in streams with clear, cold water below 7,000 feet in elevation. Within the project area, suitable habitat exists in Griff Creek, Truckee River, and Middle Martis Creek. The species is considered to be a Tahoe National Forest sensitive species.

Webber's Ivesia

Webber's ivesia (*Ivesia webberi*) is a low spreading perennial herb with gray leaf clusters and yellow rounded flowers. It is found in rocky, volcanic soils in Great Basin scrub and montane coniferous forests east of the Sierra Nevada Mountains. Webber's ivesia can be found between elevations of 4,500 feet and 7,500 feet and blooms from May to July. This species has a moderate potential to occur within the project area north of Brockway Summit in the lower Jeffrey pine and low sage habitats along the 650 Line and within the Joerger Road Staging Area. The species is considered to be a Tahoe National Forest sensitive species and is on the CNPS List 1B.1.

Hutchinson's Lewisia

Hutchinson's lewisia (*Lewisia kelloggii hutchisonii*) is a perennial herb with broad, rounded leaves. It can be found in open patches of montane coniferous forests with rocky slate substrates between elevations of 4,600 feet and 7,000 feet. Hutchinson's lewisia blooms from June to August. This species has potential to occur within coniferous forest habitats throughout the project area that fall within the elevation range of the species. This elevational range correlates to the entire project area, with the exception of portions of the new 625 Line, existing 625 Line, and 650 Line alignments east and west of Brockway Summit. This species is considered to be a sensitive species by both the Tahoe National Forest and Lake Tahoe Basin Management Unit.

Kellogg's Lewisia

Kellogg's lewisia (*Lewisia kelloggi kelloggii*) is a perennial herb with broad, rounded leaves. It can be found in open patches of montane coniferous forests with rocky slate substrates between elevations of 6,200 feet and 9,500 feet, and blooms from June to August. Suitable habitat for this species is scattered throughout coniferous forest habitat where large breaks in the canopy cover exist. The species is considered to be a sensitive species by both the Tahoe National Forest and Lake Tahoe Basin Management Unit.

Quincy Lupine

Quincy lupine (*Lupinus dalesiae*) is a perennial herb with stems standing fully upright and yellow flower clusters located along the length of the stem. It can be found on dry slopes, summits, trails, and often in disturbed areas in montane coniferous forests at elevations between 3,000 feet and 8,000 feet. This species has the greatest potential to occur along the existing 625 Line and new 625 Line in disturbed roadcuts, as well as along abandoned or closed USFS roads. Other similar suitable habitat exists east of Brockway Summit along the 650 Line, existing 625 Line, and new 625 Line. Quincy lupine blooms from May to August. This species is considered to be a Tahoe National Forest sensitive species.

Three-Ranked Hump Moss

Three-ranked hump moss (*Meesia triquetra*) is a small, clustering moss identifiable by its three-leaf arrangement. It can be found in wet areas, fens, bogs, and seeps between 4,200 feet and 8,200 feet in elevation. Three-ranked hump moss has a moderate potential to occur within the wet meadows and riparian habitats along the existing 625 Line, new 625 Line, and 650 Line. This species is a Tahoe National Forest sensitive species.

Broad-Nerved Hump Moss

Broad-nerved hump moss (*Meesia uliginosa*) is a bryophyte found in wet meadows, fens, bogs, and seeps between 4,200 feet and 8,200 feet in elevation. Broad-nerved hump moss has a moderate potential to occur within wet meadows or riparian habitats along the existing 625 Line, new 625 Line, and 650 Line. This species is considered to be a Tahoe National Forest sensitive species and is on the CNPS List 2.2.

Close-Throated Beardtongue

Close-throated beardtongue (*Penstemon perosonatus*) is a perennial herb that produces long, blue-purple flowers that appear to be closed. Short hairs can be seen on the stem. It is found in partial sunlight on north-facing slopes with metavolcanic soils located between 4,500 feet and 6,500 feet in elevation. Close-throated beardtongue is fertile from June to September. Suitable habitat is located primarily along the 650 Line north of the Brockway Summit where the slopes are north-facing. Some scattered north-facing slopes also exist south of the Brockway Summit along the new 625 Line, existing 625 Line, and 650 Line. The species is considered to be a Tahoe National Forest sensitive species and is on the CNPS List 1B.2.

Alderleaf Buckthorn

Alderleaf buckthorn (*Rhamnus alnifolia*) is a dichotomous shrub found in montane riparian and wet meadow habitat types between 4,500 and 7,000 feet in elevation. It has toothed leaves and produces red berries that mature to a deep purple. Common associates with this species include alder, dogwood, and willow. Within the project area, suitable habitat exists within ephemeral drainages, seeps, and along creeks and streams along the existing 625 Line, new 625 Line, and 650 Line south of Brockway Summit. This species blooms from May to July. This species is on the CNPS List 2.2.

Marsh Skullcap

Marsh skullcap (*Scutellaria galericulata*) is a rhizomatous[23] herb that stands upright and has pairs of blue flowers located on the same side of the stem. It can be found in open, wet habitats in meadows and seeps below 7,000 feet in elevation. Marsh skullcap blooms from July to September and has a moderate potential to occur in the wet meadow or riparian habitats within the Martis Valley along the 650 Line. The species is on the CNPS List 2.2.

[23] Rhizomatous plants are those that produce horizontal stems either above or below ground level.

Cusick's Speedwell

Cusick's speedwell (*Veronica cusickii*) is a perennial herb with a stem that curves at the base and has deep blue-violet flowers in bloom from July to August. It can be found in forest openings and meadows within conifer forests between 7,000 and 9,800 feet in elevation. Potential habitat for the species exists in scattered areas within the high elevations of the project, primarily along the existing 625 Line and new 625 Line. The species is considered to be a Tahoe National Forest watchlist species.

3.3 SENSITIVE WILDLIFE SPECIES

Seven sensitive wildlife species were observed during the 2007 and 2008 surveys or are known to be present within the project area. Additionally, four species have a high potential to occur in the project area, and 15 species have a moderate potential to occur. Species that are considered to have a high potential to occur are generally common in the area or large amounts of preferable or suitable habitat exists. Suitable habitat for sensitive wildlife species with a moderate potential to occur exists in varying quantities in the project area. A summary of these sensitive species and their habitat requirements is included in Table 6: List of Potential Sensitive Wildlife Species.

The following sensitive wildlife species are known to occur or have a high or moderate potential to occur within the project area and, therefore, warrant further discussion.

3.3.0 Species Present in the Project Area

Northern Goshawk

The northern goshawk is known to maintain nesting territories in the project area. Nesting occurrences within Burton Creek State Park and on USFS land have been documented. The USFS has designated several 200-acre northern goshawk PACs in the north Lake Tahoe area, as shown in Figure 3: Sensitive Species Designated Areas, and prohibits vegetation treatments within 0.25 mile of northern goshawk nest sites during their breeding season (February 15 to September 15). If the location of a nest site within a PAC is unknown, then the prohibition applies to a 0.25-mile area surrounding the PAC. Northern goshawk protocol-level surveys are also required for activities likely to reduce habitat quality within suitable nesting habitat that is not within a designated PAC.

One northern goshawk PAC borders the existing 625 Line and new 625 Line alignments as well as the 650 Line alignment. Two other designated northern goshawk PACs are located within 1 mile of the existing 625 Line between Brockway Summit and Burton Creek State Park. Additional northern goshawks or nesting sites are likely to exist in or near the project area on non-USFS lands.

Northern goshawks are similar in appearance to Cooper's hawks, though larger in size. The northern goshawk is a California Species of Special Concern and is considered to be both a Tahoe National Forest and Lake Tahoe Basin Management Unit sensitive species.

Yellow Warbler

The yellow warbler (*Dendroica petechia brewsteri*) is known to nest in the north Lake Tahoe area, including Burton Creek State Park. One yellow warbler was observed in a riparian thicket

associated with Griff Creek in Kings Beach during the September 2007 reconnaissance-level surveys. This species nests in the spring and summer in riparian thickets, and is also known to nest in shrubby open areas, such as montane chaparral. These small songbirds typically have a yellow breast with darker, browner wings. The yellow warbler is a California Species of Special Concern.

Willow Flycatcher

The willow flycatcher (*Empidonax traillii*) is a neo-tropical migrant that spends the summer in North America during the breeding season and migrates to Central America during the winter—its non-breeding season. Breeding typically occurs in May and June. This species is known to nest in the Martis Creek Wildlife Area along Middle Martis Creek and Martis Creek. The willow flycatcher nests primarily in shrubby riparian habitat associated with wet meadows. Willow flycatchers are brown/olive colored on top with a gray/olive underside. The species has the potential to occur in the willow-dominated riparian areas throughout the project area, primarily in Martis Valley. The willow flycatcher is listed as endangered by the State of California and considered to be a sensitive species by the Tahoe National Forest.

California Spotted Owl

The California spotted owl is known to maintain nesting territories in the project area. There are documented nesting occurrences in Burton Creek State Park, the Lake Tahoe Basin Management Unit, and the Tahoe National Forest. The USFS has designated several 300-acre California spotted owl PACs in the north Lake Tahoe area. Each PAC is contained within a larger California spotted owl HRCA. USFS-guidelines prohibit vegetation treatments within 0.25 mile of California spotted owl nests during the breeding season (March 1 to August 31), unless surveys confirm that California spotted owls are not nesting. If the location of a nest site within a PAC is unknown, surveys are required to establish or confirm the location of the nest within the activity center. If no nest is found, a 0.25-mile buffer restricting vegetation treatments will be enacted around the PAC. California spotted owl protocol-level surveys are also required for activities in spotted owl habitat with unknown occupancy. Additionally, only a total of 5 percent of all PAC areas may undergo vegetation treatment in a given year and only 10 percent within a decade. All California spotted owl PACs and HRCAs are shown in Figure 3: Sensitive Species Designated Areas.

Table 6: List of Potential Sensitive Wildlife Species

Species Name	Listing Status[24]	Habitat Requirements	Potential to Occur
Invertebrates			
Great Basin rams-horn (*Helisoma newberryi newberryi*)	TNF LTBMU	Inhabits larger lakes and slow rivers, including larger spring sources and spring-fed creeks, where it burrows into soft mud.	This species is known to occur in Lake Tahoe. Potential habitat exists in the slow moving sections of the Truckee River, downstream from the project area. **Low Potential**
California floater (*Anodonta californiensis*)	TNF	Inhabits slow-moving rivers or lakes with soft silty, sandy, or muddy substrates into which it can burrow. Generally found at lower elevations.	Though believed to occur only in lower elevations, one historic record of the species exists in Donner Lake, west of the project area. This species is not known to occur within the Lake Tahoe Basin. It is believed to occur within the Truckee River in the State of Nevada, though the species is believed to be extirpated throughout most of California. Only one location within Truckee represents historically marginal habitat. **Low Potential**
Fish			
Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*)	FT	Historically inhabited all accessible cold waters of the Lahontan Basin in a wide variety of water temperatures and conditions. Requires gravel riffles in streams for spawning.	This species is known to have occurred in Martis Creek, Middle Martis Creek, and East Martis Creek until the mid-1990s. All pure populations likely have been extirpated, though hybrid populations may still exist. **Moderate Potential**
Lahontan Lake tui chub (*Gila bicolor pectinifer*)	CSC TNF LTBMU	Inhabits large, deep lakes. Able to tolerate a wide range of physiochemical water conditions. Spawns in near-shore, shallow areas over beds of aquatic vegetation.	Because no work will occur within Lake Tahoe, there is no potential for this species to occur within the project area. **No Potential**
Hardhead (*Mylopharodon conocephalus*)	CSC TNF	Inhabits low to mid-elevation areas in the Sacramento-San Joaquin drainage systems and is also present in the Russian River.	The project is located outside of the species' range. **No Potential**
Amphibians			
Foothill yellow-legged frog (*Rana boylii*)	CSC TNF	Inhabits partly-shaded, shallow, slow, gravelly streams and rivers with sunny banks in a wide variety of habitats below 6,700 feet in elevation. Requires cobble-sized substrate for egg-laying.	The project is located outside of the species' range. **No Potential**
Sierra Nevada yellow-legged frog (*Rana sierrae*)	FC CSC TNF LTBMU	Inhabits lakes, meadow streams, isolated pools, and sunny riverbanks in the Sierra Nevada Mountains from 1,000 to 12,000 feet in elevation. Always encountered within a few feet of water. Requires between 2 and 4 years to complete aquatic development.	Suitable habitat exists in the project area, most notably Watson Lake along the existing 625 Line and new 625 Line. CNDDB records also indicate that this species is present in the Squaw Creek area, approximately 2 miles west of the project area. **Moderate Potential**
Northern leopard frog (*Rana pipiens*)	CSC LTBMU	Inhabits lakes, meadow streams, isolated pools, and sunny riverbanks throughout portions of California. Generally requires a permanent water source.	Areas of suitable habitat exist in the project area, most notably the Truckee River and Watson Lake along the existing 625 Line and new 625 Line, and Middle Martis Creek and Martis Creek along the 650 Line. **Moderate Potential**

[24] Explanation of state and federal listing codes

Federal listing codes:

-FT: Federally listed as Threatened
-FC: Candidate for Federal listing
-TNF: Tahoe National Forest Sensitive Species
-LTBMU: Lake Tahoe Basin Management Unit Sensitive Species
-MIS-T: Management Indicator Species for the Tahoe National Forest
-MIS-L: Management Indicator Species for the Lake Tahoe Basin Management Unit

California listing codes:

-CE: State listed as Endangered
-CT: State listed as Threatened
-CC: Candidate for State listing
-CSC: California Species of Special Concern
-FP: Fully Protected Species

CDFG, 2009; CDFG, 2007; Escobeda, 2008; Shuford, 2008; USFWS, 2009; USFS, 2009; USFWS, 1995; USFS, 2007; USFS, 2008

Species Name	Listing Status[24]	Habitat Requirements	Potential to Occur
Pacific tree frog (*Pseudacris regilla*)	MIS-L MIS-T	Found throughout California in a variety of habitats, including wet meadow, coniferous forest, oak woodland, and riparian streams. Considered a management indicator species for wet meadow habitats.	Suitable habitat exists throughout the project area, with the exception of the barren, low sage, or disturbed habitats. **Moderate Potential**
Reptiles			
Northwestern pond turtle (*Actinemys marmorata marmorata*)	CSC TNF	Inhabits permanent or nearly permanent bodies of water in a wide variety of habitats from sea level to 4,700 feet in elevation. Requires basking sites. May nest up to 0.3 mile from water.	The project is located above the elevation range of the species. **No Potential**
Birds			
Northern goshawk (*Accipiter gentilis*)	CSC TNF LTBMU	Inhabits coniferous forests, and usually nests on north-facing slopes. Typically nests in red fir, lodgepole pine, Jeffrey pine, or aspen trees. Nests from February to September.	Multiple CNDDB records indicate the presence of this species in the North Lake Tahoe area. Data obtained from the USFS indicates that one known northern goshawk PAC is located directly adjacent to the 650 Line, existing 625 Line, and new 625 Line north of the Kings Beach Substation. The new 625 Line will also parallel this PAC. Suitable nesting habitat exists throughout the red fir, Sierra mixed conifer, Jeffrey pine, and montane riparian habitat types. No northern goshawks were observed during the first year of northern goshawk protocol-level surveys. **Present**
Sooty (blue) grouse (*Dendragapus obscurus*)	MIS-L MIS-T	Inhabits coniferous forests and aspens woodlands. Prefers forest ecotones[25] where nesting can occur in heavier brush and foraging can occur in more old-growth areas. Nests generally from May to July. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats.	Suitable habitat for this species is scattered throughout the project area, particularly along the existing 625 Line where ROW tree removal has promoted montane chaparral foliage to grow more densely. **Moderate Potential**
Yellow warbler (*Dendroica petechia brewsteri*)	CSC MIS-L MIS-T	Inhabits oak woodlands, montane and coniferous forests, and desert lowlands. Nests in dense, brushy riparian vegetation or shrubby montane vegetation. Nests from April to August. Considered to be a management indicator species for montane riparian habitats.	This species is known to breed in Burton Creek State Park. One individual was observed along Griff Creek in Kings Beach during the September 2007 reconnaissance-level survey. Suitable nesting habitat is scattered throughout the project area amongst the montane riparian habitat along the existing 625 Line, new 625 Line, and 650 Line. **Present**
Willow flycatcher (*Empidonax traillii*)	CE TNF LTBMU	Inhabits extensive thickets of low, dense willows on the edge of wet meadows, ponds, or backwaters from 2,000 feet to 8,000 feet in elevation. Breeds from April to August.	Individuals were observed during the 2007 reconnaissance surveys. Suitable nesting habitat for this species exists in Martis Valley within the willow thickets surrounding Middle Martis Creek and Martis Creek. This species is known to nest in the Martis Creek Wildlife Area along Martis Creek and in Middle Martis Creek. **Present**
Greater sandhill crane (*Grus Canadensis tabida*)	CT FP TNF	Breeds in wetland habitats in northeastern California and winters in the Central Valley. Prefers grain fields within 4 miles of a shallow water body and breeds from April to August.	No CNDDB records for this species exist within 5 miles of the project area. This species was not observed in the project area during the 2007 or 2008 surveys. **Low Potential**
Bald eagle (*Haliaeetus leucocephalus*)	CE FP LTBMU TNF	Inhabits ocean shores, lake margins, and rivers for nesting and wintering. Usually nests within 1 mile of water in large, old-growth, or dominant live trees with open branches, especially pines. Breeds from March to August.	Suitable nesting and wintering habitat for this species is scattered throughout the project area. CNDDB records indicate the presence of breeding and wintering of bald eagles in the Lake Tahoe basin. **Moderate Potential**
Mountain quail (*Oreortyx pictus*)	MIS-L MIS-T	Inhabits coniferous or oak woodlands as well as chaparral habitat types generally between 2,200 and 9,800 feet in elevation. Prefers habitats with dense shrub cover. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats. Breeds between April and August.	Several individuals were observed during the 2008 reconnaissance surveys. Suitable habitat for this species exists throughout the project area, with the exception of the Martis Valley and Truckee areas. Preferable habitat exists in areas where tree removal has occurred, promoting the growth of dense shrubs, such as manzanita or tobacco brush. The existing 625 Line ROW supports this habitat. **Present**

[25] An ecotone is an area of transition between two differing habitat types.

Species Name	Listing Status[24]	Habitat Requirements	Potential to Occur
Osprey (*Pandion haliaetus*)	TNF	Inhabits woodlands and adjacent habitat near large waterbodies and rivers. Nests in treetops or man-made structures near open water. Breeds from March to September.	Suitable nesting habitat exists along the Lake Tahoe shoreline and surrounding area, including near Kings Beach and Tahoe City along the existing 625 Line, new 625 Line, and 650 Line. **High Potential**
Fox sparrow (*Passerella iliaca*)	MIS-T	Inhabits montane chaparral and chamise-redshank chaparral habitats in the western Sierra Nevada Mountains. Breeds from spring to summer.	The project area is outside of the range of the species. No chamise-redshank chaparral habitat exists in the project area. Limited suitable naturally occurring montane chaparral habitat occurs within the project area. **Low Potential**
Black-backed woodpecker (*Picoides arcticus*)	MIS-L MIS-T	Inhabits coniferous forest throughout North America. Prefers areas of recent wildfires. Breeds from May to July. Considered to be a management indicator species for medium or large snags in burned coniferous forest habitats.	Suitable habitat is scattered throughout the project area, in particular, areas that have recently been subject to USFS controlled burns along the existing 625 Line and new 625 Line. **Moderate Potential**
Hairy woodpecker (*Picoides villosus*)	MIS-L MIS-T	Widespread throughout western North America. Inhabits oak or coniferous woodlands and riparian areas. Breeds during the spring, preferring to nest in deciduous trees. Considered to be a management indicator species for medium or large snags in conifer habitats.	Suitable habitat is scattered throughout the red fir, Sierra mixed conifer, and Jeffrey pine forests along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
Great gray owl (*Strix nebulosa*)	CE TNF LTBMU	Inhabits mixed conifer or red fir forests. Nests in large-diameter snags in forests with a high percentage of canopy closure. Breeds from March to August.	Suitable nesting and foraging habitat is scattered throughout the red fir, Sierra mixed conifer, and Jeffrey pine forests, especially along ecotones with meadows and other open areas along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**
California spotted owl (*Strix occidentalis occidentalis*)	CSC TNF LTBMU MIS-T	Inhabits mixed conifer forests, often with an understory of deciduous hardwoods, with a canopy cover of greater than 40 percent. Most often found in deep, shaded canyons, on north-facing slopes, and within 930 feet of water. Breeds March to August. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats.	Data from the CDFG and the USFS indicates that four known nesting territories exist within the Lake Tahoe basin along the existing 625 Line, new 625 Line, and 650 Line. Two additional known nesting territories exist approximately 0.5 mile from the project area. Suitable nesting and foraging habitat is scattered throughout the project area. During the summer of 2009, the USFS identified two active nests, each approximately 1 mile from the new 625 Line. Two observations were made during the 2009 protocol-level California spotted owl survey, though no nests could be identified. **Present**
Mammals			
Pallid bat (*Antrozous pallidus*)	CSC TNF	Inhabits deserts, grasslands, shrublands, woodlands, and forests. Most commonly found in open, dry habitats with rocky areas. Roosts in rocky outcrops, snags, and abandoned manmade structures.	Suitable habitat for this species is scattered throughout the project area along all components of the project where suitable roosting areas may exist. **Moderate Potential**
Sierra Nevada mountain beaver (*Aplodontia rufa californica*)	CSC	Inhabits the Sierra Nevada Mountains in dense growths of small deciduous trees and shrubs, with wet soil and an abundance of forbs. Requires dense understory for foraging and cover and an abundant supply of water. Builds large networks of underground burrows for denning and rearing young.	CNDDB records indicate the presence of the species in the project area between MP 9.1 and MP 9.5 along the existing 625 Line at the upper headwaters of Deer Creek. Additional CNDDB records indicate this species is present in suitable habitat within 2 miles of the project site. Suitable habitat is scattered throughout the project area. **High Potential**
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSC TNF LTBMU	Found throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings of caves and abandoned structures. Highly sensitive to human disturbance, deterring them from roosting in areas frequented by people.	Due to the project's close proximity to areas heavily used by people and vehicles, as well as the requirements for an adequate roosting area, it is unlikely that roosting sites are present within the project area. **Low Potential**
Northern flying squirrel (*Glaucomys sabrinus*)	MIS-L MIS-T	Inhabits coniferous and mixed hardwood forests. More common in old-growth coniferous forests with well-developed canopies. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats.	Suitable habitat is scattered throughout the forested habitats along the existing 625 Line, new 625 Line, and 650 Line. **Moderate Potential**

Species Name	Listing Status[24]	Habitat Requirements	Potential to Occur
California wolverine (*Gulo gulo luteus*)	CT TNF LTBMU FP	Inhabits the mountains of the north coast and Sierra Nevada Mountains in a wide variety of high elevation habitats. Uses caves, logs, and burrows for denning and cover. Hunts in open areas.	Suitable habitat occurs throughout the red fir, Sierra mixed conifer, and Jeffrey pine habitats within the project area. One historical CNDDB occurrence, in 1953, is located approximately 1.5 miles west of the project area near the mouth of Squaw Creek. Recent sightings were made in 2008, north of Truckee. **Moderate Potential**
Western red bat (*Lasiurus blossevillii*)	CSC TNF	Inhabits forest habitats from sea level up to approximately 6,000 feet. Prefers ecotones. Roosts primarily in trees that are protected from above and open below.	Suitable habitat is scattered throughout the project area along the existing 625 Line, new 625 Line, and 650 Line within Sierra mixed conifer, red fir, and Jeffrey pine forests. **Moderate Potential**
Sierra Nevada snowshoe hare (*Lepus americanus tahoensis*)	CSC	Inhabits boreal riparian areas in the Sierra Nevada Mountains. Prefers thickets of riparian, deciduous trees, and thickets of young conifers.	One historical CNDDB record, in 1929, was recorded in the Tahoe City area. Suitable habitat is scattered throughout the project area. Suitable habitat exists within the montane riparian habitat along the existing 625 Line, new 625 Line, and 650 Line. Thickets of young conifers are also present within portions of the existing 625 Line ROW. **High Potential**
Western white-tailed jackrabbit (*Lepus townsendii*)	CSC	Inhabits sagebrush, subalpine conifer, juniper, alpine dwarf shrub, and perennial grassland habitats. Prefers open areas with scattered shrubs and exposed flat-topped hills with open stands of trees, brush, and herbaceous cover.	One historical CNDDB record, in 1920, was recorded in the Tahoe City area. Suitable habitat exists throughout the project area, especially within the Northstar Golf Course Staging Area, Joerger Road Staging Area, and along the 650 Line north of Brockway Summit within Jeffrey pine and low sage habitats. **Moderate Potential**
American pine marten (*Martes americana*)	TNF LTBMU MIS-T	Inhabits mixed evergreen forests with more than 40 percent crown closure. Requires a variety of different-aged stands, particularly old-growth conifers and snags, which provide cavities for denning. Considered to be a management indicator species for Sierra mixed conifer and red fir habitats.	Suitable habitat is scattered throughout project area, especially north of Tahoe City, along the border of Burton Creek State Park. One CNDDB record indicates that this species is present to the northwest of Carnelian Bay, approximately 0.75 mile south of the existing 625 Line. **High Potential**
Pacific fisher (*Martes pennanti pacifica*)	FC CC CSC TNF	Inhabits intermediate to large-tree stages of coniferous forests and riparian areas with a high percentage of canopy closure. Uses cavities, logs, and rocky areas for denning and cover and requires large areas of mature, dense forest.	Pacific fishers are believed to be extirpated from the majority of their historic range. Only two populations, one in the coast range near the border with Oregon and the other in the southern Sierra Nevada Mountains, are believed to remain. No Pacific fishers are believed to exist in the Tahoe area. **Low Potential**
Mule deer (*Odocoileus hemionus*)	MIS-T	Inhabits meadows, grasslands, and forest throughout western North America. Prefers to forage in grassy open areas and to seek cover in forests. Considered to be a management indicator species for montane hardwood forests.	Suitable habitat exists throughout the project area along the existing 625 Line, new 625 Line, 650 Line, and Northstar Fold. Several individuals were observed during the 2007 and 2008 surveys. **Present**
Sierra Nevada red fox (*Vulpes vulpes necator*)	CT TNF LTBMU	Inhabits a variety of habitats in the Cascade and Sierra Nevada Mountains. Uses dense vegetation and rocky areas for cover and denning. Prefers forests interspersed with meadows or alpine fell-fields.	One CNDDB record indicates the presence of this species approximately 3 miles north of Truckee along SR 89. Suitable habitat is scattered throughout the existing 625 Line, new 625 Line, and 650 Line areas. **Moderate Potential**

Four designated California spotted owl HRCAs are located in the project area. The PACs of three of these HRCAs are also located in the project area. Three additional HRCAs exist within 0.5 mile of the project area, as shown in Figure 3: Sensitive Species Designated Areas. Approximately 4 miles of the new 625 Line and 3.5 miles of the existing 625 Line are located within California spotted owl HRCAs. Approximately 1 mile of the new 625 Line and 0.5 mile of the existing 625 Line are located within the PACs of these HRCAs. Additionally, the 650 Line runs adjacent to approximately 0.5 mile of the HRCA and 0.25 mile of the PAC. Additional California spotted owls are likely to exist in or near the project area on non-USFS lands.

California spotted owls are medium brown with horizontal light stripes across the breast and back. The California spotted owl is a California Species of Special Concern, a Tahoe National Forest sensitive species, a Lake Tahoe Basin Management Unit sensitive species, and a Tahoe National Forest management indicator species.

Mule Deer

Mule deer (*Odocoileus hemionus*) can be found in a variety of habitats, generally preferring forests for cover and open grasslands or agricultural fields for foraging. They are brown with white coloration around the face and tail. The mule deer is listed as a management indicator species by the Tahoe National Forest for montane hardwood and coniferous forests. Several mule deer were seen during the 2007 and 2008 surveys within red fir forests.

The Verdi Subunit of the Loyalton-Truckee Deer Herd migrates from the lower elevations of Nevada, west through Martis Valley, and into the Lake Tahoe Basin during the spring and summer months after breeding. As described in the Loyalton-Truckee Deer Herd Management Plan, individuals migrate along the northern and southern sides of Interstate 80 southwest from the Truckee Meadows in Nevada. Those along the southern side of Interstate 80 then migrate through Martis Valley and into the Lake Tahoe Basin. Migratory corridors are believed to cross the 650 Line in Martis Valley as deer move along riparian corridors to western Lake Tahoe and a known critical fawning area centered on Mt. Pluto in the Northstar-at-Tahoe Resort. Because the Loyalton-Truckee Deer Herd Management Plan is very outdated (1982), deer migratory patterns may have shifted over time due to development in Truckee and at the Northstar-at-Tahoe Resort, and the increased usage of SR 267. Because of this, it is likely that there have been decreases in migrations across SR 267 and through the portions of the project that lie west of SR 267.

Mountain Quail

Mountain quail (*Oreortyx pictus*) inhabits coniferous or oak woodlands as well as chaparral habitat types generally between 2,200 and 9,800 feet in elevation. They have a grey back and a brown underside. Their face has large white bars extending across the chest. They prefer habitats with dense shrub cover or ecotones adjacent to conifer forests. Suitable habitat exists throughout the existing 625 Line, new 625 Line, and the 650 Line alignments, with the exception of the Martis Valley area and urban areas. Preferable habitat exists in areas where previous tree removal has occurred, which promotes the growth of dense shrubs, such as manzanita or tobacco brush. Examples of these types of areas exist along the existing 625 Line and 650 Line ROWs. The mountain quail is considered a management indicator species for Sierra mixed conifer and red fir forests by the Tahoe National Forest and the Lake Tahoe Basin Management Unit. Several

mountain quail were observed during the 2008 surveys along the 650 Line within Sierra mixed conifer forest habitat.

3.3.1 Species With a High Potential to Occur

Sierra Nevada Mountain Beaver

The Sierra Nevada mountain beaver is a dark brown, medium-sized rodent that spends most of its life underground within extensive burrow networks. This species is reported to occur in the project area along the existing 625 Line in the upper headwaters of Deer Creek. Suitable habitat exists in areas of dense riparian forest with deep soil along the existing 625 Line, new 625 Line, and 650 Line alignments. The Sierra Nevada mountain beaver is a California Species of Special Concern.

Osprey

The osprey is known to nest in the Lake Tahoe Basin and CNDDB occurrences are located near Donner Lake, approximately 4 miles west of the project. Osprey nest in forest snags or on manmade structures, such as power poles, and require open water for foraging. These large raptors have a dark brown back with white undersides. Suitable habitat is present along the existing 625 Line, new 625 Line, and 650 Line in Kings Beach and Tahoe City. The osprey is considered to be a Tahoe National Forest sensitive species.

Sierra Nevada Snowshoe Hare

The Sierra Nevada snowshoe hare is known to inhabit Burton Creek State Park. Sierra Nevada snowshoe hares typically inhabit riparian communities with thickets of deciduous trees and shrubs, such as willows and alders. They also frequent dense thickets of young conifers and chaparral composed of *Ceanothus* spp. or manzanita. These small hares are typically brown during summer months and can turn white during winter months. Suitable habitat is scattered throughout the existing 625 Line, new 625 Line, and 650 Line alignments, with preferable habitat existing in riparian areas, areas with *Ceanothus* spp., and thickets of young conifers. The Sierra Nevada snowshoe hare is a California Species of Special Concern.

American Pine Marten

The American pine marten is a dark brown arboreal[26] mustelid[27] that occurs throughout the northern Sierra Nevada Mountains. It is known to occur in Burton Creek State Park; one CNDDB occurrence indicates presence approximately 0.75 mile south of the existing 625 Line near Carnelian Bay. The USFS protects verified marten birthing and kit-rearing dens from March 1 to June 30 with 100-acre buffer zones. No USFS-designated marten den sites are located within or adjacent to the project area. The American pine marten is considered to be a sensitive species by the Tahoe National Forest.

[26] An arboreal species is one which spends a predominant portion of its life in trees.
[27] Mustelids are member of the family Mustelidae and include weasels, otters, minks, martens, fishers, and badgers.

3.3.2 Species With a Moderate Potential to Occur

Lahontan Cutthroat Trout

Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) are found in cold-water habitats, such as alpine lakes, slow meandering rivers, mountain rivers, and small headwater tributaries throughout the Lahontan basin of northern Nevada, eastern California, and southern Oregon. These large, speckled golden fish were once widespread throughout the area; however, overfishing and hybridization have greatly reduced or possibly extirpated their local populations. Lahontan cutthroat trout have been known to occur in Middle Martis Creek, Martis Creek, and East Martis Creek near the 650 Line, though all individuals are likely hybrids with other species. This species have been extirpated from Lake Tahoe and the Truckee River within California. Lahontan cutthroat trout spawn between February and July and are dependent upon stream flow, elevation, and water temperature. Lahontan cutthroat trout is a federally threatened species. No Lahontan cutthroat trout were observed during the 2007 or 2008 surveys.

Sierra Nevada Yellow-Legged Frog

Sierra Nevada yellow-legged frog (*Rana sierra*) is found in lakes, ponds, marshes, and meadow streams at elevations of 4,500 to 12,000 feet throughout the Sierra Nevada Mountains. Sierra Nevada yellow-legged frog reproduction starts in April at low elevations and in June or July at higher elevations. Areas of suitable habitat exist in the project area, most notably Watson Lake along the new 625 Line and along Middle Martis Creek and Martis Creek near the 650 Line. CNDDB records indicate that this species is present in the Squaw Creek area, approximately 2 miles west of the project area. The Sierra Nevada yellow-legged frog is considered a California Species of Special Concern, a Tahoe National Forest sensitive species, and a Lake Tahoe Basin Management Unit sensitive species. Sierra Nevada yellow-legged frogs are candidates for federal listing under the Endangered Species Act. No Sierra Nevada yellow-legged frogs were observed during the 2007 or 2008 surveys.

Northern Leopard Frog

Northern leopard frogs (*Rana pipiens*) inhabit lakes, meadow streams, isolated pools, and sunny riverbanks throughout portions of California. This species is easily identified by the large dark green spots that cover the dorsal side of the body. Northern leopard frogs breed from March to June in areas with permanent water, such as the Truckee River and Watson Lake along the New 625 Line and Middle Martis Creek along the 650 Line. The Northern leopard frog is considered a California Species of Special Concern and a Lake Tahoe Basin Management Unit sensitive species. No Northern leopard frogs were observed during the 2007 or 2008 surveys.

Pacific Tree Frog

The Pacific tree frog (*Pseudacris regilla*) is a common amphibian species found throughout the Pacific Northwest in a variety of habitats, including wet meadow, coniferous forest, oak woodland, and riparian streams. These small frogs can be gray, tan, brown, or green. The Pacific tree frog is listed as a management indicator species by both the Tahoe National Forest and the Lake Tahoe Basin Management Unit for wet meadow habitats. Suitable habitat for the species exists in Martis Valley along the 650 Line and along the lower elevational portions of the existing 625 Line, new 625 Line, and 650 Line alignments near Lake Tahoe. No Pacific tree frogs were observed the 2007 or 2008 surveys.

Sooty (Blue) Grouse

Sooty (blue) grouse (*Dendragapus obscurus*) inhabits coniferous forests and aspen woodlands throughout the Pacific Coast Ranges. Blue grouse are dark brown with males producing a bright orange display used during courtship. These small, primarily ground-dwelling birds prefer to inhabit conifer forest ecotones where nesting can occur in montane chaparral areas with more dense foliage and may forage in more open, forested areas. This type of area is common along the existing 625 Line where ROW tree removal has promoted montane chaparral foliage to grow more densely. Blue grouse nests from May to July and is considered to be a management indicator species by the Tahoe National Forest and Lake Tahoe Basin Management Unit for Sierra mixed conifer and red fir forest habitats.

Bald Eagle

Bald eagle (*Haliaeetus leucocephalus*) inhabits ocean shores, lake margins, and large rivers for nesting and wintering throughout North America. Bald eagles are easily identified by their large size and white head. They usually nest and breed between March and May within 1 mile of water in large, old-growth, or dominant live trees with open branches, especially pines. Suitable nesting and wintering habitat is scattered within mixed conifer and red fir forests where the existing 625 Line, new 625 Line, or 650 Line come within 1 mile of Lake Tahoe or the Truckee River. CNDDB documentation indicates the presence of breeding and wintering bald eagles in the Lake Tahoe Basin, though all known nests are located outside of the project area. The bald eagle is a state-listed endangered species, fully protected species, Lake Tahoe Basin Management Unit sensitive species, and a Tahoe National Forest sensitive species.

Black-Backed Woodpecker

Black-backed woodpecker (*Picoides arcticus*) inhabits coniferous forests throughout North America, preferring areas of recent stand-replacing wildfires. They have dark gray backs with white breasts and barred sides. They breed from May to July and prefer to nest in medium or large burnt snags. Suitable habitat is present in project area—in particular, areas that were subject to USFS-controlled burns in the fall of 2008. Areas such as these exist along the western portions of the existing 625 Line and the new 625 Line. Because the burns were controlled, it is likely that only a limited number of snags were produced as a result. The black-backed woodpecker is considered to be a management indicator species by the Tahoe National Forest and the Lake Tahoe Basin Management Unit for recently-burnt medium or large snags in burnt conifer forests.

Hairy Woodpecker

Hairy woodpeckers (*Picoides villosus*) are widespread throughout western North America, inhabiting oak or coniferous woodlands and riparian areas. They are barred or mottled black and white all over with a small red cap on the head. They breed during spring and early summer, and generally nest in medium or large snags. Suitable foraging habitat exists throughout Sierra mixed conifer forests, Jeffrey pine forests, red fir forests, and riparian thickets located along the existing 625 Line, new 625 Line, and 650 Line. Suitable nesting habitat is scattered throughout these habitat types. The hairy woodpecker is considered to be a management indicator species by both the Tahoe National Forest and the Lake Tahoe Basin Management Unit for medium- or large-snag presence within green (non-burnt) conifer forests.

Great Gray Owl

Great gray owls (*Strix nebulosa*) inhabit Sierra mixed conifer or red fir forests near ecotones with open meadows. These large solid gray owls nest and breed from March to August in large-diameter snags within older-growth forests with a high percentage of canopy closure. Suitable nesting and foraging habitat is scattered along the existing 625 Line, new 625 Line, and 650 Line, where ecotones between wet meadows and conifer forest habitats occur. The great gray owl is a state-listed endangered species, a Tahoe National Forest sensitive species, and a Lake Tahoe Basin Management Unit sensitive species.

Pallid Bat

The pallid bat (*Antrozous pallidus*) has a diverse range, inhabiting deserts, grasslands, shrublands, woodlands, and forests. These large brown bats are most common in open, dry habitats with rocky areas for roosting. Preferable foraging habitat occurs in wet meadow and Jeffrey pine forest habitats along the 650 Line near Martis Valley. Preferable roosting areas include rock crevices, large conifer snags, and anthropogenic features, such as abandoned buildings or lookouts. Roosting habitat is scattered throughout the project area due to the high number of different types of areas that may be utilized. Young are generally born from May to July and weaned in the fall. The pallid bat is listed as a California Species of Special Concern and is considered to be a Tahoe National Forest sensitive species. No pallid bats were observed during the 2007 or 2008 surveys.

Northern Flying Squirrel

The northern flying squirrel (*Glaucomys sabrinus*) is a medium-sized gray tree squirrel that inhabits coniferous and mixed hardwood forests throughout North America, but is more common in old-growth forests with well-developed canopies. Suitable habitat exists throughout the Sierra mixed conifer forest and red fir forest habitats along the existing 625 Line, new 625 Line, and 650 Line, primarily where selective logging has not occurred recently. The Northern flying squirrel is considered to be a management indicator species by both the Tahoe National Forest and the Lake Tahoe Basin Management Unit for closed-canopy Sierra mixed conifer forests and red fir forests. No Northern flying squirrels were observed during the 2007 or 2008 surveys.

California Wolverine

The California wolverine (*Gulo gulo luteus*) inhabits the mountains of the northern California coast and Sierra Nevada in a wide variety of high elevation habitats. These large mustelids are

dark brown with a light brown stripe running down their back. They use caves, logs, and burrows for denning and cover, and they hunt in open areas. Suitable denning habitat is present in small patches, scattered throughout red fir, Sierra mixed conifer, and Jeffrey pine habitats. Breeding occurs in the winter and pups are born in the spring. Suitable foraging habitat exists within the red fir, Sierra mixed conifer, and Jeffrey pine forests along the existing 625 Line, new 625 Line, and 650 Line. One historical CNDDB occurrence, in 1953, is located approximately 1.5 miles from the project area near the mouth of Squaw Creek. No scientific accounts of the species had been recorded for over 50 years until February of 2008, when remote-sensing cameras captured a photograph of a wolverine north of Truckee. The California wolverine is state-listed as a threatened species and fully protected species, a Tahoe National Forest sensitive species, and a Lake Tahoe Basin Management Unit sensitive species.

Western Red Bat

The western red bat (*Lasiurus blossevillii*) inhabits forest habitats from sea level to approximately 7,000 feet in elevation throughout the western and southwestern U.S. These foliage-roosting bats prefer to roost and forage near forest ecotones, primarily in trees that are protected from above and open below, such as large dense conifers. Suitable foraging habitat exists throughout the Sierra mixed conifer forest, red fir forest, Jeffrey pine forest, montane chaparral, montane riparian, and wet meadow habitats along the existing 625 Line, new 625 Line, and the 650 Line, where it is located below 7,000 feet in elevation. Suitable roosting habitat is scattered in small areas throughout the Sierra mixed conifer forest, red fir forest, and Jeffrey pine forest habitats where specific individual trees provide adequate cover. The western red bat is a California Species of Special Concern and is considered to be a Tahoe National Forest sensitive species. No western red bats were observed during the 2007 or 2008 surveys.

Western White-Tailed Jackrabbit

The western white-tailed jackrabbit (*Lepus townsendii*) inhabits sagebrush, subalpine conifer, juniper, alpine dwarf shrub, and perennial grassland habitats. These large, thin rabbits prefer open areas with scattered shrubs and exposed flat-topped hills with open stands of trees, brush, and herbaceous cover. One historical CNDDB record from 1920 was recorded in the Tahoe City area. Suitable habitat exists along the 650 Line within the low sage habitat near Martis Valley, as well as within the surrounding Jeffrey pine forest habitat. The western white-tailed jackrabbit is a California Species of Special Concern. No western white-tailed jackrabbits were observed during the 2007 or 2008 surveys.

Sierra Nevada Red Fox

The Sierra Nevada red fox (*Vulpes vulpes necator*) inhabits a variety of habitats in the Cascade and Sierra Nevada mountains. These small, reddish canines use densely vegetated or rocky areas for cover and denning and prefer to hunt for birds and small mammals in forests interspersed with meadows or alpine fell-fields. Suitable denning and hunting habitat is located along the existing 625 Line, new 625 Line, and 650 Line within the red fir, Sierra mixed conifer forest, wet meadow, and Jeffrey pine habitat types. One CNDDB record indicates the presence of this species approximately 3 miles north of the project area along SR 89. The Sierra Nevada red fox is state-listed as a threatened species and is considered to be both a Tahoe National Forest and a Lake Tahoe Basin Management Unit sensitive species. No Sierra Nevada red foxes were observed during the 2007 or 2008 surveys.

3.4 SENSITIVE HABITAT COMMUNITIES

Two sensitive aquatic communities were identified through the CNDDB as being near the project area. These communities are listed as habitat for several sensitive fish species including Lahontan cutthroat trout and Paiute sculpin (*Cottus beldingi*). These communities are located in North Fork Prosser Creek approximately 4 miles north of the project area; no construction activities are anticipated to occur in these communities.

USFWS Critical Habitat

As discussed previously, a search was conducted using the USFWS Critical Habitat Portal. The search included critical habitat designations for all federally threatened or endangered plant and animal species. No such designations were determined to exist within 10 miles of the project area.

3.5 AQUATIC RESOURCES

Aquatic resources within the project area include seeps, drainages, ponds, rivers, streams, and seasonally flooded areas. These aquatic features generally provide riparian, wet meadow, and fresh emergent wetland habitat types. All aquatic features located within the project area are listed in Table 7: Aquatic Resource Inventory Table. Primary water bodies include the Truckee River, which is located in Tahoe City and the Town of Truckee; Griff Creek, which flows through Kings Beach into Lake Tahoe; and Middle Martis Creek and Martis Creek, which cross Martis Valley. Additional aquatic features consist of smaller creeks, unnamed drainages, and other seasonally wet areas. These features were analyzed in order to determine their potential to foster sensitive plant and animal species, as well as for their potential to be USACE- or CDFG-jurisdictional waters. These aquatic resources are shown in Attachment A: Vegetation Community Maps.

4 – IMPACTS

4.0 SUMMARY OF IMPACTS

Impacts associated with the project differ based on specific project component. These differences arise from differing locations and construction requirements of each component. Because of these varying environmental settings and differing construction needs, the significance of these impacts can vary based upon the project component. The following is a summary of potential construction-related impacts, both temporary and permanent, as well as potential impacts resulting from the operation and maintenance for each component of the project.

4.0.0 Existing 625 Line

In general, impacts associated with the removal of the existing 625 Line will be less substantial than those associated with the new 625 Line or 650 Line because the work does not require the expansion of the existing ROW. Temporary construction-related impacts are limited to the removal of the existing 625 Line and include:

- Vegetation removal along new and existing temporary access roads, stringing sites, staging areas, and the existing ROW
- Minor grading, as necessary, along temporary access roads
- Blading, as necessary, along temporary access roads
- Skidding of existing poles and trees along the existing ROW or access roads

No permanent construction-related impacts are anticipated. Because this line is being decommissioned and removed, no impacts from operation and maintenance will occur as a result. The removal of this line will also allow the existing ROW to undergo natural succession and redevelop into a red fir or Sierra mixed conifer forest, constituting an increase in suitable habitat for several species over time.

4.0.1 New 625 Line

Construction of the new 625 Line constitutes the most substantial impacts associated with the project. Because this is a new line, it will require the most substantial vegetation removal and other impacts to previously undisturbed areas, which will subsequently have the greatest impact on sensitive species, aquatic resources, and vegetation communities. Primary temporary construction-related impacts include:

- Vegetation removal within the temporary ROW (16 miles), stringing sites, staging areas, and temporary access roads
- Grading, as necessary, of access roads
- Blading, as necessary, of access roads
- Skidding of trees
- Installation of new poles and conductor
- Dewatering during work near aquatic resources, including the Truckee River and Griff Creek

Permanent construction-related impacts include:

- Vegetation loss within the new permanent ROW
- Removal of hazard trees adjacent to the line

Impacts as a result of operation and maintenance of the line will be minimal, as SPPCo personnel will only be periodically accessing the line by vehicle or helicopter. In addition, these activities will be similar to those already occurring along the existing 625 Line; therefore, there will be no net increase in activities.

Table 7: Aquatic Resource Inventory Table

Resource Number	Name of Waterbody	Line	Approximate MP	Vegetation Community Type	Dominant Vegetation	Size	Flow Regime	USACE Jurisdictional	CDFG Jurisdictional	Notes
625-1	Unnamed creek	Existing 625	1.6	Montane riparian	Dogwood, alder, willow, snowberry, Jeffery pine, white fir, and red fir	Width: 3 to 5 feet Depth: 1 feet	Seasonal[28]	Y	Y	Significant seasonal scour
625-2	Unnamed pool and creek	Existing 625	1.7	Montane riparian and small perennial pool (fresh emergent wetland)	Alder, incense cedar, whitethorn, willow, snowberry, Jeffrey pine, white fir, and red fir	Width: 3 to 5 feet Depth: 1 feet	Perennial	Y	Y	Small pool drains to riparian thicket; no defined bed or bank; had a very light flow in September of 2007
625-3	Unnamed swale	Existing 625	1.8	Montane riparian	Alder, willow, snowberry, mugwort (*Artemisia douglasiana*), Jeffrey pine, white fir, and red fir	Width: 15 feet Depth: 0.25 foot	Not Applicable (N/A)	Y	Y	No bank, scour, or riparian vegetation present; large swale; potential yellow warbler breeding habitat
625-4	Unnamed meadow	Existing 625	6.1	Wet meadow	Bentgrass, sedges, and a large variety of forb species	Width: 10 feet Depth: 0.25 foot	N/A	Y	Y	None
625-5	Unnamed creek	Existing 625	7.7	Montane riparian	Alder, dogwood, and snowberry	Width: 8 feet Depth: 1 foot	Seasonal	Y	Y	None
625-6	Unnamed seasonal creek	Existing 625	8.1	Montane riparian	Alder	Width: 2 to 3 feet Depth: 3 to 6 feet	Seasonal	Y	Y	Saturated soil; no channel; noted to be dry in September of 2007; potential yellow warbler habitat
625-7	Unnamed seasonal channel	Existing 625	9.2	Montane riparian	Alder, dogwood, willow, snowberry, and red fir	Width: 3 to 5 feet Depth: 1 foot	Seasonal	Y	Y	Boulder stream
625-8	Unnamed seasonal channel	Existing 625	9.3	Montane riparian	Alder, dogwood, willow snowberry, and red fir	Width: 1 to 3 feet Depth: 1 foot	Seasonal	Y	Y	Seasonal channel
625-9	Unnamed seasonal creek	Existing 625	10.9–11.0	Montane riparian	Huckleberry oak and blackberry (*Rubus* sp.)	Width: 1.5 feet Depth: 10 inches	Seasonal	Y	Y	Significant seasonal scour noted to be dry in September of 2007
625-10	Unnamed seasonal riparian thicket	Existing 625	11.2	Montane riparian	Dogwood, alder, and willow	Width: 15 feet Depth: N/A	Seasonal	Y	Y	Potential yellow warbler habitat; contained saturated soil with no channel
625-11	Unnamed seasonal swale	Existing 625	11.5	Montane riparian	Dogwood, alder, and willow	Width: 1 to 3 feet Depth: 1 foot	Seasonal	Y	Y	Seasonal drainage; no bed or bank
625-12	Unnamed swale	Existing 625	14.8	Sierra mixed conifer	Red fir, ponderosa pine, willow, and black currant (*Ribes nevadense*)	Width: 2 feet Depth: 1 to 1.5 feet	Seasonal	N	Y	Semi-riparian; scoured bed

[28] Features with a seasonal flow regime include both intermittent features and ephemeral features that do not possess water year-round.

Resource Number	Name of Waterbody	Line	Approximate MP	Vegetation Community Type	Dominant Vegetation	Size	Flow Regime	USACE Jurisdictional	CDFG Jurisdictional	Notes
625-13	Truckee River	Existing 625 132/650	15.1–15.3	Montane riparian	Willows, alder, Jeffrey pine, grasses, and sedges	Width: 80 to 100 feet Depth: 3 to 6 feet	Perennial	Y	Y	Developed/disturbed along northern bank; southern bank is more natural with native vegetation; moderate flow from east to west
625-14	Unnamed	Existing 625	15.3	Fresh emergent wetland	Emergent and surrounding understory consisting of sedges and horsetail; overstory consisting of black cottonwood and Jeffrey pine	Width: 10 to 25 feet Length: 75 feet Depth: 1 to 1.5 feet	Perennial	Y	Y	Downed wood present within waterbody
625-15	Unnamed tributary to Watson Creek	New 625	8.5	Montane riparian	Dogwood, alder, willow, and mixed conifers	Width: 5 feet Depth: 1 foot	Seasonal	Y	Y	Feature drains into a large wet meadow
625-16	Unnamed tributary to Watson Creek	New 625	8.5	Montane riparian	Dogwood, alder, willow, and mixed conifers	Width: 5 feet Depth: 1 foot	Seasonal	Y	Y	Feature drains into a large wet meadow
625-17	Unnamed tributary to Watson Creek	New 625	8.7	Montane riparian	Dogwood, alder, willow, and mixed conifers	Width: 2 feet Depth: 0.5 foot	Seasonal	Y	Y	Drains to a collection pond
625-18	Unnamed drainage to Burton Creek	New 625	11.8	Montane riparian	Dogwood, alder, willow, and mixed conifers	Width: 4 to 5 feet Depth: 1 to 1.5 feet	Seasonal	Y	Y	None
625-19	Unnamed swale	New 625	12.1	Wet meadow	Mixed conifers, grasses, and forbes	Width: 10 to 15 feet Depth: N/A	Seasonal	Y	Y	Opens into large meadow; flows to Burton Creek
650-1	Terminal end of unnamed swale to Martis Creek	650	0.0	Wet meadow	Annual grasses and other herbaceous vegetation; no overstory; surrounded by low sage	Width: 18 feet Depth: N/A	Seasonal	Y	Y	Dry during the 2007 surveys
650-2	Unnamed seasonal wet depression	650	0.1	Wet meadow	Minimal herbaceous cover composed of annual grasses and other herbaceous vegetation with no overstory; surrounded by low sage scattered with Jeffrey pine	Width: 45 feet Length: 75 feet Depth: 0.25 foot	Seasonal	N	N	Manmade seasonal depression with seasonal aquatic vegetation with gravel substrate; noted to be dry during September 2007 and October 2008 surveys
650-3	Unnamed channel to Martis Creek	650	0.2	Montane chaparral	Bitterbrush and annual grasses	Width: 3 feet Depth: 1.5 feet	Seasonal	Y	Y	Hydrological channel clearly defined, but no riparian or aquatic vegetation present; dry at time of 2007 survey

Resource Number	Name of Waterbody	Line	Approximate MP	Vegetation Community Type	Dominant Vegetation	Size	Flow Regime	USACE Jurisdictional	CDFG Jurisdictional	Notes
650-4	Martis Creek	650	0.2	Montane riparian	Willow, annual grasses, currants, and lupine (*Lupinus* sp.)	Width: 3 to 10 feet Depth: 1.5 to 2 feet	Perennial	Y	Y	Historic Lahontan cutthroat trout habitat; potential yellow warbler and willow flycatcher habitat; heavily used recreation area with hikers common; flows towards SR 267; light flow noted during September 2007 surveys
650-5	Two adjacent unnamed tributaries to Martis Creek	650	0.4	Montane riparian surrounded by wet meadow	Willow, sedges, and annual grasses; duckweed (*Lemna* sp.) was present on water surface	Width: 1.5 to 2.5 feet Depth: 0.5 foot	Perennial	Y	Y	The confluence of these two creeks is approximately 300 feet north of line; light flow was noted during the September 2007 surveys
650-6	West Martis Creek	650	1.1–1.2	Montane riparian with low sage to the west and wet meadow to the east	Willow, sedges, and annual grasses	Width: 2 feet Depth: 2 feet	Seasonal	Y	Y	None
650-7	Unnamed tributary and wet meadow to Martis Creek	650	1.5	Montane riparian surrounded by wet meadow	Willow and annual grasses	Width: 350 feet Depth: 0.5 foot	Seasonal	Y	Y	Noted to be dry at time of September 2007 surveys
650-8	Unnamed tributary to Middle Martis Creek	650	2.9	Montane riparian	Willow, aspen, grasses, and wild rose (*Rosa* sp.)	Width: 1 to 3 feet Depth: 1 foot	Perennial	Y	Y	Bordered by willow approximately 8 to 10 feet tall; nearby wet meadow and meandering stream present on west side of ROW; downed logs present across stream; noted to have a light northerly flow at the time of the September 2007 survey
650-9	Unnamed wet meadow adjacent to Middle Martis Creek	650	2.9	Wet meadow	Aquatic grasses	Width: 50 feet Length: 200 feet Depth: N/A	Seasonal	Y	Y	Noted to be dry at the time of the September 2007 survey
650-10	Middle Martis Creek	650	2.9–4.2, 5.7	Montane riparian	Overstory dominated by a mix of conifers, alder, willow, and aspen; understory dominated by mugwort, columbine (*Aquilegia formosa*), larkspur (*Delphinium* spp.), and grasses	Width: 1 to 3 feet Depth: 0.5 to 1 feet	Perennial	Y	Y	Surrounded by a large riparian thicket; runs parallel to SR 267 and under road at Pole 1093; noted to have a moderate flow during the September 2007 and October 2008 surveys; historic habitat for Lahontan cutthroat trout; potential yellow warbler and willow flycatcher habitat

Resource Number	Name of Waterbody	Line	Approximate MP	Vegetation Community Type	Dominant Vegetation	Size	Flow Regime	USACE Jurisdictional	CDFG Jurisdictional	Notes
650-11	Unnamed tributary to Middle Martis Creek	650	4.9	Montane riparian	Overstory dominated by alder, willow, aspen, and Jeffrey pine	Width: 2 to 3 feet Depth: 1.5 to 2 feet	Perennial	Y	Y	Potential yellow warbler habitat; flows into culvert under SR 267
650-12	Unnamed creek	650	5.3	Montane riparian	Willow and annual grasses	Width: 4 to 6 feet Depth: 0.5 to 1 foot	Seasonal	Y	Y	Willow thicket with moist seep; dry at time of 2007 survey; no defined bank
650-13	Unnamed “blue line” creek	650	7.3	Montane riparian	Willow, huckleberry oak, and currants; surrounded by Jeffrey pine	Width: 2 to 4 feet Depth: 2 to 4 feet	Seasonal	Y	Y	Although dry at the time of the 2007 survey, appears to be substantial seasonal drainage; bank is steep and bed is deep; near SR 267; adjacent to parking area
650-14	Unnamed riparian thicket/ roadside swale	650	7.6	Montane riparian	Willow	Width: 4 to 6 feet Depth: 1 to 2 feet	Seasonal	N	Y	Willow thicket; dry at time of 2007 survey
650-15	Roadside drainage/ creek	650	7.9	Sierra mixed conifer	Snowberry, huckleberry oak, currant, and columbine; surrounded by white fir and Jeffrey pine	Width: 2 to 3 feet Depth: 0.5 to 1 feet	Seasonal	Y	Y	Majority of water runs north to south through culvert under SR 267 to Lake Tahoe; additional runoff from highway trails along the road to a second 24-inch culvert in a constructed catch basin; dry at time of 2007 survey
650-16	Unnamed drainage	650	8.3	Montane riparian	Willow, huckleberry oak, and currant; surrounded by Jeffrey pine and white fir	Width: 6 to 10 feet Depth: 1 foot	Seasonal	Y	Y	Wide and shallow drainage with open riparian vegetation; no defined bed and bank; dry at time of 2007 survey
650-17	Griff Creek	650 New 625	8.6, 9.0–9.2	Montane riparian	Dogwood, alder, willow, sedges, snowberry, and horsetail; surrounded by mixed conifers—mainly Jeffrey pine	Width: 1 to 15 feet Depth: 3 to 4 feet	Perennial	Y	Y	Dense riparian thicket surrounding creek; potential yellow warbler nesting habitat
650-18	Unnamed tributary to Griff Creek	650	9.1	Montane riparian	Dogwood, alder, willow, and mixed conifers	Width: 4 to 10 feet Depth: 1 to 2 feet	Seasonal	Y	Y	Dry at time of 2008 survey
650-19	Unnamed tributary to Griff Creek	650	9.2	Montane riparian	Dogwood, alder, willow, and mixed conifers	Width: 4 to 10 feet Depth: 1 to 2 feet	Perennial	Y	Y	Had very light flow during 2008 surveys
132-1	Unnamed stock pond	132/650	1.4	Montane riparian	Willow, sedges, and horsetail; surrounded by mixed conifers—mainly Jeffrey pine	Width: 15 feet Depth: 1 to 4 feet	Perennial	Y	Y	Highly disturbed
132-2	Trout Creek	132/650	1	Montane riparian	Willow and mixed conifers—mainly Jeffrey pine	Width: 5 feet Depth: 1.5 feet	Perennial	Y	Y	Flows from the north before paralleling Glenshire Boulevard and entering into the Truckee River

Resource Number	Name of Waterbody	Line	Approximate MP	Vegetation Community Type	Dominant Vegetation	Size	Flow Regime	USACE Jurisdictional	CDFG Jurisdictional	Notes
SA-1	Unnamed tributary to Lake Tahoe	Tahoe City Staging Area	Not Applicable (NA)	Montane riparian	Dogwood, alder, willow, snowberry, Jeffrey pine, white fir, and red fir	Unknown	Seasonal	Y	Y	Located in a steep ravine downhill from the Tahoe City Staging Area
SA-2	Unnamed seasonal wetland	Northstar Golf Course Staging Area	NA	Wet meadow	Annual grasses and other herbaceous vegetation; no overstory; surrounded by low sage	Several acres	N/A	Y	Y	None

4.0.2 650 Line

Construction of the 650 Line will likely result in a substantial part of the project's overall impacts. It is anticipated that there will be less impacts along the 650 Line than along the new 625 Line because the 650 Line will be rebuilt in place, utilizing the existing ROW. Primary temporary impacts as a result of construction include:

- Vegetation removal within the temporary ROW (10 miles), stringing sites, staging areas, and temporary access roads
- Grading, as necessary, of access roads
- Blading, as necessary, of access roads
- Skidding of existing poles and trees
- Installation of new poles and conductor
- Dewatering during work near aquatic resources, including Middle Martis Creek, Martis Creek, Griff Creek, and a large wet meadow within Martis Valley

Permanent construction-related impacts will generally be minimal because the line will primarily be rebuilt in place. Additionally, SPPCo will relocate a short segment of the line currently located within Middle Martis Creek outside of the feature to minimize future impacts. Permanent construction-related impacts include:

- Vegetation loss within the new permanent ROW of any relocated sections of the line (however, this will likely be offset by the relocation of the line out of Middle Martis Creek)
- Removal of hazard trees outside of the permanent ROW

Impacts as a result of operation and maintenance of the line will be minimal as these activities will not differ significantly from those currently being conducted for the line.

4.0.3 Northstar Fold

The Northstar Fold will likely result in less significant impacts than those associated with the existing 625 Line, new 625 Line, and 650 Line, due to its significantly shorter length and location within a largely disturbed area—the Northstar-at-Tahoe Resort. Additionally, because many permanent roads already exist in the area, temporary access road construction will be limited. Temporary impacts as a result of construction include:

- Vegetation removal within the temporary ROW (0.5 mile), stringing site, staging areas, and temporary access roads
- Skidding of existing poles and trees
- Blading, as necessary, of temporary access roads

Minimal permanent impacts are expected as a result of construction because the ROW is existing for the Northstar Tap and vegetation management practices have been implemented as part of regular maintenance. Additionally, no new permanent access roads are planned. No impacts are anticipated as a result of operation and maintenance because these activities will not differ significantly from those currently being conducted for the Northstar Tap.

4.0.4 132/650 Line Double-Circuit

Construction of the 132/650 Line Double-Circuit will impact a minimal amount of vegetation, sensitive species, and aquatic resources due to its location within the Town of Truckee and relatively short distance. Temporary construction-related impacts associated with the project include:

- Limited vegetation removal within the temporary ROW, stringing sites, and temporary access roads
- Grading, as necessary, of temporary access roads

No new permanent access roads are planned and, as a result, no new permanent impacts as a result of construction are anticipated. Additionally, no impacts are anticipated as a result of operation and maintenance activities, as these activities will not significantly differ from those currently being conducted for the 132 Line.

4.1 GENERAL VEGETATION IMPACTS

The project traverses a wide variety of vegetation communities within the north Lake Tahoe area. Construction of the project has the potential to cause both temporary and permanent impacts to these vegetation communities, primarily through vegetation removal or disturbance from construction activities.

Construction of the project will require the use of an approximately 65-foot-wide temporary construction ROW, as well as numerous staging areas, stringing sites, access roads, and pole work sites. Temporary impacts to vegetation will result from clearing of these project areas, stripping of topsoil, and building or upgrading of temporary access roads and spur roads. Additionally, equipment could further the spread of noxious weed populations by transporting weed seeds or loose vegetation of invasive species outside areas of existing infestation. These invasive weeds aggressively compete with native plants and can eventually cause long-term changes in plant communities. Temporary and permanent vegetation impacts include approximately 241.6 acres of forested lands, 25.1 acres of wet meadow or riparian areas, 15.7 acres of low sage habitat, 1.0 acre of rock outcrop, and 12.8 acres of montane chaparral. Of the 241.6 acres of potential impacts to forested areas, approximately 130.8 acres will be within red fir forest, approximately 97.1 acres will occur within Sierra mixed conifer forest, and approximately 13.7 acres will occur within Jeffrey pine forest. These acreage calculations represent a worst-case scenario where tree and vegetation removal would be required along the entire length of the temporary ROW and within all work sites and staging areas.

In addition to potential temporary impacts, the new 625 Line will require the establishment of a new 40-foot-wide permanent easement, which will need to remain in an herbaceous state and undergo periodic tree trimming throughout the life of the project. Trees will be permanently removed along this easement. In addition, trees within 10 feet of the outside conductor will be trimmed as needed, in accordance with CPUC Order 95D. Permanent vegetation impacts resulting from the construction of the new 625 Line include approximately 54.8 acres of forested lands and 0.003 acre of montane riparian areas. Within these forested areas, disturbances include approximately 45.4 acres of red fir forest and 11.3 acres of Sierra mixed conifer forest.

The dismantling of the existing 625 Line will incur temporary vegetation impacts associated with improving access roads to the line and removing poles along the ROW. The permanent impacts of establishing a new, permanent easement along the new 625 Line may be partially offset by the fact that the existing 625 Line will be removed, and approximately 86.0 acres of land within the ROW will be abandoned and left to revegetate naturally. No permanent impacts to vegetation as a result of construction are anticipated along the existing 625 Line.

Impacts to vegetation along the 650 Line will be similar in nature to those associated with the new 625 Line. However, because the 650 Line is preexisting, these impacts will be less significant due to previous vegetation management that has occurred within the existing ROW. Approximately 28.7 acres of forested land will be impacted temporarily during the rebuild of the line. Within these 28.7 acres, approximately 7.3 acres of Jeffrey pine forest, 19.3 acres of Sierra mixed conifer forest, and approximately 2.1 acres of red fir forest will be impacted. In addition to impacts to forested areas, approximately 5.0 acres of montane riparian vegetation, 10.8 acres of wet meadow, and 6.1 acres of low sage habitat may be impacted. New permanent impacts are anticipated to be minimal, because the line is being generally rebuilt within an existing easement. This easement averages approximately 30 feet wide and will be improved to approximately 40 feet wide. Expanding the easement will permanently impact approximately 15.9 acres of habitat, more specifically approximately 7.0 acres of Sierra mixed conifer forest, 0.8 acre of Jeffrey pine forest, 0.6 acre of red fir forest, 0.9 acre of low sage, 1.8 acres of montane chaparral habitat, 0.003 acre of montane riparian habitat, and 0.001 acre of wet meadow habitat.

Impacts to vegetation along the Northstar Fold and 132/650 Line Double-Circuit will be minimal due to the short lengths of the segments and the significant disturbance that exists along the lines. Along the Northstar Fold, approximately 3.5 acres of Sierra mixed conifer forest will be impacted within the temporary ROW. Impacts along the 132/650 Line Double-Circuit include approximately 6.0 acres of marginal Jeffrey pine habitat. No permanent impacts are expected as a result of construction, as these lines are being rebuilt within existing ROWs. Additionally, no impacts as a result of operation and maintenance are anticipated because operation and maintenance activities will not differ significantly from those currently employed along the existing alignments.

Of the approximately 296.1 acres of natural vegetation communities with the potential to be impacted, the majority lie within federally managed lands managed either by the USFS or the USACE. Private landowners also own a large portion of the project area. These areas are typically within timber lands or the Northstar-at-Tahoe Resort. A small portion of the project area that borders Burton Creek State Park are managed by the State of California. The impacts to each vegetation community in relation to land ownership is shown in Table 8: Vegetation Impacts by Land Owner.

Table 8: Vegetation Impacts by Land Owner

Vegetation Community	Federal Land (acres)		State Land (acres)		Private Land (acres)	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Fresh Emergent Wetland	0.00	0.00	0.00	0.00	0.06	0.00
Jeffrey Pine Forest	0.03	0.00	0.00	0.00	12.88	0.80
Low Sage	0.46	0.07	0.00	0.00	14.29	0.85
Mixed Conifer Forest	58.96	14.30	2.93	2.93	28.17	3.89
Montane Chaparral	7.25	1.31	0.00	0.00	3.72	0.53
Montane Riparian	2.47	0.05	0.00	0.00	8.34	0.70
Red Fir	106.23	39.01	0.00	0.00	23.96	5.15
Rock Outcrop/barren	0.97	0.00	0.00	0.00	0.00	0.00
Wet Meadow	1.64	0.24	0.00	0.00	10.22	1.36

To reduce the aforementioned temporary impacts to vegetation communities during construction, SPPCo will limit vegetation and tree removal to only the areas necessary for construction (especially in riparian areas), clearly delineate approved work areas and access roads with staking and flagging, train all project employees regarding the importance of remaining within approved work areas, and restore areas impacted by construction to pre-existing conditions wherever possible. Additional APMs are presented and discussed further in Section 5: Applicant-Proposed Measures. As previously mentioned, permanent impacts associated with tree removal along the new 625 Line will be offset by the decommissioning of the existing 625 Line.

4.2 IMPACTS TO SENSITIVE PLANTS

There is one rare plant that is known to be present in the project area, two sensitive plant species with a high potential to occur, and 28 rare or sensitive plant, fungi, or lichen species that have a moderate potential to occur in the project area. These species have the potential to occur along different components of the project with the greatest number of species and highest potential being along the 650 and 625 lines. The primary construction-related impact to rare plants is take of individuals during vegetation-clearing and grounding-disturbing work. Specifically, during tree removal, felled trees will be skidded to the nearest access road and loaded onto trucks for removal. Skidding activities have the potential to trample or destroy sensitive species. In addition to tree removal, general vegetation clearing and grading will occur along project ROWs, access roads, and other work areas. This will involve mowing and blading in certain areas, which has the potential to destroy any individuals located in these areas. These work areas and ROWs may also result in the removal of potential habitat after vegetation management has taken place. Another potential impact to sensitive plants includes the introduction or spread of noxious weeds, which often outcompete native species and cause declines in native plant populations.

4.2.0 Sensitive Ivesias

Several hundred Plumas ivesia individuals were observed during the 2007 and 2008 surveys within planned construction areas along the 650 Line in Martis Valley. Specifically, individuals were observed within the Northstar Golf Course Staging Area, 650 Line ROW, and within the stringing site directly adjacent to the Northstar Golf Course Staging Area. Potential temporary construction-related impacts to this species include the loss of individuals during vegetation-clearing activities and from vehicular traffic. These impacts will be minimized by conducting preconstruction surveys within planned construction areas between May and September—the species' blooming-period, and by fencing and flagging plant populations for avoidance (i.e., establishing exclusion zones). Alternatively, individuals may be relocated to avoid take. SPPCo will consult with the CDFG prior to working within these sensitive areas. Upon completion of the project, no permanent construction-related or operation and maintenance-related impacts are anticipated to occur.

Potential impacts to Webber's ivesia could occur during ground-disturbing activities or vegetation removal within the low sage and Jeffrey pine habitats of the Martis Valley and Truckee areas north of Northstar Drive along SR 267. Specifically, within the project area, suitable habitat is located along the northern portion of the 650 Line, within the Northstar Golf Course Staging Area, and within the Joerger Road Staging Area. Any individuals identified during preconstruction floristic surveys will be flagged and avoided where feasible. Because no Webber's ivesia were observed during the 2007 or 2008 surveys, temporary and permanent impacts to the species are anticipated to be minimal. Additionally, operation and maintenance of the line is anticipated to have a minimal impact on the species because they will involve minimal ground disturbance and typically only involve access along established routes.

4.2.1 Sensitive Rockcresses

Several potential Carson Range rockcress individuals were observed in several locations along the 650 Line and new 625 Line alignments. Because surveys were conducted outside of the blooming period of the species, the specific species of the individuals observed could not be confirmed. SPPCo will conduct preconstruction rare plant surveys within planned construction areas during the blooming period to determine the actual species observed and extent of the population. Impacts or take could result from crushing or damaging individuals during vegetation clearing required for work areas or from the introduction of noxious weeds. These impacts will be minimized by fencing and flagging plant populations for avoidance (i.e., establishing exclusion zones) and by implementing measures to control the spread of noxious weeds. Alternatively, individuals may be relocated to avoid take. If it is determined that identified populations cannot be avoided, SPPCo will consult with the USFS and CDFG in order to determine a further course of action. No permanent impacts or operation and maintenance-related impacts to the species are anticipated.

Potential impacts to Washoe tall rockcress could arise during tree removal and vegetation clearing within Jeffrey pine forest along the 650 Line. Individuals identified during the preconstruction floristic surveys have the potential to be lost or disturbed by construction activity, and therefore, will be avoided to the extent feasible. If impacts are anticipated, SPPCo will consult with the CDFG and/or USFS in order to implement any necessary permitting processes. Permanent impacts to the species as a result of construction may result from a

relocation of the 650 Line out of Martis Creek that would result in a loss of suitable habitat. Impacts as a result of operation and maintenance are anticipated to be minimal because they will not differ significantly from those currently employed for the existing alignments.

4.2.2 Sensitive Riparian Bryophytes

While no sensitive bryophytes were observed during the 2007 or 2008 surveys, several species are known to occur in the project area, including mingan moonwort, trianglelobe moonwort, Blandow's bog moss, western goblin, and Bolander's candle moss. Potential impacts such as crushing or damaging individuals could result from vegetation removal, pole removal, pole installation, and vehicular traffic within or near montane riparian habitat along the existing 625 Line, new 625 Line, and 650 Line. Individuals of the species, if present, would likely inhabit the banks of Griff Creek and/or several other small tributaries within the ROW. Other areas of suitable habitat exist along Middle Martis Creek beneath the 650 Line and within scattered riparian habitat along the existing 625 Line and new 625 Line. Individuals identified during preconstruction floristic surveys will be avoided where feasible. To further minimize impacts to these species, SPPCo intends to cut all trees and poles located near waterways by hand and fell all trees and poles away from waterways and drainages, wherever possible. In addition, a Stormwater Pollution Prevention Plan (SWPPP) will be developed for the project that will identify BMPs to be implemented to protect waterways and surrounding riparian habitats. Because no permanent impacts to riparian habitat are anticipated, impacts to these species are anticipated to be minimal. Additionally, because most operation and maintenance work will be conducted periodically and will not differ significantly from existing operation and maintenance activities, impacts to these species are anticipated to be minimal.

4.2.3 Constance's sedge

Impacts to Constance's sedge may arise from crushing during tree- or vegetation-clearing activities at lower elevations in the project area, primarily near Truckee along the 650 Line, Northstar Fold, and 132/650 Line Double-Circuit. Because this species is only known from one occurrence, there is only a moderate potential for this species to occur. Regardless, any individuals identified during preconstruction floristic surveys will be recorded and avoided, where feasible. If impacts to individuals are unavoidable, SPPCo will coordinate with CDFG and the USFS to determine an appropriate course of action prior to impacting individuals. No permanent impacts or impacts as a result of operation and maintenance activities are anticipated because these activities will not differ significantly from those undertaken on the existing lines.

4.2.4 Sensitive Fungi

There is a potential to impact two sensitive fungi species—*Cudonia monticola* and branched collybia—within the project area. Potential impacts to these species may arise only during heavy ground-disturbing activities within old-growth Sierra mixed conifer or red fir forests along the 650 Line, new 625 Line, and existing 625 Line. This type of disturbance could result from foundation auguring or grading activities. Because grading and foundation auguring will occur in scattered and isolated areas throughout the project area, minimal impacts to these species are anticipated. Disturbance to aboveground fruiting bodies, such as mushrooms, as a result of vehicle traffic, tree removal, or vegetation removal will likely have a negligible effect on the organisms, which are located belowground. Any sensitive fungi identified during preconstruction

floristic surveys will be flagged or fenced and avoided. If avoidance is not possible, SPPCo will consult with the USFS to determine an appropriate course of action. No permanent impacts to these species are anticipated as a result of construction. Because no regular ground-disturbing work is anticipated to be associated with operation and maintenance work, no impacts to these species are anticipated. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.5 Sensitive Orchids

There is potential to impact two sensitive orchids—clustered lady's slipper and mountain lady-slipper orchid—in the project area. Any impacts to these species will likely arise as a result of crushing during tree- or vegetation-clearing activities within Sierra mixed conifer or red fir habitat, primarily along the new 625 Line. Any individuals identified during preconstruction floristic surveys will be avoided through the assistance of on-site biological monitors. Should impacts be unavoidable, SPPCo will consult with the CDFG and/or USFS to determine an appropriate course of action. Because no orchids were observed during the 2007 or 2008 surveys, minimal temporary or permanent impacts to individuals are anticipated. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.6 Sensitive Fireweeds

Two sensitive fireweeds—Oregon fireweed and subalpine fireweed—have the potential to be impacted by the project. Individuals have the potential to be lost or disturbed during vegetation clearing within wet meadows or montane riparian habitat associated with seeps. Impacts could also result from felled trees or poles being skidded through these habitats. All individuals identified during preconstruction floristic surveys will be avoided to the extent possible by routing vehicle and equipment travel around riparian areas and using spur roads to approach work sites rather than a centerline travel route. Trees and poles will also be cut by hand and felled away from aquatic resources wherever possible. In addition, biological monitors will be present to help redirect work, should impacts be imminent. If impacts to individuals are unavoidable, SPPCo will consult with the CDFG and/or USFS to determine an appropriate course of action. No permanent impacts to these species are anticipated as a result of construction because wet meadow and montane riparian areas will not be significantly altered. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.7 Sensitive Daisies

Potential impacts to Nevada daisy and Northern Sierra daisy could arise during tree removal and vegetation clearing within Sierra mixed conifer forests, red fir forests, and Jeffrey pine forests as a result of crushing. Because individuals identified during the preconstruction floristic surveys have the potential to be lost or disturbed by construction activities, individuals will be avoided to the extent feasible and biological monitors will be present during work. Impacts to this species are expected to be minimal because biological monitors will be on site to help redirect work to minimize impacts to identified individuals. If impacts are anticipated, SPPCo will consult with the CDFG and/or USFS in order to implement any necessary permitting processes. Permanent

impacts to the species as a result of construction may result from a loss of suitable habitat along the new 625 Line ROW. The loss of suitable habitat along the new 625 Line will be partially offset by the decommissioning of the existing 625 Line, which is located in similar habitat. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.8 Donner Pass Buckwheat

Because this species is found in steep rocky outcrops and ridge tops, impacts to this species will be minimal, as these areas will be avoided wherever possible. Impacts could result from crushing or damage during vegetation clearing or grading work and individuals have the potential to be lost. Any individuals identified during preconstruction floristic surveys will be flagged or fenced and avoided, where feasible. Biological monitors will be present on site to aid in redirecting crews, should impacts be imminent. If impacts are anticipated, SPPCo will consult with the CDFG and/or USFS in order to implement any necessary permitting processes. No permanent impacts to this species are anticipated as a result of construction. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.9 Short-leaved Hulsea

Potential impacts to this species could arise as a result of crushing during tree removal and vegetation clearing within Sierra mixed conifer forest, red fir forest, or Jeffrey pine forest within the project area. Individuals identified during the preconstruction floristic surveys have the potential to be lost or disturbed by construction activity, and therefore, will be avoided to the extent feasible. However, impacts to this species are expected to be minimal because biological monitors will be present on site to aid in redirecting crews, should impacts be imminent. In addition, SPPCo will implement measures described in Section 5 – Applicant-Proposed Measures. Regardless, if impacts are anticipated, SPPCo will consult with the CDFG and/or USFS in order to implement any necessary permitting processes. Permanent impacts to the species from construction may result from a loss of suitable habitat along new 625 Line ROW or from the continued routine vegetation management required for the line. These impacts will be offset by the decommissioning of the existing 625 Line ROW, which is located in similar habitat. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.10 Aquatic Lichen

This species lives within or directly adjacent to cold mountain streams. BMPs outlined in the project's SWPPP will minimize impacts to water features, thus also minimizing impacts to any individuals within the project area. Additionally, SPPCo plans to minimize impacts to aquatic resources by cutting all trees and poles by hand and felling them away from these features. Any populations identified during preconstruction floristic surveys will be flagged, and exclusion barriers will be installed. If impacts cannot be avoided, SPPCo will consult with the USFS in order to develop an appropriate course of action. In addition, because this is an aquatic species, measures designed to protect water quality and riparian habitat will add a subsequent level of

protection to any individuals. No permanent impacts to this species are anticipated as a result of construction because no permanent impacts to perennial stream features are anticipated. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.11 Sensitive Lewisias

Potential impacts to Hutchinson's lewisia and Kellogg's lewisia could occur as a result of crushing or habitat loss during vegetation clearing and tree-removal activities within breaks in Sierra mixed conifer, Jeffrey pine, or red fir forests below 7,000 feet in elevation. These areas are scattered along the new and existing 625 lines and along the 650 Line north of Brockway Summit below 7,000 feet. Individuals identified during the preconstruction floristic surveys have the potential to be lost or disturbed by construction activity, and therefore, will be avoided to the extent feasible by establishing exclusion zones around identified populations. Impacts to this species are expected to be minimal because SPPCo will implement biological monitoring to ensure that a qualified biologist can help redirect crews, should impacts be imminent. Regardless, if impacts are anticipated, SPPCo will consult with the CDFG and/or USFS in order to implement any necessary permitting processes. No permanent impacts to these species are anticipated as a result of construction. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because they will not differ significantly from those currently employed along the existing alignments.

4.2.12 Quincy Lupine

Because this species prefers previously disturbed areas, individuals may be found within previously used access roads and work areas. SPPCo plans to utilize existing closed access roads, which may potentially disturb or destroy individuals by vehicle and equipment travel, vegetation clearing, or blading activities. Individuals found within planned work areas will be fenced or flagged, and avoided to the extent feasible. Biological monitors will be present to ensure that construction crews adhere to established exclusion zones. However, if impacts are anticipated, SPPCo will consult with the CDFG and/or USFS in order to implement any necessary permitting processes. Permanent impacts include a potential net increase in suitable habitat along disturbed roadcuts and access roads. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.13 Sensitive Wet Meadow Species

Work within large wet meadows, primarily in Martis Valley, has the potential to impact three sensitive plants—English sundew, three-ranked hump moss, and broad-nerved hump moss. Potential impacts to these species could occur during vegetation-clearing activities and vehicular travel within the wet meadow habitats of Martis Valley. Any individuals identified within planned construction areas have the potential to be lost or disturbed by the placement of wooden mats. Individuals identified within the ROW will be avoided to the extent feasible by flagging or fencing identified populations. Biological monitors will be on site to ensure that the construction crews adhere to exclusionary buffers. These species may be impacted by the installation or removal of poles. If impacts are anticipated, SPPCo will consult with the CDFG and USFS in order to obtain any necessary permits. In addition, SPPCo will implement biological monitoring

to further reduce the potential to impacts individuals during construction by ensuring that a qualified biologist is present to help redirect crews should impacts be imminent. Permanent impacts to these species are anticipated to be minimal, as the resulting loss of wet meadow habitat will only result from the placement of poles—approximately 0.001 acres. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.14 Close-throated Beardtongue

Potential impacts to this species could arise during tree removal or vegetation clearing within north-facing slopes below 6,500 feet. These areas primarily exist along the 650 Line from Martis Valley towards Brockway Summit. Any individuals identified within planned construction areas will be flagged of fenced and avoided to the extent feasible. Impacts to this species are expected to be minimal because biological monitors will be present on site to ensure that construction crews adhere to established exclusionary buffers. In addition, the biological monitors will help redirect work, should impacts be imminent. Regardless, if impacts are anticipated, SPPCo will consult with the CDFG and USFS in order to obtain any necessary permits. Permanent impacts to the species from construction may result from a loss of suitable habitat along new 625 Line ROW. These impacts will be offset by the decommissioning of the exiting 625 Line, as this line is located in similar habitat to that of the new 625 Line. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.15 Marsh Skullcap

Potential impacts to this species could occur during vegetation clearing or vehicular use in wet meadow habitat or montane riparian habitat along the new 625 Line, existing 625 Line, or 650 Line. SPPCo plans to minimize ground disturbance in wet meadow habitat by placing wooden mats along all vehicle and equipment access routes. Additionally, all poles and trees within montane riparian habitat will be cut by hand and felled away from aquatic resources. Any populations identified within the work area will be flagged and fenced and avoided where feasible. In addition, biological monitors will be present to ensure that construction crews adhere to established exclusion area. If impacts are anticipated, SPPCo will consult with the CDFG and USFS in order to obtain any necessary permits. Permanent construction impacts to this species are anticipated to be minimal due to the small amount of permanent riparian and wet meadow habitat loss—approximately 0.004 acres. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.2.16 Cusick's Speedwell

Potential impacts to this species could occur as a result of crushing or habitat loss during vegetation-clearing activities within meadow breaks or clearings in Sierra mixed conifer and red fir forest habitats along the new 625 Line and existing 625 Line. These impacts are anticipated to be minimal because this specific habitat—meadow forest breaks—is limited and scattered throughout the project area. In addition, individuals identified during preconstruction floristic surveys will be flagged and/or fenced and avoided. Biological monitors will be present during construction to ensure that construction crews adhere to established exclusion areas. If impacts

are unavoidable, SPPCo will consult with the CDFG and/or the USFS in order to obtain any necessary permits. Permanent impacts to this species are anticipated to be minimal as a result of construction due to the minimal amount of vegetation management required in meadows during operation. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal because the activities conducted will not differ significantly from those employed for the existing alignments.

4.3 IMPACTS TO SENSITIVE WILDLIFE

There are seven sensitive wildlife species that are assumed to be present in the project area, four sensitive wildlife species with a high potential to occur, and 15 sensitive species that have a moderate potential to occur in the project area. The primary construction-related impacts to sensitive species include a potential loss of individuals due to vegetation or tree removal, disruption to species behavior patterns, loss of suitable habitat, direct take due to vehicle or equipment strikes, and disturbance due to increased human presence and vehicular traffic in the area. Permanent impacts include a loss of suitable nesting and foraging habitat for birds, bats, and arboreal mammals due to the new permanent ROW. Impacts as a result of operation and maintenance include ongoing vegetation management within the ROWs, hazard tree removal, and the periodic presence of SPPCo personnel along the alignment. The following describes potential species-specific impacts as a result of the construction and operation of the project.

4.3.0 Sensitive Fish

Construction activities in the vicinity of Middle Martis Creek and Martis Creek have the potential to impact Lahontan cutthroat trout if trout are present or running. To minimize impacts resulting from the degradation of water quality or the disruption of water flow, SPPCo will implement the BMPs outlined in the project's SWPPP to prevent construction materials from entering waterways, fell all trees and poles away from stream banks, minimize vegetation clearing in riparian areas to only the areas that are required for construction, and limit vehicle and equipment usage within the stream channels and near stream banks. SPPCo will utilize existing bridges, where feasible, to cross these features to minimize the need to install temporary culverts. To protect water quality, SPPCo will limit concrete washout to designated washout stations or will require trucks to utilize washout-recycling systems. Additional impacts could arise from accidental contamination of aquatic features from hazardous materials spills or other sources. Groundwater within excavations will be pumped and allowed to disperse overland in order to prevent large amounts of sediment from entering waterways. All pump intakes will be fitted with screens in order to protect wildlife located within the excavation. With the implementation of these measures, impacts to Lahontan cutthroat trout are expected to be minimal. Because access will be routed around and all new poles will be placed outside of Martis Creek or Middle Martis Creek, temporary and permanent impacts to Lahontan cutthroat trout as a result of construction are anticipated to be minimal. Impacts as a result of operation and maintenance are anticipated to be minimal because they will not differ significantly from those currently employed for the existing alignments.

4.3.1 Sensitive Frogs

Sierra Nevada yellow-legged frog, northern leopard frog, and Pacific tree frog generally inhabit sunny riverbanks, ponds, and meadow streams. Direct take could occur from crushing by

equipment, vehicles, or felled trees or poles. Impacts could result from felled trees, poles, or equipment entering water features or surrounding habitat. Additional impacts could arise from accidental contamination of aquatic features from hazardous materials spills or other sources. To minimize impacts, SPPCo will minimize equipment usage near aquatic resources, route access roads around these features to the extent possible, and employ BMPs as outlined in the SWPPP, to prevent construction materials from entering or otherwise affecting waterways. To protect water quality, SPPCo will limit concrete washout to designated washout stations or will require trucks to utilize washout-recycling systems. Groundwater within excavations will be pumped and allowed to disperse overland in order to prevent large amounts of sediment from entering waterways. All dewatering intakes will be fitted with screens in order to prevent harm to individuals located within areas requiring dewatering. In addition, biological monitors will inspect all work areas, including excavations requiring dewatering, daily, prior to the start of work to ensure the absence of these sensitive species. Through the implementation of these measures, impacts to sensitive amphibians are expected to be minimal. If it is determined that impacts may occur to a sensitive species, SPPCo will contact the USFWS, CDFG, and/or USFS in order to obtain any necessary permits. Because no aquatic resources are anticipated to be permanently altered, no permanent impacts to sensitive aquatic species as a result of construction are anticipated. Impacts associated with operation and maintenance activities of the project could result from vehicle collisions with individuals located within access roads. However, these activities will not significantly differ from those currently being conducted on the existing lines.

4.3.2 Sensitive Songbirds

Yellow Warbler

Impacts to yellow warblers may occur as a result of collisions with construction vehicles and changed foraging, movement, or sheltering patterns caused by construction-related activities, including helicopter use. Individuals present along the new 625 Line, 650 Line, or existing 625 Line will likely relocate temporarily to avoid construction areas. Removal of any riparian vegetation, such as willow, alder, or dogwood, will result in a loss of suitable cover and nesting habitat. Permanent tree removal within planned construction areas will have a minimal impact on the species if conducted outside of the nesting season—April to August. If work occurs during the nesting season, nesting bird surveys will be conducted prior to the start of work to identify any active nests. If active nests are discovered in the project area, appropriate buffers will be determined in conjunction with the CDFG. Additionally, the project will not result in a significant loss of suitable habitat because vegetation treatment within riparian areas will typically not be required due to the shorter height of riparian vegetation. This will result in an overall minimal permanent impact. Impacts to the species as a result of operation and maintenance are anticipated to be minimal because vegetation management of willows, alders, and dogwood along the ROW is not anticipated in the same manner as conifer species, because these species rarely grow above the minimum clearance for the line—approximately 20 feet—and will not significantly differ from existing operation and maintenance activities.

Willow Flycatcher

Several willow flycatchers were observed in the willow-dominated montane riparian habitat around Middle Martis Creek and Martis Creek during the 2007 surveys. Suitable habitat in the project area will be largely avoided, as the 650 Line alignment only crosses these areas in a few

short, direct creek crossings of approximately 40 feet in length. Potential impacts to willow flycatchers as a result of the project include interruption of normal feeding and movement patterns due the presence of construction personnel, equipment, and helicopters. Additionally, work conducted during the breeding season (April to August) has the potential to limit acceptable breeding areas or to cause nest abandonment. Protocol-level surveys will be conducted prior to construction. If active nests are located or evidence of nesting is observed, SPPCo will establish buffer zones on a site-specific basis, as identified by a qualified biologist and approved by the USFS and CDFG. After nesting is complete and the young have fledged, construction activities may commence in these areas. In addition, biological monitors will be on site to minimize impacts to individuals outside of the breeding season by helping to redirect crews should impacts be imminent. Because there will be no significant loss of suitable habitat, no permanent impacts are anticipated. Additionally, impacts as a result of operation and maintenance are anticipated to be minimal, as crews will continue to access the line and conduct maintenance activities similarly to those currently being conducted.

4.3.3 Sensitive Woodpeckers

Black-Backed Woodpecker

Impacts to this species may potentially occur during vegetation-clearing activities, especially in areas along the new 625 Line that were subject to prescribed burns during the fall of 2008. These impacts could include a loss of suitable nesting habitat, especially if snags are removed from these areas to establish work areas, as well as direct take from vehicle or equipment collisions or vegetation removal. Construction activities, including helicopter work, have the potential to alter foraging or nesting behavior. Impacts will be minimized by conducting vegetation-clearing activities outside the breeding season—May to July—wherever possible. Nesting bird surveys will be conducted if tree removal will occur during the nesting season. If active nests are located or evidence of nesting is observed, SPPCo will establish buffer zones on a site-specific basis, as identified by a qualified biologist and approved by the USFS and CDFG. After nesting is complete and the young have fledged, construction activities may commence in these areas. In addition, biological monitors will be present during construction activities to help redirect crews should impacts to individuals or nest become imminent. Overall, impacts to this species are anticipated to be minimal, as the construction and operation and maintenance activities of the project will not cause large-scale fragmentation of suitable habitat.

Hairy Woodpecker

Impacts may potentially occur during vegetation-clearing activities, especially in old-growth Sierra mixed conifer and red fir forests. These impacts could include a loss of suitable nesting habitat, especially if snags are removed from these areas, as well as direct take as a result of vehicle or equipment collisions or vegetation removal. Construction activities, including helicopter work, have the potential to alter foraging or nesting behavior. Impacts will be minimized by conducting vegetation-clearing activities outside of the breeding season—May to July—wherever possible. Nesting bird surveys will be conducted if tree removal will occur during the nesting season. If active nests are located or evidence of nesting is observed, SPPCo will establish buffer zones on a site-specific basis, as identified by a qualified biologist and approved by the USFS and CDFG. After nesting is complete and the young have fledged, construction activities may commence in these areas. Biological monitors will be present during

construction activities to help redirect crews should impacts be imminent. Overall, permanent impacts to this species are anticipated to be minimal, as the project will not result cause large-scale fragmentation of suitable habitat. Impacts as a result of operation and maintenance are anticipated to be minimal, as they will not differ significantly from those currently used for the existing lines.

4.3.4 Sensitive Ground-Dwelling Birds

Construction activities, such as vegetation removal, disturbance from vehicles and equipment, or helicopter use, have the potential to cause temporary impacts to blue grouse and mountain quail. The primary impact will be the temporary loss of foraging habitat and refuge as most individuals will likely move away from active work areas during construction. Impacts to blue grouse and mountain quail may also occur as a result of collisions with construction vehicles. However, these impacts are expected to be minimal, as most individuals will likely temporarily relocate from active construction areas.

Because blue grouse and mountain quail prefer heavy brush and forest ecotones, preferable habitat likely exists beneath the existing 625 Line and 650 Line. Upon the completion of the project, the new 625 Line easement, which must remain in an herbaceous state, will provide additional habitat for ground-dwelling birds and result in a net increase of preferable habitat in the area. No additional permanent impacts as a result of construction are anticipated. Impacts as a result of operation and maintenance activities are anticipated to be minimal, as crews will only be periodically accessing the line and will be doing so at a similar rate and manner as they are currently.

4.3.5 Sensitive Raptors

Northern Goshawk

Northern goshawks are likely to be in the project area year-round and may be impacted by a temporary loss of foraging habitat or change in foraging patterns due to construction-related activities such as helicopter use. Construction-related impacts may result from increased vehicle use in the project area, primarily along access roads and Mount Watson Road. If construction activities occur during the nesting season—February 15 to September 15—protocol-level surveys will be conducted prior to any vegetation management activities. No work will occur within 0.25 mile of any identified nests or within 0.25 mile of designated PACs in which no nest is found during the breeding season. In addition, helicopter use will be evaluated near active nests to determine whether flight paths should be rerouted. Through the implementation of limited construction windows and protocol-level surveys, SPPCo will be able to reduce the potential to impact individuals as well as specifically identify additional areas to apply more stringent restrictions, thereby reducing impacts. Additionally, temporary impacts to specific areas will be short-term as construction will constantly be moving along the ROW. Permanent impacts include a loss of suitable nesting habitat along the new 625 Line to establish and maintain a new permanent easement. However, over time, the abandoned ROW along the existing 625 Line will become suitable nesting habitat. Until that time, the ROW will serve as suitable foraging habitat for small prey that tend to prefer habitat dominated by herbaceous shrubs. Impacts resulting from operation and maintenance activities of the project are anticipated

to be minimal, as the activities will not significantly differ from those previously utilized for the existing lines.

California Spotted Owl

California spotted owls are year-round residents and will likely be present during all stages of the project. The project passes through one USFS-designated PAC, two HRCAs, and is adjacent to one PAC and one HRCA. Because vegetation and tree removal is required within these areas, protocol-level surveys will be conducted throughout suitable habitat and previously designated PACs and HRCAs along the existing 625 Line, new 625 Line, and 650 Line in order to locate all nests prior to the start of vegetation-clearing activities. No work will be allowed to occur within 0.25 mile of any identified nests during the breeding season (March through August). In addition, helicopter use will be evaluated near active nests to determine whether flight paths should be rerouted.

Outside of the breeding season, construction-related noise and vehicle traffic have the potential to impact owls near the project area. Additional impacts outside of the nesting season include collisions with vehicles and changes to feeding, movement, and sheltering patterns due to increased noise and personnel in the area. Permanent impacts include the removal of approximately 30.4 acres of vegetation within HRCAs, approximately 8.6 acres of which are located within associated PACs. Additionally, potential nesting habitat (e.g., old-growth trees or snags) may be permanently reduced if old-growth trees or snags are removed from the project area for hazard tree removal. Permanent impacts to California spotted owl could result from a loss of suitable nesting or foraging habitat along the new 625 Line ROW and along the new access roads. SPPCo will work with the USFS to mitigate the loss of suitable habitat within designated PACs and/or HRCAs. The periodic presence of SPPCo personnel and equipment as a result of operation and maintenance may temporarily disrupt normal behavior; however, these types of impacts are not anticipated to greatly differ from those currently imposed by regular operation and maintenance work of the existing lines.

Bald Eagle and Osprey

Impacts to ospreys or bald eagles may occur as a result of tree removal near Lake Tahoe or by changed movement or sheltering patterns caused by construction-related activities such as helicopter use. Individuals present in the project area will likely relocate temporarily to avoid construction areas. Ospreys may potentially nest on existing transmission line poles throughout the project area, though none were observed during the 2007 or 2008 surveys. Nesting ospreys will be impacted if chicks, eggs, or nests are removed from the existing poles or disturbed by construction. Nesting bird surveys will be conducted if tree removal will occur during the nesting season. If active nests are located or evidence of nesting is observed, SPPCo will establish buffer zones on a site-specific basis, as identified by a qualified biologist and approved by the USFS and CDFG. After nesting is complete and the young have fledged, construction activities may commence in these areas. Currently, no known bald eagle or osprey nests are believed to be located in the project area. Because of this, no impacts are anticipated from the project. Permanent impacts from construction may result from the loss of suitable nesting habitat along the new 625 Line ROW. These impacts will be offset by the decommissioning of the existing 625 Line, though it may take several decades for the ROW to reach the full maturity of the surrounding stands adjacent to the entire alignment. Additional impacts as a result of operation

and maintenance of the project could result from collisions with vehicles and disturbance to normal behavior, though these impacts are anticipated to be minimal and will not differ from those currently imposed by operation and maintenance activities for the existing lines.

Great Gray Owl

Impacts to great gray owl may potentially occur during vegetation-clearing activities, especially in areas along the edge of alpine meadows bordering coniferous forests. These impacts could result in a loss of suitable habitat, especially if snags are removed from these areas. Additional impacts could include disturbance to normal feeding, movement, or nesting behaviors as a result of increased construction noise, human presence, and helicopter use. Impacts will be minimized by conducting vegetation clearing outside of the nesting season—March to August. If work must occur during the breeding season, nesting bird surveys will be conducted in order to determine if nesting owls are present. Because the great gray owl is very rare in the Lake Tahoe Basin, impacts as a result of construction or operation and maintenance activities are not anticipated.

4.3.6 Sensitive Bats

Impacts to sensitive bats could potentially occur if roosting areas are disturbed during vegetation-clearing activities or construction activities. For the pallid bat, these roosting areas include rocky outcrops, caves, snags, and anthropogenic structures, and for the western red bat, these areas consist of large dense trees. Because no structures will be removed and rocky outcrops will be largely avoided, impacts to the pallid bat are anticipated to minimal. Impacts to roosting western red bat may occur during tree-removal activities. Bat surveys will be conducted in March or April, prior to construction, in order to identify potential roosting sites, which may be impacted during tree removal. In the instance that a maternity roosting site is discovered, SPPCo will consult with the CDFG and USFS in order to establish an appropriate exclusionary buffer. If a non-maternity roosting site is discovered, all bats will be passively removed using one-way doors or similar methods prior to work being conducted in the area. Passive exclusion may be utilized on maternity roosting sites only after it has been confirmed by a qualified biologist that all young are volant. Permanent impacts may result from a loss of suitable roosting habitat along the new 625 Line. These impacts may be offset by the decommissioning of the existing 625 Line, which contains an approximately equal amount of habitat, though it may take several decades for the ROW to match the maturity of the adjacent habitat. Because bats are nocturnal, impacts to normal behavior are expected to be minimal as a result of operation or maintenance activities.

4.3.7 Sensitive Herbivorous Mammals

Mule Deer

Mule deer are highly mobile ungulates and are likely present in all areas of the project. Construction-related activities have the potential to cause mule deer to move out of the areas immediately surrounding work areas. This will result in temporary impacts to foraging, movement, fawning, or sheltering behavior. There is also a potential for direct take as a result of vehicle or equipment strikes. Because mule deer are highly mobile and adaptive, construction is anticipated to have a minimal impact. Construction of the project will not create any temporary impediments to movement that would redirect migration during non-working hours. In addition, work in Martis Valley—along the 650 Line where historic migratory corridors exist—will not

span the entire area, allowing deer to move around areas of construction through nearby low sage and Jeffrey pine habitat. A known critical fawning area identified in the Loyalton-Truckee Deer Herd Management Plan is crossed by approximately 0.4 mile of the existing 625 Line. In addition, the new 625 Line is located approximately 0.25 mile south and the Northstar Fold is approximately 1 mile northeast of the area. Impacts to fawning as a result of the Northstar Fold are not anticipated, as the line is located within an area of the Northstar-at-Tahoe Resort with high human disturbance and presence. Temporary impacts as a result of construction-related noise from helicopters and equipment along the existing and new 625 Lines have the potential disrupt fawning activities, though it can be assumed that deer will simply avoid these areas resulting in a less than significant impact. No permanent impacts are anticipated as the lines in these areas are pre-existing, and thus, it can be assumed that deer are accustomed to the presence of the lines. Because operation and maintenance work is not anticipated to differ significantly from that occurring along the existing lines, no impacts are anticipated.

Sierra Nevada Mountain Beaver

Because Sierra Nevada mountain beavers generally dig large burrow complexes hidden beneath dense brush, primary construction-related impacts will result from vegetation mowing, grading, and foundation auguring. Vegetation mowing may destroy burrows due to subsidence, while grading and foundation auguring may directly impact burrows below ground. Preconstruction surveys conducted prior to the start of work will identify any burrows located along the project ROW, access roads, or work areas. Any identified burrows will be inspected and the activity status and any inhabitants will be noted. Any burrows determined to be potentially under current use by Sierra Nevada mountain beavers will be flagged and/or fenced and avoided where feasible. Biological monitors will be present during construction activities to ensure that all flagged burrows and exclusion areas are avoided by construction crews. If impacts to active burrows are unavoidable, SPPCo will consult with the CDFG and the USFS in order to determine an appropriate course of action. Impacts to this species are anticipated to be minimal through the implementation of preconstruction surveys and biological monitoring. No permanent impacts or impacts as a result of operation and maintenance activities are anticipated as they will not significantly differ from current operation and maintenance activities.

Rabbits and Hares

Impacts to Sierra Nevada snowshoe hare and western white-tailed jackrabbit may occur as a result of collisions with construction vehicles and changed foraging, movement, or sheltering patterns caused by construction-related disturbances, as most individuals will likely relocate temporarily. On-site biological monitoring during vegetation-clearing activities will help to ensure that no individuals are injured or killed are minimized to these species. Monitors will accomplish this by inspecting work areas ahead of crews prior to work. This will include identifying burrows flagged for avoidance during the preconstruction surveys. If it determined that impacts to either species are unavoidable, SPPCo will consult with the CDFG in order to determine any necessary permit requirements. Because Sierra Nevada snowshoe hares prefer thickets of young conifers, natural revegetation of the existing 625 Line ROW will provide new habitat for several years before the vegetation matures. Additionally, tree removal along the new 625 Line will promote the growth of herbaceous plants, further increasing suitable habitat in the project area for both species. Permanent impacts to these species are anticipated to be minimal as the project does not represent a significant loss of suitable habitat. Additionally, regular

operation and maintenance activities are not anticipated to impact these species, as they will not significantly differ from current operation and maintenance activities.

Northern Flying Squirrel

Impacts to the Northern flying squirrel may occur during tree-removal activities, especially along the new 625 Line. These impacts could include a loss of suitable habitat or an interruption in normal behaviors due to equipment noise and helicopter use. In order to minimize these potential impacts, biological monitors will be on site during all tree-removal activities in order to inspect work areas ahead of crews and to identify areas flagged during the preconstruction surveys. Additional impacts include vehicle collision, though this impact is unlikely because this species is primarily arboreal. Additionally, individuals will likely move away from construction areas. Because of this, construction-related impacts are anticipated to be minimal. Permanent impacts will result from a loss of suitable habitat along the new 625 Line due to tree removal required along the ROW. These impacts may be offset by the decommissioning of the existing 625 Line, which will contain an approximately equivalent amount of habitat, though it may take several decades for the ROW to match the adjacent habitat in maturity. No impacts are anticipated as a result of operation and maintenance, as operation and maintenance activities will not significantly differ from those currently being conducted.

4.3.8 Sensitive Forest Carnivores

American Pine Marten

The greatest potential impacts to American pine marten are likely to occur during tree-removal activities. Because this is an arboreal species, individuals have the potential to be injured or killed during the tree removal process. In order to minimize these impacts, biological monitors will be on site during all tree-removal activities to inspect the work areas ahead of crews and to identify den sites flagged during preconstruction surveys. Additional potential construction-related impacts include collisions with construction vehicles and disturbance to normal behavior from construction noise, equipment, and helicopter use. Preconstruction surveys will be conducted in order to identify any dens within the project area. Because no known den sites exist in the project area, impacts are anticipated to be minimal. Permanent impacts could result from a loss of suitable denning and foraging habitat along the new 625 Line should they be identified during the preconstruction surveys. These impacts may be offset by the decommissioning of the existing 625 Line, which overtime will mature into similar habitat to that being lost. No new impacts as a result of operation and maintenance are anticipated, as these activities will not significantly differ from current operation and maintenance activities on the existing lines.

California Wolverine

Impacts to California wolverine may occur as a result of collisions with construction vehicles and changed foraging, movement, or sheltering patterns caused by construction-related disturbances and helicopter use. Additionally, similar changes to prey patterns may further impact feeding behavior. Preconstruction surveys will be conducted in order to identify any potential wolverine burrows in the project area. All burrows determined to be active potential wolverine burrows will be flagged and avoided. If an active burrow is unavoidable, SPPCo will employ den-dusting or scoping to determine the species and reproductive status of the animal. If the burrow is determined to be active and does not contain young, SPPCo will excavate the

burrow by hand or block the entrance to prevent re-entry until after the completion of work. If the species is determined to be raising young, SPPCo will establish a 200-foot exclusionary buffer surrounding the burrow until it is determined that the young have left the den. After it is determined that young have left the den, SPPCo will commence hand excavation. SPPCo will contact the CDFG prior to any den-dusting, scoping, or burrow excavation.. Biological monitoring will be conducted during construction in order to help redirect work when construction approaches a burrow identified during the preconstruction surveys or in the event that individuals may enter the work area. Impacts are expected to be minimal during construction, as most individuals will likely relocate temporarily or resort to primarily nocturnal behavior. Additionally, wolverines are reclusive and extremely rare in the area, further lessening their potential to be present in the project area. Because wolverines utilize a variety of habitats, permanent vegetation treatments do not represent a significant loss of suitable habitat in the area. No new impacts as a result of operation and maintenance are anticipated as they will not significantly differ from those incurred by current operation and maintenance activities for the existing lines.

Sierra Nevada Red Fox

Impacts may potentially occur during vegetation-clearing activities, especially along ecotones between alpine meadows and coniferous forests. These impacts could include a loss of suitable hunting and denning habitat. Additional impacts may include vehicle collisions and disturbance to normal hunting or movement behavior, as well as changes to movement behavior of their associated prey. Preconstruction surveys will be conducted and all potential Sierra Nevada red fox burrows will be flagged and avoided where feasible. If impacts to a potentially active burrow are unavoidable, SPPCo will employ den-dusting or scoping to determine the species and reproductive status of the animal. If the burrow is determined to be active and does not contain young, SPPCo will excavate the burrow by hand or block the entrance to prevent re-entry until after the completion of work. If the species is determined to be raising young, SPPCo will establish a 200-foot exclusionary buffer surrounding the burrow until it is determined that the young have left the den. After it is determined that the young have left the den, SPPCo will commence hand excavation. SPPCo will contact the CDFG prior to any den-dusting, scoping, or burrow excavation. Additionally, biological monitors will be on site during all vegetation treatments and construction activities in order to survey ahead of the work crews and to identify dens flagged during the preconstruction survey. The biological monitor will also be able to aid in redirecting work, should an individual enter the work site. Permanent impacts are anticipated to be minimal, as the project does not represent a significant loss of suitable hunting or denning habitat. In addition, because SPPCo will utilize access roads periodically, operation and maintenance activities are anticipated to have a minimal effect and will not significantly differ from current conditions.

4.4 IMPACTS TO AQUATIC RESOURCES

Construction-related impacts to aquatic resources could arise from several different factors including channel diversion; contamination from construction chemicals, fuels, or other hazardous materials; or increased erosion leading to increased sedimentation. SPPCo aims to minimize impacts to aquatic resources by implementing a SWPPP to prevent the introduction of construction materials into such features. The measures to be implemented include, but are not

limited to, installing silt fencing between construction areas and aquatic resources, protecting material stockpiles from soil and wind erosion, and installing secondary containment around hazardous liquids. All refueling will be conducted within designated areas at least 100 feet from any waterways. Any work requiring access within an intermittent drainage feature will be conducted either during the dry season when no water is present or while snow is still present on the ground. Impacts to drainages and other features will be avoided if possible, by routing access roads around aquatic resources, or using spur roads as opposed to a centerline travel route through these features. Poles will be located away from features if possible. It is anticipated that approximately 0.001 acre of wetland may be impacted through the placement of new poles. In addition, operation and maintenance activities will have a minimal effect on aquatic resources because they will not significantly differ from activities currently being performed on the existing lines.

4.4.0 Truckee River

Work is planned to occur along the Truckee River in two locations—in Tahoe City near the Tahoe City Substation and in Truckee where the 132 Line spans the river. In Tahoe City, crews will need to access the bank of the Truckee River in order to remove poles along the existing 625 Line. In order to minimize pole removal impacts, work will be conducted during low-flow conditions when the work areas will be driest. Additionally, poles will be cut by hand and felled away from the river. SPPCo will attempt to construct poles for the new 625 Line further away from the river, though still below the ordinary high water mark. SPPCo will obtain all necessary permits from the USACE, North Lahontan Regional Water Quality Control Board (RWQCB), and/or the CDFG. No impacts to the Truckee River are anticipated during construction along the 132/650 Line Double-Circuit because the poles are not located near the riverbank. Crews will be pulling conductor across the Truckee River; no access within the river is anticipated.

4.4.1 Griff Creek and Trout Creek

Several smaller creeks traverse the project area, including Griff Creek in Kings Beach near the Kings Beach Substation, Trout Creek near Truckee, and several smaller tributaries. Where these features are located near pole locations, SPPCo will conduct all necessary work during low-flow conditions whenever possible. In addition, poles and trees will be felled away from stream channels, equipment usage will be minimized near stream banks, and all temporary disturbance areas will be restored once construction is complete. Equipment operation is not anticipated to be required within the actual stream channels. If it is determined that work must be conducted within the bed or bank of Griff Creek or if riparian vegetation around these features must be cleared, SPPCo will obtain a Streambed Alteration Agreement from the CDFG prior to commencing work. Additionally, SPPCo will consult with the USACE or RWQCB if work is to occur within these features, and appropriate permits and certifications will be obtained. As a result of these measures and the BMPs that will be implemented as part of the SWPPP, impacts to aquatic features are expected to be minimal.

4.4.2 Martis Creek and Middle Martis Creek

The 650 Line crosses two perennial creeks—Middle Martis Creek and Martis Creek. Middle Martis Creek runs parallel to SR 267 and the 650 Line before flowing into Martis Valley. Martis Creek is crossed by the 650 Line in Martis Valley near Pole 1006 and approximate MP 1.0.

While working in Martis Valley near Martis Creek and other small tributaries that feed it, SPPCo will lay wooden mats down along vehicle and equipment access routes in order to minimize rutting and other damage from vehicles and equipment. Additionally, work will be conducted in the fall during low-flow conditions.

To minimize impacts to Middle Martis Creek, SPPCo plans to stage equipment away from the creek on stable ground or along SR 267. Temporary impacts associated with the removal of the existing poles is anticipated to be minimal as these poles will be cut by hand and felled away from the creek. The underground section of the pole will be left in place in order to eliminate the potential disturbance caused by excavating it. Additionally, SPPCo plans to relocate approximately four 650 Line poles that currently lie within or directly adjacent to Middle Martis Creek, to above the ordinary high water mark to avoid future impacts to this waterbody.

If work is to occur within Martis Creek or Middle Martis Creek, SPPCo will consult with the CDFG, USACE, and/or RWQCB in order to obtain any necessary permits prior to the start of work.

4.4.3 Other Aquatic Features

Several other small perennial drainages or wet meadows exist throughout the project area. These features will be avoided to the extent feasible and restored if necessary once construction is complete. Work will be conducted during low flow or dry periods if feasible. If unfeasible, wooden mats will be installed as needed along vehicle access routes to minimize rutting and other damage that might result from vehicle and equipment travel.

4.4.4 Dewatering

In order to minimize the amount of dewatering needed, SPPCo will conduct all work in these areas during the season corresponding to the lowest water levels at each site. If possible, SPPCo will discharge all water from excavations overland to allow any sediment to settle before entering waterways. In areas where overland discharge is not possible, alternatives will be determined based on the specific work area. SPPCo will obtain a National Pollutant Discharge Elimination System (NPDES) General Permit for Limited Threat Discharges to Surface Waters from the RWQCB prior to conducting dewatering activities.

5 – APPLICANT-PROPOSED MEASURES

Implementation of the following APMs will reduce project-related impacts to biological resources and hydrological resources:

5.0 BIOLOGICAL RESOURCES

- APM-BIO-01: Prior to construction, all SPPCo, contractor, and subcontractor project personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including appropriate wildlife avoidance measures; impact minimization procedures; the importance of sensitive resources, and the purpose and methods for

protecting such resources. Among other topics, the training will also include a discussion of BMPs to reduce the potential for erosion and sedimentation during construction.

- APM-BIO-02: SPPCo will conduct a complete floristic survey, including surveys for all rare plants, fungi, and invasive weeds, 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. Populations of rare plants or fungi 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.

- APM-BIO-03: As stated in the USFS Manual 2080 Noxious Weed Management, SPPCo will complete a noxious weed risk assessment for all areas to be temporarily impacted, including the ROW, access roads that require improvement, staging areas, and pull sites,.

- APM-BIO-04: Before construction activities begin, SPPCo will employ conventional or mechanical methods to remove noxious weed species where appropriate, depending on the time of year and ecology of the weed species. Herbicides may be used in project areas outside of the Lake Tahoe Basin. In areas where treatment is not feasible, SPPCo will clearly flag or fence noxious weed areas in order to clearly delineate work exclusion.

- APM-BIO-05: Equipment will arrive at the project area clean and weed-free. Equipment will be inspected by the on-site environmental monitor prior to use in the project area to ensure that no mud or other signs that weed seeds could be present exist. If the equipment is not clean, the monitor will deny entry to the ROW and other work areas.

- APM-BIO-06: Vehicles and equipment will be cleaned using high-pressure water or air at designated weed-cleaning stations after exiting a weed-infested area, as specified by the Noxious Weed Risk Assessment. Cleaning stations will be designated by a botanist or noxious weed specialist and located away from aquatic resources.

- APM-BIO-07: Only certified weed-free construction materials, such as sand, straw, or fill, will be used throughout the project.

- APM-BIO-08: If designated weed-infested areas are unavoidable, the plants may be cut and disposed of in a landfill in sealed bags or disposed of or destroyed in another manner acceptable to the USFS, TRPA, or other agency as appropriate. Layers of mulch, degradable geotextiles, or similar materials may be placed over the infestation area to minimize the spread of seeds and plant materials by equipment and vehicles during construction. These materials will be secured so they are not blown or washed away.

- APM-BIO-09: If possible, exclusion zones will be established around any identified rare plants. In the event that a rare plant may be impacted by construction activities, all attempts to relocate individuals will be made. If possible, SPPCo will collect any mature seeds from the relocated plants and store them at an appropriate native plant nursery or comparable facility. Upon the completion of work, SPPCo will redistribute the seeds within the approximate original location of the population. SPPCo will also monitor and

document the success rate of the transplanted individuals until the arrival of the first snow. In instances where take or relocation may occur, appropriate notifications will be made to the CPUC, CDFG, TRPA, and/or USFS, as applicable depending on the species listing status. SPPCo will attempt to relocate all Plumas ivesia individuals along the 650 Line to avoid take. If relocation is not possible or unsuccessful, SPPCo will consult with the CDFG in order to establish appropriate mitigation measures.

- APM-BIO-10: Any rare plants identified during the floristic surveys will be documented, photographed, and submitted to the CNDDB.

- APM-BIO-11: SPPCo will conduct protocol-level surveys prior to construction to determine whether northern goshawk or California spotted owl are nesting in work areas within suitable habitat along the new 625 Line, existing 625 Line, and 650 Line, including USFS-designated PACs or HRCAs.

- APM-BIO-12: No vegetation management or treatment will occur within 0.25 mile of active California spotted owl nests during the breeding season (March 1 to August 31) or within 0.25 mile of active northern goshawk nests during the breeding season (February 15 to September 15), unless surveys confirm that the birds are not nesting. A qualified biologist will have the ability to amend the start and end dates of these breeding seasons with concurrence from appropriate agencies if it can be determined that breeding has not started or that fledglings have left the nest. If the location of a nest site within a PAC is unknown, either surveys are required to locate the nest stand and determine nesting status or, as an alternative to surveys, an activity buffer will be applied to the 0.25-mile area surrounding the PAC. The activity buffer may be waived for vegetation treatments of limited scope and duration, when a biological evaluation determines that such projects are unlikely to result in breeding disturbance considering their intensity, duration, timing, and specific location. Where a biological evaluation concludes that a nest site will be shielded from planned activities by topographic features that will minimize disturbance, the buffer distance may be modified in coordination with the USFS.

- APM-BIO-13: To offset permanent removal of old-growth trees within designated PACs and HRCAs, SPPCo will conduct protocol-level surveys in an area of similar size to the area impacted by permanent old-growth tree removal within PACs and HRCAs in support of the USFS's goal of locating the best suitable habitat in the area for the establishment of additional California spotted owl and northern goshawk PACs and HRCAs. SPPCo will coordinate with the USFS prior to conducting these surveys to identify areas of interest and existing surveys in these areas, if any. As an alternative, SPPCo proposes to provide in-lieu fee compensation in the amount of 500 dollars per acre of lost HRCA or PAC habitat to be used to support further survey efforts, habitat restoration, or habitat protection.

- APM-BIO-14: SPPCo will conduct protocol-level surveys for willow flycatcher along the 650 Line between MP 0.2 and MP 0.3, MP 1.1 to MP 1.2, and MP 1.5 to MP 1.6 due to sightings during the 2007 field surveys and recent CNDDB records. If nesting willow flycatchers are discovered within the survey area, 250-foot exclusionary buffer zones will be established to exclude work during the breeding season—June through August—or

until young have fledged the nest. If an area is given clearance to proceed with construction and nesting activities subsequently occur, it will be assumed that the nesting pair is acclimated to the ongoing disturbance of construction. If circumstances exist such that future activities may result in the abandonment or failure of the nest, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by SPPCo, in coordination with the CDFG, to protect nesting birds.

- APM-BIO-15: Preconstruction biological surveys will be conducted no more than 30 days prior to construction activities to identify biological resources, including burrows, which could be impacted by construction activities. All burrows will be inspected for use by sensitive mammals, and buffers may be established based on burrow occupation. If an area is given clearance to proceed with construction and burrowing activities subsequently occur, it will be assumed that the individuals are acclimated to the ongoing disturbance of construction. If circumstances exist such that future activities may result in the abandonment of the burrow, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by SPPCo, in coordination with CDFG and, if necessary, the USFWS.

- APM-BIO-16: If a potentially active sensitive mammal burrow is unavoidable, SPPCo will employ den-dusting or scoping to determine the species and reproductive status of the animal. If the burrow is determined to be active and does not contain young, SPPCo will excavate the burrow by hand or block the entrance to prevent re-entry until after the completion of work. If the animal is determined to be raising young, SPPCo will establish a 200-foot exclusionary buffer surrounding the burrow until it is determined that the young have left the den. After it is determined that young have left the den, SPPCo will commence hand excavation. SPPCo will contact CDFG and/or USFS prior to any den-dusting, scoping, or burrow excavation.

- APM-BIO-17: Concurrent with the preconstruction surveys described in APM-BIO-15, surveys will be conducted for sensitive amphibians at aquatic habitat crossed by the project. These features will be evaluated for sensitive amphibians, including eggs or juveniles. If adults, juveniles, or eggs of sensitive amphibians are discovered, a permitted specialist will relocate the individuals to suitable habitat outside of the construction area. If sensitive amphibians are discovered in the construction area after the start of work, the environmental monitor will allow the individuals to leave under their own volition. As an alternative, an agency-approved biologist may relocate the individuals from the project area to similar, suitable habitat. SPPCo will coordinate with the CDFG, USFWS, and/or USFS prior to relocating any individuals.

- APM-BIO-18: Nesting bird surveys will be conducted no more than 30 days prior to construction activities if work is scheduled to occur during the breeding season—February to September. These surveys may utilize helicopters if it is deemed beneficial to the results. Exclusionary buffer zones (to be determined based on species-specific needs) will be created surrounding any active nests along the project alignment. Buffers will be established by a qualified biologist prior to the start of construction. If an area is given clearance to proceed with construction and nesting subsequently occurs, it will be

assumed that the individuals are acclimated to the ongoing disturbance of construction. If circumstances exist such that future activities may result in the abandonment or failure of the nest, as determined by a qualified biologist, an appropriate exclusionary buffer will be established by SPPCo in coordination with CDFG.

- APM-BIO-19: Transmission poles will be constructed to conform to the practices described in the Suggested Practices for Avian Protection on Power Lines Manual developed by the Avian Power Line Interaction Committee.

- APM-BIO-20: Bat surveys will be conducted in the spring, no more than 30 days prior to the start of construction, in order to identify active bat roosting sites, such as snags or dense trees. All potential roosting sites will be surveyed by a qualified biologist in order to determine usage. All non-active roosting sites will be trimmed within 30 days of the surveys in order to prevent new roosts from being established. If it is determined that an active roosting site will be impacted, SPPCo will consult with the CDFG and/or USFS in order to acquire appropriate authorizations to remove the roosting sites. All active non-maternity roosting sites will be fitted with passive exclusion devices, such as one-way doors, and all bats will be allowed to leave voluntarily. Once it is confirmed that all bats have left the roost, crews will be allowed to continue work in the area. If a maternity roosting site is discovered, SPPCo will consult with the CDFG and/or USFS in order to establish appropriate exclusionary buffers until all young are determined to be volant by a qualified biologist. Once it is determined that all young are volant, passive exclusion devices will be installed and all bats will be allowed to leave voluntarily. Once it is determined by a qualified biologist that all bats have left the roost, crews will be allowed to work within the buffer zone.

- APM-BIO-21: Environmental monitors will be present with each crew during all vegetation-removal activities to 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 ensure the protection of resources and compliance with all permits.

- APM-BIO-22: An environmental monitor will inspect all pole excavations and areas of active construction on a daily basis for trapped wildlife. Wildlife found in active construction areas will be allowed to passively leave the site. If necessary, wildlife may be relocated by a qualified biologist. The construction foreman will notify the environmental monitor immediately if any wildlife enters or becomes trapped in the work area.

- 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. The topsoil will then be replaced to the approximate location of its removal after project construction has been completed to facilitate revegation of disturbed areas. Topsoil will not be salvaged where permanent facilities are planned or where operation and maintenance activities preclude the establishment of vegetation.

- APM-BIO-24: If noxious weed populations are later identified throughout the course of construction in staging areas, parking areas, or access routes, they will be treated according to APM-BIO-04.

- APM-BIO-25: If the environmental monitor determines that construction is occurring in an active mule deer fawning area, they will have the authority to temporarily halt or relocate work until the fawns move out of the project area. In addition, helicopter flight paths may be rerouted to avoid these areas if it is determined that helicopter use may impact fawns.

- 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 the CPUC will be obtained prior to the commencement of activities. USFS approval will also be obtained in additional work areas are required on forest lands.

- APM-BIO-27: Helicopters will be used, where necessary, to avoid impacts to waterways or in areas of rough terrain. Appropriate measures, including regular watering, will be implemented at landing zones in order to control dust. Helicopter use within HRCAs and PACs will be prohibited if vegetation treatment restrictions are concurrently in place.

- APM-BIO-28: SPPCo will minimize vegetation and tree removal to only the areas necessary for construction, especially in riparian areas.

- APM-BIO-29: Skidding of trees will be avoided in waters of the U.S., including wetlands, unless the channel is dry or lined with snow. In addition, an environmental monitor will be present, as described in APM-HYD-05.

- APM-BIO-30: 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. Disturbed wetland areas will be restored to preconstruction conditions and seeded with a native annual species to stabilize the soils and minimize the introduction of noxious weeds, as specified by the USACE and RWQCB. In accordance with the USACE “no net loss” policy, all permanent wetland impacts will be mitigated at a minimum of a 1:1 ratio. This mitigation will come in the form of either contributions to a USACE-approved wetland mitigation bank or through the development of a Compensatory Mitigation and Monitoring Plan aimed at creating or restoring wetlands in the surrounding area.

- APM-BIO-31: Visibility permitting, all excavations will be inspected for sensitive aquatic wildlife prior to dewatering. Wildlife found in excavations will be allowed to leave passively or will be relocated by a qualified biologist.

- APM-BIO-32: All dewatering pump intakes will be fitted with filter screening to prevent impacts to aquatic wildlife that may accidentally enter excavations.

- APM-BIO-33: All trash and food will be removed from the site at the end of each workday in order to deter wildlife from entering the site.

- APM-BIO-34: No pets or firearms will be allowed in the project area.

- 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, SPPCo will develop a Restoration Plan that will address final clean-up, stabilization, and revegetation procedures for areas disturbed by the project. On USFS land, SPPCo will coordinate with the USFS to determine an appropriate seed mix. On private land, SPPCo will coordinate with the landowner and/or provide the landowner with a suggested seed mix based on agency consultation. The plan will include approved seed mixes, application rates, and application methods. If broadcast seeding is determined to be the most feasible application method, seeding rates will be doubled and the seeding method rationale will be explained. The plan will also include long-term erosion and sediment control measures, slope stabilization, and monitoring procedures.

- APM-BIO-37: SPPCo will offset the permanent loss of trees along the new 625 Line ROW by replanting the existing 625 Line ROW with mixed conifer species similar the surrounding area at a ratio of between 250 and 435 trees per acre. The density of planting will be dependent on surrounding habitat characteristics, including slope, aspect, soil type, vegetation, and elevation. SPPCo will also employ a certified arborist to oversee all replanting activities.

5.1 HYDROLOGY AND WATER QUALITY

- APM-HYD-01: All refueling will be conducted at least 100 feet away from wetlands, waterways, and other aquatic features. If refueling within 100 feet of a waterway is unavoidable, SPPCo will ensure that spill kits are on site, use secondary containment to control accidental spills, and notify an environmental monitor prior to fueling. Environmental monitors will regularly inspect refueling areas in order to ensure that proper measures are being implemented in accordance with the project's SWPPP and SPCC Plan.

- APM-HYD-02: All concrete washouts will be conducted either into excavations where the concrete was poured, within designated concrete washout stations, or will be captured using a washout-recycling system. Crews will not be allowed to dispose of concrete directly onto the ground.

- APM-HYD-03: Where feasible, all stormwater or groundwater within excavations will be discharged overland into well-vegetated areas to promote the settling of sediment.

- APM-HYD-04: When working near aquatic resources, poles and trees will be cut by hand and felled away from such features. The skidding of poles and trees through aquatic resources will be avoided to the extent feasible. Vehicles and equipment will be staged at

least 100 feet away from these features, along designated access routes or within staging areas. In instances where aquatic features are unavoidable, no trees or poles will be skidded through aquatic features unless they are dry or lined with snow at the time of crossing. If skidding occurs in dry or snow-covered aquatic features, SPPCo will restore the banks and channels to preconstruction conditions immediately afterwards. An environmental monitor will be present in all instances in which trees or poles must be skidded through an aquatic feature to ensure that impacts to resources are minimized and that water is not present. All skidding within dry or snow-covered features will be documented by the biological monitor.

- APM-HYD-05: When construction activities are required adjacent to flowing aquatic resources, work will be conducted during low-flow conditions.

- APM-HYD-06: In areas where topsoil has not been salvaged, construction activities will be limited when the environmental monitor determines that the soil is too wet to adequately support vehicles and equipment. Where soil conditions are deemed too wet to work, one of the following measures will apply:

    - Access will be limited to the minimum area feasible for construction. Where possible, vehicles and equipment will be routed around wet areas so long as the re-route does not cross into sensitive resource areas.

    - If wet areas cannot be avoided and soil moisture is too high to strip topsoil, BMPs, including the use of wide-track or low ground pressure equipment or installation of prefabricated equipment pads or timber mats, will be implemented for use in these areas to minimize rutting and off-site sedimentation.

- APM-HYD-07: SPPCo will minimize vehicle and equipment usage within aquatic resources stream channels and other aquatic resources to only those pieces of equipment required for tree removal or to establish access. SPPCo will construct shoo-fly access roads to access either side of the resource or utilize existing bridges, where feasible, in order to minimize the need to install temporary bridges. If there are no existing crossings and the construction of shoo-fly roads would cause greater resource impact, SPPCo will install timber mats or other materials suitable for a temporary bridge. If bridges are installed over streams with discernable flow, all attempts will be made to span the channel.

- APM-HYD-08: SPPCo will obtain permits from appropriate regulatory agencies prior to commencing work in waters of the U.S. or waters of the state. Following construction, SPPCo will restore any impacted aquatic resources to pre-project conditions and compensate for any permanent wetland impacts in accordance with the USACE's "no net loss" policy.

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ATTACHMENT A: VEGETATION COMMUNITY MAPS

Attachment A: Vegetation Community Maps has been provided in electronic format on the enclosed CD.

ATTACHMENT B: REPRESENTATIVE PHOTOGRAPHS

ATTACHMENT B: REPRESENTATIVE PHOTOGRAPHS

Photograph 1: Wet meadow habitat within Martis Valley along the 650 Line

Photograph 2: Rock outcrop/barren habitat along the existing 625 Line

Photograph 3: Low sage habitat located within the Joerger Road Staging Area

Photograph 4: Sierra mixed conifer forest along the existing 625 Line—effects of selective logging can be seen

Photograph 5: Montane riparian vegetation growing along Middle Martis Creek

Photograph 6: A small feeder channel to Martis Creek surrounded by wet meadow habitat near the 650 Line

Photograph 7: Red fir forest alongside the existing 625 Line ROW

Photograph 8: A typical Jeffrey pine forest with a low sage understory as shown along the 650 Line

Photograph 9: Montane chaparral community along the new 625 Line

Photograph 10: Disturbed habitat located within the Tahoe City Staging Area

Photograph 11: Truckee River in Tahoe City crossing beneath the existing 625 Line

Photograph 12: Fresh emergent wetland near the Truckee River along the existing 625 Line

Photograph 13: One of many Plumas ivesia plants discovered along the 650 Line

Photograph 14: An example of a permanent ROW, shown here along the existing 625 Line

Photograph 15: An example of a hazard tree that may pose a threat to the line

ATTACHMENT 4.4-B: INTERIM PROTOCOL-LEVEL SURVEY REPORTS

NORTHERN GOSHAWK INTERIM SURVEY REPORT

Northern Goshawk Interim Survey Report

for the

625 and 650 Line Upgrade Project

Prepared for:

Sierra Pacific™

Prepared by:

INSIGNIA ENVIRONMENTAL

October 14, 2009

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1 – PROJECT SUMMARY

As part of the 625 and 650 Line Upgrade Project (project), Sierra Pacific Power Company (SPPCo) plans to upgrade several components of their existing north Lake Tahoe electric transmission system in order to provide increased reliability of service to the area. These upgrades include reconfiguring, rebuilding, and relocating several transmission lines running between Truckee and Kings Beach and between Kings Beach and Tahoe City, as shown in Figure 1: Project Overview. More specifically, this includes:

- Removing the existing 15.3-mile-long 60-kilovolt (kV) 625 Line
- Constructing the new, 15.5-mile-long 120-kV 625 Line
- Rebuilding the existing 9-mile-long 60-kV 650 Line to operate at 120 kV
- Rebuilding the existing 0.5-mile-long Northstar Tap into a fold
- Rebuilding the existing 132 Line to include a double-circuit with approximately 1.6 miles of the rebuilt 650 Line
- Upgrading or modifying several substations to handle the increased capacity and new configurations

Because tree removal will be required within many of the temporary work areas and rights-of-way (ROW), northern goshawk protocol-level surveys were conducted in order to identify any active nests within 0.25 mile of the project area. By identifying existing nests, SPPCo will be able to avoid working in those areas until after the nesting season or after the chicks have fledged. This report serves as a one-year interim update to the two-year protocol-level survey that began during the summer of 2009. Upon the completion of the 2010 surveys, a complete survey report will be prepared.

2 – METHODOLOGY

In August 2009, Insignia Environmental (Insignia) biologists Kevin Kilpatrick and Tonja Chi conducted protocol-level surveys for northern goshawk in accordance with the Northern Goshawk Inventory and Monitoring Technical Guide, which was published by the United States Forest Service (USFS) in 2006. These surveys fulfilled the first year requirement of a two-year-long survey. As required by the survey protocol, two separate surveys were conducted prior to August 31.

Surveys were conducted along the new 625 Line and portions of the 650 Line south of Martis Valley. Surveys were not conducted along the Northstar Fold, 132 Line, the existing 625 Line, or portions of the 650 Line north of Martis Valley due to two factors—these areas either did not support suitable habitat for this species due to a lack of forested habitat or existing human disturbance or no tree removal is anticipated in these locations.

2.0 BACKGROUND RESEARCH

In order to obtain all relevant information regarding known occurrences of northern goshawk, data depicting USFS-designated northern goshawk Protected Activity Centers (PACs) was

obtained from the USFS and reviewed. Data depicting all goshawk detections and known nesting sites from 1977 to 2009 was also obtained from the USFS Lake Tahoe Basin Management Unit (LTBMU). The locations of these detections, nests, and PACs in relation to the project area are shown in Figure 2: Preliminary Search Results. The analysis of the records from the LTBMU indicated that the project area encompassed two historic northern goshawk nest sites near Kings Beach and coincided with a portion of one PAC.

In addition to historic and current nesting data, habitat suitability modeling data was obtained from the LTBMU to aid in refining the survey area, eliminating areas with low potential for nesting northern goshawks. A habitat suitability model was used to estimate the quality of habitat in regards to northern goshawk nesting. Habitat quality is classified based on habitat type, canopy structure, and average diameter breast height. The analysis of the project area using the model resulted in the categorization of the survey area into low-, medium-, or high-quality habitat, as shown in Figure 2: Preliminary Search Results. At the recommendation of the LTBMU, surveys were not conducted in areas classified as low-quality habitat.

Details regarding the locations of the 2009 and planned 2010 LTBMU northern goshawk surveys were also obtained, as shown in Figure 2: Preliminary Search Results. Because these areas had already been surveyed by the LTBMU in 2009 or will be surveyed in 2010, these areas were removed from Insignia's survey area. As shown in Figure 2: Preliminary Search Results, one area will only be surveyed by the LTBMU in 2009 and not in 2010. This area was be included into Insignia's 2010 survey area. Lastly, at the request of the LTBMU, no surveys were conducted within 1 mile of a confirmed active nest. The location of this nest is shown in Figure 2: Preliminary Search Results.

Prior to beginning the surveys, a Survey Plan was prepared outlining the planned survey area, methods, and credentials of the biologists conducting the work. The Survey Plan was submitted the LTBMU for review and was approved on August 7, 2009.

2.1 FIELD SURVEYS

2.1.0 Establishing Call Stations

Insignia established survey call stations in accordance with the Northern Goshawk Inventory and Monitoring Technical Guide requirements and in consultation with information provided by the LTBMU, as previously described. Call station locations were then evaluated in the field and slight modifications were made to account for topographic features, such as ridges, valleys, or streams, to improve their effectiveness. Finally, call stations were eliminated if 50 percent or more of the surrounding area was discovered to contain unsuitable habitat (such as shrubs or developed areas) or slopes greater than 60 percent. Insignia established a total of 486 calling stations on the new 625 Line and existing 650 Line. The calling stations locations are depicted in Figure 3: Survey Results.

2.1.1 Surveys

Insignia biologists conducted daytime broadcast-calling surveys for northern goshawks within suitable habitat along the new 625 Line and the existing 650 Line. Surveys were restricted to within 0.25 mile of these lines.

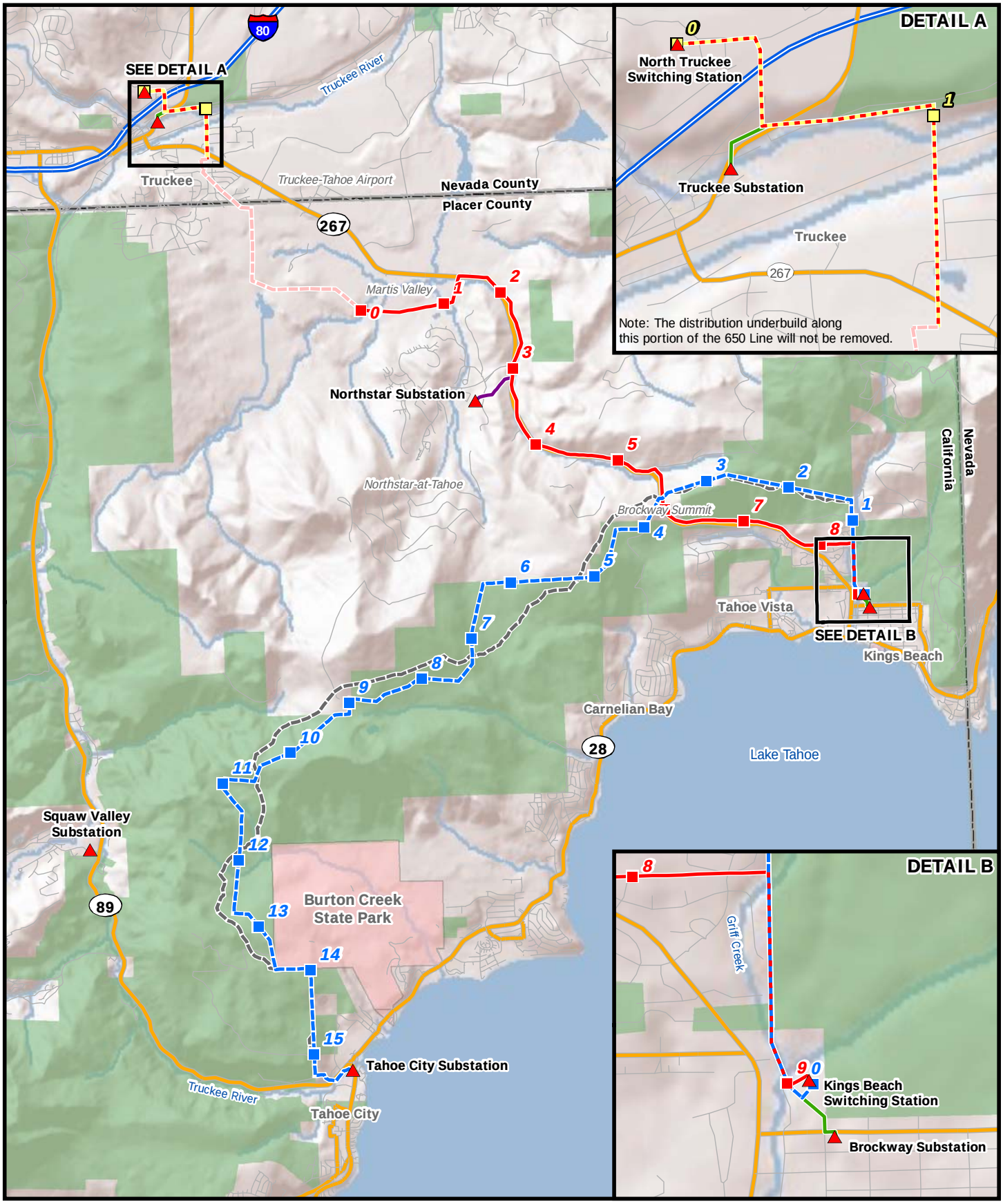

Figure 1: Project Overview

625 and 650 Line Upgrade Project

- Substation/Switching Station
- New 625 Line
- Existing 625 Line
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Milepost (Color by Line)

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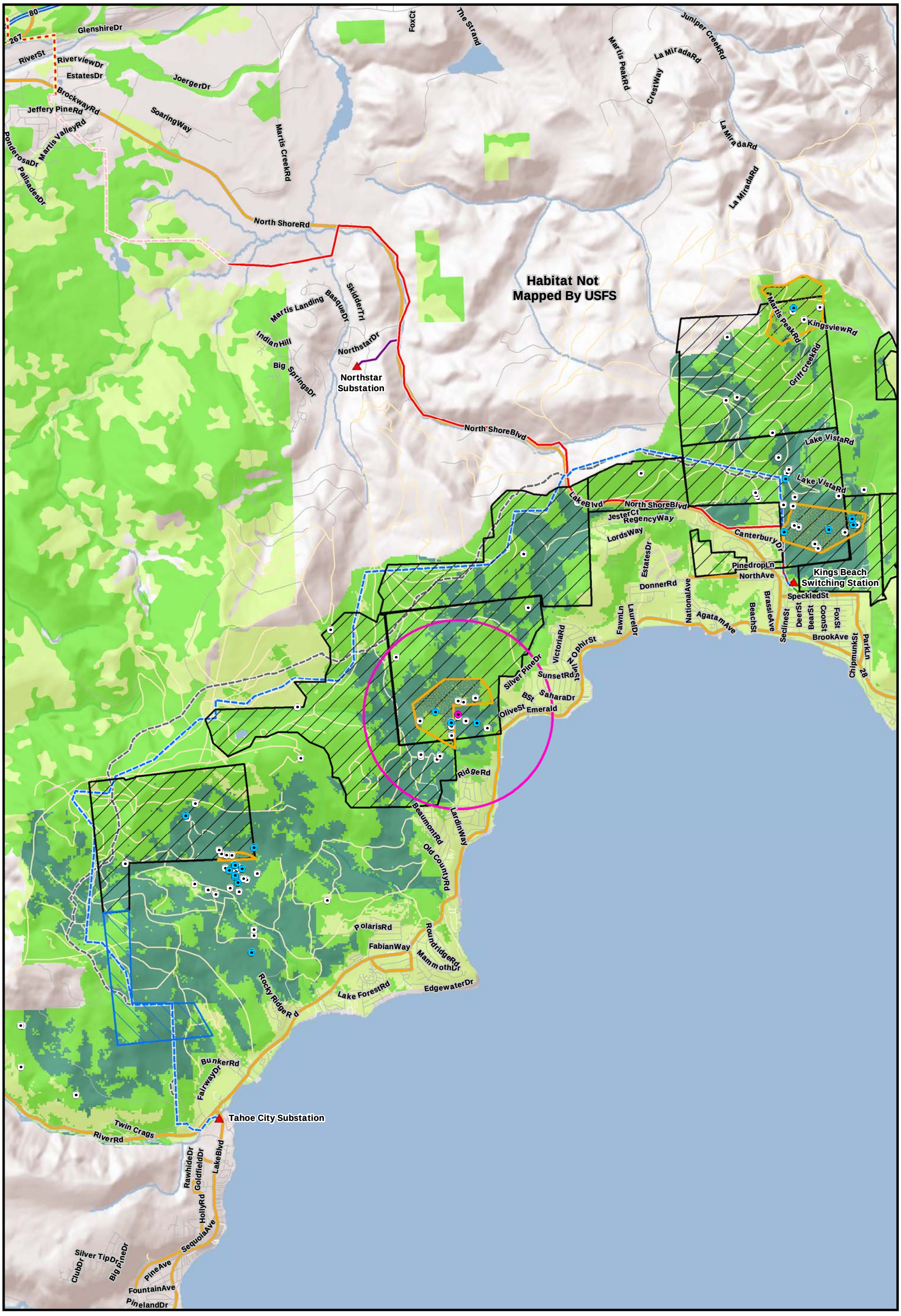

Figure 2: Preliminary Search Results

625 and 650 Line Upgrade Project

- Substation/Switching Station
- New 625 Line
- Existing 625 Line
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold

- Low Quality Habitat
- Medium Quality Habitat
- High Quality Habitat
- 2009/2010 USFS Survey
- 2009 USFS Survey
- Northern Goshawk PAC

- Northern Goshawk Detected (1977-2008)
- Northern Goshawk Nest (1977-2008)
- Active Nest (2009)
- Active Nest (1 mile buffer)

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Figure 3: Field Survey Results

625 and 650 Line Upgrade Project

- New 625 Line
- Existing 625 Line
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Substation/Switching Station
- 2009/2010 USFS Survey
- 2009 USFS Survey
- Calling Station

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As required by the survey protocol, two separate surveys were conducted prior to August 31. The first survey was conducted from August 12 to August 18; and the second survey was conducted from August 19 to August 26. These surveys were conducted on foot, by two biologists working either individually or as a pair. At each calling station, a Foxpro NX3 hand-held sound-broadcasting device was used to mimic goshawk calls. The biologists alternated between three call types—a juvenile begging call, an adult two-note wail, and occasionally an adult alarm call. The recordings used were those recommended in the Northern Goshawk Inventory and Monitoring Technical Guide.

Calling was not conducted when the winds were greater than approximately 15 miles per hour or at times when it was believed that the wind would affect the ability to hear a response. This was determined by using the Beaufort Wind Strength Scale.[1]

Insignia biologists spent approximately 4 minutes per calling station, implementing protocol procedures, calling in all directions, and listening for responses. When the calling sequence was completed, the biologists traveled to the next station, continuing to monitor for responses. Information regarding the results at each calling station was recorded on standard data collection sheets.

3 – RESULTS

During the first year of surveys, no northern goshawk nests were discovered and no individuals were detected during calls. Additionally, no confirmed signs of northern goshawk activity, such as white wash or molt sites, were identified. Several incidental observations of other raptors, including red-tailed hawk (*Buteo jamaicensis*) and Cooper's hawk (*Accipiter cooperii*), were noted within the survey area. Evidence of a California spotted owl (*Strix occidentalis*), including feathers and fresh white wash, was also detected during these surveys.

The final remaining year of protocol-level surveys will be conducted during the summer of 2010. In accordance with the Northern Goshawk Inventory and Monitoring Technical Guide, these surveys will be conducted over two separate surveys covering the entire survey area. After completion of the 2010 surveys, a final survey report will be prepared summarizing the results and findings from both years of surveys.

[1] According to the Beaufort Wind Strength Scale, wind between 13 and 17 miles per hour is a moderate breeze capable of moving small branches and raising dust or loose paper.

CALIFORNIA SPOTTED OWL INTERIM SURVEY REPORT

California Spotted Owl Interim Survey Report

for the

625 and 650 Line Upgrade Project

Prepared for:

Sierra Pacific™

Prepared by:

INSIGNIA ENVIRONMENTAL

October 21, 2009

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1 – PROJECT SUMMARY

As part of the 625 and 650 Line Upgrade Project (project), Sierra Pacific Power Company (SPPCo) plans to upgrade several components of their existing north Lake Tahoe electric transmission system in order to provide increased reliability of service to the area. These upgrades include reconfiguring, rebuilding, and relocating several transmission lines running between Truckee and Kings Beach and between Kings Beach and Tahoe City, as shown in Figure 1: Project Overview. More specifically, this project includes:

- Removing the existing 15-mile-long 60-kilovolt (kV) 625 Line
- Constructing the new, 16-mile-long 120-kV 625 Line
- Rebuilding the existing 10-mile-long 60-kV 650 Line to operate at 120 kV
- Rebuilding the existing 0.5-mile-long Northstar Tap into a fold
- Rebuilding the existing 132 Line to include a double-circuit with approximately 1.6 miles of the rebuilt 650 Line
- Upgrading or modifying several substations to handle the increased capacity and new configurations

Because tree removal will be required within most of the temporary work areas and rights-of-way, California spotted owl protocol-level surveys were proposed in order to identify any active nests within 0.25 mile of the project area. By identifying existing nests, SPPCo will be able to avoid working in those areas until after the nesting season or after the chicks have fledged. This report serves as a one-year interim update to the two-year protocol-level survey that began during the summer of 2009. Upon the completion of the 2010 surveys, a complete survey report will be prepared.

2 – METHODOLOGY

During the months of June and August 2009, Insignia Environmental (Insignia) biologists conducted protocol-level surveys for California spotted owls in accordance with the Protocol for Surveying for Spotted Owls in Proposed Management Activity Areas and Habitat Conservation Areas, which was published by the United States Forest Service (USFS) in 1993.

Surveys were conducted along the existing and new 625 lines, and portions of the 650 Line. Surveys were not conducted along the Northstar Fold, 132 Line, or portions of the 650 Line due to two factors—these areas either did not support suitable habitat for this species due to a lack of forested habitat or existing human disturbance, or no tree removal is anticipated in these locations.

2.0 BACKGROUND RESEARCH

In order to obtain all relevant information regarding known occurrences of California spotted owls, data depicting USFS-designated California spotted owl Protected Activity Centers (PACs) and Home Range Core Areas (HRCAs) was obtained from the USFS Lake Tahoe Basin Management Unit (LTBMU). In addition, the location of one active nest site was obtained. Data

depicting all historic California spotted owl nesting sites was also obtained from the California Department of Fish and Game Spotted Owl Database. The locations of these nests, HRCAs, and PACs in relation to the project area are shown in Figure 2: Preliminary Search Results. The analysis of data from the LTBMU and Spotted Owl Database indicate that the project area encompassed three PACs, five HRCAs, and one historic nest site.

Details regarding the locations of the 2009 and planned 2010 LTBMU California spotted owl surveys were also obtained, as shown in Figure 2: Preliminary Search Results. Because these areas were surveyed in 2009 or will be surveyed in 2010 by the LTBMU, these surveys did not need to be repeated and thus were removed from Insignia's survey area. Lastly, at the request of the LTBMU, no surveys were conducted within 1 mile of the confirmed active nest. The location of this nest is shown in Figure 2: Preliminary Search Results.

Prior to beginning the surveys, a Survey Plan was prepared outlining the planned survey area, methods, and credentials of the biologists conducting the work. The Survey Plan was submitted the LTBMU and California Public Utilities Commission for review and approved by the LTBMU on June 3, 2009.

2.1 FIELD SURVEYS

2.1.0 Establishing Call Stations

Insignia established survey call stations in accordance with the Protocol for Surveying for Spotted Owls in Proposed Management Activity Areas and Habitat Conservation Areas, and in consultation with information provided by the LTBMU. Initially, call stations were established approximately every 0.5 mile, assuming a call radius of 0.25 mile, in order to survey a 0.5-mile-wide survey corridor centered on the alignment. Call station locations were refined to account for topographical features. Areas believed to be located in unsuitable habitat or that overlapped with current LTBMU California spotted owl surveys were also eliminated. The determination of unsuitable habitat was based on average tree size and canopy characteristics. All assumptions regarding habitat suitability were verified in the field. Insignia established a total of 37 calling stations along the existing 625 Line, new 625 Line, and 650 Line. The calling station locations are depicted in Figure 3: Field Survey Results.

2.1.1 Surveys

The surveys summarized in this report fulfill the first-year requirement of a two-year-long survey. As required by the survey protocol, three separate surveys were conducted. Surveyors conducted nighttime broadcast-calling surveys for California spotted owls from the call stations established along the existing 625 Line, new 625 Line, and 650 Line. As required by the survey protocol, three separate surveys were conducted prior to August 31, two of which were conducted prior to June 30. In the summer of 2009, the first round of surveys was conducted by Insignia biologists from June 4 to June 7, the second from June 23 to June 27, and the third from August 9 to August 12 and on August 19.

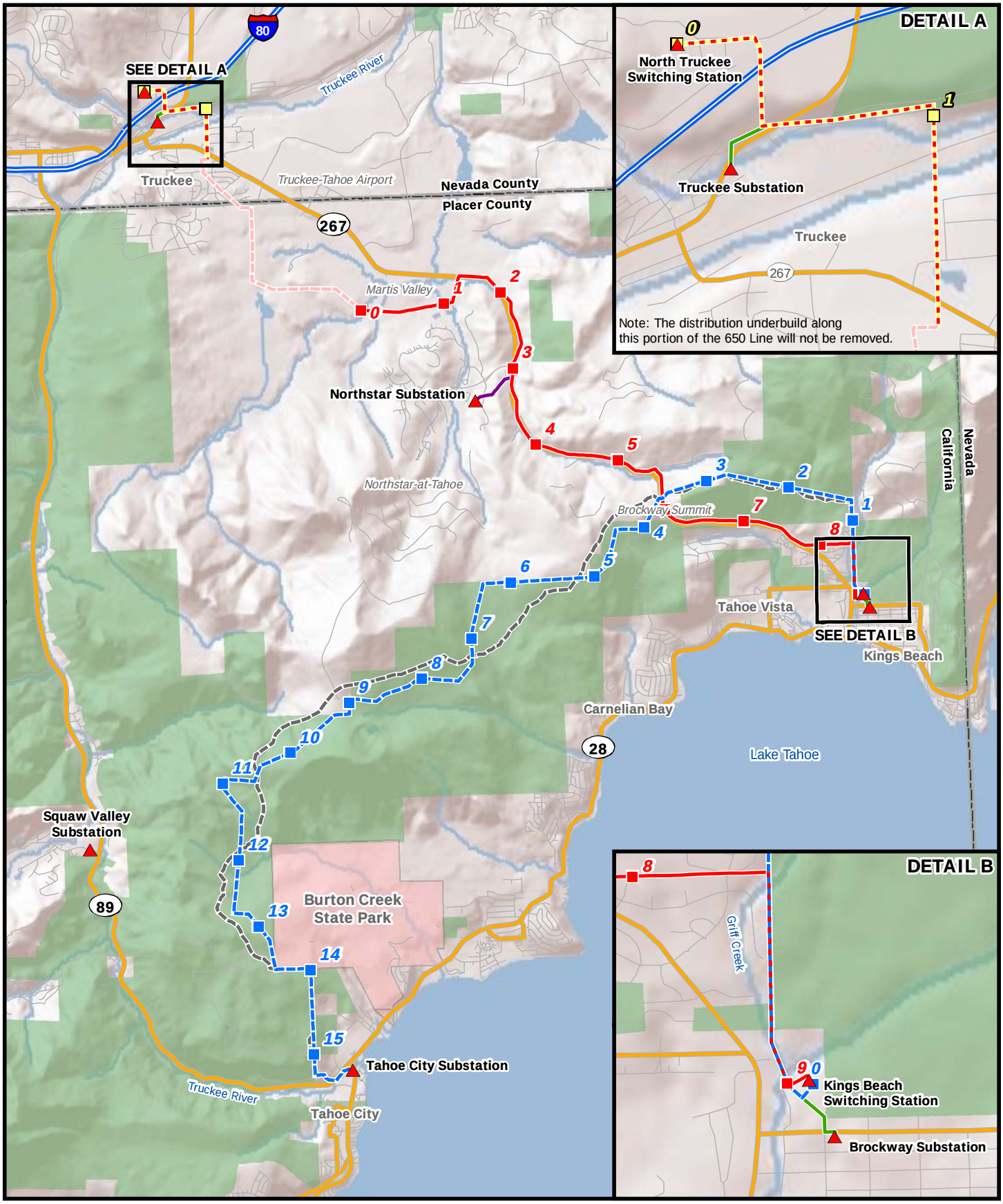

Figure 1: Project Overview

625 and 650 Line Upgrade Project

- Substation/Switching Station
- New 625 Line
- Existing 625 Line
- 650 Line to be Rebuilt
- 650 Line Previously Upgraded
- 132/650 Double Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Milepost (Color by Line)

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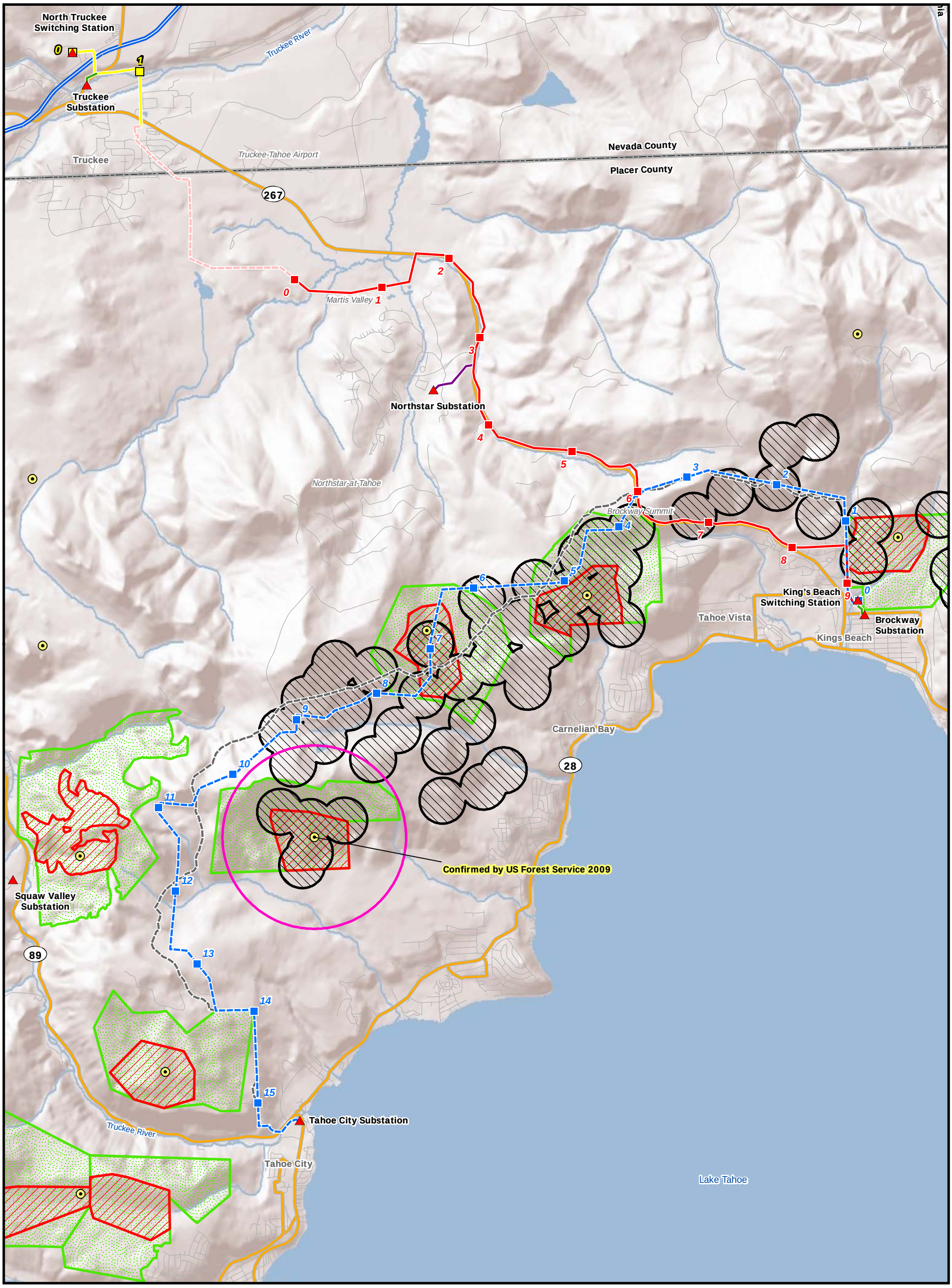

Figure 2: Preliminary Search Results

625 and 650 Line Upgrade Project

- Substation/Switching Station
- New 625 Line
- Existing 625 Line
- 650 Line
- 650 Line Previously Upgraded
- 132/650 Double Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Milepost (Color by Line)
- CDFG Spotted Owl Database - Historic Nest Site
- Spotted Owl Protected Activity Center (PAC)
- Spotted Owl Home Range Core Area (HRCA)
- 2009 USFS Survey

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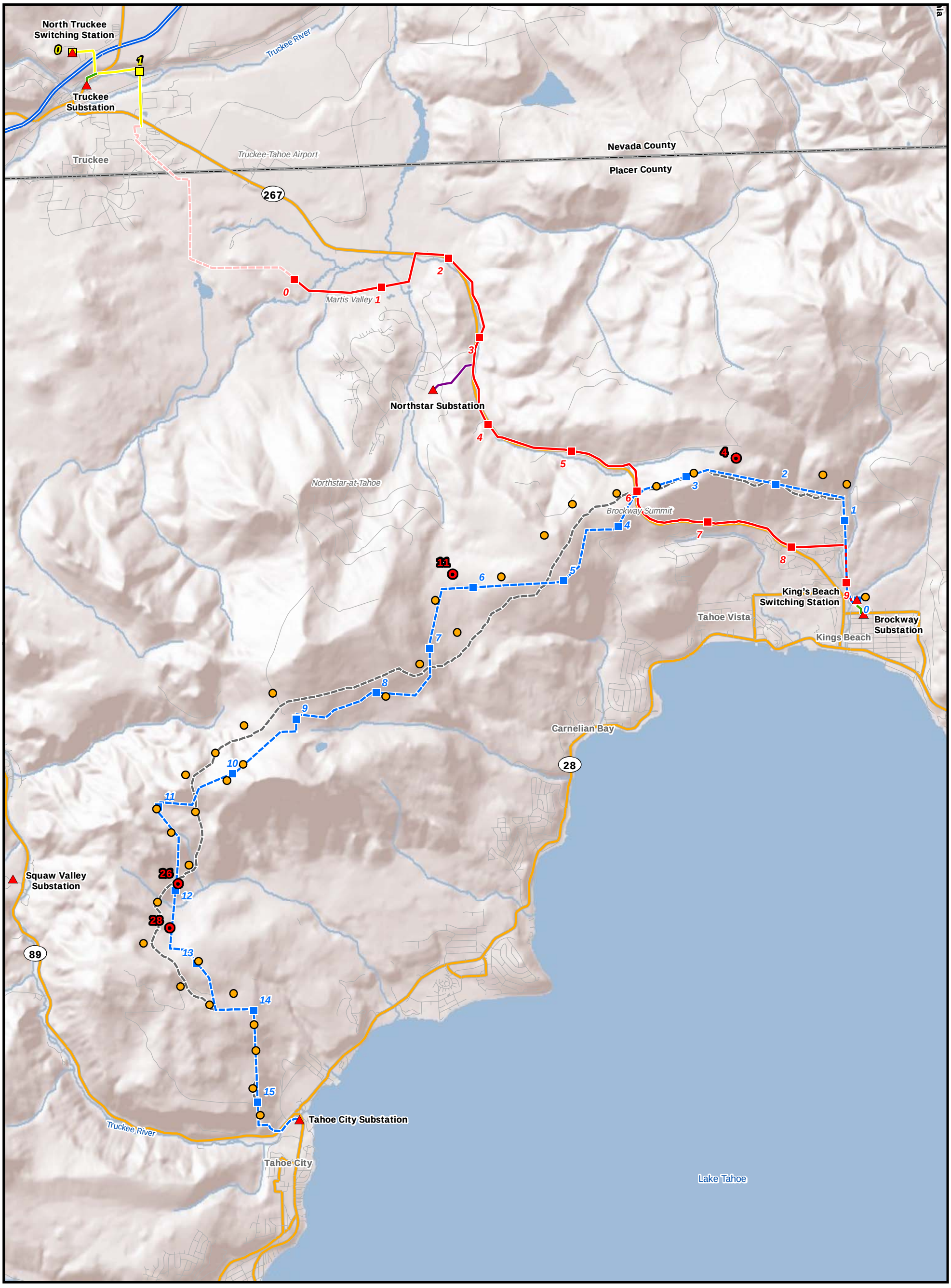

Figure 3: Field Survey Results

625 and 650 Line Upgrade Project

- Substation/Switching Station
- New 625 Line
- Existing 625 Line
- 650 Line
- 650 Line Previously Upgraded
- 132/650 Double Circuit to be Rebuilt
- 650 Line to be Removed
- Northstar Fold
- Milepost (Color by Line)
- Calling Stations
- California Spotted Owl Detection

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Surveyors, working in pairs, accessed the call stations by either driving or hiking. Once at a call station, one surveyor vocally called while the other listened for responses from approximately 500 feet away. By splitting up to listen for responses, surveyors were more likely to hear responses and could more accurately triangulate the direction and distance of responding owls. Surveyors predominantly vocalized the male or female four-note hoot call. The biologists also infrequently used alternate calls, such as the three- to eight-note hoot calls or the contact call (often referred to as a whistle).

Calling was not conducted when winds exceeded approximately 15 miles per hour or at times when the wind affected the ability to hear responses. This was determined by using the Beaufort Wind Strength Scale.[1]

Surveyors spent a minimum of 10 minutes at each call station. During this time, surveyors implemented protocol procedures, broadcasted calls in all directions, and listened for responses. Information regarding the results at each call station was recorded on standard data collection sheets.

Evening surveys resulting in one or more vocal response(s) were followed-up with a protocol day survey within 48 hours of detection. During these surveys, Insignia biologists returned at either dusk or dawn to the call station where the response was recorded. Calling was conducted for a minimum of 2 hours throughout the area surrounding the suspected response in order to attempt to locate the owl and/or nest.

3 – RESULTS

During the first year of surveys, Insignia biologists made four detections of California spotted owl, including one visual observation of a California spotted owl, several owl vocal responses, and evidence of spotted owl activity including feathers and whitewash. These detections are summarized in Table 1: California Spotted Owl Survey Detections. Of these detections, only one follow-up survey resulted in the confirmation of a California spotted owl. No California spotted owl nests were discovered. The visual observation is discussed further below.

Insignia biologists found California spotted owl feathers and fresh whitewash on August 17, 2009 while conducting surveys for northern goshawk at Call Station 4. The biologists considered the area to be poor-quality habitat for nesting California spotted owls and believed that the owl may have flown in to investigate the goshawk calls, or had followed them during the goshawk surveys. The biologists evaluated maps of the surrounding area and found higher-quality habitat near the top of a drainage. This area was determined to be the most likely location for California spotted owls to occur in mid-August. A follow-up survey was conducted on August 19, approximately 0.75 mile east of the original feather detection at Call Station 4. The survey included a daytime search for evidence of California spotted owls, during which additional feathers and whitewash were found. The biologists then conducted a dusk call survey. One of the biologists observed a California spotted owl flying near the calling site; however, the owl did not

[1] According to the Beaufort Wind Strength Scale, wind between 13 and 17 miles per hour is a moderate breeze capable of moving small branches and raising dust or loose paper.

vocalize a response to the calls. Over the course of the next hour, the biologists made one more observation of a California spotted owl, though the age and sex could not be determined. The location of this follow-up survey is shown in Figure 3: Field Survey Results. After speaking with LTBMU Biologist Shay Zanetti, it was determined that the nearest known active California spotted owl nest was located approximately 2 miles east of the drainage where the owl was observed.

Table 1: California Spotted Owl Survey Detections

Date of detection	Detection Type	Call Station Number	Approximate Distance and Bearing From Call Station	Follow-Up Survey Date and Time	Results of Follow-Up
June 6, 2009	Four-note hoot (male)	26	Approximately 0.25 mile at 90 degrees	June 7 0710 to 1110	No further detections
June 24, 2009	Single whistle (unknown species)	11	Approximately 500 feet at 315 degrees	June 26 1700 to 1930	No further detections
June 25, 2009	Single-note hoot (unknown owl species)	28	Approximately 100 feet at 360 degrees	June 27 1730 to 1930	No further detections
August 17, 2009	Feathers, whitewash	4	Approximately 1,000 feet at 218 degrees	August 19 1700 to 2100	Visual detection of California spotted owl

The final remaining year of protocol-level surveys will be conducted during the summer of 2010. In accordance with the Protocol for Surveying for Spotted Owls in Proposed Management Activity Areas and Habitat Conservation Areas, these surveys will be conducted during three separate visits, covering the entire survey area. After completion of the 2010 surveys, a final survey report will be prepared, summarizing the results and findings from both years of surveys.