4.14 WILDLIFE AND AQUATICS

This section describes the common and special-status wildlife and aquatic species that are known or have the potential to occur in the project area. Federal, state, and local regulations related to wildlife and aquatic resources are summarized. The potential for wildlife and aquatic resources to be affected by the action alternatives is fully assessed.

For the portion of the project area that includes National Forest System (NFS) lands, this analysis is based partly on information, detailed analysis, and conclusions presented in the following specialist reports prepared for the project:

- Biological Assessment for Sierra Nevada Yellow-Legged Frog: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018a);
- Aquatic Resources: Biological Evaluation for Fish, Amphibians, Reptiles, and Their Habitat (U.S. Forest Service 2018b);
- Biological Evaluation for Terrestrial Wildlife: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018c);
- Biological Evaluation-Biological Assessment of Botanical Species: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018d);
- Management Indicator Species Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018e);
- Migratory Landbird Conservation Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018f); and
- Riparian Conservation Objectives Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018g).

Other reports used for the analysis also include:

- Squaw Valley – Alpine Meadows Interconnect Project Botanical Survey Report 2015-2017 (EcoSynthesis 2017) provided in Appendix H of this EIS/EIR,
- Aquatic Resource Delineation Report 2016 (Hydro Restoration 2016), and
- Aquatic Resource Delineation Report 2017 (Hydro Restoration 2017).

These documents are hereby incorporated by reference, are part of the project record, and available for review, along with the entirety of the project record, at the:

- Tahoe National Forest Truckee Ranger District Office, 10811 Stockrest Springs Road Truckee, CA 96161;
- Tahoe National Forest Supervisor's Office, 631 Coyote Street, Nevada City, CA 95959;
- Placer County Tahoe City Office, 775 North Lake Blvd., Tahoe City, CA 96145; and
- Placer County Auburn Office, 3091 County Center Drive, Suite 190, Auburn, CA 95603.

4.14.1 Affected Environment

4.14.1.1 ENVIRONMENTAL SETTING

Regional Setting

The project area is in Squaw Creek and Bear Creek valleys, in the Central Sierra Nevada in eastern Placer County (County) at an elevation ranging from approximately 6,235 to 7,800 feet above mean sea level. The Squaw Creek valley corresponds to Olympic Valley, where the Squaw Valley Ski Area (Squaw Valley) is located. The Bear Creek valley corresponds to the valley where the Alpine Meadows Ski Area (Alpine Meadows) is located. The project area lies within the Sierra Nevada ecoregion and due to the elevation of the area is within the mid-elevation zone in mixed conifer forest. The Squaw Creek and Bear Creek valleys are located near the transition zone between the west and east sides of the Sierra Nevada and do not experience the rain shadow effect. The regional setting of the project area includes undeveloped, developed, and recreational development.

Local Setting

The analysis area, as defined in this section, includes the general vicinity surrounding the alternatives, composed of the Squaw Creek, Bear Creek, and Five Lakes watersheds. It encompasses all project components and areas of construction activity. The survey area for purposes of this evaluation is a subset of the larger analysis area and extends 100 feet from each side of centerline of the Proposed Action and alternatives gondola alignments, and 100 feet from each Gazex tube, shelter, and gas transfer pipe (HDPE pipe). For this section, the term survey area and study area are used synonymously. Four key components of the analysis area are described below:

- Squaw Valley Ski Area,
- Caldwell property,
- Alpine Meadows Ski Area, and
- Five Lakes watershed.

Squaw Valley Ski Area

The Squaw Valley portion of the analysis area is on private lands bordered by NFS lands. Surrounding land uses are residential, dispersed recreation, and resort recreation. This portion of the analysis area encompasses much of the upper reaches of the Squaw Creek watershed. The remainder of the watershed extends east to the Truckee River. An unnamed tributary to Squaw Creek is the most prominent water body in the immediate vicinity of the gondola action alternatives on the Squaw Valley portion of the analysis area. However, there are two human-constructed ponds that receive snowmelt near the bottom of the mountain in the vicinity of the Squaw Valley base terminal: Cushing Pond and an unnamed detention pond. The detention pond would not be directly affected by the action alternatives, but it was included in field surveys because it is located close to the analysis area. The Squaw Valley area contains unpaved high-clearance vehicle roads, ski runs, and some hiking trails. Ground disturbance in the area consists mainly of resort infrastructure including buildings, access roads, ski trails, and hiking trails. The northern aspect from the ridge down to Squaw Creek is fairly steep with slopes ranging from 40 to 70 percent.

Land cover types within the Squaw Valley portion of the analysis area are dominated by montane chaparral, coniferous woodland, rock and talus, ruderal vegetation and mountain sagebrush. Detailed descriptions of these land cover types are provided later in this analysis. Road drainages and intermittent streams that drain snow runoff are present in the area. Tallac very gravelly sandy loam 2- to 30-percent slopes, Tallac very gravely sandy loam 30- to 50-percent slopes, rock outcrop volcanic, Meiss-rock outcrop complex 30- to 75-percent slopes severely eroded, rock outcrop granitic are the soil types mapped by the Natural Resources Conservation Service (NRCS) for this area. None of these soils meet the hydric criteria (NRCS 2017). More information on the soil types, can be found in Section 4.16, “Soils, Geology, and Seismicity.”

Caldwell Property

The Caldwell Property portion of the analysis area is bordered by Squaw Valley lands to the north, the Granite Chief Wilderness (GCW) to the west, private property to the east, and Alpine Meadows/NFS lands to the south. This property is primarily within the Bear Creek watershed, but small portions also extend into the Squaw Creek and Five Lakes watersheds. An unnamed ephemeral drainage drains the northern portion downslope toward the Caldwell Pond and eventually into Bear Creek, and other ephemeral drainages occur within this area. Snowmelt creates at least three ephemeral ponds within the western granite formation and during snowmelt also drain into the Caldwell property and eventually drain into Bear Creek. The Five Lakes Trail and other unnamed user created recreational trails also cross this area. The congressionally designated GCW boundary encroaches on the west portion of the Caldwell Property (see Section 4.3, "Wilderness," for additional details). The slopes within this portion of the analysis area vary from gentle sloping to 63 percent, although there are some almost vertical granitic cliffs outside of the study area. Rock outcrop-granitic, Meiss-rock outcrop complex, 30- to 75-percent slopes severely eroded, Ledford-rock outcrop complex 30- to 75-percent slopes, Tinker-rock outcrop granitic Cryumbrepts, wet complex 2- to 30-percent slopes are the soil types mapped by NRCS for this portion of the analysis area. None of these soils meet the hydric criteria (NRCS 2017).

Alpine Meadows

The Alpine Meadows portion of the analysis area is bordered by the Caldwell Property to the north, private property to the west, and NFS lands to the east and south. The Alpine Meadows portion of the analysis area includes both private and Forest Service lands. Squaw Valley Ski Holdings, LLC, owns a portion of the land and is a holder of a special use permit for the Forest Service land. Intermittent drainages, Bear Creek, and road side ditches that convey water from the intermittent drainages also occur in this area. Three human constructed ponds fed by snowmelt and mountain seepage are present near the Alpine Meadows base area. The Alpine Meadows lands within the analysis area are dominated by montane chaparral, bitter cherry thicket, coniferous woodland, mountain alder thicket, and rock and talus. Small areas of aspen, mesic and riparian shrubland, and freshwater emergent vegetation associated with the drainages and Bear Creek are also present. Soil types mapped by the NRCS within the Alpine Meadows area include Ledford variant-Rock outcrop complex, 30- to 75-percent slopes, Tinker-Rock outcrop granitic Cryumbrepts wet complex 30- to 75-percent slopes, Tinker-Rock outcrop granitic Cryumbrepts, wet complex 2- to 30-percent slopes, Tallac-Cryumbrepts, wet complex, 2- to 30-percent slopes, Tallac-Cryumbrepts, wet complex 30- to 50-percent slopes, and Tallac very gravelly sandy load, 2- to 30-percent slopes. None of these soils meet the hydric criteria. None of these soils meet hydric criteria (NRCS 2017).

Five Lakes Watershed

The Five Lakes watershed portion of the analysis area is bordered by the Caldwell property to the east, Squaw Valley Ski Area to the north, NFS lands not part of the Alpine Meadows Ski Area to the west, Alpine Meadows SUP to the southeast, and private land owned by SVSH to the south. The GCW comprises 87 percent of the total area of the Five Lakes watershed. This watershed includes the following water bodies: Barstool Lake, the unnamed pond adjacent to Barstool Lake (visible as a small water body just northwest of Barstool Lake in Exhibit 4.14-1 and more clearly visible in Exhibit 2-4), the three westernmost lakes of Five Lakes, Five Lakes Creek, Whisky Creek, two unnamed ponds near Whisky Creek, Big Springs, Shanks Cove drainage, an unnamed pond near the headwaters of Shanks Creek drainage, Grouse Canyon drainage, Bear Pen Creek, two ponds near the headwaters of Bear Pen Creek, Willow Creek, an unnamed pond between Willow Creek and Powderhorn Creek, Powderhorn Creek, Little Powderhorn Creek, Ladies Cove drainage, an unnamed pond, Buckskin Creek, Steamboat Canyon Creek, Hunters Spring, and six unnamed seasonal drainages. The only soil type mapped by NRCS in the Five Lakes portion is rock outcrop granitic. This soil type does not meet the hydric criteria (NRCS 2017).

Methods for Documenting Existing Biological Conditions

To assess and document existing biological resources in the survey area, biologists with expertise in natural resources of the Tahoe-Truckee region reviewed existing data and conducted field surveys in the study area on multiple dates in 2015, 2016, and 2017 (specific dates are provided below). The area considered for analysis of each species varies per species depending on available habitat, species requirements, and

known range. For example, the area for evaluation specific to Sierra Nevada yellow-legged frog (SNYLF) extended out to 3,294 feet (1 kilometer) from the survey area and includes the Five Lakes, Squaw Creek, and Bear Creek water basins, whereas the area for evaluation specific to golden eagle extended five miles from the survey area of the action alternatives.

Biologists reviewed existing data to preliminarily identify special-status species and other sensitive resources known or with potential to occur in the project region. The data review included: U.S. Fish and Wildlife Service (USFWS) list of endangered, threatened, and proposed species for the project site and vicinity (USFWS 2018), USFWS National Wetlands Inventory online mapping (USFWS 2017a); Tahoe National Forest (TNF) management indicator species (MIS) list (Brokaw, pers. comm. 2017); a records search of the California Natural Diversity Database (CNDDB) (CNDDB 2017); and other relevant literature and previous analyses conducted for other projects in the region.

On August 24-26 and September 9, 2015; September 14, 2016; and July 20, August 10–11, and September 30, 2017, an Ascent Environmental wildlife biologist conducted field studies to verify information collected during the data review and to augment that information with updated project-specific survey results. These field studies consisted of reconnaissance-level surveys and habitat assessments for terrestrial wildlife and aquatic resources, and land cover/vegetation mapping. In addition, botanical surveys were conducted by EcoSynthesis on August 25, October 2, 3, 11, and 18, 2015; September 17 and October 6, 12, and 13, 2016; and July 6 and August 6, 8, 12, 15, 16, and 29, 2017. An aquatic habitat survey was conducted by Hydro Restoration from August 1 through October 15, 2015, and from September through October 31, 2016. The combined results of these survey efforts provide a habitat assessment for wildlife and aquatic resources, information about land cover type, hydrology (e.g., drainage patterns, areas of inundation/saturation, surface water conditions), vegetation stand composition and structure, and habitat suitability for special-status species.

Vegetation polygons were mapped by digitizing polygons on the basis of Global Navigation Satellite System features and notes marked on field maps. Vegetation types were discriminated to levels equivalent to the Group or, where possible, Alliance in the U.S. National Vegetation Classification 2.01 (USNVC 2016, cited in EcoSynthesis 2017) and/or *A Manual of California Vegetation* (Sawyer et al. 2009).

Land Cover Types

Nomenclature and descriptions of the land cover types used in this analysis were obtained from the botanical survey report prepared for the project by EcoSynthesis (EcoSynthesis 2017). Each of the land cover types are briefly described in Table 4.14-1 and maps showing location are included in the EcoSynthesis botanical report in Appendix H. Although the survey area used for the botanical report for Alternative 2 is smaller (100 feet) than the wildlife survey area (200 feet), the mapped land cover types provide coverage for the proposed disturbance area for this analysis. Note that a wider botanical survey corridor was implemented for Alternatives 3 and 4 as there is a higher potential than for Alternative 2 for slight adjustments in the alignment if one of these alternatives is selected and more detailed engineering and design is conducted. With a wider survey corridor, it is less likely that any future adjustments would cause the alignment to leave the survey corridor. The landcover types present provide suitable habitat for many common wildlife species, and also provide potential habitat for some sensitive species. Aquatic and terrestrial wildlife species detected in the study area during the reconnaissance surveys are listed in Appendix H. Special-status species and other sensitive resources are also addressed in this section under “Sensitive Biological Resources,” below.

Table 4.14-1 Habitat Types and Land Cover in the Survey Area

Habitat Type/ Land Cover	Summary Description	Acres Mapped in Survey Area[1, 3]								
		Alpine Meadows Special Use Permit			Private			Total[2]		
		Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4
Upland Habitats										
Sierra Nevada Coniferous Woodland	This land cover types occurs in small patches within the study area. For many of these small patches, it was not possible to assign them to one or another forest alliance as described in the Manual of California Vegetation. Species associated with this land cover type include mountain juniper (*Juniperus communis* var. *saxatilis*), Sierra juniper (*Juniperus grandis*), white fir (*Abies concolor*), red fir (*Abies magnifica*), lodgepole pine (*Pinus contorta* ssp. *murrayana*), Jeffrey pine (*Pinus jeffreyi*), western white pine (*Pinus monticola*), and mountain hemlock (*Tsuga mertensiana*). Identifiable woodland types included Lodgepole Pine near the Alpine Meadows base area; Jeffrey Pine scattered at mostly moderate elevations; and Red Fir – White Fir in one or two very small patches at middle-upper elevations of the slopes. Coniferous trees were also encountered as scattered individuals within non-forest vegetation types, and, in one area within the Rock Outcrop land cover type, The woodland understory was generally sparse to non-existent and, due to the small size of forest patches, no one or several herbs or shrubs could be identified as being consistently dominant or as being characteristic associates of the Coniferous Woodland.	0.79	2.33	1.72	2.25	4.89	1.19	**3.03**	**7.22**	**2.91**
Montane Chaparral	Montane Chaparral is mostly limited to the non-deciduous, coriaceous-leaved community. Deciduous and soft-leaved shrub vegetation is described in other land cover types. Montane Chaparral include areas that correspond to more than one vegetation alliance described in Sawyer et al. (2009); *Quercus vacciniifolia* Shrubland Alliance and Arctostaphylos patula Shrubland Alliance, however, these often occur intermixed, so a single more inclusive cover type is appropriate for the present project. This community is found most continuously on south- and southeast-facing rocky slopes, especially in the southern segment of all the action alternatives. Many of the mapped polygons of Montane Chaparral are nearly pure huckleberry oak (*Quercus vaccinifolia*); other areas are mostly greenleaf manzanita (*Arctostaphylos patula*) or rarely pinemat manzanita (A, *nevadensis*); some areas are a mixture of those species and/or mixed with snowbush (*Ceanothus cordulatus*) or rarely tobacco brush (*C. velutinus*). The distinguishing ecological characteristics of this community type as mapped are dense "hard-leaved" shrub canopy with leaves that are not deciduous. This vegetation occurs on steep rocky slopes. There is often no herbaceous understory at all, due to the dense shrub canopy which prevents sufficient light from reaching the ground surface for herbaceous or subshrubby plants to be sustained. Where there are gaps or thin shrub canopy, lower stratum plant species may occur, most often ones that are typical of Rock Outcrop areas (see below), such as species of wild buckwheat (*Eriogonum* spp.) or penstemon (*Penstemon* spp.).	4.56	2.34	2.34	1.81	8.80	11.75	**6.37**	**11.14**	**14.09**

Table 4.14-1 Habitat Types and Land Cover in the Survey Area

Habitat Type/ Land Cover	Summary Description	Acres Mapped in Survey Area[1, 3]								
		Alpine Meadows Special Use Permit			Private			Total[2]		
		Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4
Bitter Cherry Thickets	*Prunus emarginata* Provisional Alliance - This shrubland type is distinguished from Montane Chaparral by the deciduous habit of the majority of the dominant species within it. It is found extensively but not exclusively on the lower elevation slopes of the southern segments of Alternatives 3 and 4. MCV2 and direct field observation suggest that there is likely to be a somewhat more mesic soil moisture regime in bitter cherry thickets than chaparral areas, but they are still quite dry in summertime. The most dominant species is bitter cherry; also codominant in many areas is Sierra coffeeberry (*Frangula rubra*). In some areas, there is a minor to codominant component of some non-deciduous species such as tobacco brush (*Ceanothus velutinus*). Wildlife values of the deciduous and non-deciduous shrubland types may differ somewhat. This map unit term is also applied to the patchwork of mostly shrub- and subshrub-dominated woody vegetation found in the northern segment of the alignment, which varies widely in species composition (bitter cherry; oceanspray, *Holodiscus discolor* var. *microphyllus*; and snowberry, *Symphoricarpos rotundifolius*). These mixed species communities may also include a substantial component of subshrub or forb species.	-	2.28	3.64	4.91	7.30	3.34	**4.91**	**9.58**	**6.98**
Mountain Sagebrush/ Forb Vegetation	*Artemisia tridentata* ssp. *vaseyana* Shrubland Alliance - These communities occur on slopes and ridges with all aspects and of all gradients from gentle to steeply sloping. Soil moisture regimes vary from relatively dry to much more mesic. Mountain sagebrush is the distinguishing shrub species, but many others occur within the alliance. Cover is highly variable from sparse to nearly 100 percent canopy including associated forbs and grasses. Overall species diversity tends to be much higher than in Montane Chaparral or Bitter Cherry Thickets. Although the U.S. National Vegetation Classification has formerly mentioned "Forb Meadow" in Macrogroup descriptions of montane vegetation, there is no alliance for the mixed subshrub/forb communities that occur commonly throughout the northern Sierra Nevada. Since those are ecologically more similar to the Mountain Sagebrush community at the present project site, and cannot always be mapped separately, they are included under this heading. Common species of the montane forb communities on the Interconnect study site include coyote mint (*Monardella odoratissima*), Brewer's angelica (*Angelica breweri*), woolly mule's-ears (*Wyethia mollis*), Brewer's aster (*Eucephalus breweri*), paint-brush (*Castilleja* spp.), beard-tongue (*Penstemon* spp.), sulfur buckwheat (*Eriogonum umbellatum* var. *nevadense* and var. *modocense*), lupines (*Lupinus* spp.), and others.	-	-	-	-	-	5.23	**-**	**-**	**5.23**

Table 4.14-1 Habitat Types and Land Cover in the Survey Area

Habitat Type/ Land Cover	Summary Description	Acres Mapped in Survey Area[1, 3]								
		Alpine Meadows Special Use Permit			Private			Total[2]		
		Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4
Rock outcrop/Rock and Talus	These land cover types do not technically constitute vegetation: except for small patches, there is usually much less than 10 percent vegetative cover. Nearly all of the area within Rock and Talus is exposed bedrock, with areas of talus (broken rock from large boulders down to angular cobbles) and sparsely vegetated gravel and coarse sand. Within the study area, talus may occur in large exposures of 1 acre to many acres, or in small patches within otherwise extensive bedrock. For this reason, they were mapped together for this report. Notwithstanding the low vegetation cover, many plant species occur in Rock and Talus. In small depressions or flat areas within the rock, tiny pockets of finer grained soil have accumulated and support a great diversity if not much cover of vegetation. Commonly encountered species include frosted buckwheat (*Eriogonum incanum*), Lobb's buckwheat (*E. lobbii*), mountain pride (*Penstemon newberryi*), stonecrop (*Sedum obtusatum*), jewel weed (*Streptanthus tortuosus*), and various sedges and grasses. Rock outcrops and small accumulations of sandy soil within them provide potentially suitable habitat for a variety of special-status plant species. Talus is typically fractured along pre-existing zones of weakness and are lying at diverse angles, there is usually nowhere for soil to accumulate, and no crevices in which species such as starved daisy (*Erigeron miser*) could grow. However, talus provides refuge for wildlife species that forage on herbaceous species supported by nearby soil patches.	3.77	2.45	2.45	12.76	8.81	13.13	**16.53**	**11.26**	**15.58**
Mesic to Aquatic Habitats										
Mesic and Riparian Shrubland	This land cover types include Acer glabrum Provisional Shrubland Alliance and Rubus (parviflorus) Shrubland Alliance. This land cover type includes vegetation that is intermediate between the upland shrubland types described above, and truly riparian woody vegetation that is consistently associated with presence of surface water or saturated soil for a portion of the year (see below under Mountain Alder Thicket). It occurs almost exclusively on moderate slopes (for this study area) with shallow to deep, sometimes loamy soils. Aspect is generally north or east. The vegetation is characterized by having deciduous leaves that are much thinner and more susceptible to desiccation than those of the species that are characteristic of Montane Chaparral or Bitter Cherry Thickets. Common plant species in Mesic and Riparian Shrubland vary spatially but include one or more of the following: mountain maple (*Acer glabrum*), Scouler's willow (*Salix scouleriana*), thimbleberry (*Rubus parviflorus*), currants/gooseberries (*Ribes nevadensis, roezlii, viscosissimum*), elderberries (*Sambucus* spp.), snowberry (*Symphoricarpos mollis*), and serviceberry (*Amelanchier* spp.).	-	0.48	0.40	-	0.45	6.17	**-**	**0.93**	**6.57**

Table 4.14-1 Habitat Types and Land Cover in the Survey Area

Habitat Type/ Land Cover	Summary Description	Acres Mapped in Survey Area[1, 3]								
		Alpine Meadows Special Use Permit			Private			Total[2]		
		Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4
Mountain Alder Thicket	*Alnus incana* Shrubland Alliance - This woody riparian vegetation type occurs in the lower elevation portion of the southern segment, on lower slopes adjoining a snowmaking pond at Alpine Meadows ski area, and in several other small exposures. Aspect is variable, and slopes vary from steep ones that are fed by groundwater emerging at a point-source or diffuse spring to near level ones. The water source is generally entirely, or supplemented by, groundwater, though for convenience the small areas of streamflow supported riparian vegetation are included in this land cover type. The distinguishing physical characteristic of Mountain Alder Thicket is the presence of saturated soil at or near the ground surface throughout most or all of the year. The dominant species is mountain alder (*Alnus incana*), but scattered groups of willow species (*Salix* spp.) may also occur. A small patch of Eastwood's willow (*S. eastwoodiae*) near the pond where the alignments of Alternatives 3 and 4 cross was mapped within adjacent alder thicket for simplicity. There is little or no understory in most of the alder thickets, but some openings are vegetated by wetland or facultative herbaceous species. In the present study area, these herbaceous areas are dominated mostly by forbs (specifically fireweed, *Chamerion angustifolium* and corn lily, *Veratrum californicum*) but may also include species of *Juncus* and/or *Carex*.	0.64	-	-	-	0.14	0.48	**0.64**	**0.14**	**0.48**
Aspen Grove	*Populus tremuloides* Forest Alliance - A very small portion of the study area passes through an aspen grove in the lower part of the southern segment of the Alternative 2 study area. Quaking aspen is a tree with rhizomes (underground stems) or near-surface roots with adventitious shoots, which thereby form small to large (100-acre) clones of separate-appearing trees. These groves persist for long periods of time; some, at least, are believed to date from the last glacial period, 10,000 years ago. Most aspen groves occur on upland slopes, but also occur in lower parts of riparian valleys. Aspen groves provide some ecological values that are similar to those of riparian forest and are a sensitive biological resource, even though aspen itself is a facultative-upland (mesic but not generally hydrophytic) plant species.	0.13	-	-	-	-	-	**0.13**	**-**	**-**
Freshwater Emergent Wetland[3]	Herbaceous wetland vegetation occurs in extremely small patches in slight topographic depressions within tributary drainages within the study area. Dominant species include sedges (*Carex leporinella* and *heteroneura*), rushes (*Juncus chlorocephalus* or *bufonius*), grasses (*Agrostis exarata* and/or *humilis*), and forbs (e.g. *Oreostemma alpigenus*). In one ephemerally ponded area, some woody species are also present (*Salix eastwoodiae*, *Vaccinium* sp.). A *Carex* wetland is present at the fringe of a perennial pond near the southern end of the central segment. Small areas of wetland vegetation occur near the Alpine Meadows base lodge, in patches too small to be effectively mapped for the present vegetation study.	0.07	0.87	0.44	0.89	0.17	0.08	**0.96**	**1.04**	**0.52**
Freshwater Pond[3]	Two types of freshwater ponds occur in the study area; human constructed ponds and naturally occurring ponds. The constructed ponds include Cushing Pond, Caldwell Pond, and three detention ponds near the base of Alpine Meadows. The naturally occurring ponds is Barstool Pond and an unnamed pond by *The Buttress*. Note: Barstool Pond (0.87 acre) and the unnamed pond (0.22 acre) acreages are added since they were included in the study area surveys.	-	0.52	0.64	0.25	0.51	0.02	**0.25**	**1.03**	**0.66**

Table 4.14-1 Habitat Types and Land Cover in the Survey Area

Habitat Type/ Land Cover	Summary Description	Acres Mapped in Survey Area[1, 3]								
		Alpine Meadows Special Use Permit			Private			Total[2]		
		Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4
Riverine[3]	Several unnamed ephemeral tributaries cross the site, in all three segments of the study area. They are recognizable primarily from exposures of rounded or subangular (alluvial) gravels, deposits of transported sand and from "water staining" (blackish growth of cyanobacteria, and/or deposition of orangish oxidized iron compounds) on bedrock and boulders, but also occasionally from the presence of hydrophytic plant species. Vegetation of Riverine habitat within the study site includes areas of cover by mosses (and no vascular plants) growing on sand or bedrock, and areas of hydrophytic vascular plants.	0.17	0.40	0.38	0.26	0.30	0.04	**0.44**	**0.70**	**0.42**
Human Modified Habitats										
Ruderal Grassland	"Ruderal" refers to vegetation growing in areas disturbed by human activities, usually grading but also applicable to other anthropogenic disturbances. Within the study area, this occurs primarily within the developed ski areas, both at the base facilities and on road embankments and ski runs. Ruderal vegetation occurs on all aspects and slope gradients from nearly level to steeply sloping. Soil textures and moisture regimes are also highly variable. Within the study area, Ruderal vegetation includes small areas of landscaping and lawn turf near the ski area base facilities; erosion control revegetation on ski slopes and other constructed features such as roads and their embankments; and substantially disturbed soil profiles that support weedy plants. The ruderal erosion control vegetation within the Squaw Valley and Alpine Meadows base areas is generally dominated by grasses, especially wheatgrass (*Elymus hispidus=Thinopyrum intermedium*), squirreltail (*Elymus elymoides*), and hard fescue (*Festuca* sp.) but also including (and being locally dominated by) a variety of forbs and low shrubs (yarrow, *Achillea millefolium*; rabbitbrush, *Ericameria nauseosa*; and many others). As is typical of ruderal vegetation, dominance varies greatly by microsite. Weedy ruderal vegetation includes a wide variety of both native and non-native species.	1.39	1.82	2.05	2.86	2.93	3.41	**4.25**	**4.75**	**5.46**
Urban Land Cover	This land cover type includes primarily pavement (asphalt or gravel), buildings including ski lift towers, and some other structures such as pond weirs and outfalls. Most of the lift towers and some other constructed features have very small footprints and were not mapped separately, but some of the terminals with associated paved or otherwise unvegetated surface were mapped as Urban polygons.	2.28	4.44	4.53	1.59	2.72	2.86	**3.87**	**7.16**	**7.39**

[1] Study/Survey area refers to the survey area identified and mapped in the Botanical Survey Report (EcoSynthesis 2017): 50 feet on each side of the Alternative 2 alignment and 100 feet on each side of the Alternative 3 and Alternative 4 alignments, and 30–50 feet on each side of the proposed Gazex facilities. A wider survey corridor was implemented for Alternatives 3 and 4 as there is a higher potential than for Alternative 2 for slight adjustments in the alignment if one of these alternatives is selected and more detailed engineering and design is conducted. With a wider survey corridor, it is less likely that any future adjustments would cause the alignment to leave the survey corridor.

[2] Totals may not sum due to independent rounding.

[3] Wetland acreages based on mapping by Hydro Restoration (2016, 2017) and Ascent Environmental for a study area of 100 feet on each side of the alternative alignments and around the proposed Gazex facilities.

Sources: EcoSynthesis 2017, Hydro Restoration 2016, 2017; adapted by Ascent Environmental in 2018

Common Wildlife

The undeveloped portions of the survey area for each action alternative (37.51 acres for Alternative 2, 47.79 acres for Alternative 3, and 58.89 acres for Alternative 4 [i.e., sum of all habitat acres in Table 4.14-1 except for Urban Land Cover]) support different common wildlife species due to the diversity of land covers present that these species use for forage, shelter, and for reproduction. Some common wildlife species that were observed in the project area include California black bear (*Ursus americanus californiensis*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), mule deer (*Odocoileus hemionus*), Douglas squirrel (*Tamiasciurus douglasii*), golden-mantled ground squirrel (*Callospermophilus lateralis*), red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), mallard (*Anas platyrhynchos*), common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), mountain chickadee (*Poecile gambeli*), Steller's jay (*Cyanocitta stelleri*), pygmy nuthatch (*Sitta pygmaea*), dark-eyed junco (*Junco hyemalis*), brown-headed cowbird (*Molothrus ater*), band-tailed pigeon (*Patagioenas fasciata*), northern flicker (*Colaptes auratus*), western fence lizard (*Sceloporus occidentalis*), western terrestrial garter snake (*Thamnophis elegans*), valley garter snake (*Thamnophis sirtalis fitchi*) and Sierran treefrog (*Pseudacris sierra*).

Aquatic Resources

A total of 2.29 acres of aquatic resources were mapped in the survey area for Alternative 2, 3.76 acres in the survey area for Alternative 3, and 4.61 acres for the survey area for Alternative 4 (Table 4.14-2). These mapped features are presented in Exhibit 4.14-1. Aquatic resources denoted include lacustrine, palustrine, and riverine habitat. These categories correspond to those used in Section 4.15, "Wetlands," and are intended to represent aquatic habitats that could fall under the jurisdiction of Section 404 of the Clean Water Act (CWA), the Porter-Cologne Water Quality Control Act, and California Fish and Game Code Section 1602. These laws are described in below in Section 4.14.1.2, "Regulatory Setting." Each of these laws provides various criteria for aquatic habitats that fall under their jurisdiction. In many cases, only a portion of a broader mesic or aquatic habitat type may fall under the jurisdiction of one of these laws. For example, a riparian community may be considered a mesic or aquatic habitat; however, only the aquatic portion of the habitat may meet the criteria of a water, wetland, or streambed included in these laws. The use of the aquatic resource types allows for a sharper focus on the aquatic components of broader mesic or aquatic vegetation communities.

Table 4.14-2 Wetlands and Other Waters in the Study Area

Action Alt.	Ownership	Feature Type (acre)							Total*
		Riverine			Lacustrine	Palustrine			
		Perennial	Ephemeral	Roadside Ditch	Pond	Mountain Alder Thicket	Wetland	Freshwater Emergent Wetland	
2	Private	0	0.22 [0.18]	0.04 [0.03]	0.25 [0.25]	0	0	0.89 [0.89]	1.40 [1.35]
	Alpine Meadows SUP Area	0.10 [0.10]	0.07 [0.07]	0	0	0.64 [0.64]	0.07 [0.07]	0	0.89 [0.25]
	Total*	0.10 [0.10]	0.30 [0.25]	0.04 [0.03]	0.25 [0.25]	0.64 [0.64]	0.07[0.07]	0.89 [0.89]	2.29 [2.24]
3	Private	0	0.26 [0.10]	0.04 {<0.01]	0.51 [0.26]	0.14 [0.14]	0.088 [0.01]	0.16 [0.11]	1.98 [0.62]
	Alpine Meadows SUP Area	0.35 [0.35]	0.01 [0.01]	0.04 [0.04]	0.52 [0.52]	0	0.16 [0.16]	0.71 [0.71]	1.78 [1.78]
	Total*	0.35 [0.35]	0.27 [0.11]	0.08 [0.08]	1.03 [0.78]	0.14 [0.14]	1.04 [0.17]	0.87 [0.82]	3.76 [2.4]
4	Private	0	0.04 [0.04]	0	0.02 [0.02]	0.48 [0.48]	2.53 [0.01]	0.07 [0.07]	3.14 [0.62]
	Alpine Meadows SUP Area	0.35 [0.35]	0.01 [0.01]	0.02 [0.02]	0.64 [0.64]	0	0.07 [0.07]	0.37 [0.37]	1.47 [1.47]
	Total*	0.35 [0.35]	0.05 [0.05]	0.02 [0.02]	0.66 [0.66]	0.48 [0.48]	2.60 [0.08]	0.44 [0.44]	4.61 [2.09]

Note: Alt = Alternative, SUP = special use permit, [#] acreage in Sierra Nevada yellow-legged frog critical habitat

*Totals may not sum because of independent rounding.

Sources: Hydro Restoration 2016, 2017; adapted by Ascent Environmental in 2018

The acreage values provided in Table 4.14-2, and elsewhere in this section, correspond to an initial estimate of the portions of aquatic habitats in the study area that may be subject to Section 404 of the CWA, the Porter-Cologne Water Quality Control Act, and/or California Fish and Game Code Section 1602. A formal delineation of jurisdictional features associated with each action alternative has not been conducted to confirm the precise boundaries of waters and wetlands consistent with the criteria provided in each of these laws. Such a delineation would be conducted after a single alternative is approved to focus the effort on a limited number of aquatic features. The surveys that have been performed provide sufficient information, however, to determine the presence and extent of these features, and to determine whether the action alternatives will significantly affect those features. A formal delineation, and appropriate verification, may result in refinement of the locations of where these features are present.

Riverine habitat in the project vicinity includes Bear Creek, a perennial stream that flows from Alpine Meadows to the Truckee River, adjacent to the southern and eastern side of the action alternatives. Riparian scrub habitat, adjacent to Bear Creek was mapped within the survey area, on the southern segment of the action alternatives prior to the lower terminal at Alpine Meadows. Areas adjacent to Bear Creek exhibit typical alpine riparian floodplain with alder scrub-shrub habitat.

The aquatic resources survey found a small number of ephemeral drainages as well as a small amount of ephemeral wetland habitat. Roadside ditches and small unnamed ephemeral drainages cross the lower portion of the northern face of the alignment on Squaw Valley and southern face along Alpine Meadows Road. The ephemeral drainages support hydrophytic vegetation. Many of the features are ditches dug in uplands that concentrate flow off roadways.

Lacustrine habitats in the project vicinity consist of seven open water sites within the study area: Cushing Pond at Squaw Valley, the three snowmaking ponds at the Alpine Meadows base area, the Caldwell Pond, Barstool Lake, and an unnamed pond adjacent to Barstool Lake.

Palustrine features in the project vicinity consist of mountain alder thicket (a palustrine scrub-shrub habitat), freshwater emergent wetland, and a wetland category that consists of areas where the water source appears to be groundwater seeps, and seasonal wetlands that did not specifically fit into either a palustrine scrub-shrub or freshwater emergent wetland category. Palustrine habitats exist along topographic benches in the seasonal streams and at the edges of lakes and streams. A small fen exists on the southern exposure of Skunk Rock, where several ephemeral tributaries convene based on topography. The southern portion of the project descends over a mountain flank spring seep, typical of alpine wetland features.

Nonnative Fish and Aquatic Invasive Species

The ephemeral and intermittent streams in the study area do not provide suitable habitat for fish species to survive due to their ephemeral nature. Surveys of the perennial streams and ponds associated with the SNYLF (*Rana sierrae*) surveys documented rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and brook trout (*Salvelinus fontinalis*) within an unnamed tributary of Squaw Creek, west of the Squaw Valley base terminal. Koi (*Cyprinus carpio*) were also documented, an ornamental fish species, within the Caldwell Pond, although trout are also reported as being present in this pond. No fish species were observed within the surveyed portion of Bear Creek or within the snowmaking ponds in Alpine Meadows, although Forest Service catch-and-release signs are present in their vicinity. The snowmaking ponds are drained on a regular basis, and therefore would not be expected to support fish.

The trout species observed within the unnamed Squaw Creek tributary are established species that were historically introduced to the region. Nonnative trout compete, predate, and hybridize with the native trout species.

There are no known occurrences of aquatic invasive species such as quagga mussels, New Zealand mud snails, nor Eurasian water-milfoil within the study area. These species can easily be transported into the study area and the region by outdoor enthusiast traveling from infected watersheds. These species can hitch hike on contaminated water equipment or dirty boots. These species could severely disrupt the aquatic ecosystems.

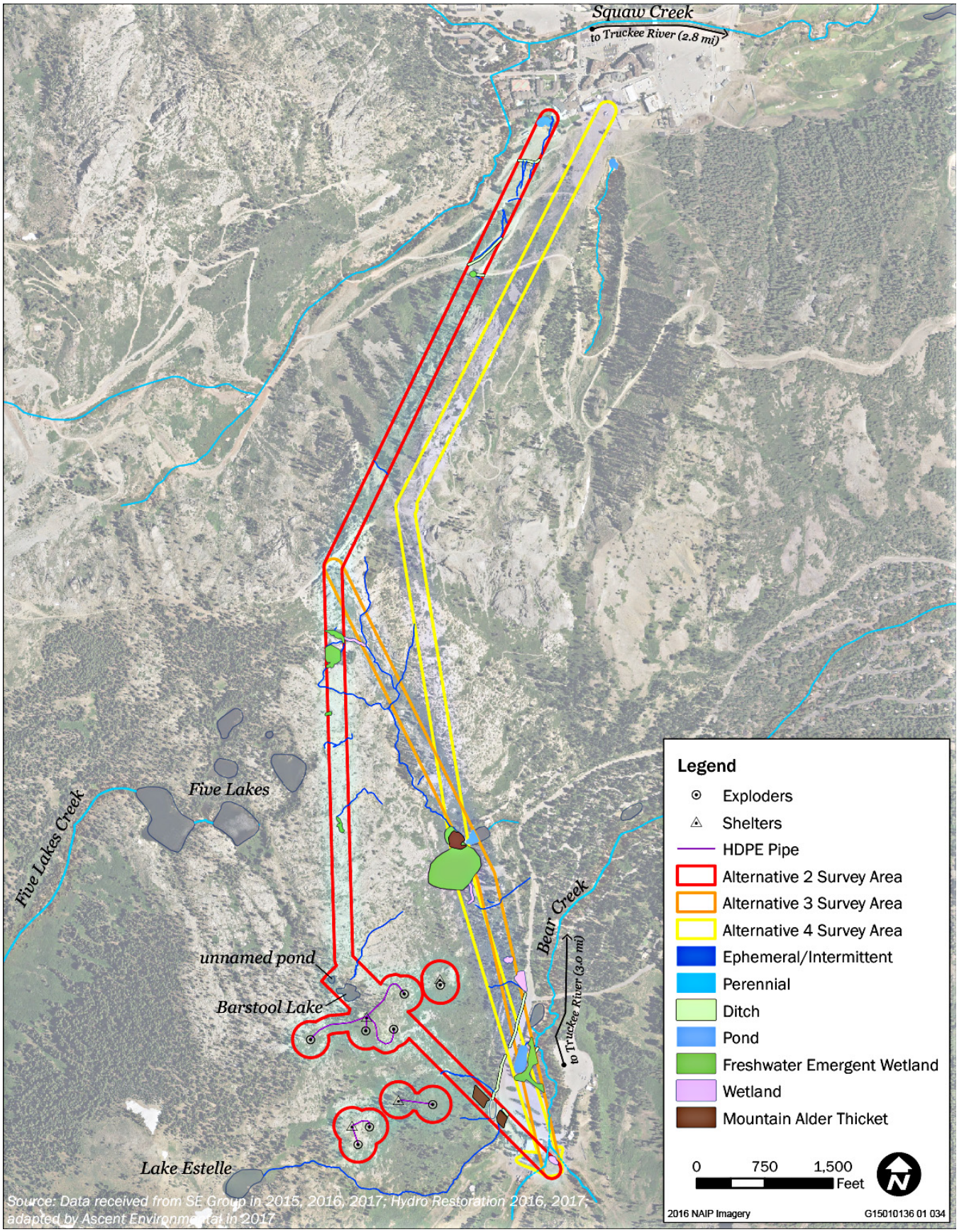


Exhibit 4.14-1 Aquatic Resources in the Study Area

Sensitive Biological Resources

Sensitive biological resources include those species, natural communities, and habitats that receive special protection through the federal Endangered Species Act (ESA), California Endangered Species Act (CESA), CWA, California Fish and Game Code, or local plans, policies, and regulations; or that are otherwise considered sensitive by federal, state, or local resource conservation agencies. Sensitive biological resources evaluated as part of this analysis include, Forest Service MIS, USFWS-designated critical habitat, and special-status animal species. These resources are discussed below. Sensitive natural communities are addressed separately in Section 4.12, "Vegetation." Forest Service designated riparian conservation areas (RCAs) are addressed in Section 4.17, Hydrology and Water Quality and the Riparian Conservation Objectives Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018g).

Management Indicator Species

The MIS report prepared for the project (U.S. Forest Service 2018e) evaluated 12 habitats for MIS required for consideration on national forest lands. The MIS report concluded that representative habitat for the following five MIS is present in the project area: aquatic macroinvertebrates (lacustrine/riverine habitat); yellow warbler (*Dendroica petechia*; riparian habitat); Pacific tree (chorus) frog (*Pseudacris regilla;* freshwater emergent wetland); mountain quail (*Oreortyx pictus*; early and mid-seral coniferous forest); and hairy woodpecker (*Picoides villosus*; snags in green forest). Further information on the MIS is provided in Table 4.14-3.

Table 4.14-3 Tahoe National Forest MIS and Selection of MIS for Project-Level Analysis for the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project

Habitat or Ecosystem Component	CWHR Type(s) Defining the Habitat or Ecosystem Component [1]	Management Indicator Species	Category for Project Analysis[2]
Riverine & Lacustrine	Lacustrine (LAC) and riverine (RIV)	Aquatic macroinvertebrates	3
Shrubland (west-slope chaparral types) (TAHOE NATIONAL FOREST only)	Montane chaparral (MCP), mixed chaparral (MCH), chamise-redshank chaparral (CRC)	Fox sparrow *(Passerella iliaca)*	1
Sagebrush	Sagebrush (SGB)	Greater sage-grouse *(Centrocercus urophasianus)*	1
Oak-associated Hardwood & Hardwood/conifer	Montane hardwood (MHW), montane hardwood-conifer (MHC)	Mule deer *(Odocoileus hemionus)*	1
Riparian	Montane riparian (MRI), valley foothill riparian (VRI)	Yellow warbler *(Dendroica petechia)*	3
Wet Meadow	Wet meadow (WTM), freshwater emergent wetland (FEW)	Pacific tree frog *(Pseudacris regilla)*	3
Early Seral Coniferous Forest	Ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree sizes 1, 2, and 3, all canopy closures	Mountain quail *(Oreortyx pictus)*	3
Mid-Seral Coniferous Forest	Ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 4, all canopy closures	Mountain quail *(Oreortyx pictus)*	3
Late Seral Open Canopy Coniferous Forest	Ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), eastside pine (EPN), tree size 5, canopy closures S and P	Sooty (blue) grouse *(Dendragapus obscures)*	1
Late Seral Closed Canopy Coniferous Forest	Ponderosa pine (PPN), Sierran mixed conifer (SMC), white fir (WFR), red fir (RFR), tree size 5 (canopy closures M and D), and tree size 6.	California spotted owl *(Strix occidentalis occidentalis)* American marten *(Martes caurina)* Northern flying squirrel *(Glaucomys sabrinus)*	1
Snags in Green Forest	Medium and large snags in green forest	Hairy woodpecker *(Picoides villosus)*	3
Snags in Burned Forest	Medium and large snags in burned forest (stand-replacing fire)	Black-backed woodpecker *(Picoides arcticus)*	1

[1] All CWHR size classes and canopy closures are included unless otherwise specified; dbh = diameter at breast height; MIS = management indicator species.

Canopy Closure classifications:
S = Sparse Cover (10–24% canopy closure)
P = Open cover (25–39% canopy closure)
M = Moderate cover (40–59% canopy closure)
D = Dense cover (60–100% canopy closure)

Tree size classes:
1 (Seedling) (<1" dbh)
2 (Sapling) (1–5.9" dbh)
3 (Pole) (6–10.9" dbh)
4 (Small tree) (11–23.9" dbh)
5 (Medium/Large tree) (>24" dbh)
6 (Multi-layered Tree) [In PPN and SMC] (Mayer and Laudenslayer 1988).

[2] Category 1: MIS whose habitat is not in or adjacent to the project area and would not be affected by the project.
Category 2: MIS whose habitat is in or adjacent to project area but would not be either directly or indirectly affected by the project.
Category 3: MIS whose habitat would be either directly or indirectly affected by the project.

Source: U.S. Forest Service 2018e

Critical Habitat

SNYLF, an endangered species, is the only species with designated critical habitat under the ESA in the project area. On April 25, 2013, USFWS published a proposal in the *Federal Register* (Vol. 78, No. 80) proposing listing SNYLF as endangered and designating critical habitat. On April 29, 2014, the final rule was published in the *Federal Register* (Vol. 79, No. 82) designating the species as Endangered. The effective date of this final rule was June 30, 2014. On August 26, 2016 (after the applicant had developed the alignment identified for Alternative 2 and included this alignment in application packages submitted to the Forest Service and the County), the final rule designating critical habitat for SNYLF was published in the *Federal Register* (Vol. 81, No. 166). The Five Lakes subunit consists of approximately 3,758 hectares (9,286 acres), of which 2,396 hectares (5,921 acres) are on federal land and 1,362 hectares (3,365 acres) are on private land. The critical habitat designation applies to most of the land on which the action alternative alignments are located, although the northern segment of Alternative 4 is outside the critical habitat area. Exhibit 4.14-2 shows the extent of the critical habitat designation in the project area and the location of the action alternatives and respective acreages.

The designation of critical habitat describes suitable habitat and the "primary constituent elements." The primary constituent elements are those physical or biological features and habitat characteristics required to sustain the species' life-history processes. The primary constituent elements for SNYLF—aquatic habitat for breeding and rearing; aquatic nonbreeding habitat, including overwintering habitat; and upland areas—are described in the following paragraphs (USFWS 2016):

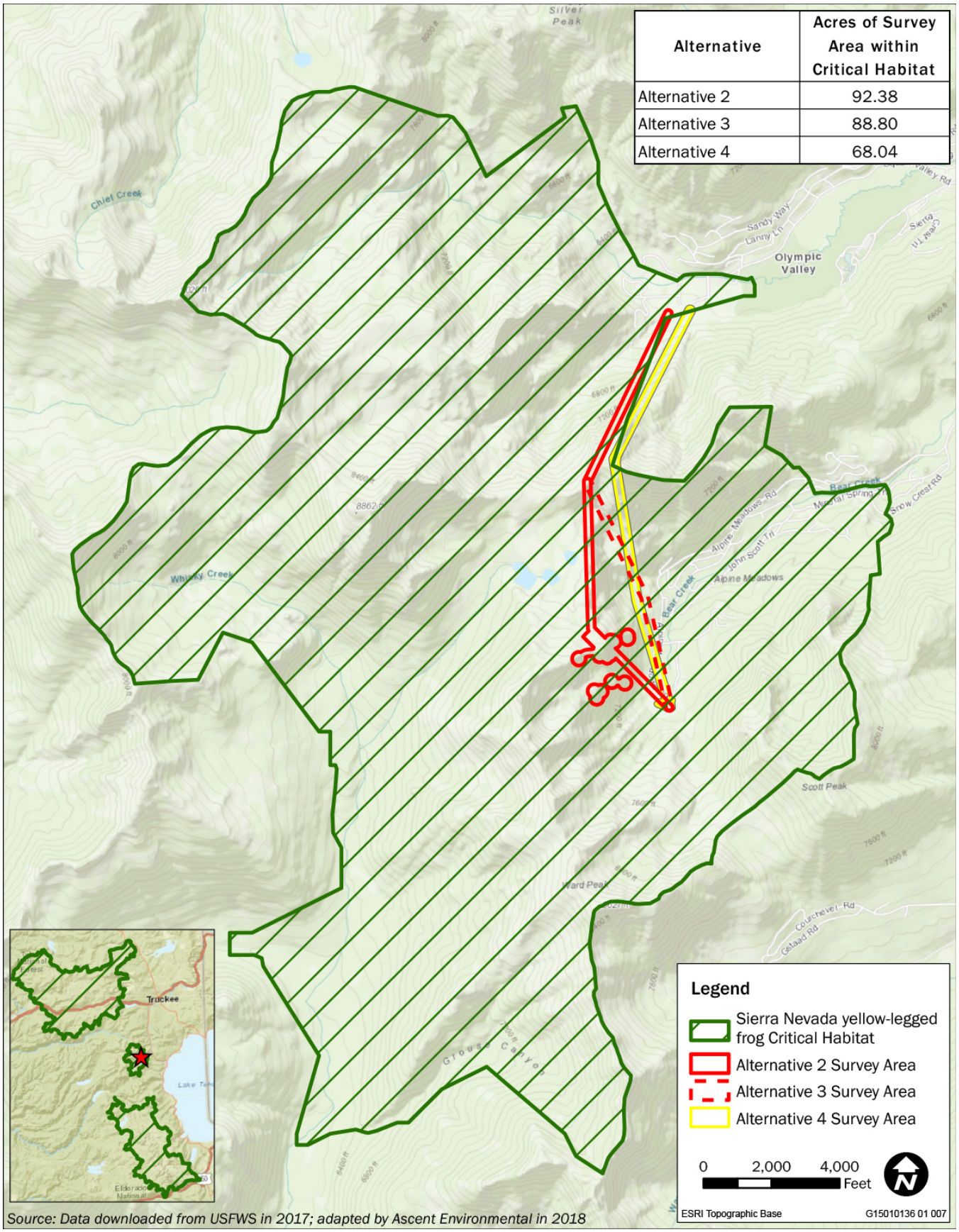
(1) *Aquatic habitat for breeding and rearing.* Habitat that consists of permanent water bodies, or those that are either hydrologically connected with, or close to, permanent water bodies, including, but not limited to, lakes, streams, rivers, tarns, perennial creeks (or permanent plunge pools within intermittent creeks), pools (such as a body of impounded water contained above a natural dam), and other forms of aquatic habitat. This habitat must:

(a) For lakes, be of sufficient depth not to freeze solid (to the bottom) during the winter (no less than 1.7 m (5.6 ft), but generally greater than 2.5 m (8.2 ft), and optimally 5 m (16.4 ft) or deeper (unless some other refuge from freezing is available).

(b) Maintain a natural flow pattern, including periodic flooding, and have functional community dynamics in order to provide sufficient productivity and a prey base to support the growth and development of rearing tadpoles and metamorphs.

(c) Be free of introduced predators.

(d) Maintain water during the entire tadpole growth phase (a minimum of 2 years). During periods of drought, these breeding sites may not hold water long enough for individuals to complete metamorphosis, but they may still be considered essential breeding habitat if they provide sufficient habitat in most years to foster recruitment within the reproductive lifespan of individual adult frogs.



Source: Data downloaded from USFWS in 2017; adapted by Ascent Environmental in 2018

Exhibit 4.14-2 Sierra Nevada Yellow-Legged Frog Critical Habitat in the Study Area

(e) Contain:

(i) Bank and pool substrates consisting of varying percentages of soil or silt, sand, gravel, cobble, rock, and boulders (for basking and cover);

(ii) Shallower microhabitat with solar exposure to warm lake areas and to foster primary productivity of the foodweb;

(iii) Open gravel banks and rocks or other structures projecting above or just beneath the surface of the water for adult sunning posts;

(iv) Aquatic refugia, including pools with bank overhangs, downfall logs or branches, or rocks and vegetation to provide cover from predators; and

(v) Sufficient food resources to provide for tadpole growth and development.

Aquatic habitat that falls within this category includes the larger and deep lakes of the Five Lakes area and Barstool Pond. The human-made ponds—Cushing Pond and the Alpine Meadows snowmaking ponds—do not hold water year-round because they are serviced for repairs in summer and because the snowmaking ponds are used to make snow in Alpine Meadows during the winter. The Caldwell Pond could provide suitable habitat; however, the presence of koi and planted trout likely precludes the presence of the species.

Aquatic nonbreeding habitat for SNYLF is described as follows (USFWS 2016):

(2) *Aquatic nonbreeding habitat (including overwintering habitat).* This habitat may contain the same characteristics as aquatic breeding and rearing habitat (often at the same locale), and may include lakes, ponds, tarns, streams, rivers, creeks, plunge pools within intermittent creeks, seeps, and springs that may not hold water long enough for the species to complete its aquatic life cycle. This habitat provides for shelter, foraging, predator avoidance, and aquatic dispersal of juvenile and adult mountain yellow-legged frogs. Aquatic nonbreeding habitat contains:

(a) Bank and pool substrates consisting of varying percentages of soil or silt, sand, gravel, cobble, rock, and boulders (for basking and cover);

(b) Open gravel banks and rocks projecting above or just beneath the surface of the water for adult sunning posts;

(c) Aquatic refugia, including pools with bank overhangs, downfall logs or branches, or rocks and vegetation to provide cover from predators;

(d) Sufficient food resources to support juvenile and adult foraging;

(e) Overwintering refugia, where thermal properties of the microhabitat protect hibernating life stages from winter freezing, such as crevices or holes within bedrock, in and near shore; and/or

(f) Streams, stream reaches, or wet meadow habitats that can function as corridors for movement between aquatic habitats used as breeding or foraging sites.

Aquatic nonbreeding habitat includes the smaller, shallower ephemeral ponds in the Five Lakes area, the unnamed pond adjacent to Barstool Lake, the ephemeral streams, and seasonal wetlands in the study area. Although most of the ephemeral streams dry up by late spring and early summer, they may provide potential dispersal routes for SNYLF.

Upland areas used by SNYLF are described as follows (USFWS 2016):

(3) *Upland areas.*

(a) Upland areas adjacent to or surrounding breeding and nonbreeding aquatic habitat that provide area for feeding and movement by mountain yellow-legged frogs.

(i) For stream habitats, this area extends 25 m (82 ft) from the bank or shoreline.

(ii) In areas that contain riparian habitat and upland vegetation (for example, mixed conifer, ponderosa pine, montane conifer, and montane riparian woodlands), the canopy overstory should be sufficiently thin (generally not to exceed 85 percent) to allow sunlight to reach the aquatic habitat and thereby provide basking areas for the species.

(iii) For areas between proximate (within 300 m (984 ft)) water bodies (typical of some high mountain lake habitats), the upland area extends from the bank or shoreline between such water bodies.

(iv) Within mesic habitats such as lake and meadow systems, the entire area of physically contiguous or proximate habitat is suitable for dispersal and foraging.

(b) Upland areas (catchments) adjacent to and surrounding both breeding and nonbreeding aquatic habitat that provide for the natural hydrologic regime (water quantity) of aquatic habitats. These upland areas should also allow for the maintenance of sufficient water quality to provide for the various life stages of the frog and its prey base.

[3] Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries of designated critical habitat on September 26, 2016.

Upland areas surrounding the available breeding and aquatic nonbreeding habitats include several land cover types, such as montane chaparral, Sierra Nevada coniferous woodland, bitter cherry thickets, but they also include granite and volcanic rock formations with little to no vegetation. Except for those ephemeral drainages already discussed, these rock formations would be unsuitable because they lack moisture and seeps. During periods of high temperature and relatively low humidity, these conditions could lead to desiccation of migrating amphibians.

Special-Status Species

This section addresses special-status wildlife and aquatic species. For the purposes of this analysis, special-status species are animals that are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. Special-status species are defined as:

- species listed or proposed for listing as threatened, rare, or endangered under the ESA or CESA;
- species considered as candidates for listing under the ESA or CESA;
- wildlife species identified by CDFW as species of special concern;
- animals fully protected under the California Fish and Game Code; and
- species designated as sensitive by the Forest Service Regional Forester in Region 5 (this designation applies only to species present on Forest Service lands).

A preliminary list of special-status wildlife species known or with potential to occur in the study area was developed based on a review of the following sources:

- a list of species that are federally listed as endangered or threatened, or candidate species that may be affected by the project (USFWS 2018 – provided in Appendix H);
- a list of special-status species known to occur within 5 miles of the study area, obtained from the CNDDB (CNDDB 2017 – provided in Appendix H);
- the Forest Service Regional Forester's list of sensitive animal species for the TNF (updated September 9, 2013 – provided in Appendix H);
- Forest Service geographic information system (GIS) data file;
- USFWS IPaC data; and
- the CNDDB.

The review of these materials identified 35 special-status wildlife species that could occur in or near the study area. Of these 35 species, nine are known to occur in the study area, two species have a moderate potential for occurrence, seven species have a low potential to be present and are not expected to occur, and 17 species have no potential for occurrence within the study area (Tables 4.14-4 and 4.14-5). These determinations were based on the types, extent, and quality of habitats in the study area determined during the reconnaissance-level field surveys; the proximity of the study area to known occurrences of the species; and the regional distribution and abundance of the species. Tables 4.14-4 and 4.14-5 summarize the regulatory status, habitat associations, and potential for each of the 35 special-status species initially identified with potential to occur in the study area.

The following species are known to occur in the study area:

- southern long-toed salamander (*Ambystoma macrodactylum sigillatum*),
- Sierra Nevada yellow-legged frog (*Rana sierrae*),
- golden eagle (*Aquila chrysaetos*),
- olive-sided flycatcher (*Contopus cooperi*),
- American peregrine falcon (*Falco peregrinus anatum*),
- Lewis's woodpecker (*Melanerpes lewis*),
- rufous hummingbird (*Selasphorus rufus*),
- yellow warbler (*Setophaga petechia*), and
- Williamson's sapsucker (*Sphyrapicus thyroideus*).

The following species have moderate potential to occur in the study area:

- bald eagle (Haliaeetus leucocephalus) and
- pallid bat (*Antrozous pallidus*).

The following species have low potential to occur in the study area:

- Great Basin rams-horn (*Helisoma newberry*),
- California spotted owl (*Strix occidentalis occidentalis*),
- California wolverine (*Gulo gulo*),
- Sierra Nevada snowshoe hare (*Lepus americanus tahoensis*),
- western white-tailed jackrabbit (*Lepus townsendii townsendii*),
- Pacific marten (*Martes caurina*), and
- fringed myotis (*Myotis thysanodes*).

Table 4.14-4 Special-Status Aquatic Species Known or Potentially Occurring in the Study Area

Common and Scientific Names	Status[a] Federal/ State	Distribution	Preferred Habitats	Potential for Occurrence within Study Area
Invertebrates				
California floater (freshwater mussel) *Anodonta californiensis*	FS-S/-	California floater is broadly distributed across western North America and the study area is within the historic range.	Typically found in lakes, slow rivers and some reservoirs with mud or sand substrates and are typically found at low elevations (Jepsen et al. 2010).	None – no suitable habitat within the study area.
Great Basin rams-horn (snail) *Helisoma newberryi*	FS-S/–	Larger lakes and slow rivers, including larger spring sources and spring-fed creeks.	Freshwater aquatic snail that burrows in soft mud. Areas with this species generally have a well-oxygenated but soft substrate and clear, very cold, slowly flowing water; sites may be associated with very large spring pools or strongly spring-influenced areas in larger streams or lakes.	Low – species has been documented in Lake Tahoe. Historically, it has been observed in the Truckee River directly downstream of Lake Tahoe on Forest Service lands.
Black juga (snail) *Juga nigrina*	FS-S/-	This species occurs throughout north central California, northwestern Nevada, and southwestern Oregon.	This species inhabits seepages, spring and creeks, in perennial flowing water.	None – study area is outside of the current known range of the species.
Fish				
Lahontan Lake tui chub *Gila bicolor pectinifer*	FS-S/-	Tui chubs are native mostly to interior drainages, except the Central Valley, and absent from all coastal drainages, except where introduced. This subspecies is known to occur within the Lahontan drainage. The subspecies is present in Pyramid Lake, Nevada, and is at least present in Lake Tahoe.	Occurs in many habitats: isolated springs, large desert lakes, sloughs, meadow streams, sluggish rivers, and backwaters of swift creeks. The key feature is quiet water with well-developed beds of aquatic plants and bottoms of sand or other fine materials.	None – study area is outside of the current known range of the species.
Hardhead *Mylopharodon conocephalus*	FS-S/	Hardhead are widely distributed in low- to midelevation streams in the main Sacramento-San Joaquin drainage. Their range extends from the Kern River, Kern County, in the south to the Pit River (south of Goose Lake drainage), Modoc County, in the north.	Hardhead are typically found in undisturbed areas of larger low- to mid-elevation streams	None – study area is outside of the current known range of the species.
Lahontan cutthroat trout *Oncorhynchus clarkii henshawi*	T/–	Native to streams and lakes on the eastern side of Sierra Nevada. Independence Lake (Placer County), By-Day Creek (Mono County) and Heenan Lake support the only authentic endemic populations of fish (Moyle 2002).	Occurs in cool, oxygenated streams and lakes.	None – surveys conducted within Squaw Creek in 2011 did not identify this species as being present. This species is known to occur in the Lower Truckee River and individuals may move upstream into Squaw Creek or Bear Creek; however, these streams are unlikely to provide suitable habitat for this species because of limited habitat function, potential barriers to movement, and presence of introduced species. The Five Lakes area is part of the historical fishless

Table 4.14-4 Special-Status Aquatic Species Known or Potentially Occurring in the Study Area

Common and Scientific Names	Status[a] Federal/ State	Distribution	Preferred Habitats	Potential for Occurrence within Study Area
				area (Moyle et al. 1996) and is not directly connected to a stream system where Lahontan cutthroat trout are found.
Amphibians				
Southern long-toed salamander *Ambystoma macrodactylum sigillatum*	-/SCC	High-elevation meadows and lakes in the Sierra Nevada, Cascade Range, and Klamath Mountains.	Aquatic larvae occur in ponds and lakes. Outside of breeding season adults are terrestrial and associated with underground burrows of mammals and moist areas under logs and rocks.	Present – species observed in Cushing Pond, unnamed pond next to Barstool Lake, Barstool Lake, and the two easternmost snowmaking ponds at the Alpine Meadows base terminal. There are eight known occurrences of this species in the CNDDB within 5 miles.
Foothill yellow-legged frog *Rana boylii*	FS–S/SSC	Occurs in the Klamath Mountains, Cascade Range, north and south Coast Ranges, Transverse Ranges, and Sierra Nevada up to approximately 6,000 feet.	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge. Usually found near riffles with rocks and sunny banks nearby.	None – study area is outside of the current known range of this species.
Sierra Nevada yellow-legged frog *Rana sierrae*	E, /T, SSC	Found in the Sierra Nevada above 4,500 feet from Plumas County to southern Tulare County. Isolated populations in Butte County and near Mono Lake, Mono County.	Associated with streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats.	Present – species observed within Barstool Lake and the unnamed pond adjacent to Barstool Lake. No other water body within the study area was found to support this species after surveys conducted on July 26, August 10 and 11, and September 30, 2017. Historical records along Squaw Creek and tributary to Squaw Creek date back to 1938 and 1960, recent surveys for the Squaw Valley Village did not observe this species. Surveys conducted by California Department of Fish and Wildlife in 2004 and 2011 did not detect the frog at Five Lakes. The last time a Sierra Nevada yellow-legged frog was observed in the Five Lakes was in 1999.
Reptiles				
Western pond turtle *Emys marmorata*	FS–S/SSC	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada up to 4,690 feet in elevation.	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests.	None – study area is outside of the range of this species.

[a] Status explained:
Federal:
E = listed as endangered under the federal Endangered Species Act
T = listed as threatened under the federal Endangered Species Act
FS-S= Forest Service-sensitive

State:
T = listed as threatened under the California Endangered Species Act
SSC = species of special concern in California

[b] Known occurrences from CDFW's California Natural Diversity Database (CNDDB 2017).

Sources: CNDDB 2017, U.S. Forest Service 2013, USFWS IPaC data; adapted by Ascent Environmental in 2018

Table 4.14-5 Special-Status Wildlife Species Known or Potentially Occurring in the Study Area

Common and Scientific Names	Status[a] Federal/ State	Distribution	Preferred Habitats	Potential for Occurrence within study area
Invertebrates				
Western bumble bee *Bombus occidentalis*	FS-S/-	Occurs throughout the western United States and western Canada. In California occurs in northern California.	A generalist forager; does not depend on any one flower type.	None – Forest Service considers this species as absent from the Tahoe Forest. NOTE: This species was thought to have been observed during the 2015 surveys, but it was misidentified, and the species observed was a California bumble bee (*B. californicus*)
Birds				
Northern goshawk *Accipiter gentilis*	FS–S/SSC	Permanent resident in the Klamath Mountains and Cascade Range, in the north Coast Range from Del Norte County to Mendocino County, and in the Sierra Nevada south to Kern County. Winters in Modoc, Lassen, Mono, and northern Inyo Counties	In the Sierra Nevada, this species generally requires mature conifer forests (late seral structure) with large trees, snags, downed logs, dense canopy cover, and open understories for nesting; aspen stands also are used for nesting. Foraging habitat includes forests with dense to moderately open overstories and open understories interspersed with meadows, brush patches, riparian areas, or other natural or artificial openings. Goshawks reuse old nest structures and maintain alternate nest sites.	None – no suitable nesting habitat (no late seral structure) present within the study area. There are several Forest Service occurrences all further than 1.5 miles. There are seven Forest Service PACs that fall within the Lake Tahoe Basin Management Unit area in the vicinity of the study area: PACs Blackwood Canyon, Middle Blackwood, East Blackwood, Page Meadows, Alpine Ridge, Twin Crags, and Burton Creek. Within the Tahoe National Forest, there are four PACs: Bear Creek PAC, which was active with two young in 2014; Silver PAC (no activity during 2015 visits); Big Chief, which had young in 2015; and Deep Creek PAC, which was created in 2014 with two juveniles, in 2015, a female NOGO was observed on nest, but the nest was presumed abandoned.
Golden eagle *Aquila chrysaetos*	FS-S, BGEPA/FP	Foothills and mountains throughout California. Uncommon nonbreeding visitor to lowlands such as the Central Valley.	Nest on cliffs and escarpments or in tall trees overlooking open country. Forages in annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals.	Present – species was observed flying over study area during field surveys. Beedy and Pandolfino (2013) note that most golden eagle pairs in the west side of the Sierra crest nest in the Foothill zone and those nesting near the crest favored vertical cliffs above river canyons. For the east side of the Sierra, many breeding pairs are located below the pine forests where open, sagebrush-foraging habitats are located nearby. No nests attributable to this species were observed during field surveys. Nearest known historical (1981) nest is approximately 26 miles south by Strawberry, California.
Olive-sided flycatcher *Contopus cooperi*	BCC/SSC	Summer breeder in California, winters in South of Mexico and in South America.	Breeds in montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds.	Present – species heard and observed during field surveys near the Five Lakes Trail in the study area. No nest observed.

Table 4.14-5 Special-Status Wildlife Species Known or Potentially Occurring in the Study Area

Common and Scientific Names	Status[a] Federal/ State	Distribution	Preferred Habitats	Potential for Occurrence within study area
Black swift *Cypseloides niger*	BCC	Occurs in California as a summer resident and migrant from mid-April to mid-October. Nests are occupied from min-May to mid-September, but most nesting occurs during June through August	Breeding black swifts are restricted to a very limited supply of potential nesting locations: behind or beside permanent or semipermanent waterfalls, on perpendicular cliffs near water (such as above Sierran rivers or on the sea coast), or in sea caves.	None – no suitable nesting habitat present within the study area.
Willow flycatcher *Empidonax traillii*	FS-S, BCC/E	Summers along the western Sierra Nevada from El Dorado to Madera County, in the Cascade Range and northern Sierra Nevada in Trinity, Shasta, Tehama, Butte, and Plumas Counties, and along the eastern Sierra Nevada from Lassen to Inyo County.	In the Sierra Nevada, suitable habitat typically consists of montane meadows that support riparian deciduous shrubs (particularly willows) and remain wet through the nesting season (i.e., midsummer). Important characteristics of suitable meadows include a high-water table that results in standing or slow-moving water, or saturated soils (e.g., "swampy" conditions) during the breeding season; abundant riparian deciduous shrub cover (particularly willow); and riparian shrub structure with moderate to high foliar density that is uniform from the ground to the shrub canopy. Most breeding occurrences are in meadows larger than 19 acres, but the average size of occupied meadows is approximately 80 acres. Although less common in the Sierra Nevada, riparian habitat along streams also can function as suitable habitat for willow flycatcher. However, those areas must support the hydrologic and vegetation characteristics described for suitable meadows (e.g., standing or slow-moving water, and abundant and dense riparian vegetation).	None – no suitable breeding habitat exists in the study area (saturated wetland areas with high acreages of willow). Although willows occur within some of the riparian areas, these areas are not ideal for willow flycatcher nesting because of the small acreage of willows and the low amount of water in the study area. CNDDB and Forest Service data contains occurrence reports by the Granite Chief Trail-north side of Squaw Valley area (0.82 mile northwest of study area), and along Silver Creek, west of Silver Creek Campground (approximately 2 miles northeast of the study area).
American peregrine falcon *Falco peregrinus anatum*	D/D, FP	Permanent resident along the north and south Coast Ranges. May summer in the Cascade Range and Klamath Mountains and through the Sierra Nevada to Madera County. Winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations	Present – species observed soaring above *The Buttress* and utilizes the forest area for foraging. No nests (scrapes) attributable to this species were observed and observations of this species were sporadic. Nearest known nest is located on the east side of State Route 89 near the intersection with Alpine Meadows Road, approximately 2.3 miles.

Table 4.14-5 Special-Status Wildlife Species Known or Potentially Occurring in the Study Area

Common and Scientific Names	Status[a] Federal/ State	Distribution	Preferred Habitats	Potential for Occurrence within study area
Greater sandhill crane *Grus Canadensis tabida* (nesting and wintering)	FS–S/T, FP	Breeds in Siskiyou, Modoc, Lassen, Plumas, and Sierra Counties. Winters in the Central Valley, southern Imperial County, Lake Havasu National Wildlife Refuge, and the Colorado River Indian Reserve.	Summers in open terrain near shallow lakes or freshwater marshes. Winters in plains and valleys near bodies of fresh water.	None – study area is outside of the current known range of the species.
Bald eagle *Haliaeetus leucocephalus*	D, FS-S, BGEPA/E, FP	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin. Reintroduced into central coast. Winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County.	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, stream, or the ocean. Bald eagle does not nest in or near the study area. The only known nest sites in the Tahoe Basin are several miles away at Emerald Bay and Marlette Lake. Bald eagle is not expected to regularly use habitat within the project site; however, larger water bodies with sufficient prey may provide potential foraging habitat occasionally during winter. Any bald eagle occurrence and habitat use in the study area would be most likely during winter, or transitory during other seasons.	Moderate – species is known to forage in the Five Lakes area and may use the study area during fly overs; no nests were observed during field surveys in the study area. Forest Service data shows locations of observation along the Truckee River, approximately 2 miles east of the study area. Nearest nest records are near Hell Hole (8.4 miles southwest) and by Donner Lake (8.5 miles northeast).
Lewis's woodpecker *Melanerpes lewis*	BCC (wintering)/–	From interior southern British Columbia and southwestern Alberta south to Arizona and New Mexico, and from central coastal California east to Colorado	Three principal habitats are open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest; however, breeding birds are also found in oak woodland, nut and fruit orchards, pinyon pine-juniper woodland, a variety of pine and fir forests, and agricultural areas including farm and ranchland.	Present – may use pine forest for breeding; this species winters in low-elevation areas.
Rufous hummingbird *Selasphorus rufus*	BCC	Occurs along the Pacific Coast and Rocky Mountains from southern Alaska to central Mexico	Rufous hummingbirds typically breed in open or shrubby areas, forest openings, yards, and parks, and sometimes in forests, thickets, swamps, and meadows from sea level to about 6,000 feet. During their migration, rufous hummingbirds can also occur in mountain meadows up to 12,600 feet in elevation.	Present – species is known to occur in the project area.
Yellow warbler *Setophaga petechia*	-/SCC	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in the Cascade Range and Sierra Nevada.	Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Present – species is known to occur in the project area.

Table 4.14-5 Special-Status Wildlife Species Known or Potentially Occurring in the Study Area

Common and Scientific Names	Status[a] Federal/ State	Distribution	Preferred Habitats	Potential for Occurrence within study area
Williamson's sapsucker *Sphyrapicus thyroideus*	BCC (year-round)/–	Year-round resident of the northern Sierra. Winters in southern California and Mexico.	Inhabits open coniferous and mixed coniferous-deciduous forest	Present – species is common locally and was observed during field surveys.
Great gray owl *Strix nebulosa*	FS-S/E	Permanent resident of the Sierra Nevada from Plumas County south to the Yosemite area. Occasionally occurs in northwestern California in the winter and the Warner Mountains in the summer.	Late successional coniferous forests bordering large meadows	None – no suitable late successional coniferous habitat or large meadow complexes in the study area.
California spotted owl *Strix occidentalis*	FS-S/SSC	Resident of southern Cascade Range south along the west slope of the Sierra Nevada, along the mountains in the Central Coast, and in the mountains of southern California.	Breeds and roosts in forests and woodlands with large old trees and snags, high basal areas of trees and snags, dense canopies, multiple canopy layers, and downed woody debris. Nest sites in the Sierra Nevada are typically tree cavities or on broken-topped trees or snags.	No nesting habitat – no dense canopy or multiple canopy layer habitat within the study area. Known territories and occurrences are known from CNDDB and Forest Service, most are concentrated in closer proximity to State Route 89. Nearest known occurrence is 1.75 miles southeast of the Alpine Meadows Base area. Species could occasionally move through the study area during foraging or local movements.
Mammals				
Pallid bat *Antrozous pallidus*	FS–S/SSC	Occurs throughout California except the high Sierra (up to 8,000 feet) from Shasta to Kern County and the northwest coast, primarily at lower and mid-elevations.	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts but also rocky outcrops, cliffs, and crevices with access to open habitats for foraging.	Moderate – although no documented occurrences in the study area have been reported, the study area is at the upper range of the elevational range of this species and suitable roosting habitat is present in the study area.
Sierra Nevada mountain beaver *Aplodontia rufa californica*	–/SSC	Occurs from Mt. Shasta east and south through the Sierra Nevada. Populations scattered and local	Frequent open and intermediate- canopy coverage with a dense understory near water. Deep, friable soils are required for burrowing, along with a cool, moist microclimate.	None – no suitable habitat within the study area. Species or sign not observed during field surveys.
Townsend's big-eared bat *Corynorhinus townsendii*	FS–S/SSC	Throughout California from low desert to mid-elevation montane habitats.	Desert, oak woodland, coastal redwood, and mixed coniferous- deciduous forest. Day roosts in cave- like spaces including mines, caves, tunnels, and dark spaces in buildings, such as attics. May night roost in more open areas such as under bridges.	None – no suitable roosting habitat in study area.
California wolverine *Gulo gulo*	FC, FS-S/T, FP	Historically found in the Klamath Mountains and Cascade Range south through the Sierra	Wolverines that occur in forested areas use dense forest cover for travel and resting. Habitats used in	Low – Although within the historic range, the study area is outside of current known occurrence area and is subject to

Table 4.14-5 Special-Status Wildlife Species Known or Potentially Occurring in the Study Area

Common and Scientific Names	Status[a] Federal/ State	Distribution	Preferred Habitats	Potential for Occurrence within study area
		Nevada to Tulare County. There have been only two recent sighting of a wolverine in California. One of them was in an area north of Truckee and one by Lake Spaulding. The occurrence from the area north of Truckee was verified by the California Department of Fish and Wildlife as an individual from a population in Idaho. Wolverine is highly sensitive to human disturbance.	the Sierra Nevada include mixed conifer, red fir, lodgepole pine, subalpine conifer, alpine dwarf-shrub, wet meadows, and montane riparian habitats. Habitat requires that road densities are below 2 miles per square mile. Need water source and denning sites. Rarely seen. Most sightings have been between 1,600 and 4,800 feet. The species has been found between 4,300 and 7,300 feet in the northern Sierra Nevada and between 6,400 and 10,800 in the southern Sierra Nevada. Most common in open terrain above timberline and subalpine forests.	high levels of recreation/human disturbances. Historical occurrence within 5 miles of the study area dates back to 1953, by the entrance to Squaw Valley and State Route 89.
Sierra Nevada snowshoe hare *Lepus americanus tahoensis*	–/SSC	Occurs in the Cascade Range in Siskiyou and Del Norte Counties and the Sierra Nevada from Mt. Lassen south to Mono and Tulare Counties, generally between 4,800 and 8,000 feet	Found in dense thickets of conifers, riparian vegetation, or chaparral in boreal life zones	Low – suitable chaparral habitat in the study area, but no sign was observed during field surveys.
Western white-tailed jackrabbit *Lepus townsendii townsendii*	–/SSC	Occurs in the Great Basin, as well as high elevations on the crest of the Sierra Nevada and rarely to 6,000 feet on the western slope of this range.	Sagebrush-covered slopes, grasslands and meadows to timberline or above, and open forests of lodgepole pine, yellow pine, western juniper, dwarf juniper, red fir and mixed conifers. Moves to lower regions during the winter in the Sierra Nevada	Low – suitable habitat (coniferous woodland) is present but no sign was observed during field surveys.
Pacific marten *Martes caurina*	FS-S/-	Permanent resident of North Coast regions and Sierra Nevada, Klamath Mountains, and Cascade Range.	Pacific marten lives in mature, dense conifer forests or mixed conifer-hardwood forests with a high-percentage canopy cover and large amounts of coarse woody debris on the forest floor.	Low – no suitable denning habitat with dense conifer forest that supports high-percentage canopy cover occurs within the study area; Forest Service data indicate that they are present in the Five Lakes area. Nearest observation was approximately 700 feet west of the Alternative 2 alignment.
Pacific fisher *Pekania pennanti* (*pacifica*) West Coast DPS	PT, FS-S/CT, SSC	Coastal mountains from Del Norte County to Sonoma County, east through the Cascade Range to Lassen County, and south in the Sierra Nevada to Kern County	Late successional coniferous forests and montane riparian habitats	None – no late successional coniferous forest habitat within the study area and considered extirpated from the Tahoe region.
Fringed myotis *Myotis thysanodes*	FS-S/-	Fringed myotis is widespread in California, occurring in all but the Central Valley and Colorado and Mojave deserts.	Fringed myotis roosts in caves, mines, buildings, and crevices. Separate day and night roosts may be used. Maternity colonies of up to 200 individuals are located in caves, mines, buildings, or crevices. Adult males are absent from maternity	Low – study area is within the upper elevational range and supports conifer habitat (red fir and others) but lacks roosting habitat (i.e., caves).

Table 4.14-5 Special-Status Wildlife Species Known or Potentially Occurring in the Study Area

Common and Scientific Names	Status[a] Federal/ State	Distribution	Preferred Habitats	Potential for Occurrence within study area
			colonies, which are occupied from late April through September. Optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally 4,000–7,000 feet.	
Sierra Nevada red fox *Vulpes vulpes necator*	C (Sierra Nevada Distinct Population Segment)/T	Before 2010, two small populations of fewer than 40 adults were known to exist in California around Mt. Lassen Peak in the southern Cascade Range, and Sonora Pass (north of Yosemite National Park) in the Sierra Nevada. Since that time, the geographic range of the species has been confirmed (through a combination of genetics and photographic evidence) to extend north throughout the southern Cascade Range into Oregon as far north as Mt. Hood, significantly extending the Sierra Nevada subspecies' range north beyond its historically known range in California. However, within the Sierra Nevada portion of the range, this species is currently known to occur only in the Sonora Pass area (USFWS 2015). No longer considered present in the Tahoe-Truckee region.	Uses multiple habitat types primarily in the alpine and subalpine zones (near and above treeline). In addition to meadows and rocky areas, this species uses a variety of high-elevation conifer forest habitats. Near treeline in the Lassen area, where habitat use has been best documented, this species frequents subalpine conifer habitat dominated by whitebark pine (*Pinus albicaulus*) and mountain hemlock (*Tsuga mertensiana*). This conifer forest habitat has been described as typically open and patchy (USFWS 2015).	None – study area is outside the current known occurrence distribution of the species.

Note: PAC = protected activity center.

[a] Status explained:

Federal:
BGEPA = protected under Bald and Golden Eagle Protection Act
E = listed as endangered under the federal Endangered Species Act
T = listed as threatened under the federal Endangered Species Act
PT = proposed threatened
D = delisted
C = candidate for threatened or endangered status
FP = proposed for delisting
BCC = USFWS Bird of Conservation Concern
FS-S = Forest Service-sensitive

State:
E = listed as endangered under the California Endangered Species Act
T = listed as threatened under the California Endangered Species Act
CT = candidate for threatened status
D = delisted
FP = fully protected under the California Fish and Game Code
SSC = species of special concern in California

[b] Known occurrences from the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB 2017).

Source: CNDDB 2017, U.S. Forest Service 2013, USFWS IPaC data; adapted by Ascent Environmental in 2018

Wildlife Movement Corridors

The California Essential Habitat Connectivity Project is a recently-completed, peer-reviewed statewide assessment of important habitat linkages (Spencer et al. 2010). The project's goal was to identify large remaining blocks of intact habitat or natural landscape at a coarse spatial scale, and model linkages between them that are important to maintain as corridors for wildlife. This coarse-scale, statewide map was based primarily on the concept of ecological integrity over a very large region, rather than the specific movement and other life history requirements of a particular species. The study areas for all the action alternatives are at the northeastern edge of the Sturdevant Ridge–Mosquito Ridge/Crystal Ridge Essential Connectivity Area (ECA). This ECA connects natural landscape blocks from around Sturdevant Ridge in El Dorado County up through the Crystal Ridge northbound until approximately the summit of Granite Chief, encompassing 171,457 acres (Spencer et al. 2010).

More locally, the management plan for the Loyalton-Truckee Deer Herd (CDFG 1982, 2010) shows that Olympic Valley is included in the Verdi Sub-Unit of the Loyalton-Truckee Deer Herd summer and migratory range. The Verdi sub-unit of the Loyalton-Truckee Deer Herd is identified in the 1982 management plan as migrating from the eastern Sierra Nevada foothills outside of Reno, Nevada, southwest into eastern Sierra, Nevada, and Placer Counties in California during the spring and summer months after breeding. As described in the *Loyalton-Truckee Deer Herd Management Plan* (CDFG 1982, 2010), individuals migrate along the northern and southern sides of the Interstate 80 (I-80) corridor from the Truckee Meadows in Nevada to as far west as Donner Lake, as well as travelling south and southwest from this corridor to as far as the western Lake Tahoe Basin. Olympic Valley is located in the summer range of the deer herd. Migratory corridors are believed to often coincide with riparian habitat corridors.

Fawning habitat has been identified along the Truckee River, near Dry Lake in the Martis Valley, and Lookout Mountain (Town of Truckee 2014), and all to the north and northeast of Olympic Valley. Fawning has been documented in the last 5 years at Northstar-at-Tahoe. CDFW maps also show the southern edge of Northstar-at-Tahoe near Mt. Pluto as a fawning area (EDAW/AECOM 2009). Because fawning occurs within Martis Valley and Northstar-at-Tahoe, it is possible that some fawning may also occur in suitable habitat along the migratory corridor that extends into the Lake Tahoe Basin. While not designated as an important fawning area, the meadows associated with Squaw Creek could be used by some migrating or resident deer for fawning.

The 1982 *Loyalton-Truckee Deer Herd Management Plan* is 30 years old, and deer migratory and fawning patterns have been shown to have shifted somewhat since the plan's completion due to development in the general region, increased traffic on State Routes 267 and 89, and the expansion of I-80. Additionally, over the last 15 years, migratory habitat loss and fragmentation has increased throughout the herds' range because of residential development. The mule deer population has generally declined over the last few decades, with the loss of wintering habitat and reduced access to wintering areas being a primary contributor to this decline (CDFG 2010). In the update to the deer herd management plan, changes were noted based on various radiotelemetry studies. Telemetry studies from the 1990s showed some use by migratory deer around Martis Valley, but none to the south or southwest where the *Village at Squaw Valley Specific Plan* project site is located (CDFG 2010). Radiotelemetry studies from 2002 through 2005 did not observe Loyalton-Truckee Deer Herd migratory deer using the area south of I-80 (CDFG 2010). In 2009, RMT, Inc., conducted a study on the movement and migration of mule deer at the proposed Canyon Springs development site (Town of Truckee 2014). This site is located 12 miles northeast of the *Village at Squaw Valley Specific Plan* project site in the town of Truckee, at generally the same elevation as Olympic Valley, and directly within the mapped migratory pathway of the herd. The study documented deer using the area for forage and cover. While it was generally believed that deer used the general area for migration, no direct evidence of migration was found from the study and most of the observed deer were thought to be resident. Similarly, a portion of the deer observed in Olympic Valley may be resident deer and not migratory based on these data and the previous telemetry studies conducted in the 1990s and early 2000s. If there is a resident, year-round deer population in the area, it may move ephemerally to different locations within the general Truckee-Tahoe region but is not likely to make longer migrations down the slope of the Sierra Nevada.

4.14.1.2 REGULATORY SETTING

Federal

Federal Endangered Species Act

USFWS and the National Marine Fisheries Service are charged with oversight of species designated as threatened or endangered under the ESA (Title 50, Part 17 of the Code of Federal Regulations [i.e., 50 CFR 17]), as amended under the USFWS Mitigation Policy of 1956 (Title 16, Chapter 35, Section 1531 of the United States Code [16 USC 1531 et seq.]), as well as those species that are designated by Region 1 of USFWS as species of concern.

USFWS has authority over projects that may result in take of a federally listed species. Under the ESA, "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in any such conduct" (Public Law 93-205, as amended by Section 3 of Public Law 107-136 [16 USC 1532]). The loss of habitat can also be considered "take" under the ESA. For projects with a federal nexus, such as this project, the process is accomplished through consultation under ESA Section 7 (16 USC 1536[a][2]), which produces a biological assessment to describe the impact mechanisms and any adverse effects on the listed population. The Section 7 process for this project would apply to activities on both Forest Service and private lands. Information within the biological assessment is used to prepare a biological opinion for projects that may adversely affect a listed species. SNYLF, which is listed as endangered under the ESA, and designated critical habitat for this species occur in the study area and would be subject to Section 7 review and consultation for the alternatives.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act, enacted in 1918, domestically implements a series of international treaties that provide protection for migratory birds. It authorizes the Secretary of the Interior to regulate the taking of migratory birds and provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the Migratory Bird Treaty Act includes several hundred species, which is essentially all the native birds, in the United States.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act, enacted in 1940 and amended multiple times since, prohibits the taking of bald and golden eagles without a permit from the Secretary of the Interior. Similar to the ESA, the Bald and Golden Eagle Protection Act defines "take" to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" (16 USC 668–668c). For the purpose of the act, disturbance that would injure an eagle, decrease productivity, or cause nest abandonment, including habitat alterations that could have these results, are considered take and can result in civil or criminal penalties.

Executive Order 11990 Protection of Wetlands

Executive Order 11990 established the protection of wetlands and riparian systems as the official policy of the federal government. The order requires all federal agencies to consider wetland protection as an important part of their policies and take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

Executive Order 13112 National Invasive Species Management Plan

Executive Order 13112 directs all federal agencies to prevent the introduction and control the spread of invasive species in a cost-effective and environmentally sound manner to minimize economic, ecological, and human health impacts. It established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. The Invasive Species Council and advisory committee oversee and facilitate implementation of the executive order.

Section 404 of the Clean Water Act

Section 404 of the CWA establishes a requirement for a project applicant to obtain a permit before engaging in any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Under Section 404 of the CWA, USACE regulates and issues permits for activities that involve the discharge of dredged or fill materials into waters of the United States. Fills of less than 0.5 acre of nontidal waters of the United States for residential, commercial, or institutional development projects can generally be authorized under USACE's nationwide permit program, provided that the project satisfies the terms and conditions of the particular permit. Fills that do not qualify for a nationwide permit require a letter of permission or an individual permit.

Section 401 Water Quality Certification

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine RWQCBs. The study area is within the jurisdiction of the Lahontan RWQCB.

Forest Service

Tahoe National Forest Land and Resource Management Plan and Sierra Nevada Plan Amendment Record of Decision

The *Tahoe National Forest Land and Resource Management Plan* (LRMP) (U.S. Forest Service 1990) provides direction for managing the TNF, which includes Alpine Meadows in the study area. Specifically, Chapter V, "Management Direction," presents both forest-wide and area-specific management direction for the TNF. The forest-wide management direction consists of forest goals and desired future conditions, objectives, and forest-wide standards and guidelines. Specific management direction for each of the 106 management areas includes management emphasis for the area, selected standards and guidelines, and compatible available management practices. The LRMP was amended by the SNFPA (U.S. Forest Service 2004). Together, the LRMP and SNFPA are referred to as the Forest Plan. Specific standards and guidelines identified in the Forest Plan related to wildlife and aquatics were applied and evaluated for consistency.

Tahoe National Forest Management Indicator Species

The TNF MIS are animal species identified in the Sierra Nevada Forest (SNF) MIS Amendment Record of Decision (ROD) signed December 14, 2007, which was developed under the 1982 National Forest System Land and Resource Management Planning Rule (1982 Planning Rule) (36 CFR 219). Guidance regarding MIS set forth in the LRMP as amended by the 2007 SNF MIS Amendment ROD directs Forest Service resource managers to (1) at project scale, analyze the effects of proposed projects on the habitat of each MIS affected by such projects, and (2) at the bioregional scale, monitor populations and/or habitat trends of MIS, as identified in the LRMP as amended.

State

California Endangered Species Act

CESA prohibits the taking of state-listed endangered or threatened species, as well as candidate species being considered for listing. Applicants may obtain a Section 2081 incidental take permit if the impacts of the take are minimized and fully mitigated and the take would not jeopardize the continued existence of the species. A "take" of a species, under CESA, is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of "take" does not include "harm" or "harass" as is included in the federal ESA.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes waters of the United States as well as areas that meet the definition of "waters of the state." Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally protected under Section 404 of the CWA provided they meet the definition of waters of the state. Mitigation requiring no net loss of wetlands functions and values of waters of the state is typically required by the RWQCB.

California Fish and Game Code Section 1602—Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Sections 1600 *et seq.* of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a lake or streambed alteration agreement authorizing such activity. "Stream" is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

California Fish and Game Code Sections 3503–3503.5—Protection of Bird Nests and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., hawks, owls, eagles, and falcons), including their nests or eggs. Violations of these codes include destroying active nests by removing the vegetation in which the nests are located and disturbance of nesting pairs that results in the failure of active raptor nests.

Local

Placer County General Plan

The *Placer County General Plan* (Placer County 2013) contains the following policies that are applicable to the alternatives:

Water Resources Policies

- **Policy 6.A.1.** The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected including riparian zones, wetlands, old growth woodlands, and the habitat of rare, threatened or endangered species. Based on more detailed information supplied as a part of the review for a specific project, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

    a. Reasonable use of the property would otherwise be denied;

    b. The location is necessary to avoid or mitigate hazards to the public;

    c. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or

    d. The location is necessary for the construction of new roads, bridges, trails, or similar infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.

- **Policy 6.A.3.** The County shall require development projects proposing to encroach into a creek corridor or creek setback to do one or more of the following, in descending order of desirability:

  a. Avoid the disturbance of riparian vegetation;

  b. Replace riparian vegetation (on-site, in-kind);

  c. Restore another section of creek (in-kind); and/or

  d. Pay a mitigation fee for restoration elsewhere (e.g., wetland mitigation banking program).

- **Policy 6.A.4.** Where creek protection is required or proposed, the County should require public and private development to:

  a. Preserve stream zones and stream setback areas through easements or dedications. Parcel lines (in the case of a subdivision) or easements (in the case of a subdivision or other development) shall be located to optimize resource protection; If a stream is proposed to be included within an open space parcel or easement, allowed uses and maintenance responsibilities within that parcel or easement should be clearly defined and conditioned prior to map or project approval;

  b. Designate such easement or dedication areas (as described in a. above) as open space;

  c. Protect creek corridors and their habitat value by actions such as: 1) providing an adequate creek setback, 2) maintaining creek corridors in an essentially natural state, 3) employing creek restoration techniques where restoration is needed to achieve a natural creek corridor, (4) utilizing riparian vegetation within creek corridors, and where possible, within creek areas, 5) prohibiting the planting of invasive, non-native plants (such as Vinca major and eucalyptus) within creek corridors or creek setbacks, and 6) avoiding tree removal within creek corridors;

  d. Provide recreation and public access near creeks consistent with other General Plan policies;

  e. Use design, construction, and maintenance techniques that ensure development near a creek will not cause or worsen natural hazards (such as erosion, sedimentation, flooding, or water pollution) and will include erosion and sediment control practices such as: 1) turbidity screens and other management practices, which shall be used as necessary to minimize, sedimentation, and erosion, and shall be left in place until disturbed areas; and/or are stabilized with permanent vegetation that will prevent the transport of sediment off site; and 2) temporary vegetation sufficient to stabilize disturbed areas.

  f. Provide for long-term creek corridor maintenance by providing a guaranteed financial commitment to the County which accounts for all anticipated maintenance activities.

- **Policy 6.A.5.** The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff and to encourage the use of BMPs for agricultural activities.

- **Policy 6.A.9.** The County shall require that natural watercourses are integrated into new development in such a way that they are accessible to the public and provide a positive visual element.

- **Policy 6.A.10.** The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

- **Policy 6.A.11.** Where the stream environment zone has previously been modified by channelization, fill, or other human activity, the County shall require project proponents to restore such areas by means of landscaping, revegetation, or similar stabilization techniques as a part of development activities.

Fish and Wildlife Habitat Policies

- **Policies 6.C.1** Identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations. Significant ecological resource areas include the following:

  a. Wetland areas including vernal pools.

  b. Stream environment zones.

  c. Any habitat for rare, threatened or endangered animals or plants.

  d. Critical deer winter ranges (winter and summer), migratory routes and fawning habitat.

  e. Large areas of non-fragmented natural habitat, including Blue Oak Woodlands, Valley Foothill Riparian, vernal pool habitat.

  f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.

  g. Important spawning areas for anadromous fish.

- **Policy 6.C.2.** The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.

- **Policy 6.C.5.** The County shall require mitigation for development projects where isolated segments of stream habitat are unavoidably altered. Such impacts should be mitigated on-site with in-kind habitat replacement or elsewhere in the stream system through stream or riparian habitat restoration work where it is clear that offsite replacement provides greater functions and values than onsite replacement.

- **Policy 6.C.9.** The County shall require new private or public developments to preserve and enhance existing riparian habitat unless public safety concerns require removal of habitat for flood control or other public purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for acquiring, restoring, and enhancing at least an equivalent amount of like habitat within or near the project area.

- **Policy 6.C.11.** Prior to approval of discretionary development permits involving parcels within a significant ecological resource area, the County will require, as part of the environmental review process, a biotic resources evaluation of the sites by a wildlife biologist.

Placer County Code

- **Article 12.20. Tree Preservation in Area East of Sierra Summit.** Placer County Code, Article 12.20, addresses tree preservation in the County east of the Sierra summit. The ordinance is applicable to all trees east of the Sierra summit that are 6 inches in diameter at breast height (dbh) or greater, excluding trees on lands devoted to the growing and harvesting of timber for commercial purposes. A timber harvest plan must be prepared and considered by the California Department of Forestry and Fire Protection before the removal of timberland, and a tree permit must be obtained before trees 6 inches dbh or greater can be removed.

Squaw Valley General Plan and Land Use Ordinance

No policies in the *Squaw Valley General Plan and Land Use Ordinance* (Placer County 2006) apply directly to wildlife or special-status species or their habitat. The Environmental Resources Element requires minimizing adverse impacts on the unique resources of the area. Vegetation policies require any planning to minimize damage to existing vegetation and to revegetate all areas disturbed by construction. Revegetation of any cover temporarily removed or altered through construction activities is required (Section 118.16). To protect against erosion and sedimentation and loss of vegetation, a detailed erosion control, drainage and

revegetation plan would need to be submitted for any project (Section 118). Streams and waterways are given protection through requirements that construction not cause siltation or adversely affect the quality of water or fish habitat. Setbacks and protections from construction along the stream environment zone (100-year floodplain) are described in Section 115.18-115.23. Section 115.18 restricts adverse impacts from development activities within any undisturbed stream environmental zone. Where the floodplain has not been established, the area within 100 feet of the centerline of the stream will be left in its natural state (Section 139.14). There are additional setbacks for buildings and structures (Section 139.16). Snow storage is also not allowed within the 100-year floodplain (Section 121). Restoration is required for the approval of projects on adjoining properties when any stream environmental zone or floodplain has been adversely affected by channelization, fill or other human activity.

Alpine Meadows General Plan

No policies in the *Alpine Meadows General Plan* (Placer County 1968) apply directly to wildlife, or special-status species

4.14.2 Analysis Methods

4.14.2.1 METHODS AND ASSUMPTIONS

The analysis of potential impacts on biological resources from implementation of the project is based on the data review, project-specific biological surveys, and technical studies described previously in Section 4.14.1.1, "Environmental Setting." The following discussion summarizes the impact mechanisms and assumptions considered for this analysis and describes how potential impacts were evaluated for activities anticipated under the alternatives.

Primary Impact Mechanisms and Assumptions

Potential impacts associated with the alternatives can be classified as either Direct, Indirect, or Cumulative. Cumulative impacts are discussed in 4.14.4.

Direct effects are caused by the action and occur at the same time and place (40 CFR Section 1508.8; Forest Service Handbook 1909.15_zero Code). Direct impacts on aquatic and wildlife species generally can include ground disturbances associated with construction activities. These direct impacts can be short term or long term in nature. They include:

- construction staging;
- storage of construction materials and equipment;
- removal of existing vegetation, as well as its restoration later in the construction process;
- potential construction disturbances assumed to occur within 10 feet of most permanent project features;
- demolition via explosives or cut and fill that changes the existing ground elevation and
- noise, ground vibration, airborne particulate (dust), and other physical disturbances generated by construction activities, including rock blasting.

Direct effects can also include dispersal/removal of species due to activities associated with temporary construction activities and/or proposed operation of approved facilities. These direct impacts can be short term or long term in nature. They include:

- the use of vehicles, including on existing roads and temporary roads developed to support construction; and
- effects from operation of approved facilities, such as noise.

Indirect impacts are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR Section 1508.8; Forest Service Handbook 1909.15). Indirect effects generally include effects associated with permanent changes to wildlife and aquatic habitat and land use conversion for the establishment of new facilities. The magnitude and scope of indirect effects are discussed in terms of habitat quality and quantity. Indirect effects may be short term or permanent and include:

- construction of tower foundations, base terminals, mid-stations, and Gazex exploders and shelters that result in a permanent conversion of land cover;
- removal of vegetation that is replanted after construction activities cease; and
- demolition using explosives or cut and fill that changes the existing ground elevation.

The following summarizes the methodology for determining potential impacts on wildlife and aquatic resources, including key assumptions about their relative effects.

Land Cover and Wildlife

Potential impacts of the alternatives on wildlife and aquatic resources were initially identified by overlaying GIS layers of conceptual project components on the land cover maps of the project site and maps of sensitive biological resources. Any natural community and wildlife habitat that overlapped with an area of proposed modification was considered to be directly affected during project construction by that respective alternative. An estimate of the amount of vegetation removal planned for the clearing of work areas and access ways was estimated to the extent possible. Short-term construction impacts would occur where natural vegetation would be removed to construct new features and facilities or modify existing features. Construction-related impacts could affect biological resources through vegetation disturbance, noise disturbances, stormwater runoff, erosion, and the introduction of invasive or nonnative species. Long-term impacts on biological resources would occur in or adjacent to habitats that would experience a permanent conversion in land use and cover (i.e., conversion of natural vegetation due to installation of towers, and other facilities).

Table 4.14-6 summarizes the estimated maximum amounts of habitat alteration or loss assumed for the construction of the action alternatives. Additional habitat impacts would occur as a result of constructing temporary access roads and utilities. These additional habitat alterations have been estimated based on the following assumptions of affected areas: 25-foot width for the access routes; and 20-foot width for the powerline to terminals (where needed). These estimates are conservative because the actual habitat impacts within those areas is expected to be less.

Impacts on common and sensitive habitats could occur through changes in the amount, distribution and pattern, quality, and function of those communities as a result of project construction and operation. Impacts on special-status species could occur either through short-term habitat degradation/alteration or permanent habitat loss; disturbance of normal activity, reproduction, and dispersal patterns during construction; or through direct mortality. Potential impacts on special-status species were determined by analyzing species life history requirements and known occurrences or potential to occur on the project site. Once the species and habitats were identified, impacts from project activities were analyzed.

Table 4.14-6 Estimated Maximum Land Cover Alteration or Loss Under the Action Alternatives

Ownership/ Alternatives	Disturbance Type	Vegetation/Land Cover Type														
		Aspen	Bitter Cherry Thicket	Coniferous Woodland	Freshwater Emergent Wetland	Mesic and Riparian Shrubland	Montane Chaparral	Mountain Alder Thicket	Mountain Sagebrush Forb	Pond	Rock and Talus	Rock Outcrop	Ruderal	Tributary	Urban	Grand Total
Alpine Meadows SUP Boundary (i.e., Forest Service or Public Lands)																
Alt 2	Overstory Veg Removal, Temp Construction Dist	0.08		0.05			1.32	0.39		0.15	0.51		0.41	0.02	0.75	3.68
	Perm Tower Footing, Temp Construction Dist	0.01		0.03			0.03				0.03		0.02		0.04	0.16
	Permanent Ground Disturbance						0.25				0.29		0.99		0.90	2.43
	Temporary Ground Disturbance			0.03			0.05				0.16					0.24
	Alt 2 Total	*0.08*		*0.11*			*1.64*	*0.39*		*0.15*	*0.99*		*1.42*	*0.02*	*1.69*	*6.51*
Alt 3	Overstory Veg Removal, Temp Construction Dist			0.16	0.18					0.21			0.16		0.28	0.99
	Perm Tower Footing, Temp Construction Dist			0.01									0.01		0.03	0.06
	Permanent Ground Disturbance						0.05				0.01		1.20		0.34	1.60
	Temporary Ground Disturbance												0.04			0.04
	Alt 3 Total			*0.17*	*0.18*		*0.05*			*0.21*	*0.01*		*1.41*		*0.65*	*2.68*
Alt 4	Overstory Veg Removal, Temp Construction Dist		0.83	0.18	0.11					0.30			0.10		0.20	1.70
	Perm Tower Footing, Temp Construction Dist		0.01										0.01		0.03	0.06
	Permanent Ground Disturbance						0.10				0.03		1.20		0.34	1.67
	Temporary Ground Disturbance		0.27	0.04									0.08			0.39
	Alt 4 Total		*1.11*	*0.22*	*0.11*		*0.10*			*0.30*	*0.03*		*1.39*		*0.57*	*3.83*

Table 4.14-6 Estimated Maximum Land Cover Alteration or Loss Under the Action Alternatives

Ownership/ Alternatives	Disturbance Type	Vegetation/Land Cover Type														
		Aspen	Bitter Cherry Thicket	Coniferous Woodland	Freshwater Emergent Wetland	Mesic and Riparian Shrubland	Montane Chaparral	Mountain Alder Thicket	Mountain Sagebrush Forb	Pond	Rock and Talus	Rock Outcrop	Ruderal	Tributary	Urban	Grand Total
Private Lands																
Alt 2	Overstory Veg Removal, Temp Construction Dist		2.87	1.28	0.21		0.44			0.09	1.82	0.44	1.40		0.49	9.05
	Perm Tower Footing, Temp Construction Dist		0.06	0.01			0.02				0.19	0.01	0.05			0.35
	Permanent Ground Disturbance						0.29			0.25	0.73	0.02	0.74		0.52	2.55
	Temporary Ground Disturbance			0.13	0.11		0.51				1.80				0.61	3.15
	Alt 2 Total		*2.93*	*1.42*	*0.32*		*1.26*			*0.34*	*4.54*	*0.47*	*2.19*		*1.62*	*15.10*
Alt 3	Overstory Veg Removal, Temp Construction Dist		2.81	1.71	0.04	0.09	1.08			0.17	2.00		1.37		0.35	9.61
	Perm Tower Footing, Temp Construction Dist		0.08	0.04			0.06				0.11		0.03			0.32
	Permanent Ground Disturbance			0.52			0.33			0.25	0.83		0.74		0.86	3.53
	Temporary Ground Disturbance			0.03			0.29				0.75		0.09		0.20	1.36
	Alt 3 Total		*2.90*	*2.30*	*0.04*	*0.09*	*1.75*			*0.42*	*3.70*		*2.22*		*1.41*	*14.82*
Alt 4	Overstory Veg Removal, Temp Construction Dist		0.65	0.26	0.02	1.47	1.15	0.15	0.63		0.79		0.87	0.03	0.15	6.17
	Perm Tower Footing, Temp Construction Dist		0.04	0.03		0.03	0.03		0.05		0.13		0.04		0.03	0.38
	Permanent Ground Disturbance		0.07	0.15			0.19		0.37						0.65	1.43
	Temporary Ground Disturbance		0.13	0.23		0.17	0.33	0.06	0.28		0.92		0.22	0.01	0.58	2.92
	Alt 4 Total		*0.89*	*0.67*	*0.02*	*1.67*	*1.70*	*0.21*	*1.33*		*1.84*		*1.12*	*0.04*	*1.41*	*10.90*

Sources: EcoSynthesis 2017; data provided by SE Group in 2015, 2016, 2017; adapted by Ascent Environmental in 2018

Aquatic Resources

Potential impacts of the action alternatives on aquatic resources (i.e., lakes, ponds, wetlands, perennial and ephemeral streams) were identified by overlaying GIS layers of project components on aquatic habitats and wetlands. Impacts on aquatic resources were determined by the proximity of these resources to project work areas, taking into account the construction needs within those areas and habitat suitability for special-status aquatic wildlife.

Table 4.14-7 summarizes the estimated maximum amounts of aquatic habitat alteration/degradation or loss assumed for construction of the action alternatives.

Table 4.14-7 Estimated Maximum Aquatic Habitat Alteration or Loss under the Action Alternatives

Ownership	Impact Type & Duration	Feature Type (acre)							Total*
		Riverine			Lacustrine	Palustrine			
		Perennial	Ephemeral	Roadside Ditch	Pond	Mountain Alder Thicket	Wetland	Freshwater Emergent Wetland	
Alternative 2									
Alpine Meadows SUP Area	Short-term change in habitat quality	0.05 [0.05]	0.03 [0.03	0	0	0.39 [0.39]	0	0	0.46 [0.46]
	Permanent loss in habitat quantity	0.10 [0.10]	<0.01 [<0.01]	0	0	0.0	0.05 [0.05]	0	0.15 [0.15]
Private	Short-term change in habitat quality	0	0.07 [0.07]	0.01 [0.01]	0.09 [0.09]	0	<0.01 [<0.01]	0.45 [0.45]	0.63 [0.63]
	Permanent loss in habitat quantity	0	0.03 [0.03]	0	0.25 [0.25]	0	0	0	0.28 [0.28]
Total	**Short-term change in habitat quality**	**0.05 [0.05]**	**0.10 [0.10]**	**0.01 [0.01]**	**0.09 [0.09]**	**0.39 [0.39]**	**<0.01 [<0.01]**	**0.45 [0.45]**	**1.09 [1.09]**
	Permanent loss in habitat quantity	**0.10 [0.10]**	**0.03 [0.03]**	**0**	**0.25 [0.25]**	**0**	**0.05 [0.05]**	**0**	**0.43 {0.43]**
	Grand Total*	**0.14 [0.14]**	**0.13 [0.13]**	**0.01 [0.01]**	**0.34 [0.34]**	**0.39 [0.39]**	**0.06 [0.06]**	**0.45 {0.45]**	**1.52 [1.52]**
Alternative 3									
Alpine Meadows SUP Area	Short-term change in habitat quality	0.06 [0.06]	<0.01 [<0.01]	0.01 {0.01]	0.16 [0.16]	0	0	0.17 [0.17]	0.40 [0.40]
	Permanent loss in habitat quantity	0.13 [0.13]	0	0	0	0	0.07 [0.07]	0	0.20 [0.20]
Private	Short-term change in habitat quality	<0.01 [<0.01]	0.07 [0.07]	0.01 [0.01]	0.17 [0.17]	0	<0.01 [<0.01]	0.25 [0.25]	0.50 [0.50]
	Permanent loss in habitat quantity	0	0.03 [0.03]	0	0.25 [0.25]	0	0	0.05 [0.05]	0.33 [0.33]
Total	**Short-term change in habitat quality**	**0.06[0.06]**	**0.07 [0.07]**	**0.02 [0.02]**	**0.33 [0.33]**	**0**	**<0.01 [<0.01]**	**0.42 [0.42]**	**0.91 [0.91]**
	Permanent loss in habitat quantity	**0.13 [0.13]**	**0.03 [0.03]**	**0**	**0.25 [0.25]**	**0**	**0.07 [0.07]**	**0.05 [0.05]**	**0.53 [0.53]**
	Grand Total*	**0.19 [0.19]**	**0.10 [0.9]**	**0.02 [0.02]**	**0.58 [0.58]**	**0**	**0.07 [0.07]**	**0.47 [0.47]**	**1.44 [1.43]**

Table 4.14-7 Estimated Maximum Aquatic Habitat Alteration or Loss under the Action Alternatives

Ownership	Impact Type & Duration	Feature Type (acre)							Total*
		Riverine			Lacustrine	Palustrine			
		Perennial	Ephemeral	Roadside Ditch	Pond	Mountain Alder Thicket	Wetland	Freshwater Emergent Wetland	
Alternative 4									
Alpine Meadows SUP Area	Short-term change in habitat quality	0.03 [0.03]	<0.01 [<0.01]	<0.01 <0.01	0.26 [0.26]	0	0	0.11 [0.11]	0.40 [0.40]
	Permanent loss in habitat quantity	0.13 [0.13]	0	0	0	0	0.07 [0.07]	0	0.20 [0.20]
Private	Short-term change in habitat quality	0	0.01 [0.01]	0	0	0.21 [0.21]	0	0.65 [0.65]	0.87 [0.87]
	Permanent loss in habitat quantity	0	<0.01 [<0.01]	0	0	0	<0.01 [<0.01]	0.26 [0.26]	0.27 [0.27]
Total	**Short-term change in habitat quality**	**0.03 [0.03]**	**0.01 [0.01]**	**<0.01 [<0.01}**	**0.26 [0.26]**	**0.21 [0.21]**	**0**	**0.76 [0.76]**	**1.28 [1.28]**
	Permanent loss in habitat quantity	**0.13 [0.13]**	**<0.01 [<0.01]**	**0**	**0**	**0**	**0.08 [0.08]**	**0.26 [0.26]**	**0.46 [0.46]**
	Grand Total*	**0.16 [0.16]**	**0.01 [0.01]**	**<0.01 [<0.01]**	**0.26 [0.26]**	**0.21 [0.21]**	**0.08 [0.08]**	**1.02 [1.02]**	**1.75 [1.75]**

*Totals may not sum because of independent rounding, [#] acreage in Sierra Nevada yellow-legged frog critical habitat.

Sources: Hydro Restoration 2016, 2017; adapted by Ascent Environmental in 2018

Incorporation of Resource Protection Measures

As described in Section 2.2.6, "Resource Protection Measures," the project incorporates a number of Resource Protection Measures (RPMs) designed to avoid and minimize environmental effects. These RPMs are considered part of the project by the Forest Service and will be conditions of approval of the Placer County Conditional Use Permit. The text of all RPMs is provided in Appendix B. The potential effects of implementing the action alternatives are analyzed as follows: The effect of the action alternatives was determined, relevant RPMs were applied, and the effectiveness of reducing adverse effects was determined. If additional measures were needed to further reduce effects, they were identified.

As it relates to CEQA, the significance of impacts is determined before RPMs are implemented. The analysis then determines whether the RPMs would reduce significant impacts to a less-than-significant level. If significant impacts would remain, mitigation measures are added, as feasible, to further reduce the significant impact. All RPMs, as well as additional mitigation measures, would be included in the Placer County mitigation monitoring and reporting program (MMRP), and their implementation would be ensured by the conditional use permit's conditions of approval. All RPMs are considered roughly proportional and have an essential nexus to the impacts they reduce.

The content of RPMs originates from multiple sources including (but not limited to):

- *1990 Tahoe National Forest Lands and Resource Management Plan*, as amended by the 2004 SNFPA (U.S. Forest Service 1990, 2004);
- June 2017 *Amendment of the Programmatic Biological Opinion on Nine Forest Programs on Nine National Forests in the Sierra Nevada of California for the Endangered Sierra Nevada Yellow-Legged Frog, Endangered Northern Distinct Population Segment of the Mountain Yellow-Legged Frog, and Threatened Yosemite Toad* (USFWS 2017b);

- *Placer County Community Development Resource Agency Sample Conditions* (Placer County 2012); and
- nonnative invasive plant management RPMs for project-related nonnative invasive plant control taken from *Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers* (Cal-IPC 2012).

Although not expected, if any circumstances occur where two or more RPMs provide different standards/level of protection for the same resource, the RPM with the most stringent standards/level of protection would apply. The full text of all RPMs is provided in Appendix B.

4.14.2.2 EFFECTS ANALYSIS AND SIGNIFICANCE CRITERIA

NEPA Indicators

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the action alternatives. Under NEPA, impacts should be addressed in proportion to their significance (40 CFR 1502.2[b]), meaning that severe impacts should be described in more detail than less consequential impacts. This is intended to help decision makers and the public focus on the project's key effects. The evaluation of effects considers the magnitude, duration, and significance of the changes. Changes that would improve the existing condition if they occur are noted and considered beneficial, and detrimental impacts are characterized as adverse. Where there would be no change, a "no effect" conclusion is used. The Forest Service has determined that the action alternatives could affect wildlife and aquatic resources in the study area. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Identify federally listed, Management Indicator, Forest Service Sensitive wildlife and aquatic species, and migratory birds potentially present in the habitats of the project site and conduct field studies (as needed) to determine the presence or absence of these species **(Section 4.14.1.1, "Environmental Setting")**
- Quantification (acres) and qualification of existing wildlife habitat and proposed alteration, fragmentation, or removal of wildlife habitat, by species **(Impacts 4.14-3, 4.14-4, and 4.14-5)**. Include specifically an analysis of riparian and wetland habitat for the federally endangered Sierra Nevada yellow-legged frog containing:
  - discussion of designated critical habitat **(Section 4.14.1.1, "Environmental Setting"; Impact 4.14-2)**;
  - quantification of impacts in suitable habitat **(Impacts 4.14-1 and 4.14-2)**;
  - indirect effects resulting from hydrology, alterations from natural streamflow patterns, sedimentation, water temperatures, cover **(Impacts 4.14-1 and 4.14-2)**; and
  - direct effects resulting from the alteration of migration patterns, introduction of contaminants, and construction and operation activity in the area **(Impacts 4.14-1, 4.14-2, and 4.14-6)**.
- Describe the existing environmental baseline by quantifying current use in the project area (operating lifts, existing backcountry skiing, summer activities, etc.) and compare to proposed conditions **(Section 4.14.1, "Affected Environment")**
- Disclosure of effects to terrestrial Proposed, Threatened, Endangered, and Sensitive (PTES), MIS, and migratory birds **(Impacts 4.14-1, 4.14-2, 4.14-3, 4.14-4, and 4.14-5)**. Include specifically impacts to the Sierra Nevada yellow-legged frog resulting from the introduction of hazardous materials (oils, fuels, lubricants, metals, equipment coatings) **(Impact 4.14-1 and 4.14-2)**
- Quantification and qualification of compensatory mitigation for impacts to Sierra Nevada yellow-legged frog or other relevant species habitat **(Impact 4.14-1, 4.14-2 and 4.14-6)**

- Identification of impacts to avian species as a result of tree removal and helicopter activity **(Impact 4.14-5)**
- Discussion of impacts of construction and operation of the proposed project (including both Gazex and gondola infrastructure) on wildlife, particularly the Sierra Nevada yellow-legged frog, including noise impacts (helicopters, ATVs, Gazex exploders), and changing skier-use patterns **(Impacts 4.14-1, 4.14-2, 4.14-3, 4.14-4, and 4.14-5)**

CEQA Criteria

Based on the Placer County CEQA checklist and Appendix G of the State CEQA Guidelines, implementing any of the alternatives would result in a significant impact related to wildlife and aquatics if it would:

- 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, polices, or regulations, or by CDFW or USFWS **(Impacts 4.14-1, 4.14-2, 4.14-3, 4.14-4, and 4.14-5)**;
- substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate an animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species **(Impacts 4.14-1, 4.14-2, 4.14-3, 4.14-4, and 4.14-5)**;
- 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 **(Impact 4.14-6)**;
- conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance **(Section 4.14.2.3, "Issues Not Discussed Further")**; or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan **(Section 4.14.2.3, "Issues Not Discussed Further")**.

4.14.2.3 ISSUES NOT DISCUSSED FURTHER

Section 4.14.1.1, "Environmental Setting," discusses all special-status terrestrial and aquatic wildlife species evaluated in this analysis, and Tables 4.14-4 and 4.14-5 summarize the potential for each of these species to occur on the project site. Generally, terrestrial or aquatic wildlife species not expected to occur, or with a low probability to occur (because of a lack of suitable habitat, or lack of other occurrence records), and that have not been observed during on-site surveys, are not addressed further in this Draft EIS/EIR.

One mammal species not defined as a special-status species in this EIS/EIR—gray-headed pika (*Ochotona princeps schisticeps*)—was evaluated because of its unique habitat requirements and the climate-related threats to its distribution. Pika is narrowly associated with talus/scree slopes and rock piles in alpine habitats. Pika sign (pellets) was observed within talus in the study area for Alternative 4 during biological surveys conducted for the project, and the species may use suitable habitats elsewhere in the study areas for all alternatives. Under all action alternatives, some towers would be constructed within rock and talus habitats and remove or disturb potentially suitable habitat for gray-headed pika. However, the amount of permanent disturbance or loss of talus and rock habitats as a result of tower construction would be minor (between 0.03 and 1 acre, depending on the alternative) relative to the extensive amount available in the vicinity. Additionally, RPMs include requirements for identifying mammal den sites prior to construction and measures to minimize or avoid disturbances to den sites, which would reduce the potential for project-related injury or mortality to individuals if they are present during construction. Therefore, potential effects of any project alternative on gray-headed pika would not be substantial, and this issue is not discussed further.

As discussed in the Initial Study prepared for the project (Appendix A), Placer County has applied to receive approval from the federal wildlife agencies for a comprehensive natural community conservation plan known as the *Placer County Conservation Plan*. When approved and implemented, the plan will establish an interconnected open-space preserve system in western Placer County that is designed specifically to offset impacts on special-status species and protected habitats that are anticipated to occur as a result of the planned growth of Placer County and the City of Lincoln. The project area is not located within the boundary of the *Placer County Conservation Plan*; therefore, the project would not conflict with this plan. No other habitat conservation plans, natural community conservation plans, or similar plans are being considered in the project area. No impact would occur. This issue is not discussed further in this Draft EIS/EIR.

Section 4.12, "Vegetation," addresses impacts on timberland and land cover removal. Although the biological effects on wildlife of land cover and tree removal are considered in the following analysis, the impacts of land cover and tree removal as they relate to each vegetation community, and not the wildlife species that may use them, are addressed in Section 4.12.

Section 4.15, "Wetlands," addresses waters of the United States and waters of the state, including wetlands, in the context of the statutes, regulations, and policies that regulate these resources. Although the biological effects of wetland fill or removal on terrestrial and aquatic wildlife are considered in the following analysis, the impacts of wetland fill as they relate specifically to consistency with applicable regulations and policies are covered in Section 4.15.

4.14.3 Direct and Indirect Environmental Consequences

4.14.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.14-1 (Alt. 1): Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog

Alternative 1 - No Action Alternative would result in a continuation of existing conditions. There would be no new construction; therefore, no disturbance to or loss of SNYLF or their habitat would occur. Therefore, the No Action Alternative would result in **no effect** on SNYLF under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of the gondola and Gazex avalanche control facilities. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. The existing avalanche mitigation methods used in the project area would continue to be used. Therefore, no disturbance to or loss of SNYLF or their habitat would occur. There would be no effect on SNYLF or its habitat.

NEPA Effects Conclusion

With no new construction, and therefore no disturbance to or loss of SNYLF or its habitat, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new construction, and therefore no disturbance to or loss of SNYLF or its habitat, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.14-2 (Alt. 1): Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat

Alternative 1 - No Action Alternative would result in a continuation of existing conditions. There would be no new construction; therefore, no disturbance to or loss of SNYLF critical habitat would occur. Therefore, the No Action Alternative would result in **no effect** on SNYLF critical habitat under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of the gondola and Gazex avalanche control facilities. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. The existing avalanche mitigation methods used in the project area would continue to be used. Therefore, no disturbance to or loss of SNYLF critical habitat would occur. There would be no effect on SNYLF critical habitat.

NEPA Effects Conclusion

With no new construction, and therefore no disturbance to or loss of SNYLF critical habitat, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new construction, and therefore no disturbance to or loss of SNYLF critical habitat, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.14-3 (Alt. 1): Direct and Indirect Effects on Southern Long-Toed Salamander

Alternative 1 - No Action Alternative would result in a continuation of existing conditions. There would be no new construction; therefore, no disturbance to or loss of southern long-toed salamander would occur. Therefore, the No Action Alternative would result in **no effect** on southern long-toed salamander under CEQA. Because this species has no federal status and is not otherwise addressed by a NEPA indicator for the project, no NEPA determination of effect in provided.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of the gondola and Gazex avalanche control facilities. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. The existing avalanche mitigation methods used in the project area would continue to be used. Therefore, no disturbance to or loss of southern long-toed salamander would occur. There would be no effect on southern long-toed salamander.

NEPA Effects Conclusion

Because this species has no federal status and is not otherwise addressed by a NEPA indicator for the project, no NEPA determination of effect in provided.

CEQA Determination of Effects

With no new construction, and therefore no disturbance or loss of southern long-toed salamander, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.14-4 (Alt. 1): Direct and Indirect Effects on Management Indicator Species

Alternative 1 - No Action Alternative would result in a continuation of existing conditions. There would be no new construction; therefore, no disturbance to or loss of Forest Service MIS would occur. Therefore, the No Action Alternative would result in **no effect** on Forest Service MIS. This impact analysis is specific to a NEPA indicator and is not responsive to CEQA criteria. No CEQA determination of effect is provided.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of the gondola and Gazex avalanche control facilities. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. The existing avalanche mitigation methods used in the project area would continue to be used. Therefore, no disturbance to or loss of Forest Service MIS would occur. There would be no effect on Forest Service MIS.

NEPA Effects Conclusion (NFMA MIS Finding)
With no new construction, and therefore no disturbance to or loss of Forest Service MIS, there would be **no effect** related to this issue.

CEQA Determination of Effects
This impact analysis is specific to a NEPA indicator and is not responsive to CEQA criteria. No CEQA determination of effect is provided.

Mitigation Measures

No mitigation measures are required.

Impact 4.14-5 (Alt. 1): Direct and Indirect Effects on Special-Status Terrestrial Wildlife

Alternative 1 - No Action Alternative would result in a continuation of existing conditions. There would be no new construction, and therefore habitat required by special-status terrestrial wildlife, including golden eagle, olive-sided flycatcher, American peregrine falcon, bald eagle, Lewis' woodpecker, rufous hummingbird, yellow warbler, Williamson's sapsucker, pallid bat, and Forest Service MIS, would not be disturbed or lost. Therefore, the No Action Alternative would result in **no effect** on these species.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of the gondola and Gazex avalanche control facilities. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. The existing avalanche mitigation methods used in the project area would continue to be used. Therefore, habitat required by special-status terrestrial wildlife, including golden eagle, olive-sided flycatcher, American peregrine falcon, bald eagle, Lewis' woodpecker, rufous hummingbird, yellow warbler, Williamson's sapsucker, pallid bat, and Forest Service MIS, would not be disturbed or lost, and there would be no effects on these resources.

NEPA Effects Conclusion
With no new construction, and therefore no disturbance or loss of special-status terrestrial wildlife, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction, and therefore no disturbance or loss of special-status terrestrial wildlife, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.14-6 (Alt. 1): Disturbance or Loss of Wildlife Movement, Wildlife Corridors. and Native Wildlife Nursery Sites

Alternative 1 - No Action Alternative would result in a continuation of existing conditions. There would be no new construction, the disturbance or loss of native land cover would not occur, and therefore there would be no effect on wildlife movement, wildlife corridors, or native wildlife nursery sites. The No Action Alternative would result in **no effect** on movement, corridors, or native wildlife nursery sites.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of the gondola and Gazex avalanche control facilities. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. The existing avalanche mitigation methods used in the project area would continue to be used. Therefore, there would be no effects on wildlife movement, wildlife corridors, and native wildlife nursery sites.

NEPA Effects Conclusion

With no new construction, and therefore no disturbance or loss of wildlife movement, wildlife corridors, or native wildlife nursery sites, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new construction, and therefore no disturbance or loss of wildlife movement, wildlife corridors, or native wildlife nursery sites, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.14.3.2 ALTERNATIVE 2

Impact 4.14-1 (Alt. 2): Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog

Implementation of Alternative 2 would result in direct and indirect effects, such as loss of individual SNYLF or occupied habitat. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF would be **adverse** because suitable aquatic and upland habitat could be disturbed or removed. Implementation of the project **may affect, and is likely to adversely affect** SNYLF and its habitat**.** Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, an endangered species would be affected either directly or through habitat modifications. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on this species; however, the impact on SNYLF would not be reduced to a less-than-significant level as the loss of individuals and occupied habitat could still occur. Under CEQA, this impact would remain **potentially significant**.

SNYLF is state listed as threatened and is federally listed as endangered. Suitable habitat for SNYLF, as defined by USFWS, typically occurs above 4,500 feet in elevation and includes permanent water bodies or those hydrologically connected to permanent water, such as lakes, streams, rivers, tarns, perennial creeks (or permanent plunge pools within intermittent creeks), and pools (such as a body of impounded water contained above a natural dam). Suitable habitat also includes most types of creeks, seeps, springs, and wet meadows plus surrounding areas up to a distance of 82 feet (25 meters) and where water bodies occur

within 948 feet (300 meters) of one another (as is typical of some high-mountain lake habitat). Suitable habitat for dispersal and movement includes the overland area between lake shorelines; in mesic habitats such as lake and meadow systems, the entire area of physically contiguous or proximate habitat is suitable for dispersal and foraging.

Suitable breeding habitat for SNYLF is found within the lakes in the Five Lakes area, and Barstool Lake (Exhibit 4.14-1). SNYLF surveys conducted as part of the project detected SNYLF at Barstool Lake but not on any other water body within the action alternatives. Historical records of SNYLF (i.e., more than 10 years old) exist from the vicinity of the project area, including Squaw Creek (last know observation was in 1960), Five Lakes (last known observation was 1999), and Barstool Lake (last known observation was 2004). More recent surveys conducted by CDFW in 2011 found no SNYLF at these locations (CNDDB 2017). However, observations of SNYLF were recorded at Barstool Lake in 2015, 2016 and 2017. Suitable non-breeding habitat present in the study area, includes the seasonal streams and wetlands (all aquatic categories in Exhibit 4.14-1)). Suitable upland habitat, as defined by USFWS, includes adjacent areas from streams, up to a distance of 82 feet, and the area surrounding the shore of the lakes up to a distance of 948 feet.

SNYLF surveys conducted for the project followed the guidance for determining if suitable habitat was occupied or not occupied in the USFWS *Amendment of the Programmatic Biological Opinion on Nine Forest Programs on Nine National Forests in the Sierra Nevada of California for the Endangered Sierra Nevada Yellow-Legged Frog, Endangered Northern Distinct Population Segment of the Mountain Yellow-legged Frog, and Threatened Yosemite Toad* (USFWS 2017b). This guidance requires the implementation of three surveys staggered during one summer with an early season, mid-season, and late season survey (e.g., from 14 calendar days after sufficient habitat becomes free of snow at snowmelt to the fall before cold temperatures trigger movements to overwintering habitats. The guidance also allows for surveys to be conducted during three separate consecutive calendar years, that are ideally but do not have to be consecutive. Surveys within potentially suitable habitat for SNYLF for the action alternatives took place on August 24–26, 2015, September 9, 2016, and July 20, August 10–11, and September 30, 2017 (three surveys in one year in 2017). The ephemeral streams within the study area do not contain water year-round and most of them are dry by end of spring, or early summer. Furthermore, most of the drainages occur over granite bedrock where there is little substrate, or the substrate is so imbedded that there are little to no pockets that could be used as refugia and this may pose a desiccation risk for migrating amphibians. The ephemeral streams do not support permanent plunge pools that SNYLF could use. For the most part, these drainages are intermittent or ephemeral in nature and the vegetation that they support is typical to the land cover type they are within, like chaparral or coniferous woodland. Although the section of these seasonal streams is small within the study area, these ephemeral streams within the middle portion of the study area, south of KT-22, were surveyed and drain through the Caldwell property toward the Caldwell Pond and eventually drain into Bear Creek. Within the upper valley in the Caldwell property there is an ephemeral water impoundment that the property owner uses as a source of water and there are ephemeral streams, wetlands, a wet meadow and a pond (Caldwell Pond) behind a human-made dam that provides low-quality habitat for SNYLF. The Caldwell Pond supports koi and planted trout. However, no SNYLF were observed within these areas during the July 20, August 10–11, and September 30, 2017, surveys. Nevertheless, the ephemeral drainages and wetlands may provide a migration route from the Five Lakes area down into Bear Creek valley during snowmelt.

Other water features that would be directly and indirectly affected by Alternative 2 include Cushing Pond (indirectly affected resulting in habitat loss) and the southernmost snowmaking pond at Alpine Meadows (temporarily affected during overstory vegetation removal). Cushing Pond is a human-made feature, less than 6 feet in depth, and is drained yearly for maintenance and repairs. The southernmost snowmaking pond serves as a water reservoir during the summer and a source of water for snowmaking during the winter, and it's drained and serviced yearly. CDFW visual surveys in 2004 observed at least one rainbow trout in each of the Alpine Meadows ponds during the surveys (Mussulman 2016). No fish were observed in the ponds during the 2015, 2016, and 2017 field surveys for the study area, although Forest Service catch-and-release signs are posted in their vicinity. As currently managed, the snowmaking ponds do not provide suitable breeding habitat for SNYLF because of the potential of known predators and more importantly the ponds do not hold water long enough to support development of the frog.

Construction Effects

Alternative 2 would indirectly affect up to 4.02 acres of upland land cover by permanently removing it due to the construction of the Squaw Valley mid-station and the Alpine Meadows mid-station and towers and other project elements. Alternative 2 would directly affect up 14.28 acres of upland land cover associated with temporarily disturbance such as vegetation clearing and other temporary ground disturbance (see Table 4.14-6). Up to 1.09 acre of wetland and stream habitat would be directly affected by construction activities, and up to 0.43 acre of wetland and stream habitat would be permanently removed (see Table 4.14-7). Within these indirect and direct effects, Alternative 2 would permanently remove up to 1.17 acres of SNYLF upland and dispersal habitat and temporarily alter up to 3.72 acres of SNYLF upland and dispersal habitat (see Table 4.14-8).

Table 4.14-8 Estimated Maximum Sierra Nevada Yellow-Legged Frog Upland Habitat (Acres) Alteration or Loss under the Action Alternatives

Ownership/ Alternatives	Disturbance Type		Buffer Distance		
			25 m	300 m	Grand Total
Alternative 2					
Alpine Meadows SUP	Short term change in habitat quality	Aspen	<0.01	–	<0.01
		Coniferous Woodland	–	0.08	0.08
		Montane Chaparral	0.40	0.55	0.95
		Mountain Alder Thicket	0.14	–	0.14
		Rock and Talus	0.06	0.61	0.67
		Ruderal	0.01	–	0.01
	Permanent loss in habitat quality	Coniferous Woodland	–	0.03	0.03
		Montane Chaparral	0.10	0.13	0.23
		Rock and Talus	0.01	0.30	0.31
		Ruderal	<0.01	–	<0.01
Private	Short term change in habitat quality	Bitter Cherry Thicket	0.40	–	0.40
		Coniferous Woodland	0.74	–	0.74
		Montane Chaparral	0.39	0.02	0.41
		Rock and Talus	0.79	0.74	1.53
		Rock Outcrop	0.05	–	0.05
		Ruderal	1.02	–	1.02
	Permanent loss in habitat quality	Bitter Cherry Thicket	0.01	–	0.01
		Montane Chaparral	–	0.01	0.01
		Rock and Talus	0.01	0.17	0.18
		Ruderal	0.40	–	0.40
Short term change			*1.72*	*2.0*	*3.72*
Permanent loss			*0.53*	*0.64*	*1.17*
Alt 2 Total			*2.25*	*2.64*	*4.89*
Alternative 3					
Alpine Meadows SUP	Short term change in habitat quality	Coniferous Woodland	0.03	–	0.03
Private	Short term change in habitat quality	Bitter Cherry Thicket	0.39	–	0.39
		Coniferous Woodland	0.77	–	0.77
		Mesic and Riparian Shrubland	0.07	–	0.07
		Montane Chaparral	0.45	–	0.45
		Rock and Talus	0.36	–	0.36
		Ruderal	1.03	–	1.03

Table 4.14-8 Estimated Maximum Sierra Nevada Yellow-Legged Frog Upland Habitat (Acres) Alteration or Loss under the Action Alternatives

Ownership/ Alternatives	Disturbance Type		Buffer Distance		
			25 m	300 m	Grand Total
	Permanent loss in habitat quality	Bitter Cherry Thicket	<0.01	–	<0.01
		Coniferous Woodland	0.01	–	0.01
		Montane Chaparral	0.03	–	0.03
		Ruderal	0.38	–	0.38
Short term change			*3.11*		*3.11*
Permanent loss			*0.42*		*0.42*
Alt 3 Total			*3.53*	*-*	*3.53*
Alternative 4					
Alpine Meadows SUP	Short term change in habitat quality	Bitter Cherry Thicket	0.14	–	0.14
		Coniferous Woodland	0.10	–	0.10
Private Lands	Short term change in habitat quality	Bitter Cherry Thicket	<0.01	–	<0.01
		Coniferous Woodland	0.34	–	0.34
		Mesic and Riparian Shrubland	0.17	–	0.17
		Montane Chaparral	0.30	–	0.30
		Mountain Alder Thicket	0.19	–	0.19
		Rock and Talus	0.10	–	0.10
	Permanent loss in habitat quality	Bitter Cherry Thicket	<0.01	–	<0.01
		Coniferous Woodland	0.08	–	0.08
		Montane Chaparral	0.18	–	0.18
Short term change			*1.34*		*1.34*
Permanent loss			*0.26*		*0.26*
Alt 4 Total			*1.60*		*1.60*

Sources: EcoSynthesis 2017; data provided by SE Group in 2015, 2016, 2017; adapted by Ascent Environmental 2018

Indirect effects to SNYLF upland habitat in proximity to Barstool Lake, a known occupied habitat (frog observed August 25, 2015; September 9, 2016 and July 20, 2017), would occur through the construction of the Alpine Meadows mid-station. The upland area around breeding habitat, up to 984 feet, is considered suitable dispersal and movement habitat (USFWS 2017b). Similarly, construction up to 984 feet of the Five Lakes areas and 82 feet of the seasonal streams that Alternative 2 crosses would result in indirect and direct effects on SNYLF upland habitat. Construction activities such as grading, vegetation removal, excavation, blasting (if required), driving, in SNYLF upland habitat, could lead to the injury or death of SNYLF if they were to be present within the construction area.

Construction activities associated with Alternative 2 outside of the area around occupied habitat but still in areas within suitable SNYLF upland habitat would also result in indirect effects to SNYLF through land cover removal via tree falling, ground cover removal, and removal of upland habitat for the mid-stations and towers. The alignment for Alternative 2 crosses several ephemeral streams, some of the towers are proposed to be placed within the 82-foot area surrounding these aquatic habitats, and for most of the alignment south of the Five Lakes Trail, the Alternative 2 alignment is within the 984-foot area surrounding suitable breeding habitat for the frog (Exhibit 4.14-1). Tree removal necessary for the construction and installation of the project components in the Alpine Meadows mid-station area would require skidding of the trees. Vegetation removal associated with Alternative 2 in suitable habitat within the 984-foot area and the 82-foot area around the drainages could lead to frogs being crushed during tree falling/hauling or ground vegetation removal. Vegetation/tree removal could increase water temperatures through the removal of shade from waterways

and adjacent uplands. Vegetation clearing adjacent to waterways would also remove potential sheltering locations for the frog which would lead to a reduction in available habitat or crushing of frogs if they were to be present in the area.

Seasonal drainages and wetlands crossed by the Alternative 2 alignment could provide suitable dispersal habitat for this species during snowmelt and late spring. Although the gondola cabins themselves would "fly over" the wetlands and not result in a direct impact, 12 of the proposed towers south of the Squaw Valley mid-station would be within the upland habitat adjacent to these wetland features. Construction activities have the potential to have an indirect effect on suitable SNYLF non-breeding aquatic habitat by increasing sedimentation and turbidity in waterways adjacent to construction areas. Sedimentation can alter the substrate of stream courses by filling in deeper sections or by filling interstitial spaces, thus reducing cover.

Indirect effects to SNYLF could also occur through the accidental introduction of hazardous materials and chemicals in the form of gasoline, engine oil, lubricants, or other fluids used during construction activities that could potentially enter Barstool Lake or the seasonal streams as a result of spills. Barstool Lake is hydrologically connected to one of the Five Lakes through a drainage and thus there is potential for this lake to also be affected. Depending on the type, quantity of spill, and if an accidental spill was to reach Barstool Lake and occurs while there are SNYLF eggs, tadpoles or adults at Barstool Lake, it could result in a die-off that could eliminate that year age class and those adults that are in the Lake. During tower installation, there is also the potential for chemical or hazardous spills or leakage into the seasonal streams. Accidental discharge of hazardous materials and chemicals could affect SNYLF that may be present in the immediate vicinity or downstream of the spill, in a similar manner than at Barstool Lake, this could cause the population to drop below self-sustaining levels if it were to kill several age classes at the same time.

Construction activities can also have a direct effect on the SNYLF by temporarily displacing the frog from the construction area as they may avoid the surrounding area due to human presence and noise during construction. Noise from increased human activity, heavy equipment operations, vehicle traffic, and helicopter operations may temporarily displace SNYLF during construction resulting in a temporary reduction in habitat quality adjacent to construction areas. In habitat adjacent to construction activities, noise impacts may cause frogs to temporarily avoid habitat, thereby temporarily displacing frog and disrupting breeding, territorial, shelter, and foraging behaviors. A reduction in fitness or survivorship may occur if frogs are displaced into lower-quality habitats or change their behavior in a way that reduces their survival or the survival of their offspring. During noisy activities, wildlife may temporarily leave their territories or experience a reduction in predator detection that may subsequently result in mortality. The use of helicopters may disrupt SNYLF due to noise disturbances or wind wash if operating close to basking/sunning individuals but may also affect the foraging behaviors of the species or habitat resulting in reduced foraging. Rock blasting could also have an indirect effect on SNYLF if blasting locations occur in close proximity to the species, breeding habitat, aquatic nonbreeding habitat, or within SNYLF upland habitat, or cause permanent damage, injury or death to individuals.

Operational Effects

The eight proposed Gazex facilities are also located within the SNYLF critical habitat designation (seven are on NFS lands and one in private property); and five out of the eight are within the 984-foot area surrounding Barstool Lake. Each Gazex facility would remove approximately 280 square feet of upland habitat for its foundation and each shelter would remove 120 square feet of upland habitat. As part of the existing avalanche safety operations at Alpine Meadows, hand shot (explosive) and or artillery is used to initiate an avalanche. Shrapnel, associated with artillery, was found within the survey area, including Barstool Lake and the surrounding area. The hand shot used for avalanche control at Alpine Meadows contains pentaerythritoltetranitrate (PETN) as the explosive material, and the explosive-residue compounds resulting from avalanche control explosions have the potential to contaminate the snow immediately adjacent to the explosion site and may persist and accumulate in soil after snowmelt (Naftz et al. 2003). At the Naftz et al. study in Utah, out of seven compounds detected in their samples, 2,4-Dinitrotoluene was consistently the most abundant and with the highest concentration measured (0.10 to 1.30 micrograms per liter) (Naftz et al. 2003). Studies conducted on American bullfrogs, as reported by the U.S. Army Public Health Command on

Wildlife Toxicity Assessment for 2,4- and 2,6-Dinitrotoluenes indicate that the LD50 value of 1,098 milligrams per kilogram (mg/kg), compared to the relative low concentrations typically observed in aquatic environments, and the short half-life of the compounds indicate that adult bullfrogs in the wild are at low risk for either exposure or toxicity (USAPHC 2011); however, EPA reported that the concentration of 2,4-DNT in the soil in a waste lagoon abandoned for 20 years at the Iowa Army Ammunition Plant was 3.0 mg/kg (EPA 2008).

There are currently no studies that have looked at the effects of avalanche control or shelling explosions on overwintering amphibians or tadpoles, and although the avalanche target area is on the face of *The Buttress* and surrounding mountain face, sound and vibration may reach Barstool Lake (approximately 350 feet) and the overwintering SNYLF tadpoles and adults. Adult SNYLF do have lungs, but while overwintering they breathe through their skin. Keevin and Hempen, in their handbook *The Environmental Effects of Underwater Explosions with Methods to Mitigate Impacts*, write that although untested, amphibians with air-containing organs, such as lungs, probably have mortality comparable to fish with swim bladders for underwater blasting (Keevin and Hempen 1997). The National Park Service describe localized effects on burrowing wildlife (primarily reptiles, amphibians, and small mammals), from detonation of explosive charges in shotholes associated with oil and gas seismic survey work, to include shock, concussion, and possibly mortality (NPS 2005). Current avalanche control methods at Alpine Meadows include hand shot (2.2 pound [1 kg] cast primers using PETN as the explosive material) and a howitzer cannon. In contrast the Gazex system, uses a mixture of propane/oxygen mixture for the explosion that initiates the avalanche. The byproducts of propane combustion are carbon dioxide and water vapor. The direction that the tubes of the Gazex system are angled, direct the force of the explosion and noise away from Barstool Lake and down toward Alpine Meadows. There should also be a reduction of shrapnel in the area and hand shot byproducts within the snowpack. There are no changes to the avalanche mitigation system on the Squaw Valley portion of the study area.

Skiing into the GCW from Squaw Valley KT-22 Express or from Alpine Meadows Summit Express Chair lift is currently allowed and is done so at the risk of the skier as this area is outside of the ski area boundary and requires some level of traversing and hiking. Because skiing into the GCW requires hiking, it is not hugely frequented by skiers. Some snow enthusiasts also hike the GCW through the Five Lakes trail system via snowshoes. Operation of Alternative 2 could provide a greater opportunity for access to the GCW to skiers who normally would not venture into the area due to the extra effort of traversing and hiking from the KT-22 Express and Summit Express chairlifts. The discussion of Impact 4.1-1 (Alt. 2) in Section 4.1, “Recreation,” indicates that Alternative 2 would adversely affect dispersed recreation by increasing the number of visitors. Furthermore, this increase in visitation could also occur during transitional seasons, or periods of inconsistent snow cover, during which the gondola (and two ski areas) would be operational and at the same time and when southern aspect slopes would be dry enough for foot traffic to access the GCW by hiking. During these periods, the additional access provided by the gondola to skiers could increase the current use. Barstool Lake and the Five Lakes area also receive visitation during both the winter and nonwinter seasons as evidenced by trash observed during initial surveys (i.e., ski pole and glove, water bottles and snack food wrappers). An increase in use could have an indirect effect on SNYLF and its habitat, through an increase of trash and visitation to Barstool Lake and suitable habitats within the Five Lakes area which would result in a reduction of habitat quality and quantity. Additionally, an increase in visitation could expose the frog to potential trampling by both hikers and skiers, potentially resulting in injury or death. This issue is also addressed in Section 4.3, “Wilderness.”

Alternative 2 also includes a winter use–only (over the snow) access road to the Alpine Meadows mid-station. Operation of snow equipment would be necessary only if repairs are needed, or emergencies such as evacuating gondola passengers. SNYLF are known to travel over snow to get to breeding habitat during snowmelt. Usage of snow equipment in vicinity of occupied breeding habitat, especially closer to snowmelt could have an effect on the species. Frogs could react to the noise or vibration and avoid the area or could be run over by the snow equipment if they were to be present in its path.

Increase usage by skiers and hikers and the use of snow equipment through over-the-snow-only access roads near and to the Alpine Meadows mid-station would increase the likelihood of frog-human encounters

especially closer to snowmelt, potentially resulting in trampling or frogs getting runover by skiers and snow equipment. No reports of skiers observing frogs in the review of literature were found, but typically skiers ride at increased rates of speed and may miss the encounters.

Implementation of the following biological resource RPMs (the full text of all RPMs is provided in Appendix B) would reduce these effects or impacts on SNYLF and its aquatic and upland habitat. The order of the RPMs listed here is the order in which they would be completed to avoid impacts on the frog and its habitat. RPMs BIO-26, BIO-33, BIO-35, BIO-36, and BIO-40 relate to the identification and avoidance of aquatic and riparian habitats and compensation for these habitats where they cannot be avoided. RPM BIO-24 requires the minimization of ground disturbance and vegetation removal. RPMs BIO-1, BIO-25, and MUL-5 require the presence of qualified biological monitors during construction. RPMs BIO-18 and BIO-19 address surveys for and protection of SNYLF. RPM MUL-1 requires implementation of surveys and protection measures if new sites are identified for disturbance during project construction. RPM MUL-2 requires the clear demarcation of construction areas and retaining activities within those areas. RPM MUL-3 requires the use of existing roads and limits development of new access routes. RPM MUL-6 requires the design and implementation of a worker environmental awareness training program. RPM BIO-34 requires the use of exclusion fencing to prevent sensitive wildlife from entering construction areas. RPM BIO-22 requires monitoring for wildlife entrapped in the construction area.

Alternative 2 would likely produce elevated noise levels during construction activities as a result of the presence of construction equipment (including helicopters, tracked machinery, pick-up trucks, and all-terrain vehicles [ATVs]); this impact would be short term and would be reduced upon completion of construction. In habitat adjacent to construction activities, noise impacts may cause frogs to temporarily avoid habitat, thereby temporarily displacing frog and disrupting breeding, territorial, shelter, and foraging behaviors. A reduction in fitness or survivorship may occur if frogs are displaced into lower-quality habitats or change their behavior in a way that reduces their survival or the survival of their offspring. Construction and operation of Alternative 2 would require the use of hazardous materials, such as oils, lubricants, and fuels which could be accidentally spilled and could reach SNLYF occupied or suitable aquatic or upland habitat. This impact would be reduced through training, self-reporting, working in accordance with applicable laws and regulations. Alternative 2 has the potential to cause some erosion and sedimentation during construction activities; this impact would be short term and would be reduced upon completion of construction. RPMs applicable to these resource areas are also identified in the following sections of this EIS/EIR: Sections 4.6, “Public Safety”; 4.9, “Noise”; 4.16, “Soils, Geology, and Seismicity”; and 4.17, “Hydrology and Water Quality.” As mentioned above, a comprehensive list of RPMs is included in Appendix B. Sections 4.6, 4.9, 4.16, and 4.17 list the RPMs that would also reduce impacts on special-status aquatic wildlife and incorporate the RPMs as mitigation measures under CEQA. Although the RPMs reduce indirect and direct effects on SNYLF and its habitat, implementation of Alternative 2 would remove suitable aquatic and upland habitat for this species and has the potential of directly affecting occupied breeding habitat. For these reasons, Alternative 2 **may affect, is likely to adversely affect** SNYLF and its habitat.

NEPA Effects Conclusion

Implementation of Alternative 2 would result in indirect and direct effects on suitable upland and aquatic habitat. Alternative 2 would remove up to 4.02 acres of upland land cover and would temporarily affect 14.28 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance. Similarly, up to 0.43 acre of wetland and stream habitat would be removed and up to 1.09 acres of wetland and stream habitat would be altered or degraded in the short term. Within these indirect and direct effects, Alternative 2 would permanently remove up to 1.17 acres of SNYLF upland and dispersal habitat and temporarily alter up to 3.72 acres of SNYLF upland and dispersal habitat (see Table 4.14-8). Alternative 2 also has the potential of directly affecting Barstool Lake through sedimentation, hazardous material spills, and other physical disturbances generated by construction activities and operation of the Gondola. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF under Alternative 2 would be **adverse**. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through

WQ-20, TREE-1, TREE-6, and TREE-7 would partially mitigate the effects on these resources through habitat avoidance, habitat restoration, and direct species protection measures. See Sections 4.6, 4.9, 4.16, and 4.17, which list additional RPMs that would reduce effects on special-status aquatic wildlife. However, the RPMs do not contain mechanisms for compensating for the loss of suitable habitat or for actions leading to unintentionally killing of frogs. These effects are addressed by Mitigation Measure 4.14-1 (Alt. 2).

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be significant prior to consideration of RPMs because without implementation of RPMs, an endangered species would be affected either directly or through habitat modifications. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on these resources; however, the impact on SNYLF would not be reduced to a less-than-significant level as the loss of individuals and habitat could still occur. Therefore, this impact would remain **potentially significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 as mitigation measures reduces this significant impact, but not to a less-than-significant level because the loss of individuals and habitat is not addressed in the RPMs. Therefore, this impact would remain significant.

Mitigation Measure 4.14-1 (Alt. 2): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog and Its Habitat through Consultation with Permitting Agencies

Direct and indirect effects to SNYLF and to its utilized (occupied) and unutilized potential (unoccupied) habitat shall be addressed through formal consultation with USFWS, and impacts on the critical habitat shall be compensated for through a combination of habitat compensation and habitat restoration at a minimum of a 3:1 mitigation ratio for utilized critical habitat and at a minimum of a 1:1 mitigation ratio for unutilized critical habitat, or as required by the permitting agencies. Habitat compensation shall be accomplished through USFWS- and CDFW-approved land preservation (if a mitigation bank exists by the time consultation is completed) or mitigation fee payment for the purpose of habitat compensation for lands supporting SNYLF (if a fee program is established). Land preservation or mitigation fee payment for habitat compensation must be completed prior to habitat disturbance or as approved by USFWS and CDFW. Habitat restoration may be appropriate as habitat compensation provided that the restoration effort is demonstrated to be feasible and implemented under a habitat restoration plan, which shall include success criteria and monitoring specifications and shall be approved by the permitting agencies prior to project construction. All habitat compensation and restoration used as mitigation for the selected alternative on public lands shall be conducted in areas designated for resource protection and management. All habitat compensation and restoration used as mitigation for the selected alternative on private lands shall include long-term management and legal protection assurances.

Significance after Mitigation

Consultation between the Forest Service, USFWS, and CDFW would ensure that indirect and direct effects on SNYLF and its habitat (including critical habitat) would be minimized and mitigated fully to the satisfaction of the resource agencies. The 3:1 ratio requirement would ensure that there would not be a reduction in suitable habitat for this species, nor would the alternative substantially reduce the number or restrict the range of the species or result in the population dropping below self-sustaining levels. This impact would be reduced to a **less-than-significant** level.

Impact 4.14-2 (Alt. 2): Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat

Implementation of Alternative 2 would result in direct and indirect effects to occupied SNYLF habitat and to habitat with unutilized potential (not occupied) within critical habitat and would temporarily modify or remove primary constituent elements: non-breeding aquatic habitat and upland habitat for SNYLF. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF critical habitat would be **adverse** because non-breeding aquatic habitat PCE and upland habitat PCE would be removed or temporarily modified. Implementation of the alternative **may affect and is likely to adversely affect** SNYLF critical habitat. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4, WQ-5, WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, SNYLF critical habitat would be affected either indirectly (removal of habitat) or directly through temporary habitat modifications. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on this species; however, the impact on SNYLF critical habitat and PCEs would not be reduced to a less-than-significant level as the loss of occupied habitat would still occur. Under CEQA, this impact would remain **potentially significant**.

Since the study area for Alternative 2 is 98.16 percent within critical habitat, all of the available SNYLF suitable aquatic and upland habitat is within the critical habitat designation. The designation of critical habitat describes suitable habitat and the "primary constituent elements." The primary constituent elements are those physical or biological features and habitat characteristics required to sustain the species' life-history processes. The primary constituent elements for SNYLF—aquatic habitat for breeding and rearing; aquatic nonbreeding habitat, including overwintering habitat; and upland areas—are described in the "Critical Habitat" subsection in Section 4.14.1.1, "Environmental Setting."

As described aquatic habitat for breeding and rearing PCE occurs within Barstool Lake and the lakes within the Five Lakes area since the larger lakes are depth enough that do not freeze solid to the bottom, maintain a natural flow pattern, are partially free of introduced predators, and maintain water long enough to allow for individuals to metamorphose, and contain all of the required physical and biological habitat components needed by the frog. It should be noted that the CDFW removed introduced fish in the early 2000s in the Five Lakes. Fishing line, hooks, and artificial bait were observed during SNYLF surveys, so there may still be some fish present in these lakes.

The human made ponds that would be indirectly affected by Alternative 2 such as Cushing Pond and the snowmaking pond near the Alpine Meadows Base Terminal do not meet the definition of this PCE since they do not hold/maintain water during the entire tadpole growth phase (a minimum of 2 years). These ponds are drained yearly for repairs, and the water within the snowmaking pond at Alpine Meadows is used in the winter months to produce snow.

Aquatic non-breeding habitat (including overwintering habitat) PCE, as described includes any water body that may not hold water long enough for SNYLF to complete its aquatic life cycle, and this habitat provides for shelter, foraging, predator avoidance, and aquatic dispersal of juveniles and adult SNYLF. Aquatic non-breeding habitat includes the smaller, shallower ponds in the Five Lakes area, the unnamed pond adjacent to Barstool Lake (visible as a small water body just northwest of Barstool Lake in Exhibit 14-1 and more clearly visible in Exhibit 2-4), and the seasonal streams and wetlands in the study area. Although most of the seasonal streams do not hold water year-round, they may provide seasonal dispersal routes for SNYLF. Cushing Pond and the snowmaking pond near the Alpine Meadows Base terminal would not provide suitable overwintering habitat for SNYLF due to ongoing management practices.

Upland area PCE is described as the upland area adjacent to or surrounding breeding and non-breeding habitat that provide area for feeding and movement of SNYLF. This area extends 82 feet from the bank or shoreline for stream habitats and for areas between proximate water bodies such as lakes the area extends out 984 feet from the shore. Upland habitat for SNYLF within the study area for Alternative 2 includes the upland areas 82 feet from seasonal streams and the upland area up to 984 feet from the lakes. This PCE also includes upland areas (catchments) adjacent to and surrounding both breeding and nonbreeding aquatic habitat that provide for the natural hydrologic regime of aquatic habitats. These upland areas should also allow for the maintenance of sufficient water quality to provide for the various life stages of the frog and its prey base.

Implementation of Alternative 2 would directly affect through temporary disturbance associated with vegetation clearing and other temporary ground disturbance up to 14.03 acres of upland land cover within critical habitat designation. Alternative 2 would indirectly affect, through permanent habitat removal, up to 3.89 acres of upland land cover associated with new construction of project elements (Table 4.14-6). Alternative 2 would indirectly affect, through permanent removal, up to 1.17 acres of SNYLF upland and dispersal habitat and would directly affect through temporarily alteration of the habitat, up to 3.72 acres of SNYLF upland and dispersal habitat (see Table 4.14-8) which corresponds to Upland Habitat PCE. Implementation of Alternative 2 would indirectly affect through habitat removal up to 0.43 acre of wetland and stream habitat, and directly affect up to 1.09 acres of wetland and stream habitat through short-term change in habitat quality due to temporary vegetation removal or other temporary construction activity (Table 4.14-7). These indirect and direct wetland and seasonal stream habitat effects correspond to non-breeding aquatic habitat PCE. Additionally, implementation of Alternative 2 has the potential of directly affect Barstool Lake as explained in Impact 4.14-1 and because Barstool Lake is hydrologically connected to one of the Five Lakes, although seasonally, the project has the potential of indirectly affect this lake in the Five Lake area as well. As proposed the project elements for Alternative 2 would not have an effect on catchment component of the upland habitat PCE, as the project components are not diverting water or affect the draining patters, direction, or affect the quantity of water available.

The mechanism and magnitude of effects to SNYLF critical habitat would be similar to those described on SNYLF suitable habitat in Impact 4.14-1. Implementation of Alternative 2 **may affect, and is likely to adversely affect** critical habitat, including direct effects to occupied aquatic breeding and rearing habitat PCE, indirect and direct effects to nonbreeding aquatic habitat PCE and direct and indirect effects to SNYLF upland habitat PCE.

NEPA Effects Conclusion

Implementation of Alternative 2 would result in indirect and direct effects on critical habitat and PCEs. Alternative 2 would remove up to 3.89 acres of upland land cover and would temporarily affect 14.03 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance within critical habitat. Similarly, up to 0.43 acre of wetland and stream habitat (non-breeding aquatic habitat) would be removed and up to 1.09 acres of wetland and stream habitat (non-breeding aquatic habitat) would be altered or degraded in the short term. Within these indirect and direct effects, Alternative 2 would permanently remove up to 1.17 acres of SNYLF upland and dispersal habitat and temporarily alter up to 3.72 acres of SNYLF upland and dispersal habitat. Alternative 2 also has the potential of directly affect Barstool Lake and the hydrologically connected lake of the Five Lakes through sedimentation, hazardous material spills, and other physical disturbances generated by construction activities and operation of the Gondola. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF critical habitat including PCEs under Alternative 2 would be **adverse** because the project would temporarily affect and permanently remove non-breeding aquatic habitat PCE and would temporarily affect and permanently remove upland habitat PCE. Implementation of Alternative 2 **may affect and is likely to adversely affect** SNYLF breeding aquatic habitat PCE, non-breeding aquatic habitat PCE and upland habitat PCE. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would partially mitigate the effects on critical habitat through habitat avoidance, habitat restoration, and direct species protection measures. See

Sections 4.6, 4.9, 4.16, and 4.17, which list additional RPMs that would reduce effects on SNYLF and other aquatic wildlife. However, the RPMs do not contain mechanisms for compensating for the loss of critical habitat. These effects are addressed by Mitigation Measure 4.14-2 (Alt. 2).

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be significant prior to consideration of RPMs because without implementation of RPMs, direct and indirect effects on SNYLF critical habitat would occur. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on these resources; however, the impact on SNYLF critical habitat would not be reduced to a less-than-significant level as the loss of critical habitat could still occur. Therefore, this impact would remain **potentially significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 as mitigation measures reduces this significant impact, but not to a less-than-significant level because the loss of critical habitat is not addressed in the RPMs. Therefore, this impact would remain significant.

Mitigation Measure 4.14-2 (Alt. 2): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog Critical Habitat through Consultation with Permitting Agencies

Implement Mitigation Measure 4.14-1 (Alt. 2).

Significance after Mitigation

Consultation between the Forest Service, USFWS, and CDFW would ensure that indirect and direct effects on SNYLF and its critical habitat would be minimized and mitigated fully to the satisfaction of the resource agencies. The 3:1 ratio requirement would ensure that there would not be a reduction in suitable habitat for this species. This impact would be reduced to a **less-than-significant** level.

Impact 4.14-3 (Alt. 2): Direct and Indirect Effects on Southern Long-Toed Salamander

Implementation of Alternative 2 could result in the disturbance or loss of aquatic and adjacent upland habitats suitable for southern long-toed salamander, a CDFW species of special concern. Without protection measures to avoid or minimize injury or mortality of salamanders during project construction, under CEQA, this impact would be **potentially significant** if individuals are present in disturbance areas during construction. However, implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would avoid or reduce the potential construction-related disturbance or loss of salamanders and suitable habitat. Specifically, RPM BIO-36 requires pre-project surveys for amphibians and actions to protect amphibian eggs, tadpoles, larvae, juveniles, and adults from construction-related impacts. Therefore, with implementation of the RPMs, the potential impact on southern long-toed salamander would be reduced to a **less than significant** level. Because this species has no federal status and is not otherwise addressed by a NEPA indicator for the project, no NEPA determination of effect in provided.

Southern long-toed salamander is designated as a California species of special concern. The aquatic breeding and dispersal habitat described for SNYLF is also suitable for southern long-toed salamander (i.e., Barstool Lake and Five Lakes for breeding habitat and all aquatic categories shown in Exhibit 4.14-2 for dispersal

habitat). The southern long-toed salamander requires permanent ponds for breeding because this species often has a prolonged larval stage (overwinter prior to metamorphosis for up to three years), especially at high elevations (approximately 6,900 feet). If the overwintering pond is shallow (less than 6 feet in depth) few larvae seem to survive the winter. Much of the nonbreeding period is spent underground in conifer forests. Migrations between breeding and nonbreeding habitat are thought to be less than 3,280 feet (Zeiner et al. 1988). Adults emerge from hibernation and migrate to breeding habitat after the first thaw. Egg deposition in this species varies geographically, they are either laid singly or in loose clumps of up to 100 eggs. Eggs typically hatch after 2-5 weeks but it is dependent on elevation and water temperature. The larval period can be as short as 50 days or as long as 2-3 years in the higher elevations and lower water temperatures. This species is a generalist predator, as both larvae and metamorphs feed on a variety of small insects, crustaceans, and spiders. Larvae and males in aquatic environments will prey on zooplankton, insect larvae, and small snails. In laboratory conditions, larvae are also known to eat frog (primarily *Pseudacris* sp.) tadpoles and conspecific larvae. This species is known to utilize hardwood forests, meadows, granite slopes for upland habitat. Introduction of fish have also had a negative effect in this species due to predation. At least nine CNDDB records of southern long-toed salamander occur within 5 miles of the study area. Adults and aquatic larvae were observed in Cushing Pond, Barstool Lake, the unnamed pond adjacent to Barstool Lake (visible as a small water body just northwest of Barstool Lake in Exhibit 4.14-1 and more clearly visible in Exhibit 2-4), and all three snowmaking ponds at Alpine Meadows during field surveys, although it is unlikely that they are able to complete their metamorphosis on these ponds due to their maintenance schedule.

Alternative 2 would remove up to 0.43 acre of wetland and stream habitat, and up to 1.09 acres of wetland and stream habitat would be temporarily affected. Southern long-toed salamander has been observed in some of the aquatic habitats that would be removed or disturbed during project construction. The terrestrial habitats within the disturbance area could also provide suitable upland habitat (i.e., shelter) for this species. Alternative 2 would remove up to 4.02 acres of upland land cover due to the construction of the Squaw Valley mid-station and the Alpine Meadows mid-station and towers and other project elements (see Table 4.14-7). Alternative 2 would temporarily affect 14.28 acres of upland land cover types associated with vegetation clearing and other temporary ground disturbance (see Table 4.14-6). Removing or temporarily affecting these habitats could lead to the injury or mortality of southern long-toed salamander individuals if they are present there during construction.

Construction and operation of the project also could introduce hazardous materials to aquatic and terrestrial habitat, during construction and operation, through accidental spills as described under Impact 4.14-1. and the southern long-toed salamander could be temporarily displaced because of human presence and noise.

NEPA Effects Conclusion

This impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA effects conclusion is provided.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be potentially significant prior to consideration of RPMs because without implementation of RPMs, direct and indirect effects on southern long-toed salamander would occur. Alternative 2 would require the removal or would modify aquatic habitat suitable for the southern long-toed salamander, including at locations where the species has been observed. Without measures to minimize and compensate for disturbances or loss of aquatic habitat and wetland habitats, up to 0.43 acre of wetland and stream habitat would be removed permanently and up to 1.09 acres of wetland and stream habitat would be temporarily affected. Additionally, without protection measures to avoid or minimize injury or mortality of salamanders during project construction, removal or disturbance of this habitat while occupied by the southern long-toed salamander could lead to the injury or death of southern long-toed salamander individuals. The injury or mortality of southern long-toed salamanders as a result of construction activities would be potentially significant. However, implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1,

TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 of this EIS/EIR would avoid or reduce potential construction-related disturbance or loss of salamanders and suitable habitat. Specifically, RPM BIO-36 requires pre-project surveys for amphibians and actions to protect amphibian eggs, tadpoles, larvae, juveniles, and adults from construction-related impacts. Additionally, RPMs BIO-24, and BIO-26 require minimizing and compensating for the loss of wetland/aquatic habitats which would reduce and compensate for the potential loss of aquatic habitats suitable for southern long-toed salamander. Therefore, with implementation of these RPMs, project implementation is not expected to substantially affect the local or regional populations of southern long-toed salamander. Although there is still a small possibility for harm to individual salamanders, the alternative would not substantially reduce the number or restrict the range of the species or result in the population dropping below self-sustaining levels. This impact would be reduced to a **less-than-significant** level.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 as mitigation measures would reduce this significant impact on southern long-toed salamander to a less-than-significant level.

Impact 4.14-4 (Alt. 2): Direct and Indirect Effects on Management Indicator Species

Implementation of Alternative 2 would result in direct and indirect effects on Management Indicator Species habitat. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to temporary disturbance or loss of MIS habitats would be slightly **adverse** because small quantities of habitat for Forest Service MIS would be lost. Although some loss of habitat would occur, implementation of the project is not likely to result in a downward trend in the population of MIS. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. This impact analysis is specific to a NEPA indicator and is not responsive to CEQA criteria. No CEQA determination of effect is provided.

The MIS report prepared for the project (U.S. Forest Service 2018e) evaluated habitat for 13 MIS required for consideration on NFS lands. The acreage presented in this analysis corresponds only to land cover types in NFS lands only. The MIS report concluded that representative habitat for the following MIS is present in the project area within NFS lands: aquatic macroinvertebrates (lacustrine/riverine habitat); yellow warbler (*Dendroica petechia*; riparian habitat); Pacific tree frog (*Pseudacris regilla;* freshwater emergent wetland); mountain quail (*Oreortyx pictus*; early and mid-seral coniferous forest); and hairy woodpecker (*Picoides villosus*; snags in green forest) (Table 4.14-3). Effects on the habitat or ecosystem components where these species would occur are the same as those addressed in Section 4.12, "Vegetation": alteration or loss of upland habitats (montane chaparral, early seral coniferous forest [Sierran mix conifer], and snags in green forest), with impacts considered less than significant. A summary of the analysis for the MIS is presented here. These summaries also include an evaluation of cumulative effects consistent with the methodologies and templates used for MIS analyses. The information on cumulative effects from the MIS report is provided here to assist in providing a more thorough understanding of the overall effects on MIS. Additional analysis for each of these species is provided in the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project MIS Report.

Aquatic Macroinvertebrates

Implementation of Alternative 2 would result in indirect and direct effects to riverine habitat through short-term change in habitat quality of up to 0.07 acre and permanent removal of up to 0.10 acre within the Alpine Meadows SUP. The short-term disturbance of riverine habitat would be restored to original contour

and revegetated after construction. Additionally, implementation of RPMs (See Appendix B) would avoid or minimize and compensate for potential impacts on aquatic habitat. Project design and incorporation of applicable RPMs would reduce project impacts on aquatic resources, and most potential residual impacts on aquatic habitat functions would not be considered substantial.

Cumulative Effects to Habitat in the Analysis Area: The Forest Service MIS Report includes cumulative effects analysis and its included here as part of this summary. Additional analysis for each of these species is provided in the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project MIS Report that is on file at the TNF office. The special scale for the cumulative effects of the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project on MIS habitat is the Squaw Creek, Bear Creek, and the Five Lakes watersheds. The temporal scale for the analysis is the date of the NOP to 20 years from the present, which is the period of time the direct effects of the project and other projects would occur and for which there is information on reasonably foreseeable future actions in the study area.

The list of past, present, and reasonably foreseeable future projects considered in this cumulative effects analysis:

- Alpine Meadows Master Plan Development (includes Rollers Chair),
- Village at Squaw Valley Specific Plan,
- Squaw Valley Red Dog Lift Replacement,
- Alpine Meadows Hot Wheels Lift Replacement,
- Timberline Twister,
- Squaw Valley Olympic Museum and Winter Sports Heritage Center,
- White Wolf Development (aka Caldwell Property),
- General Development in Olympic Valley,
- General Development in Alpine Meadows,
- TNF LRMP,
- Sierra Nevada Forest Plan Amendment,
- TNF Motorized Travel Management Plan,
- Tahoe West Project,
- Truckee River Tributaries Project,
- Five Creeks Project, and
- Alpine Stables Equestrian SUP.

Projects that are listed are in the project vicinity and have the possibility of interacting with the proposed project to generate a cumulative impact.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in these watersheds include logging, grazing, fuels management, recreational development and activities, urban and commercial development, and habitat restoration and enhancement projects. Some of the development projects are located in rural settings that could support lacustrine and riverine habitats. Some present and future projects expected to improve habitats for aquatic macroinvertebrates through restoration or enhancement include the Five Creeks project and Squaw Creek restoration project.

Cumulative Effects Conclusion: Some past and current projects in the region have contributed to an adverse cumulative effect on aquatic habitats. Reasonably foreseeable future projects that encompass or are near aquatic habitats could further contribute to this cumulative effect, although various laws and regulations (e.g., CWA, Fish and Game Code Section 1602, local ordinances, and Forest Service regulations) would minimize and require mitigation that result in a no-net-loss for these effects.

As described previously, under Alternative 2, construction activities such as vegetation clearing, tower installation, creation of temporary access ways, and staging near aquatic habitats could temporarily result in adverse impacts on invertebrates and aquatic habitat, including removal of riparian vegetation, accidental spill and contamination from construction chemicals, fuels, or other hazardous materials; and direct

mortality of aquatic species cause by equipment use within aquatic habitats. However, the project's design, construction methods, incorporation of several RPMs designed to avoid and protect aquatic resources, would minimize, avoid, and compensate for these potential impacts on aquatic habitats. Specifically, these measures require that (1) aquatic habitat be avoided to the extent feasible; (2) aquatic habitats that cannot be avoided be restored following construction; (3) any unavoidable losses be compensated for in a manner that results in no net loss of aquatic habitats; and (4) project implementation be consistent with the aquatic and riparian habitat protection provisions of CWA, RWQCB, Fish and Game Code Section 1602, and the Forest Service. Because any residual effects on aquatic habitats would be minor, temporary, and mitigated; the no net loss standard would be implemented; and there would be no permanent impacts on the quality, amount, or function of aquatic habitats, implementation of Alternative 2 would not make a considerable contribution to any cumulative impact related to aquatic macroinvertebrate habitat. In addition, habitat enhancements that could occur as a result of other projects in the study area, such as the Squaw Creek Restoration may also improve the condition of aquatic macroinvertebrate habitat in the study area.

Forest Level Effects: The above effects include disturbance and removal of riverine habitat due to project implementation and increase winter recreation. Based on the stable trend in the RIVPACS scores, implementation of the project is not likely to result in a downward trend in the habitat or aquatic macroinvertebrates.

Yellow Warbler

Approximately 0.64 acre of montane riparian habitat on NFS lands occurs in the study area for Alternative 2. There is no permanent removal of montane riparian habitat from implementation of Alternative 2. However, implementation of Alternative 2 would temporarily affect 0.39 acre of montane riparian habitat during overhead vegetation removal (Table 3 in Forest Service MIS Report [U.S. Forest Service 2018e]). Since the disturbance area would be reduced in sensitive habitat areas and RPMs would be implemented to avoid and minimize impacts in these areas, the acreage of habitat within the permanent and temporary disturbance presented in Table 3 in Forest Service MIS Report are considered maximum and overestimate the area of actual impacts. For example, riparian habitat is present between two tower locations, and the area is marked as overhead vegetation removal, but the riparian shrubs are shorter than the proposed bottom height of the Gondola and the slope of the towers would help span the riparian area and no construction or disturbance would likely occur.

Implementation of Alternative 2 would not cause a substantial loss of montane riparian habitat for yellow warbler because overhead vegetation removal within the existing riparian areas would likely not be required due to the shorter height of vegetation; the Gondola would span the riparian areas. Implementation of RPMs, particularly RPM BIO-24 will be implemented to minimize the removal of riparian habitat by limiting vegetation removal to only those areas necessary for construction, particularly in riparian zones. (Full descriptions of all RPMs are provided in Appendix B, Resource Protection Measures). For Alternative 2, towers are outside of montane riparian areas, although some are in close proximity to drainages, it is possible that the preliminary location of the towers can be adjusted during final design to provide sufficient distance from the drainage channel to minimize effects on riparian habitats.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for riparian habitat are the same as those described above for lacustrine/riverine (aquatic macroinvertebrate) habitat.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in the Squaw Creek, Bear Creek and Five Lakes watersheds include logging, grazing, fuels management, habitat restoration, recreational development and activities, urban and commercial development. Other projects that may interact with the proposed project on a cumulative basis are listed and shown in Chapter 3 of this Draft EIS/EIR. Some development and recreation projects planned in the study area (including Alpine Meadows MDP, White Wolf Development, General Development within Olympic Valley and Alpine Meadows, and fuel reduction projects) could contribute to an adverse cumulative effect on riparian habitat.

Cumulative Effects Conclusion: Implementation of Alternative 2 would result in temporary disturbance of riparian habitat for yellow warbler. However, the shrub species and stand types that would be temporarily affected are common locally and regionally and occur within montane riparian habitat types that are abundant in the region. RPMs have been incorporated into the project design to avoid and minimize vegetation removal to the extent feasible and project temporary effects would not result in substantial changes in stand structure or composition or in the distribution or abundance of shrub species or montane riparian habitat in the region. Because temporary disturbance of montane riparian habitat would occur along a narrow linear corridor and would be small relative to the total available in the study area, implementation of Alternative 2 would not result in substantial contribution to a cumulative effect on montane riparian habitat.

Forest Levels Effects: The disturbance of montane riparian habitat would result in temporary disturbance of riparian habitat for yellow warbler. However, the shrub species and stand types that would be temporarily affected are common locally and regionally and occur within montane riparian habitat types that are abundant in the region. RPMs have been incorporated into the project design to avoid and minimize effects on sensitive habitat areas (including riparian areas and RCAs) and reduce vegetation removal to the extent feasible, and temporary effects would be mitigated or compensated for to prevent substantial changes in stand structure or composition or in the distribution or abundance of shrub species, montane riparian, or RCAs in the region. Because any residual effects on riparian habitats would be minor, temporary, and if needed mitigated, and the no net loss standard would be implemented, implementation of Alternative 2 would not alter existing trends in riparian habitat, nor would construction of this alternative lead to a change in distribution of yellow warbler across the Sierra Nevada bioregion.

Pacific Tree (Chorus) Frog

Construction of the project, under Alternative 2, would result in direct loss of approximately 0.05 acre of wetland habitat. Construction and operation of the Gazex Avalanche Mitigation System is not expected to have direct or indirect effects to wetlands or other waters. Implementation of RPMs to protect water quality, as described in Section 4.16, “Soils, Geology, and Seismicity,” and Section 4.17, “Hydrology and Water Quality,” would prevent direct impacts on wetlands and waters by preventing erosion and runoff into adjacent waters and require any temporarily disturbed areas to be restored and revegetation.

Overall, implementation of Alternative 2 would not cause a substantial permanent loss of freshwater emergent wetland habitat for Pacific tree frog because vegetation treatment within these areas would typically not be required due to the short height of vegetation; towers are outside of wetland features and the Gondola would span most or all of these areas. As part of the project, RPMs described previously for Lacustrine/Riverine Habitat (Aquatic Macroinvertebrates) will be implemented to minimize impacts on aquatic habitats. Although some freshwater emergent habitat suitable for Pacific tree frog may still be disturbed or removed during project construction, very little is expected to be permanently removed (0.05 acre) and required mitigation would result in a no net loss of habitat.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for freshwater emergent habitat are the same as those described above for lacustrine/riverine (aquatic macroinvertebrate) habitat.

Cumulative Effects Conclusion: Minor construction disturbance and alteration to a small amount of freshwater emergent wetland habitat on NFS lands would occur as a result of Alternative 2. However, because the amount of unavoidable habitat disturbance and loss would be very small relative to the total amount available in the area, and the fact that any habitat disturbance or loss would have to be mitigated so that there is no net loss of wetland habitat, any potential cumulative effects would be offset by this mitigation. Implementation of Alternative 2 would not result in substantial contribution to a cumulative effect on montane riparian habitat.

Forest Level Effects: Because the amount of unavoidable disturbance and loss of wet meadow habitat would be very small (0.05 acre) relative to the total amount available in the TNF (61,247 acres), implementation of

Alternative 2 would not alter existing trends in wet meadow or freshwater emergent wetland habitat, nor would it lead to a change in distribution of pacific tree frog across the Sierra Nevada bioregion.

Mountain Quail

Construction of Alternative 2 within NFS Lands would disturbed up to 0.11 acre of Sierran Mixed Conifer habitat. This acreage is divided into overstory (limb-trimming and tree topping), permanent, and temporary effects. Total overstory vegetation removal is expected to be 0.05 acre; total vegetation removal (from grading or construction) up to 0.03 acre; and temporary disturbance is anticipated at 0.03 acre. In general, much of the forest habitat throughout the study area is evenly split between early seral and mid-seral with few occurrences of large trees.

Tree surveys conducted for Alternative 2 identified 476 trees >6 inches in diameter at breast height (dbh) (Under the Trees 2015). Construction of Alternative 2 within NFS Lands would require the removal of 20 trees (approximately 5 percent) of the total for the whole alignment. Construction would also require the trimming or topping of trees that are within the corridor of the Gondola, up to 71 trees (approximately 15 percent) of the total for the whole alignment.

While up to 0.03 acre of early and mid-seral coniferous forest and up to 20 conifer trees would be permanently affected during construction of Alternative 2, the loss of this amount of common habitat from the region would not substantially reduce the quantity or quality of this habitat in the region and would not change the distribution or viability of any MIS. Some of the loss of conifer forest vegetation would be compensated for through new plantings or payment of tree replacement mitigation fees. Additionally, implementation of RPMs would require that vegetation removal is minimized to the extent feasible and that habitat is restored to pre-project conditions in temporary construction areas.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for early and mid-seral conifer forest are the same as those described above for lacustrine/riverine (aquatic macroinvertebrate) habitat.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in the region include logging, grazing, fuels management, habitat restoration, recreational development and activities, urban and commercial development. Other projects that may interact with the proposed project on a cumulative basis are the same as those described for Lacustrine/Riverine (aquatic macroinvertebrate) habitat. Some development and recreation projects planned in the study area (including Alpine Meadows MDP, White Wolf Development, General Development within Olympic Valley and Alpine Meadows, and fuel reduction projects) could contribute to an adverse cumulative effect on early and mid-seral coniferous forest habitat.

Cumulative Effects Conclusion: Implementation of Alternative 2 would result in the removal of early and mid-seral coniferous forest for mountain quail. However, the tree species and stand types that would be removed are common locally and regionally and occur within common coniferous habitat types that are abundant in the region. RPMs have been incorporated into the project design to avoid and minimize vegetation removal to the extent feasible and protect early and mid-seral coniferous forest. Implementation of Alternative 2 would not result in substantial changes in stand structure or composition or in the distribution or abundance of tree species or coniferous communities in the region. Because loss of early and mid-seral coniferous forest habitat would occur along a narrow linear corridor and would be small relative to the total available in the study area, implementation of Alternative 2 would not result in substantial contribution to a cumulative effect on common early and mid-seral coniferous forest.

Forest Level Effects: Implementation of Alternative 2 would result in disturbances and removal of early and mid-seral conifer forest habitat for mountain quail. However, the tree species and stand types that would be removed are common locally and regionally and occur within common coniferous forest types that are abundant in the region. RPMs have been incorporated into the project design to minimize vegetation and tree removal to the extent feasible and project tree removal would not result in substantial changes in stand

structure or composition or in the distribution or abundance of tree species or forest communities in the region. Because the disturbance and loss of early and mid-seral coniferous forest would occur along a narrow linear corridor and would be small (0.10 acre) relative to the total available in the region (There are currently 530,851 acres of early seral and 2,776,022 acres of mid-seral coniferous forest habitat on NFS lands in the Sierra Nevada), implementation of Alternative 2 would not alter existing trends in early and mid-seral coniferous forest habitat, nor would implementation of Alternative 2 lead to a change in distribution of mountain quail across the Sierra Nevada bioregion.

Hairy Woodpecker
The dominant forest habitat type is Sierran mix conifer woodland within NFS lands, but stands of white fir, Jeffrey pine, and red fir are also common outside of NFS lands. The study area has not been inventoried for snags as part of this analysis; however, medium and large snags exist within forested habitats that could be affected by project implementation. Based on observations during reconnaissance-level biological surveys, medium and large snags are not uncommon in the study area and vicinity.

Construction under Alternative 2 would remove snags in association with vegetation clearance necessary for project construction, including clearance of the 60-foot construction corridor, temporary access roads, staging areas, and other areas outside of the 60-foot construction corridor that would require clearing for project construction. As part of the vegetation management activities associated with maintenance of the ROW, hazard trees (dead, dying, diseased, decaying, or infested) would also be removed. Hazard tree removal may extend beyond the 60-foot construction corridor more distant trees are tall enough to fall and damage the Gondola, Gondola lines, or towers. Under Alternative 2, a total of 0.79 acre of Sierran mixed conifer woodland occurs within the proposed Gondola corridor on NFS lands (Table 2 in Forest Service MIS Report). However, the number and quality of medium and large snags that may require removal within this area are unknown. Snag retention needs for wildlife would be taken into consideration in areas where temporary vegetation removal associated with project construction would occur, but generally snags that are also considered hazard trees that have potential to fall onto and damage the Gondola, Gondola cables, towers or any component of the project would be removed.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for snags in green forest are the same as those described above for lacustrine/riverine (aquatic macroinvertebrate) habitat.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in the region include logging, grazing, fuels management, habitat restoration, recreational development and activities, urban and commercial development. Some development and recreation projects planned in the study area (including Alpine Meadows MDP, White Wolf Development, General Development within Olympic Valley and Alpine Meadows, and fuel reduction projects) could contribute to an adverse cumulative effect on snags on green forest habitat.

Cumulative Effects Conclusion: An unknown number of medium to large snags would likely be removed because of project implementation. However, due to the narrow and linear distribution of the project, and the overall abundance of snags in the study area and vicinity, the number of medium to large snags removed relative to the amount available in the region is not expected to be substantial. Therefore, the project's contribution to a cumulative effect on the abundance, distribution, and availability of medium and large snags in the region is considered minor.

Forest Level Effects: Hairy woodpecker is a common species in the study area and the region, and suitable habitat for this species is abundant. Implementation of Alternative, includes clearance of the 60-foot construction corridor, temporary access roads, staging areas, and other areas outside of the 60-foot construction corridor that would require clearing for project construction. As part of the vegetation management activities associated with maintenance of the Gondola corridor, hazard trees (dead, dying, diseased, decaying, or infested) would also be removed. A total of 0.79 acre of coniferous forest occurs within Alternative 2 on NFS lands. However, the number and quality of medium and large snags that may require removal within this area are unknown. Snag retention needs for wildlife would be taken into

consideration in areas where temporary vegetation removal associated with project construction would occur, but generally snags that are also considered hazard trees that have potential to fall onto and damage the Gondola, Gondola cables, towers or any component of the project would be removed. However, due to the narrow and linear distribution of the project, and the overall forested habitat removed relative to the amount available in the region is not expected to be substantial. Therefore, implementation of the project under any of the alternatives would not alter the existing trend in the ecosystem component, nor would it lead to a change in the distribution of hairy woodpecker across the Sierra Nevada bioregion.

NEPA Effects Conclusion (NFMA MIS Finding)

The detailed MIS analysis concluded that implementation of Alternative 2 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion (U.S. Forest Service 2018e).

CEQA Determination of Effects

This impact analysis is specific to a NEPA indicator and is not responsive to CEQA criteria. No CEQA determination of effect is provided.

Mitigation Measures

No mitigation measures are required.

Impact 4.14-5 (Alt. 2): Direct and Indirect Effects on Special-Status Terrestrial Wildlife

Implementation of Alternative 2 would result in indirect and direct effects of habitat either occupied or potentially occupied by special-status terrestrial wildlife species. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to disturbance or loss of special-status terrestrial wildlife would be **adverse** because special-status species and their habitat would be lost. Implementation of the alternative **may affect individuals but is not likely to cause a trend toward federal listing or loss of viability of any of the Forest Service sensitive species**. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, a state-protected species would be affected either directly or through habitat modifications**.** Implementation of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34would require a range of surveys and other actions that would minimize and avoid effects on these species and their habitat. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

The following species were either observed in or have suitable habitat in the study area: golden eagle (*Aquila chrysaetos*), olive-sided flycatcher (*Contopus cooperi*), American peregrine falcon (*Falco peregrinus anatum*), Lewis's woodpecker (*Melanerpes lewis*), rufous hummingbird (*Selasphorus rufus*), yellow warbler (*Setophaga petechia*), and Williamson's sapsucker (*Sphyrapicus thyroideus*); two have a moderate potential for occurrence: bald eagle (*Haliaeetus leucocephalus*), and pallid bat (*Antrozous pallidus*). Special-status terrestrial species with no or low potential to occur are not discussed. Alternative 2 could result in direct loss or impacts through habitat modification or direct mortality.

Golden Eagle

Golden eagle is a California fully protected species. It is also a Forest Service sensitive species and is protected under the Bald and Golden Eagle Protection Act. Golden eagle is a year-round permanent resident and migrant throughout most of California. Within the region, golden eagles occur year-round in rocky, open habitats up to 11,500 feet. Vegetation associations utilized as foraging habitat include chaparral, grassland, and desert associations as well as open canopied, early-successional coniferous forests and woodlands. Secluded cliffs with overhanging ledges and large trees are used for cover (Zeiner et al. 1990). Golden eagles nest in large trees and on cliff faces, typically in areas that are remote from human activity. Alternative nest sites are maintained, and old nests are reused.

Home range size is related to prey density and availability, as well as openness of terrain, and has been documented to range from 9 to 74 square miles (Zeiner et al. 1990). In California, this species may have home ranges of more than 50 square miles (Dixon 1937). Prey species include jackrabbits and other small mammals, although carrion may be eaten when other prey is scarce. There are no known occurrences of golden eagles nesting within or immediately adjacent to study area. One golden eagle was observed during 2016 field surveys of the study area flying in a northerly flightpath from Alpine Meadows area toward Squaw Valley, no other observations of golden eagles took place and no nest attributable to this species were observed within or adjacent to the study area.

Larger trees (greater than 30 inches dbh) within the study are could provide suitable nesting habitat for this species, out of the 42 trees that would be removed as part of Alternative 2, 14 could provide suitable nesting habitat for this species (approximately 3 percent of the total within the study area for Alternative 2). The cliff area to the east of the study area could provide low-quality nesting habitat since there are no overhang ledges; no nests attributable to this species were observed within trees in the study area, adjacent forest or cliffs. The nearest known nest is a historical occurrence from 1981 near Strawberry, 26 miles south of the study area.

There are no known records of collisions between golden eagles and the Squaw Valley tram or cables that sit higher in elevation, within potential raptor flight paths, than the proposed gondola. Collisions between the cables, gondola, and golden eagles are not expected.

Trees suitable for nesting for the golden eagle would be removed, and noise from increased human activity, heavy equipment operations, vehicle traffic, and helicopter operations may temporarily affect the species' foraging behavior.

Bald Eagle

Bald eagle is state listed as endangered, as well as a fully protected species, delisted under the ESA, and a Forest Service sensitive species. It is also protected under the Bald and Golden Eagle Protection Act. The bald eagle is known to winter in the region, where it occurs in association with large bodies of water such as lakes, reservoirs, and river systems that provide ample fish to sustain them. Wintering habitat in the Tahoe area consists of mid-to-late successional stages of montane riparian and mixed conifers forests. Bald eagle habitats are characterized by a canopy closure of less than 40 percent and the presence of standing dead trees or snags.

There are no known wintering areas within the study area. Observation of bald eagles during the winter have been reported along the Truckee River in proximity to the outlet of Lake Tahoe, and the nearest known wintering grounds are located in the Lake Tahoe Basin Management Unit in Taylor Creek, Emerald Bay, and Fallen Leaf Lake.

A bald eagle adult was also observed flying over the study area and observations have also occurred within the Five Lakes area. It is possible that the Five Lakes still contain enough fish for bald eagles to forage upon, however these high-elevation lakes are frozen during winter, making foraging unavailable as a prey base for wintering bald eagles. Observations of bald eagles, in the area, has also occurred along the Truckee River, but there are no nesting reports. Nearest known nesting sites are near Hell Hole (8.4 miles southwest) and by Donner Lake (8.5 miles northeast).

Out of the 42 trees that would be removed as part of Alternative 2, 25 of them could provide suitable nesting habitat (trees greater than 20 inches dbh [Lehman 1979]) for this species (approximately 5 percent of the total within the study area for Alternative 2), however bald eagles tend to nest in proximity to lakes or rivers with ample fish sources. No nests attributable to this species were observed within the study areas or immediate vicinity and the likelihood of nesting in the study area or vicinity is very low.

Since operation of the gondola would occur only during the winter months, when the Five Lakes are frozen and any potentially wintering bald eagle would not be able to forage, Alternative 2 would have no effect on wintering bald eagles.

There are no known records of collisions between bald eagles and the Squaw Valley tram or cables that sit higher in elevation, within potential raptor flight paths, than the proposed gondola. Collisions between the cables, gondola, and bald eagles are not expected.

Trees suitable for nesting bald eagle would be removed, and noise from increased human activity, heavy equipment operations, vehicle traffic, and helicopter operations may temporarily affect the species' foraging behavior.

Peregrine Falcon

Peregrine falcon is a fully protected species in California. As such there are no take permit authorizations for this species. In California, American peregrine falcon is an uncommon breeder or winter migrant throughout much of the state. It is absent from desert areas (Zeiner et al. 1990). Active nests have been documented along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California. As a transient species, American peregrine falcon may occur almost anywhere that suitable habitat is present (Garrett and Dunn 1981). Peregrine falcons in general use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannahs, grasslands, meadows, open woodlands, and agricultural areas. The species breeds mostly in woodland, forest, and coastal habitats (Zeiner et al. 1990).

This species was observed flying over the study area during the 2015 field surveys. No scrapes (nests) were observed within the cliff areas in the vicinity of the study area. The study area provides suitable prey species (i.e., band tail pigeons, ducks). The study area provides suitable foraging habitat for this species. No nest sites (scrapes) attributable to this species were observed during field surveys. The nearest known nest site is approximately 2.5 miles east of the study area (Brokaw, pers. comm., 2017).

There are no known records of collisions between peregrine falcons and the Squaw Valley tram or cables that sit higher in elevation, within potential raptor flight paths, than the proposed gondola. Collisions between the cables, gondola, and peregrine falcons are not expected.

Noise from increased human activity, heavy equipment operations, vehicle traffic, and helicopter operations may temporarily affect the foraging behavior of the peregrine falcon, however, suitable and higher quality foraging habitat exists outside of the study area.

USFWS Birds of Conservation Concern and Forest Service Sensitive Avian Species

The rufous hummingbird and Williamson's sapsucker are Birds of Conservation Concern. Lewis's woodpecker is a Bird of Conservation Concern. The olive-sided flycatcher is a Bird of Conservation Concern and a California species of special concern. The yellow warbler is a Forest Service MIS and California species of special concern. These species are also protected under the Migratory Bird Treaty Act.

The rufous hummingbird typically breeds in open or shrubby areas, forest openings, thickets, swamps and meadows from sea level to about 6,000 feet in elevation. This species winters in Mexico and during migration can occur a variety of open and semi-open habitats up to 12,600 feet in elevation. This species was observed near Barstool Lake, and also within the Caldwell property. This hummingbird takes nectar from many species of flowering plants; also eats insects, spiders, and tree sap. Trees and shrubs in many habitats provide cover, including lowland riparian, open woodland, scrub, and chaparral, also mountain meadows extending to and above treeline.

The Williamson's sapsucker is a year-round resident of the northern Sierra Nevada, it is typically found in open coniferous and mixed coniferous-deciduous forests. This species was observed within coniferous woodland upslope from Squaw Valley during field surveys. This sapsucker drills horizontal rows of holes in lodgepole and other conifer, from which it drinks sap and eats cambium and other soft tissues. Gleans ants and other insects from trunks and, to a lesser extent, drills for wood-boring insects. Williamson's sapsucker requires snags or live trees with rotted heartwood in which to excavate nesting and roosting cavities.

Lewis' woodpecker is typically found in open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest. In lower elevations, breeds in oak woodland, nut and fruit

orchards, pinyon pine-juniper woodland, a variety of pine and fir forest, and agricultural areas including farm and ranchlands. Requires open habitats with scattered trees and snags with cavities. As previously mentioned, this species is a Bird of Conservation Concern, but only during winter. This species winters in low-elevation areas and it is not expected to occur in the study area during winter months.

Olive-sided flycatcher is mostly associated with edges, opening, and natural and human-created clearings in otherwise relative dense forests, but they also occupy semi open forests. Breeding habitat for the olive-sided flycatcher is primarily late-successional conifer forests with open canopies (e.g., 0–39 percent canopy cover). Foraging habitat is described as unobstructed airspace within opening and over forest canopies with exposed perches. The olive-sided flycatcher diet is composed almost entirely of insects, 83 percent of which are bees and wasps.

Yellow warblers generally occupy riparian vegetation in close proximity to water along streams and in wet meadows. East of the Sierra crest, the combined effect of elevation, percent riparian graminoid cover, and riparian corridor width was positively correlated with yellow warbler occurrence. However, in the Cascade Range and northern and western Sierra, yellow warblers also breed in xeric montane shrub fields and occasionally in the shrubby understory of mixed-conifer forest. Nests have been found in bush chinquapin nowhere near water in the Lassen region and in snow bush 98 feet from water in the southern Sierra. This species was observed along Bear River riparian area during SNYLF surveys in 2017.

Vegetation suitable for nesting and foraging habitat for would be removed, and noise from increased human activity, heavy equipment operations, vehicle traffic, and helicopter operations may temporarily affect the nesting and foraging behavior of USFWS Birds of Conservation Concern and Forest Service sensitive avian species. This impact would be potentially significant.

Pallid Bat

The pallid bat is listed as a California species of special concern, and a Forest Service sensitive species. This species is locally common in arid deserts (especially the Sonoran life zone) and grassland throughout the western United States, it also occurs in shrublands, woodland, and forests at elevations up to 8,000 feet. Although this species prefers rocky outcrops, cliffs, and crevices with access to open habitat for foraging, it may be observed far from such areas. Conifer forest and rock outcrops and cliffs and crevices in the study area and vicinity would provide suitable habitat to this species. This species is known to be present in the Tahoe area (Morrison et al. 2010).

As shown in Table 4.14-6, construction of Alternative 2 would remove 4.02 acres of land cover habitat and would temporarily affect 14.28 acres of land cover habitat that could provide suitable roosting or foraging habitat for these species.

Suitable roosting or foraging habitat would be removed, and noise from increased human activity, heavy equipment operations, vehicle traffic, and helicopter operations may temporarily affect the roosting and foraging behavior of the pallid bat.

Impact Mechanisms

Alternative 2 activities that could result in temporary and/or permanent impacts related to loss of nesting/roosting and foraging habitat include the removal of ground vegetation and trees associated with staging areas, gondola corridor, access, tower placement, mid-station construction, rock blasting, and installation of the Gazex system. In addition, temporary impacts on avian nesting and foraging and bat roosting may include a temporary increase in noise from construction equipment, vehicles, and/or helicopters.

Terrestrial wildlife may be temporarily displaced within the construction areas and may avoid the surrounding area due to human presence and noise. Construction noise may also affect wildlife behavior. For example, noise could result in wildlife species abandoning nests, or roosts that are otherwise perfectly suitable; noise can be stressful and interfere with foraging, sleep and other activities; intense noise can cause permanent

damage to the auditory system; and noise can interfere with acoustic communication by masking important sounds or sound components.

Noise from increased human activity, heavy equipment operations, vehicle traffic, and helicopter operations may temporarily displace wildlife during construction resulting in a temporary reduction in habitat quality for wildlife adjacent to construction areas. In habitat adjacent to construction activities, noise impacts may cause wildlife to temporarily avoid habitat, thereby temporarily displacing wildlife and disrupting breeding, territorial, shelter, and foraging behaviors. A reduction in fitness or survivorship may occur if wildlife are displaced into lower-quality habitats or change their behavior in a way that reduces their survival or the survival of their offspring. During noisy activities, wildlife may temporarily leave their territories, flush from nests (birds), or experience a reduction in predator detection that may subsequently result in mortality. This impact would be short term and would be reduced upon completion of construction.

The use of helicopters may disrupt all nesting avian species and special-status species if they occur in close proximity to these individuals or their nests or cause a permanent disruption to the foraging behaviors of the species or habitat resulting in reduced foraging. Disruption from helicopters may also come from noise disturbances or wind wash if operating close to nesting individuals, potentially affecting nesting materials, eggs, and/or nestlings.

Rock blasting may also disrupt all nesting avian species and special-status species if blasting locations occur in close proximity to these species, their nests or roosts, or cause a permanent disruption to the foraging behaviors of the species or habitat resulting in reduced foraging. Blasting of rock would potentially occur for the Squaw Valley mid-station and the Alpine Meadows mid-station, overall these two mid-stations would affect approximately 2.0 acres of habitat. Blasting may also be required for some of the tower foundations and the disturbance for each tower would vary.

The Gazex system would be used during winter time only in avalanche-prone terrain, where these species are not expected to occur. Routine operation and maintenance of the Gazex exploders, shelters, and HDPE pipe would be authorized by the SUP through an annual Operating Plan. Use of the Gazex system would eliminate the use of the howitzer cannon for avalanche mitigation in the location of the Gazex system and associated shrapnel from the shelling, and eliminate explosive residue compounds byproducts from the hand shots in this area.

Implementation of the following biological resources RPMs (the full text of all RPMs is provided in Appendix B) would reduce potential project impacts on these species and their habitats. RPMs BIO-12 through BIO-16 and RPM BIO-20 relate to identifying the presence of biological resources and avoiding habitat loss in buffer areas. RPM BIO-21 provides direction if a special-status species previously unknown in the project area is detected near project activities. RPM BIO-22 requires that a biological monitor inspect all tower placement locations and areas of active construction for trapped wildlife. RPM BIO-24 requires the minimization of ground disturbance and vegetation removal. RPM BIO-37 requires that nesting raptor surveys be conducted prior to any grading or tree removal and that any no-construction buffers be included in the Placer County Improvement Plan submittal. RPM MUL-1 requires implementation of surveys and protection measures if new sites are identified for disturbance during project construction. RPM MUL-2 requires the clear demarcation of construction areas and retaining activities within those areas. RPM MUL-3 requires the use of existing roads and limits development of new access routes. RPM MUL-5 requires that at least one environmental monitor be present during all construction activities. RPM MUL-6 requires the design and implementation of a worker environmental awareness training program. RPM MUL-7 relates to completing project construction in a single construction season. RPM BIO-34 requires the use of exclusion fencing to prevent sensitive wildlife from entering construction areas.

Alternative 2 would likely produce elevated noise levels during construction activities because of the presence of construction equipment (including helicopters, blasting, tracked machinery, pickup trucks, and ATVs); this impact would be short term and would be reduced upon completion of construction. Construction and operation of Alternative 2 would require the use of hazardous materials, such as oils, lubricants, and fuels. This impact would be reduced through training, self-reporting, working in accordance with applicable

laws and regulations. RPMs applicable to these resource areas are identified in Section 4.6, "Public Safety," and Section 4.9, "Noise." As mentioned above, a comprehensive list of RPMs is included in Appendix B. See Sections 4.6 and 4.9, which list RPMs that would also reduce impacts on special-status terrestrial wildlife and incorporate the RPMs as mitigation measures under CEQA.

With implementation of RPMs, Alternative 2 **may affect individuals, but it is not likely to result in a trend toward federal listing or loss of viability for Forest Service sensitive species.**

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to special-status terrestrial wildlife habitat under Alternative 2 would be **adverse** but minimal because small amounts of habitat would be disturbed compared to available habitat in the surrounding area. Similarly, the effect on the USFWS birds of conservation concern would be **adverse** because construction activities could affect these species if present within the construction area of Alternative 2. These effects would be mitigated through implementation of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34. Alternative 2 would likely produce elevated noise levels during construction activities as a result of the presence of construction equipment (including helicopters, tracked machinery, pickup trucks, and ATVs); this impact would be short term and would end upon completion of construction. RPMs applicable to these resource areas are also identified in Section 4.6, "Public Safety." As mentioned above, a comprehensive list of RPMs is included in Appendix B. See Sections 4.6 and 4.9, which list the specific RPMs that would also reduce impacts on special-status terrestrial wildlife.

CEQA Determination of Effects

Alternative 2 involves construction and operation activities that would remove or modify habitat suitable for the species evaluated above. Without proper implementation of RPMs, implementation of Alternative 2 could result in adverse effects on these species through habitat loss, disturbance, or direct mortality. Under CEQA, and using the CEQA criteria, this impact on these special-status species would be significant. However, implementing RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34 would protect these special-status species by requiring preconstruction surveys for nesting birds, nesting raptors, roosting bats; providing construction monitoring through all phases of construction; creating no-disturbance buffers; excluding construction activity from sensitive resource areas; and coordinating with the appropriate regulatory agencies. Also, see Sections 4.6 and 4.9, which list RPMs related to noise and hazardous materials that would also reduce impacts on special-status terrestrial wildlife habitat and incorporate the RPMs as mitigation measures under CEQA. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34 as mitigation measures would reduce this significant impact on special-status terrestrial wildlife species to a less-than-significant level.

Also, see Sections 4.6 and 4.9, which list RPMs related to noise and hazardous materials that would reduce impacts on special-status terrestrial wildlife species, and incorporate the RPMs as mitigation measures under CEQA.

Impact 4.14-6 (Alt. 2): Disturbance or Loss of Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites

Implementing Alternative 2 could interfere with the movement of native resident or migratory wildlife, or with established wildlife corridors, or impede the use of native wildlife nursery sites. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to disturbance or loss of wildlife movement, wildlife corridors, and native wildlife nursery sites would be **adverse** because construction activities have the potential to displace wildlife and disturb native breeding wildlife. Implementation of Alternative 2 **may affect and is likely to adversely affect** breeding SNYLF and its movement. Implementation of Alternative 2 **may affect individuals but is not likely to cause a trend toward federal listing of loss of viability for any of the Forest Service sensitive species**. Implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37 would mitigate this adverse effect. Under CEQA, and using the CEQA criteria, direct and indirect impacts related to disturbance or loss of wildlife movement and wildlife corridors would be **less than significant** prior to consideration of RPMs because wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative 2 would not prohibit the passage of wildlife between the forested areas west and east of KT-22, and the direct and indirect impacts on native wildlife nursery sites would be **potentially significant** prior to consideration of RPMs because Alternative 2 would impede the use of these nursery sites. Implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, which require preconstruction wildlife surveys, no-disturbance buffers, construction monitoring, minimizing vegetation and sensitive habitat area impacts, and limiting the operation of the gondola to winter months, would reduce this impact to a less-than-significant level for all species except SNYLF. For SNYLF this impact remains **significant**.

The study areas for the action alternatives are at the northeastern edge of the Sturdevant Ridge–Mosquito Ridge/Crystal Ridge ECA. This ECA connects natural landscape blocks from around Sturdevant Ridge in El Dorado County up through the Crystal Ridge northbound to approximately the summit of Granite Chief, encompassing 171,457 acres (Spencer et al. 2010).

The main function of the ECA is to connect natural landscape block between the two end points. The Alternative 2 alignment is located at the edge of the ECA, toward one of the end points. Implementing Alternative 2 would not interfere with the main function of the ECA because it would not prevent the movement of wildlife between the two end points or prevent the movement of wildlife to adjacent natural landscape blocks.

Wildlife in the study area typically use riparian and forested areas as migration routes and typically avoid disturbed areas and areas with high levels of human presence. Noise and human presence associated with construction activities have the potential to temporarily affect wildlife traveling west to east and vice versa primarily near the summit of KT-22 because the adjacent terrain and lack of cover create natural barriers for wildlife. However, this is not the only available route for movement; wildlife can and do travel through Squaw Valley and Alpine Meadows and the Bear River riparian corridor. Although some wildlife may be temporarily displaced during construction, wildlife would not be physically prevented from moving around project construction areas since most wildlife will move through the area in the evening or early morning hours when construction is not yet occurring. Additionally, operation of the gondola would occur mostly during the winter months, when migration activities have been completed, and no operation, except for maintenance or limited movement of cabins, may occur during nonwinter time, when migration and wildlife movement typically occur.

The Gazex avalanche control system would be used only during the winter months, outside of the typical nesting season, and thus would not have an effect on nursery or breeding activities. With the exception of minimal maintenance activities during the summer months, the gondola would be operated during the winter months, outside of the wildlife breeding season. However, construction activities have the potential to affect breeding wildlife in vicinity of the Alternative 2 alignment, through tree removal, vegetation clearing,

grading, rock blasting, drilling for tower placement, helicopter use, access road usage, filling of wetlands/streams if these activities take place in proximity to breeding wildlife. The land cover types present within the Alternative 2 alignment provide suitable breeding habitat for wildlife species including special-status species (see Impacts 4.14-1 [Alt. 2], 4.14-5 [Alt. 2], 4.14-1 [Alt. 3], 4.14-5 [Alt. 3], 4.14-1 [Alt. 4] and 4.14-5 [Alt. 4]). Potential disturbance or impacts on nesting/denning/roosting wildlife would be avoided through implementation of biological resources RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, which include preconstruction surveys for breeding amphibians, denning mammals, nesting birds, and nursery bat roosts; implementation of no-disturbance buffers; construction monitoring; requiring minimizing vegetation and sensitive habitat area impacts; and limiting operation of the gondola to winter months.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to wildlife movement and wildlife corridors under Alternative 2 would be minimally **adverse** because although wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative 2 would not prohibit the passage of wildlife between the forested areas west and east of KT-22, construction activities could nonetheless displace wildlife albeit temporarily.

Absent RPMs and/or mitigation, direct and indirect impacts related to wildlife nurseries would be **adverse** because construction activities have the potential to disturb native breeding wildlife. Implementation of Alternative 2 **may affect and is likely to adversely affect** breeding SNLYF and its movement because construction activities have the potential to disturb occupied breeding habitat and upland areas potentially used for dispersal. Implementation of the project **may affect individuals but is not likely to cause a trend toward federal listing of loss of viability for any of the Forest Service sensitive species**. These effects would be mitigated through implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37. Furthermore, implementation of Mitigation Measure 4.14-6 (Alt. 2) would address potential effects to breeding and dispersing SNYLF.

CEQA Determination of Effects

Alternative 2 would result in construction activities that would affect wildlife. Under CEQA, and using the CEQA criteria, direct and indirect impacts related to wildlife movement and wildlife corridors under Alternative 2 would be less than significant because although construction activities could temporarily displace wildlife, wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative 2 would not prohibit the passage of wildlife between the forested areas west and east of KT-22.

Without proper implementation of RPMs, Alternative 2 would affect wildlife nurseries because construction activities have the potential to disturb native breeding wildlife. Under CEQA, and using the CEQA criteria, if wildlife nurseries would be affected, this would be a significant impact. However, with implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, the following actions would be required: preconstruction surveys for nesting, roosting, denning, and breeding wildlife; avoidance; construction monitoring; and implementation of no-disturbance buffers. With implementation of these RPMs, this impact would be reduced to a less-than-significant level or all species except for SNYLF. For SNYLF this impact remains **significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 as mitigation measures would reduce this impact on wildlife nurseries but would not reduce it to a less than significant effect for SNYLF.

Mitigation Measure 4.14-6 (Alt. 2): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog Nursery Sites through Consultation with Permitting Agencies

Implement Mitigation Measure 4.14-1 (Alt. 2).

Significance after Mitigation

Consultation between the Forest Service, USFWS, and CDFW would ensure that indirect and direct effects on SNYLF and its habitat (including breeding habitat) would be minimized and mitigated fully to the satisfaction of the resource agencies. The 3:1 ratio requirement would ensure that there would not be a reduction in suitable habitat for this species, nor would the alternative substantially reduce the number or restrict the range of the species or result in the population dropping below self-sustaining levels. This impact would be reduced to a **less-than-significant** level.

4.14.3.3 ALTERNATIVE 3

Impact 4.14-1 (Alt. 3): Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog

Implementation of Alternative 3 would result in direct and indirect effects, such as loss of individual SNYLF or occupied habitat. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF would be **adverse** but at a lesser degree than Alternative 2 because although suitable aquatic and upland habitat could be disturbed or removed, Alternative 3 is further away from occupied breeding habitat and would not affect it. Nevertheless, implementation of Alternative 3 **may affect, and is likely to adversely affect** SNLYF and its habitat. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, an endangered species would be affected either directly or through habitat modifications. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on this species; however, the impact on SNYLF would not be reduced to a less-than-significant level as the loss of individuals and occupied habitat could still occur. Under CEQA, this impact would remain **potentially significant**.

Impact 4.14-1 (Alt. 3) would be similar to Impact 4.14-1 (Alt. 2). The Alternative 3 alignment is further east than the proposed location of Alternative 2 and thus is also further away from Five Lakes, and Barstool Lake and falls outside of the 984-foot area surrounding the SNYLF breeding habitats and thus would have no effects on Five Lakes or Barstool Lake.

The alignment that Alternative 3 takes is the same from the Squaw Valley base terminal to the Squaw Valley mid-station at which, Alternative 3 heads in a southernly route towards the Caldwell property towards the proposed location of the Alpine Meadows mid-station from here Alternative 3 alignment heads towards the Alpine Meadows base terminal. In this new portion of the alignment, aquatic habitats suitable for SNYLF include seasonal streams, emergent wetland, Caldwell Pond, wet meadow habitat and the middle snowmaking pond near the Alpine Meadows base terminal. These habitat types are similar to those discussed under Alternative 2 and were also surveyed as part of the SNYLF surveys. Just as for Alternative 2, no SNYLF were observed in this habitats during the July 20, August 10–11, and September 30, 2017, surveys. The ephemeral drainages and wetlands may provide a migration route from the Five Lakes area down into Bear Creek valley during snowmelt. Just as described in Impact 4.14-1 for Alternative 2, Cushing Pond, the Caldwell Pond and the Alpine Meadows snowmaking pond do not provide suitable breeding habitat for SNYLF.

Alternative 3 would, however, remove more upland land cover and wetland habitat than Alternative 2, specifically removing up to 4.27 acres of upland land cover habitat due to the construction of the project

elements. Alternative 3 would directly affect 11.17 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance (see Table 4.14-6). Up to 0.53 acre of wetland and stream habitat would be removed or indirectly affected by construction activities, and up to 0.91 acre of wetland and stream habitat would be directly affected due to temporarily disturbance (see Table 4.14-7).

The construction components for Alternative 3 are similar to those for Alternative 2 and thus would have similar impacts. These construction components include vegetation removal/clearing, grading, rock blasting, drill locations for tower and tower installation, mid-stations construction, access route use, trench work for underground utilities at the base terminals, and/or other utilities. Because Alternative 3 would indirectly or directly remove suitable aquatic habitat and upland habitat, Alternative 3 also has the potential to kill or injure SNYLF during construction activities.

The location of the Gazex system for Alternative 3 is the same as for Alternative 2; thus, the analysis and conclusion for Alternative 3 are the same as for Alternative 2.

Skiing into the GCW from Squaw Valley KT-22 Express or from Alpine Meadows Summit Express Chair lift is currently allowed and is done so at the risk of the skier as this area is outside of the ski area boundary and requires some level of traversing and hiking. Because skiing into the GCW requires hiking, it is not hugely frequented by skiers. Some snow enthusiasts also hike the GCW through the Five Lakes trail system via snowshoes. The discussion of Impact 4.1-1 (Alt. 2) in Section 4.1, “Recreation,” indicates that Alternative 3 could adversely affect the dispersed recreation due to an increase in visitors. Furthermore, this increase in visitation could also occur during transitional seasons, or periods of inconsistent snow cover, during which the gondola (and two ski areas) would be operational and at the same time, southern aspect slopes would be dry enough for foot traffic to access the GCW by hiking. During these periods, the additional access provided by the gondola to skiers could increase current use. Barstool Lake and the Five Lakes area receive visitation during both winter and nonwinter season as evidenced by trash observed during initial surveys (i.e., ski pole and glove, water bottles and granola bar wrappings). An increase in use could have a detrimental effect on SNYLF and its habitat, through an increase of trash and visitation to Barstool Lake and suitable habitats within the Five Lakes area. However, any impacts would be lesser than those discussed for Alternative 2 since the Alpine Meadows mid-station under Alternative 3 would be lower in the valley area and not near *The Buttress* or Barstool Lake adjacent to known occupied breeding habitat and skiers would not be able to disembark adjacent to this habitat. This issue is also addressed in Section 4.3, “Wilderness.”

Seasonal stream and wetland habitat and associated upland habitat for SNYLF exist within the Alternative 3 alignment. Indirect effects via loss of habitat would include up to 4.27 acres of upland land cover habitat due to the construction of the project elements similar to those described under Alternative 2. Alternative 3 would directly affect 11.17 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance. Within these indirect and direct effects, Alternative 3 would permanently remove up to 0.42 acre of SNYLF upland and dispersal habitat and would temporarily alter up to 3.11 acres of SNYLF upland and dispersal habitat, whereas Alternative 2 would permanently remove 1.17 acres and temporarily alter 3.72 acres (Table 4.14-8). Alternative 3 would also indirectly affect up to 0.53 acre of wetland and stream habitat through removal, and up to 0.91 acre of wetland and stream habitat would be directly affected through vegetation clearing and other temporary ground disturbance.

Implementation of the same biological resource RPMs as for Alternative 2, would reduce these effects on SNYLF and its aquatic and upland habitat: RPMs MUL-1 through MUL-7 relate to identifying and protecting resources through implementing surveys and protection measures, monitoring construction activities, designing and implementing a worker environmental awareness training program, and completing project construction in a single construction season. RPMs HAZ-1, HAZ-3, and HAZ-6 through HAZ-8 involve providing training regarding hazardous materials, preparing a safety plan and modifying existing plans so they include further guidance on the storage and uses of hazardous substances, and disposing of hazardous materials in accordance with applicable laws and regulations. RPM BIO-1 requires the presence of qualified biological monitors during construction. RPM BIO-7 requires the use of weed-free construction materials. RPMs BIO-18, BIO-19, and BIO-21 through BIO-26 relate to the identification and avoidance of aquatic and riparian habitats and compensation for these habitats where they cannot be avoided. RPM BIO-27 relates to

removing trash and food from the work site each day, and RPM BIO-28 forbids pets and firearms from the project area. RPM BIO-29 forbids the harm, harassment, or collection of wildlife species. RPMs BIO-30 through BIO-32 relate to developing a restoration plan and reclaiming and revegetating disturbed areas. RPM BIO-33 requires evidence of resource agency notification regarding existence of wetlands, streams and/or vernal pools on the project site. RPM BIO-34 requires proper construction fencing adjacent to wetland preservation easements and other protected areas. RPM BIO-35 requires a verified wetland report. RPM BIO-36 requires approval or issuance of a building permit that addresses compensation for wetland/riparian impacts. RPM BIO-39 requires preparation of an MMRP. RPMs SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, and SOILS 12 relate to controlling erosion on the project site. RPMs WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20 relate to projecting water quality and sensitive water resources during project construction. RPM TREE-1 requires protecting waters of the United States and State, including wetlands, when removing trees. RPMs TREE-6 and TREE-7 relate to siting landings in areas that would not threaten aquatic habitats and designated buffer zones.

Alternative 3 would likely produce the same elevated noise levels during construction activities as a result of the presence of construction equipment (including helicopters, tracked machinery, rock blasting, pickup trucks, and all-terrain vehicles [ATVs]); this impact would be short term and would be reduced upon completion of construction. Construction and operation of Alternative 3 would require the use of hazardous materials, such as oils, lubricants, and fuels. This impact would be reduced through training, self-reporting, working in accordance with applicable laws and regulations. Alternative 3 would likely cause some erosion and sedimentation during construction activities; this impact would be short term and would be reduced upon completion of construction. RPMs applicable to these resource areas are also identified in the following sections of this EIS/EIR: Sections 4.6, “Public Safety”; 4.9, “Noise”; 4.16, “Soils, Geology, and Seismicity”; and 4.17, “Hydrology and Water Quality.” As mentioned above, a comprehensive list of RPMs is included in Appendix B. Sections 4.6, 4.9, 4.16, and 4.17 list the RPMs that would also reduce impacts on SNYLF and incorporate the RPMs as mitigation measures under CEQA. Although the RPMs reduce indirect and direct effects on SNYLF and its habitat, implementation of Alternative 3 would remove suitable aquatic and upland habitat for this species and has the potential of directly affect occupied breeding habitat. For these reasons, Alternative 3 **may affect, and is likely to adversely affect** SNYLF and its habitat.

NEPA Effects Conclusion

Implementation of Alternative 3 would result in direct and indirect effects on suitable upland and aquatic habitat for SNYLF via the removal and/or short-term alteration or degradation of landcover and aquatic habitat. Alternative 3 removes slightly greater amount of upland land cover (4.27 acres) compared to Alternative 2 (4.02 acre) and has a short-term alteration or degradation of upland cover habitat of 11.17 acres, compared to 14.28 acres for Alternative 2. Alternative 3 would permanently remove up to 0.42 acre of SNYLF upland and dispersal habitat and temporarily alter up to 3.11 acres of SNYLF upland and dispersal habitat (see Table 4.14-8). Alternative 3 would also have a short-term change in habitat quality through temporary effects to 0.91 acre of aquatic habitat which is less than under Alternative 2 (1.09 acres) and would permanently remove up to 0.53 acre of aquatic habitat, which are slightly greater than for Alternative 2 (0.43 acres). The location of Alternative 3 Alpine Meadows mid-station location is further east and not near Barstool Lake or Five Lakes nor within the 984-foot upland habitat area of the lakes, and thus any impacts on these areas would be less than for Alternative 2. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to SNYLF would be slightly less **adverse** than Alternative 2 since although Alternative 3 removes slightly more suitable non-breeding aquatic, the effects to occupied breeding habitat would be less than Alternative 2 since project elements for Alternative 3 are not near Barstool Lake or Five Lakes**.** Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20; TREE-1, TREE-6, and TREE-7 would partially mitigate the effects on these resources through habitat avoidance, habitat restoration, and direct species protection measures. See Sections 4.6, 4.9, 4.16, and 4.17, which list additional RPMs that would reduce effects on the SNYLF and other aquatic wildlife. However, the RPMs do not contain mechanisms for compensation for the loss of suitable habitat for SNYLF or for actions leading to unintentionally killing of frogs. These effects are addressed by Mitigation Measure 4.14-1 (Alt. 3).

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, an endangered species would be affected either directly or through habitat modifications. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on these resources; however, the impact on SNYLF would not be reduced to a less-than-significant level as the loss of individuals and habitat could still occur. Therefore, this impact would remain **potentially significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20; TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 as mitigation measures reduces this significant impact, but not to a less-than-significant level because the loss of individuals and habitat is not addressed in the RPMs. Therefore, this impact would remain significant.

Mitigation Measure 4.14-1 (Alt. 3): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog and its Habitat through Consultation with Permitting Agencies

Implement Mitigation Measure 4.14-1 (Alt. 2).

Significance after Mitigation

Consultation between the Forest Service, USFWS, and CDFW would ensure that temporary and permanent impacts on critical habitat for SNYLF would be minimized and mitigated fully to the satisfaction of the resource agencies. The 3:1 ratio requirement would ensure that there would not be a reduction in suitable habitat for this species, nor would the alternative substantially reduce the number or restrict the range of the species or result in the population dropping below self-sustaining levels. This impact would be reduced to a **less-than-significant** level.

Impact 4.14-2 (Alt. 3): Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat

Implementation of Alternative 3 would result in direct effects to occupied SNYLF habitat and habitat with unutilized potential (not occupied) within critical habitat and it would remove primary constituent elements: non-breeding aquatic habitat and upland habitat for SNYLF. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF critical habitat would be **adverse** because non-breeding aquatic habitat PCE and upland habitat PCE would be temporarily modified or removed. Implementation of the project **may affect and is likely to adversely affect** SNYLF critical habitat. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, SNYLF critical habitat would be affected either indirectly (removal of habitat) or directly through temporary habitat modifications. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on this species; however, the impact on SNYLF critical habitat would not be reduced to a less-than-significant level as the loss of critical habitat and PCEs would still occur. Under CEQA, this impact would remain **potentially significant**.

Impact 4.14-2 (Alt. 3) would be similar to Impact 4.14-2 (Alt. 2), since the study area for Alternative 3 is 97.94 percent within critical habitat, which is smaller than Alternative 2. The major difference between Alternative 3 and Alternative 2 is that Alternative 3 by being further east than Alternative 2, Alternative 3 is further east from the Five Lakes and Barstool Lake and is outside of the 984-foot SNYLF upland habitat area around the lakes. Just like for Alternative 2, upland habitat for SNYLF within the study area for Alternative 3 includes the upland areas 82 feet from seasonal streams and the upland area up to 984 feet from the lakes. This PCE also includes upland areas (catchments) adjacent to and surrounding both breeding and nonbreeding aquatic habitat that provide for the natural hydrologic regime of aquatic habitats. These upland areas allow for the maintenance of sufficient water quality to provide for the various life stages of the frog and its prey base.

Implementation of Alternative 3 would directly affect through temporary disturbance associated with vegetation clearing and other temporary ground disturbance up to 10.87 acres of upland land cover within critical habitat designation. Alternative 3 would indirectly affect, through permanent habitat removal up to 4.15 acres of upland land cover associated with new construction of project elements (Table 4.14-6). Alternative 3 would indirectly affect through permanent removal up to 0.42 acre of SNYLF upland and dispersal habitat and would directly affect through temporarily alteration of the habitat, up to 3.11 acres of SNYLF upland and dispersal habitat (see Table 4.14-8) which corresponds to Upland Habitat PCE. Implementation of Alternative 3 would indirectly affect through habitat removal up to 0.53 acre of wetland and stream habitat, and directly affect up to 0.91 acre of wetland and stream habitat through short-term change in habitat quality due to temporary vegetation removal or other temporary construction activity (Table 4.14-7). These indirect and direct wetland and seasonal stream habitat effects correspond to non-breeding aquatic habitat PCE. The location of Alternative 3 Alpine Meadows mid-station location is further east and not near Barstool Lake or Five Lakes nor within the 984-foot upland habitat area of the lakes, and thus any direct impacts on these areas would be less than for Alternative 2, however, because of the distance Alternative 3 is not expected to affect SNYLF breeding aquatic habitat PCE.

The mechanism of effects to SNYLF critical habitat would be similar to those described on SNYLF habitat in Impact 4.14-1 (Alt. 2). Implementation of Alternative 3 **may affect and is likely to adversely affect** critical habitat, including direct and indirect effects to nonbreeding aquatic habitat PCE and direct and indirect effects to SNYLF upland habitat PCE.

NEPA Effects Conclusion

Implementation of Alternative 3 would result in indirect and direct effects on critical habitat and PCEs. Alternative 3 would indirectly affect up to 4.15 acres of upland land cover by removal and would directly affect 10.87 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance within critical habitat. Similarly, up to 0.53 acre of wetland and stream habitat would be indirectly affected by removal and up to 0.91 acre of wetland and stream habitat would be directly affected by short-term alteration or degradation. Within these indirect and direct effects to existing landcover habitat, Alternative 3 would permanently remove up to 0.42 acre of SNYLF upland and dispersal habitat and temporarily alter up to 3.11 acres of SNYLF upland and dispersal habitat. The location of Alternative 3 Alpine Meadows mid-station location is further east and not near Barstool Lake or Five Lakes nor within the 984-foot upland habitat area of the lakes, and thus any direct impacts on these areas would be less than for Alternative 2, however, because of the distance Alternative 3 is not expected to affect SNYLF breeding aquatic habitat PCE. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF critical habitat including PCEs under Alternative 3 would be **adverse** because the project would temporarily affect and permanently remove non-breeding aquatic habitat PCE and would temporarily affect and permanently remove upland habitat PCE. Although Alternative 3 removes slightly more aquatic non-breeding habitat (0.53 acres) than Alternative 2 (0.43), Alternative 3 is not expected to affect occupied breeding habitat and thus the overall effects on critical habitat are less than those of Alternative 2. Implementation of the project **may affect and is likely to adversely affect** SNYLF non-breeding aquatic habitat PCE and upland habitat PCE. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20,

TREE-1, TREE-6, and TREE-7 would partially mitigate the effects on critical habitat through habitat avoidance, habitat restoration, and direct species protection measures. See Sections 4.6, 4.9, 4.16, and 4.17, which list additional RPMs that would reduce effects on SNYLF and other aquatic wildlife. However, the RPMs do not contain mechanisms for compensating for the loss of critical habitat. These effects are addressed by Mitigation Measure 4.14-2 (Alt. 3).

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be potentially significant prior to consideration of RPMs because without implementation of RPMs, direct and indirect effects on SNYLF critical habitat would occur. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on these resources; however, the impact on SNYLF critical habitat would not be reduced to a less-than-significant level as the loss of critical habitat could still occur. Therefore, this impact would remain **potentially significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 as mitigation measures reduces this significant impact, but not to a less-than-significant level because the loss critical habitat is not addressed in the RPMs. Therefore, this impact would remain significant.

Mitigation Measure 4.14-2 (Alt. 3): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog Critical Habitat through Consultation with Permitting Agencies

Implement Mitigation Measure 4.14-1 (Alt. 2).

Significance after Mitigation

Consultation between the Forest Service, USFWS, and CDFW would ensure that indirect and direct effects on SNYLF critical habitat would be minimized and mitigated fully to the satisfaction of the resource agencies. The 3:1 ratio requirement would ensure that there would not be a reduction in suitable habitat for this species. This impact would be reduced to a **less-than-significant** level.

Impact 4.14-3 (Alt. 3): Direct and Indirect Effects on Southern Long-Toed Salamander

Implementation of Alternative 3 would result in direct and indirect effects, such as loss of individual southern long-toed salamander. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, state-protected species would be affected either directly through temporary habitat modifications or indirectly through habitat removal that leads to injury or death of individual southern long-toed salamander. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on this species to a **less than significant** level. Because this species has no federal status, this impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided.

Southern long-toed salamander is designated as a California species of special concern. The aquatic breeding, and aquatic non-breeding habitat described under Impact 4.14-1 (Alt. 2) for SNYLF would also be suitable for the southern long-toed salamander. Aquatic and terrestrial habitat under Alternative 3 provides suitable habitat for the southern long-toed salamander. Loss of habitat would include up to 4.27 acres of upland land cover habitat due to the construction of the Squaw Valley mid-station and the Alpine Meadows mid-station, towers and other project elements. Alternative 3 would temporarily affect 11.17 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance. Up to 0.53 acre of wetland and stream habitat would be removed or directly affected by construction activities, and up to 0.91 acre of wetland and stream habitat would be temporarily affected from implementation of Alternative 3. Southern long-toed salamander has been observed in some of the aquatic habitats that would be removed or disturbed during project construction. The terrestrial habitats within the disturbance area could also provide suitable upland habitat (e.g., shelter) for this species. Removing or temporarily affecting these habitats could lead to the injury or mortality of southern long-toed salamander individuals, if they are present there during construction.

Construction and operation of the project also could introduce contaminants to the habitat as described in Impact 4.14-1 (Alt. 2), and the southern long-toed salamander could be temporarily displaced because of human presence and noise.

NEPA Effects Conclusion

Because this species has no federal status, this impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided.

CEQA Determination of Effects

Alternative 3 would require the removal or would modify aquatic habitat suitable for the southern long-toed salamander, including at locations where the species has been observed. Without measures to minimize and compensate for disturbances or loss of aquatic habitat and wetland habitats, up to 0.53 acre of wetland and stream habitat would be removed permanently, and up to 0.91 acre of wetland and stream habitat would be temporarily affected. Removal or disturbance of this habitat while occupied by the southern long-toed salamander could lead to the injury or death of southern long-toed salamander individuals. Under CEQA, and using the CEQA criteria, the effect on southern long-toed salamander would be potentially significant and slightly greater than Alternative 2 since more aquatic and terrestrial habitat is removed or disturbed. However, implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 of this EIS/EIR, would avoid or reduce potential construction-related disturbance or loss of salamanders and suitable habitat. Specifically, RPM BIO-36 requires pre-project surveys for amphibians and actions to protect amphibian eggs, tadpoles, larvae, juveniles, and adults from construction-related impacts. Additionally, RPMs BIO-24, and BIO-26 require minimizing and compensating for the loss of wetland/aquatic habitats which would reduce and compensate for the potential loss of aquatic habitats suitable for southern long-toed salamander. Therefore, with implementation of these RPMs, project implementation is not expected to substantially affect the local or regional populations of southern long-toed salamander. Although there is still a small possibility for harm to individual salamanders, the alternative would not substantially reduce the number or restrict the range of the species or result in the population dropping below self-sustaining levels. This impact would be reduced to a **less-than-significant** level.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 of this EIS/EIR as mitigation measures would reduce this potentially significant impact on southern long-toed salamander to a less-than-significant level.

Impact 4.14-4 (Alt. 3): Direct and Indirect Effects on Management Indicator Species

Implementation of Alternative 3 would result in direct and indirect effects on Management Indicator Species habitat. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to temporary disturbance or loss of MIS habitats would be minimally **adverse** because small quantities of habitat for Forest Service MIS would be lost. Although some loss of habitat would occur, implementation of the project would not likely to result in a downward trend in the population of MIS. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. This impact analysis is specific to a NEPA indicator and is not responsive to CEQA criteria. No CEQA determination of effect is provided.

The MIS report prepared for the project (U.S. Forest Service 2018e) evaluated habitat for 13 MIS required for consideration on NFS lands. The MIS report concluded that representative habitat for the following MIS is present in the project area within NFS lands: aquatic macroinvertebrates (lacustrine/riverine habitat); yellow warbler (*Dendroica petechia*; riparian habitat); Pacific tree frog (*Pseudacris regilla;* freshwater emergent wetland); mountain quail (*Oreortyx pictus*; early and mid-seral coniferous forest); and hairy woodpecker (*Picoides villosus*; snags in green forest) (Table 4.14-3). Effects on the habitat or ecosystem components where these species would occur are the same as those addressed in Section 4.12, "Vegetation": alteration or loss of upland habitats (early seral coniferous forest [Sierran mix conifer], and snags in green forest) an Section 4.15, "Wetlands": alteration or loss of wetlands, lacustrine/riverine and riparian habitat, with impacts considered less than significant. A summary of the analysis for the MIS is presented here. These summaries also include an evaluation of cumulative effects consistent with the methodologies and templates used for MIS analyses. The information on cumulative effects from the MIS report is provided here to assist in providing a more thorough understanding of the overall effects on MIS. The analysis for each of these species is provided in the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project MIS Report that is on file at the TNF office.

Aquatic Macroinvertebrates

Implementation of Alternative 3 would result in indirect and direct effects to riverine habitat through short-term change in habitat quality of up to 0.07 acre and permanent removal of up to 0.13 acre within the Alpine Meadows SUP. The short-term disturbance of riverine habitat would be restored to original contour and revegetated after construction. Implementation of Alternative 3 would also result in direct effects on lacustrine habitat through short-term change in habitat quality of up to 0.16 acre of overstory vegetation removed. Additionally, implementation of RPMs (see Appendix B) would avoid or minimize and compensate for potential impacts on aquatic habitat. Project design and incorporation of applicable RPMs would reduce project impacts on aquatic resources, and most potential residual impacts on aquatic habitat functions would not be considered substantial.

Cumulative Effects to Habitat in the Analysis Area: The spatial and temporal scale for the cumulative effects of the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project on MIS habitat are the same as those described above for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat.

The list of past, present, and reasonably foreseeable future projects considered in this cumulative effects analysis is the same as for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat analysis.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in these watersheds include logging, grazing, fuels management, recreational development and activities, urban and commercial development, and habitat restoration and enhancement projects. Some present and future projects expected to improve habitats for aquatic macroinvertebrates through restoration or enhancement include the Five Creeks Project and Squaw Creek restoration project.

Cumulative Effects Conclusion: Some past and current projects in the region have contributed to an adverse cumulative effect on aquatic habitats. Reasonably foreseeable future projects that encompass or are near aquatic habitats, could further contribute to this cumulative effect, although various laws and regulations (e.g., CWA, Fish and Game Code Section 1602, local ordinances, and Forest Service regulations) would minimize these effects.

As described previously, under Alternative 2, construction activities such as vegetation clearing, tower installation, creation of temporary access ways, and staging near aquatic habitats could temporarily result in adverse impacts on invertebrates and aquatic habitat, including removal of riparian vegetation, accidental spill and contamination from construction chemicals, fuels, or other hazardous materials; and direct mortality of aquatic species cause by equipment use within aquatic habitats. However, the project's design, construction methods, incorporation of several RPMs designed to avoid and protect aquatic resources, would minimize, avoid, and compensate for these potential impacts on aquatic habitats. Specifically, these measures require that (1) aquatic habitat be avoided to the extent feasible; (2) aquatic habitats that cannot be avoided be restored following construction; (3) any unavoidable losses be compensated for in a manner that results in no net loss of aquatic habitats; and (4) project implementation be consistent with the aquatic and riparian habitat protection provisions of CWA, RWQCB, Fish and Game Code Section 1602, and the Forest Service. Because any residual effects on aquatic habitats would be minor, temporary, and mitigated; the no net loss standard would be implemented; and there would be no permanent impacts on the quality, amount, or function of aquatic habitats, implementation of Alternative 3 would not make a considerable contribution to any cumulative impact related to aquatic macroinvertebrate habitat. In addition, habitat enhancements that could occur as a result of other projects in the study area may also improve the condition of aquatic macroinvertebrate habitat in the study area.

Forest Level Effects: The above effects include disturbance and removal of riverine habitat due to project implementation and increase winter recreation. Based on the stable trend in the RIVPACS scores, implementation of the project would not be likely to result in a downward trend in the habitat or aquatic macroinvertebrates.

Yellow Warbler

Approximately 0.48 acre of montane riparian habitat on NFS lands occurs in the study area for Alternative 3. No montane riparian habitat would be permanently removed or temporarily disturbed under Alternative 3 (Table 3 in Forest Service MIS Report [U.S. Forest Service 2018e]).

Implementation of Alternative 3 would not result in loss of montane riparian habitat for yellow warbler. Implementation of RPMs, particularly RPM BIO-24 will still be implemented to minimize the removal of riparian habitat by limiting vegetation removal to only those areas necessary for construction, particularly in riparian zones. (Full descriptions of all RPMs are provided in Appendix B, Resource Protection Measures). For Alternative 3, project elements are outside of montane riparian areas, and will have no effects on riparian habitats or yellow warbler.

Pacific Tree (Chorus) Frog

Construction of the project, under Alternative 3, would result in removal of approximately 0.07 acre of wetland habitat and would result in the short-term change in habitat quality of approximately 0.17 acre due to temporary ground disturbance. Construction and operation of the Gazex Avalanche Mitigation System is not expected to have direct or indirect effects to wetlands or other waters. Implementation of RPMs to protect water quality, as described in Section 4.16, "Soils, Geology, and Seismicity," and Section 4.17, "Hydrology and Water Quality," would prevent indirect impacts on wetlands and waters by preventing erosion and runoff into adjacent waters and require any temporarily disturbed areas to be restored and revegetation.

Overall, implementation of Alternative 3 would not cause a substantial permanent loss of freshwater emergent wetland habitat for Pacific tree frog because ground vegetation removal or overhead vegetation trimming/removal within these areas would typically not be required due to the short height of vegetation; towers are outside of wetland features and the Gondola would span most or all of these areas. As part of the project, RPMs described previously for Lacustrine/Riverine Habitat (Aquatic Macroinvertebrates) will be

implemented to minimize impacts on aquatic habitats. Although some freshwater emergent habitat suitable for Pacific tree frog may still be disturbed or removed during project construction, very little is expected to be permanently removed and temporary affected and would have to be replaced in a no net loss of wetland habitat.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for freshwater emergent habitat are the same as those described above for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat.

Cumulative Effects Conclusion: Minor construction short-term alteration and loss to a small amount of freshwater emergent wetland habitat on NFS lands would occur as a result of Alternative 3. However, because the amount of unavoidable habitat disturbance and loss would be very small relative to the total amount available in the area, and the fact that any habitat disturbance or loss would have to be mitigated so that there is no net loss of wetland habitat, any potential contribution to cumulative effects is expected to be minor.

Forest Level Effects: Because the amount of loss and short-term disturbance of freshwater emergent wetland habitat would be very small (0.07 acre and 0.17 acre, respectively) and relative to the total amount available in the forest (61,247 acres), Alternative 3 would not alter existing trends in wet meadow or freshwater emergent wetland habitat, nor would it lead to a change in distribution of pacific tree frog across the Sierra Nevada bioregion.

Mountain Quail

Construction of Alternative 3 within NFS Lands would disturb up to 0.17 acre of Sierran Mixed Conifer habitat. This acreage is divided into overstory (limb-trimming and tree topping) and temporary effects. In general, much of the forest habitat throughout the study area is evenly split between early seral and mid-seral with few occurrences of large trees.

Tree surveys conducted for Alternative 3 identified 1,090 trees >6 inches in diameter at breast height (dbh) (Under the Trees 2016). Construction of Alternative 3 within NFS Lands would require the removal of 20 trees (approximately 2 percent of the total for the whole alignment). Construction would also require the trimming or topping of trees that are within the corridor of the Gondola, up to 22 trees (2 percent of the total for the whole alignment).

While up to 0.17 acre of early and mid-seral coniferous forest, 20 conifer trees would be permanently affected, and 20 trees would be temporarily affected due to overhead trimming during construction of Alternative 3, the loss of this amount of common habitat from the region would not substantially reduce the quantity or quality of this habitat in the region and would not change the distribution or viability of any MIS. Some of the loss of conifer forest vegetation would be compensated for through new plantings or payment of tree replacement mitigation fees. Additionally, implementation of RPMs would require that vegetation removal is minimized to the extent feasible and that habitat is restored to pre-project conditions in temporary construction areas.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for early and mid-seral conifer forest are the same as those described above for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in the region include logging, grazing, fuels management, habitat restoration, recreational development and activities, urban and commercial development, and ROW maintenance and operation activities. Projects that may interact with the proposed project on a cumulative basis are the same as those described for Alternative 2 Lacustrine/Riverine (aquatic macroinvertebrate) habitat. Some development and recreation projects planned in the study area (including Alpine Meadows

MDP, White Wolf Development, General Development within Olympic Valley and Alpine Meadows, and fuel reduction projects) could contribute to an adverse cumulative effect on early and mid-seral coniferous forest habitat.

Cumulative Effects Conclusion: Implementation of Alternative 3 would result in the removal of early and mid-seral coniferous forest for mountain quail. However, the tree species and stand types that would be removed are common locally and regionally and occur within common coniferous habitat types that are abundant in the region. RPMs have been incorporated into the project design to avoid and minimize vegetation removal to the extent feasible and project early and mid-seral coniferous forest removal would not result in substantial changes in stand structure or composition or in the distribution or abundance of tree species or coniferous communities in the region. Because loss of early and mid-seral coniferous forest habitat would occur along a narrow linear corridor and would be small relative to the total available in the study area, implementation of Alternative 3 would not result in substantial contribution to an adverse cumulative effect on common early and mid-seral coniferous forest.

Forest Level Effects: Implementation of the Alternative 3 would result in disturbances and removal of early and mid-seral conifer forest habitat for mountain quail. However, the tree species and stand types that would be removed are common locally and regionally and occur within common coniferous forest types that are abundant in the region. RPMs have been incorporated into the project design to minimize vegetation and tree removal to the extent feasible and project tree removal would not result in substantial changes in stand structure or composition or in the distribution or abundance of tree species or forest communities in the region. Because the disturbance and loss of early and mid-seral coniferous forest would occur along a narrow linear corridor and would be small (0.17 acre) relative to the total available in the region (There are currently 530,851 acres of early seral and 2,776,022 acres of mid-seral coniferous forest habitat on NFS lands in the Sierra Nevada), implementation of Alternative 3 would not alter existing trends in early and mid-seral coniferous forest habitat, nor would implementation of Alternative 3 lead to a change in distribution of mountain quail across the Sierra Nevada bioregion.

Hairy Woodpecker

The dominant forest habitat type is Sierra Nevada coniferous woodland within NFS lands, but stands of white fir, Jeffrey pine, and red fir are also common outside of NFS lands. The study area has not been inventoried for snags as part of this analysis; however, medium and large snags exist within forested habitats that could be affected by project implementation. Based on observations during reconnaissance-level biological surveys, medium and large snags are not uncommon in the study area and vicinity.

Construction under Alternative 3 would remove snags in association with vegetation clearance necessary for project construction, including clearance of the 60-foot construction corridor, temporary access roads, staging areas, and other areas outside of the 60-foot construction corridor that would require clearing for project construction. As part of the vegetation management activities associated with maintenance of the ROW, hazard trees (dead, dying, diseased, decaying, or infested) would also be removed. Hazard tree removal may extend beyond the 60-foot construction corridor more distant trees are tall enough to fall and damage the Gondola, Gondola lines, or towers. Under Alternative 3, a total of 2.33 acres of coniferous woodland occurs within the proposed Gondola corridor on NFS lands (Table 4.14-1). Although only 0.11 acre of coniferous woodland would experience a short-term change in habitat quality due to overhead vegetation removal or temporary ground disturbance, the number and quality of medium and large snags that may require removal within this area are unknown. Snag retention needs for wildlife would be taken into consideration in areas where temporary vegetation removal associated with project construction would occur, but generally snags that are also considered hazard trees that have potential to fall onto and damage the Gondola, Gondola cables, towers or any component of the project would be removed.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for snags in green forest are the same as those described above for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in the region include logging, grazing, fuels management, habitat restoration, recreational development and activities, urban and commercial development. Development and recreation projects planned in the study area are the same as those described for Alternative 2 lacustrine/riverine (aquatic macroinvertebrates) and could contribute to an adverse cumulative effect on snags on green forest habitat.

Cumulative Effects Conclusion: An unknown number of medium to large snags would likely be removed as a result of project implementation. However, due to the narrow and linear distribution of the project, and the relative small acreage of coniferous woodland that would be removed in the study area and vicinity, the number of medium to large snags potentially removed relative to the amount available in the region is not expected to be substantial. Therefore, the project's contribution to a cumulative effect on the abundance, distribution, and availability of medium and large snags in the region is considered minor.

Forest Level Effects: Hairy woodpecker is a common species in the study area and the region, and suitable habitat for this species is abundant. Implementation of Alternative, includes clearance of the 60-foot construction corridor, temporary access roads, staging areas, and other areas outside of the 60-foot construction corridor that would require clearing for project construction. As part of the vegetation management activities associated with maintenance of the Gondola corridor, hazard trees (dead, dying, diseased, decaying, or infested) would also be removed. A total of 0.17 acre of coniferous forest would be temporarily affected under Alternative 3 on NFS lands. However, the number and quality of medium and large snags that may require removal within this area are unknown. Snag retention needs for wildlife would be taken into consideration in areas where temporary vegetation removal associated with project construction would occur, but generally snags that are also considered hazard trees that have potential to fall onto and damage the Gondola, Gondola cables, towers or any component of the project would be removed. However, due to the narrow and linear distribution of the project, and the overall abundance of snags in the study area and vicinity, the number of medium to large snags removed relative to the amount available in the region is not expected to be substantial. Therefore, implementation of the project under Alternative 3 would not alter the existing trend in the ecosystem component, nor would it lead to a change in the distribution of hairy woodpecker across the Sierra Nevada bioregion.

NEPA Effects Conclusion (NFMA MIS Finding)

The detailed MIS analysis concluded that implementation of Alternative 3 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion (U.S. Forest Service 2018e).

CEQA Determination of Effects

This impact analysis is specific to a NEPA indicator and is not responsive to CEQA criteria. No CEQA determination of effect is provided.

Mitigation Measures

No mitigation measures are required.

Impact 4.14-5 (Alt. 3): Direct and Indirect Effects on Special-Status Terrestrial Wildlife

Implementation of Alternative 3 would result in indirect and direct effects of habitat either occupied or potentially occupied by special-status terrestrial wildlife species. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to disturbance or loss of special-status terrestrial wildlife would be **adverse** because special-status species and their habitat would be lost. Implementation of the project may affect individuals but is not likely to cause a trend toward federal listing or loss of viability of any of the Forest Service sensitive species. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, state-protected species would be affected either directly or through habitat modifications**.** Implementation of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34would require a range of surveys and other actions that would minimize and avoid effects on these species and their habitat. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Impact 4.14-2 (Alt. 3) would be slightly similar to Impact 4.14-2 (Alt. 2), Alternative 3 removes less upland land cover habitat than Alternative 2. Alternative 3 would indirectly affect upland land cover types suitable for special-status terrestrial wildlife by removing up to 4.27 acres of upland land cover habitat due to the construction of the project elements (Alternative 2 removes up to 4.02 acres). Alternative 3 would directly affect these land cover types due to short-term changes in habitat quality affecting 11.17 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance [Alternative 2 affects 14.28 acres] (see Table 4.14-6). Alternative 3 indirectly affects via removal more aquatic habitats, and also directly affects more aquatic habitat due to the shift in the alignment as compared to Alternative 2. Alternative 3 would indirectly affect up to 0.52 acre of wetland and stream habitat by removal and it would directly affect up to 0.91 acre of wetland and stream habitat due to short-term changes in habitat quality due to temporary vegetation removal or temporary construction activities (see Table 4.14-7). Tree surveys for Alternative 3 identified 1,090 trees, implementation of Alternative 3 would remove up to 104 trees. Out of these, 19 would be potentially suitable for nesting for the golden eagle and 45 would be potentially suitable for nesting for the bald eagle (or 1.7 percent and 4.1 percent, respectively, of the total trees surveyed for Alternative 3). No nests attributable for golden eagle or bald eagle were observed within or adjacent to the survey area.

Impact Mechanisms

Because the project elements for Alternative 3 are the same as those for Alternative 2. The impact mechanism for Alternative 3 would be the same as those described for Alternative 2.

Implementation of the same biological resources RPMs, as those described under Alternative 2, would reduce potential project effects on these species and their habitats. RPMs BIO-12 through BIO-16 and RPM BIO-20 relate to identifying the presence of biological resources and avoiding habitat loss in buffer areas. RPM BIO-21 provides direction if a special-status species previously unknown in the project area is detected near project activities. RPM BIO-22 requires that a biological monitor inspect all tower placement locations and areas of active construction for trapped wildlife. RPM BIO-24 requires the minimization of ground disturbance and vegetation removal. RPM BIO-37 requires that nesting raptor surveys be conducted prior to any grading or tree removal and that any no-construction buffers be included in the Placer County Improvement Plan submittal. RPM MUL-1 requires implementation of surveys and protection measures if new sites are identified for disturbance during project construction. RPM MUL-2 requires the clear demarcation of construction areas and retaining activities within those areas. RPM MUL-3 requires the use of existing roads and limits development of new access routes. RPM MUL-5 requires that at least one environmental monitor be present during all construction activities. RPM MUL-6 requires the design and implementation of a worker environmental awareness training program. RPM MUL-7 relates to completing project construction in a single construction season. RPM BIO-34 requires the use of exclusion fencing to prevent sensitive wildlife from entering construction areas.

Alternative 3 would likely produce the same elevated noise levels during construction activities, as Alternative 2, as a result of the presence of construction equipment (including helicopters, blasting, tracked machinery, pickup trucks, and ATVs); this impact would be short term and would be reduced upon completion of construction. Construction and operation of Alternative 3 would require the use of hazardous materials, such as oils, lubricants, and fuels. This impact would be reduced through training, self-reporting, working in accordance with applicable laws and regulations. RPMs applicable to these resource areas are identified in Section 4.6, "Public Safety," and Section 4.9, "Noise." As mentioned above, a comprehensive list of RPMs is included in Appendix B. See Sections 4.6 and 4.9, which list RPMs that would also reduce impacts on special-status terrestrial wildlife and incorporate the RPMs as mitigation measures under CEQA.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to special-status terrestrial wildlife habitat under Alternative 3 would be **adverse** but minimal because small amounts of habitat would be disturbed compared to available habitat in the surrounding area. Similarly, the effect on the USFWS birds of conservation concern would be **adverse** because construction activities could affect these species but at a lesser extent than Alternative 2 since overall less habitat would be affected. Implementation of Alternative 3 **may affect individuals, but it is not likely to result in a trend toward federal listing or loss of viability for Forest Service sensitive species.** These effects would be mitigated through implementation of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34. Alternative 3 would likely produce elevated noise levels during construction activities as a result of the presence of construction equipment (including helicopters, tracked machinery, pickup trucks, and ATVs); this impact would be short term and would end upon completion of construction. RPMs applicable to these resource areas are also identified in Section 4.6, "Public Safety." As mentioned above, a comprehensive list of RPMs is included in Appendix B. See Sections 4.6 and 4.9, which list the specific RPMs that would also reduce impacts on special-status terrestrial wildlife.

CEQA Determination of Effects

Alternative 3 involves construction and operation activities that would remove or modify habitat suitable for the species evaluated above. Without proper implementation of RPMs, implementation of Alternative 3 could result in adverse effects on these species through habitat loss, disturbance, or direct mortality. Under CEQA, and using the CEQA criteria, this impact on these special-status species would be significant. However, implementing RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34 would protect these special-status species by requiring preconstruction surveys for nesting birds, nesting raptors, roosting bats; providing construction monitoring through all phases of construction; creating no-disturbance buffers; excluding construction activity from sensitive resource areas; and coordinating with the appropriate regulatory agencies. Also see Sections 4.6 and 4.9, which list RPMs related to noise and hazardous materials that would also reduce impacts on special-status terrestrial wildlife habitat and incorporate the RPMs as mitigation measures under CEQA. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34 as mitigation measures would reduce this significant impact on special-status terrestrial wildlife species to a less-than-significant level.

Also, see Sections 4.6 and 4.9, which list RPMs related to noise and hazardous materials that would reduce impacts on special-status terrestrial wildlife species, and incorporate the RPMs as mitigation measures under CEQA.

Impact 4.14-6 (Alt. 3): Disturbance or Loss of Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites

Implementing Alternative 3 could interfere with the movement of native resident or migratory wildlife, or with established wildlife corridors, or impede the use of native wildlife nursery sites. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to disturbance or loss of wildlife movement, wildlife corridors, and native wildlife nursery sites would be **adverse** because construction activities have the potential to displace wildlife and disturb native breeding wildlife, but less adverse than Alternative 2 due to a reduction in effects to available habitat. Because Alternative 3 is further east than Alternative 2 and thus is not near Barstool Lake or Five Lakes, or within the 982 feet surrounding these lakes, however Alternative 3 through impacts on seasonal drainages would affect dispersal habitat for the frog. Alternative 3 **may affect and is likely to adversely affect** movement of SNYLF. Implementation of the project **may affect individuals but is not likely to cause a trend toward federal listing of loss of viability for any of the Forest Service sensitive species**. Implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37 would mitigate this adverse effect. Under CEQA, and using the CEQA criteria, direct and indirect impacts related to disturbance or loss of wildlife movement and wildlife corridors would be **less than significant** prior to consideration of RPMs because wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative would not prohibit the passage of wildlife between the forested areas west and east of KT-22, and the direct and indirect impacts on native wildlife nursery sites would be **potentially significant** prior to consideration of RPMs because Alternative 3 would impede the use of these nursery sites. Implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, which require preconstruction wildlife surveys, no-disturbance buffers, construction monitoring, minimizing vegetation and sensitive habitat area impacts, and limiting the operation of the gondola to winter months, would reduce this impact to a less-than-significant level for all species except SNYLF. For SNYLF this impact remains **significant**.

The study areas for the action alternatives are at the northeastern edge of the Sturdevant Ridge–Mosquito Ridge/Crystal Ridge ECA. This ECA connects natural landscape blocks from around Sturdevant Ridge in El Dorado County up through the Crystal Ridge northbound to approximately the summit of Granite Chief, encompassing 171,457 acres (Spencer et al. 2010).

The main function of the ECA is to connect natural landscape block between the two end points. Alternative 3 alignment is located at the edge of the ECA, toward one of the end points. Implementing Alternative 3 would not interfere with the main function of the ECA because it would not prevent the movement of wildlife between the two end points or prevent the movement of wildlife to adjacent natural landscape blocks.

Wildlife in the study area typically use riparian and forested areas as migration routes and typically avoid disturbed areas and areas with high levels of human presence. Noise and human presence associated with construction activities have the potential to temporarily affect wildlife traveling west to east and vice versa primarily near the summit of KT-22 because the adjacent terrain and lack of cover create natural barriers for wildlife. However, this is not the only available route for movement; wildlife can and do travel through Squaw Valley and Alpine Meadows and the Bear River riparian corridor. Although some wildlife may be temporarily displaced during construction, wildlife would not be physically prevented from moving around project construction areas since most wildlife will move through the area in the evening or early morning hours when construction is not yet occurring. Additionally, operation of the gondola would occur mostly during the winter months, when migration activities have been completed, and no operation, except for maintenance or limited movement of cabins, may occur during nonwinter time, when migration and wildlife movement typically occur.

Alternative 3 is further east than Alternative 2 and thus also further to Barstool Lake and the Five Lakes. Alternative 3 is not expected to have an effect on these lakes that provide suitable breeding habitat for SNYLF. Alternative 3 is also outside of the 984 feet buffer surrounding these lakes and thus avoiding the upland habitat around Barstool Lake and the Five Lakes area that the frog could utilize for movement.

However, Alternative 3 would affect seasonal streams and wetlands within the study area and thus affects dispersal habitat. This impact is addressed in the discussions of Impact 4.14-1 and Impact 4.14-2.

The Gazex avalanche control system would be used only during the winter months, outside of the typical nesting season, and thus would not have an effect on nursery or breeding activities. With the exception of minimal maintenance activities during the summer months, the gondola would be operated during the winter months, outside of the wildlife breeding season. However, construction activities have the potential to affect breeding wildlife in vicinity of the Alternative 3 alignment, through tree removal, vegetation clearing, grading, rock blasting, drilling for tower placement, helicopter use, access road usage, filling of wetlands/streams if these activities take place in proximity to breeding wildlife. The land cover types present within the Alternative 3 alignment provide suitable breeding habitat for wildlife species including special-status species (see Impacts 4.14-1 [Alt. 2], 4.14-5 [Alt. 2], 4.14-1 [Alt. 3], 4.14-5 [Alt. 3], 4.14-1 [Alt. 4] and 4.14-5 [Alt. 4]). Potential disturbance or impacts on nesting/denning/roosting wildlife would be avoided through implementation of biological resources RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, which include preconstruction surveys for breeding amphibians, denning mammals, nesting birds, and nursery bat roosts; implementation of no-disturbance buffers; construction monitoring; requiring minimizing vegetation and sensitive habitat area impacts; and limiting operation of the gondola to winter months.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to wildlife movement and wildlife corridors under Alternative 3 would be minimally **adverse** because although wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative 3 would not prohibit the passage of wildlife between the forested areas west and east of KT-22, construction activities could nonetheless displace wildlife albeit temporarily. Implementation of Alternative 3 may affect and is likely to adversely affect SNYLF movement because construction activities would disturb seasonal streams and wetlands suitable for dispersal.

Absent RPMs and/or mitigation, direct and indirect impacts related to wildlife nurseries would be **adverse** because construction activities have the potential to disturb native breeding wildlife. Implementation of the project may affect individuals but is not likely to cause a trend toward federal listing of loss of viability for any of the Forest Service sensitive species. These effects would be mitigated through implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37. Furthermore, implementation of Mitigation Measure 4.14-6 (Alt. 3) would address potential effects to breeding and dispersing SNYLF.

CEQA Determination of Effects

Alternative 3 would result in construction activities that would affect wildlife. Under CEQA, and using the CEQA criteria, direct and indirect impacts related to wildlife movement and wildlife corridors under Alternative 3 would be less than significant because although construction activities could temporarily displace wildlife, wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative 3 would not prohibit the passage of wildlife between the forested areas west and east of KT-22.

Without proper implementation of RPMs, Alternative 3 would affect wildlife nurseries because construction activities have the potential to disturb native breeding wildlife. Under CEQA, and using the CEQA criteria, if wildlife nurseries would be affected, this would be a significant impact. However, with implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, the following actions would be required: preconstruction surveys for nesting, roosting, denning, and breeding wildlife; avoidance; construction monitoring; and implementation of no-disturbance buffers. With implementation of these RPMs, this impact would be reduced to a less-than-significant level for all species except SNYLF. For SNYLF this impact remains **significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 as mitigation measures would reduce this impact on wildlife nurseries, but would not reduce it to a less than significant effect for SNYLF.

Mitigation Measure 4.14-6 (Alt. 3): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog Dispersal Habitat Consultation with Permitting Agencies

Implement Mitigation Measure 4.14-1 (Alt. 2).

Significance after Mitigation

Consultation between the Forest Service, USFWS, and CDFW would ensure that indirect and direct effects on SNYLF and its habitat (including breeding habitat) would be minimized and mitigated fully to the satisfaction of the resource agencies. The 3:1 ratio requirement would ensure that there would not be a reduction in suitable habitat for this species, nor would the alternative substantially reduce the number or restrict the range of the species or result in the population dropping below self-sustaining levels. This impact would be reduced to a **less-than-significant** level.

4.14.3.4 ALTERNATIVE 4

Impact 4.14-1 (Alt. 4): Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog

Implementation of Alternative 4 would result in direct and indirect effects, such as loss of individual SNYLF or occupied habitat. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF would be **adverse** but at a lesser degree than Alternative 2 because although suitable aquatic and upland habitat could be disturbed or removed Alternative 4 is further east than Alternative 2 and is further away from occupied breeding habitat and would not affect it. Nevertheless, implementation of the project **may affect, and is likely to adversely affect** SNLYF and its habitat. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, an endangered species would be affected either directly or through habitat modifications. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on this species; however, the impact on SNYLF would not be reduced to a less-than-significant level as the loss of individuals and occupied habitat could still occur. Under CEQA, this impact would remain **potentially significant**.

Impact 4.14-1 (Alt. 4) would be similar to Impact 4.14-1 (Alt. 2). The Alternative 4 alignment is further east than Alternative 2 and Alternative 3 and overall is also further away from Five Lakes, and Barstool Lake and falls outside of the 984-foot area surrounding SNYLF breeding habitats and thus will have no effects on Five Lakes or Barstool Lake.

Alternative 4 Squaw Valley base terminal location is east from the proposed location for Alternative 2 or Alternative 3 since it now is where the Red Dog lift is. From here, Alternative 4 takes a ridge approach from the Squaw Valley base terminal to the Squaw Valley mid-station which under this Alternative is located west of the KT22 express lift terminal, Alternative 4 heads in a southernly route towards the Caldwell property towards the proposed location of the Alpine Meadows mid-station, which is approximately 100 feet west from the proposed Alpine Meadows mid-station under Alternative 3. From here Alternative 4 alignment heads towards the Alpine Meadows base terminal still west of the proposed route of Alternative 3. Under

Alternative 4, aquatic habitats suitable for SNYLF include seasonal streams, emergent wetland, Caldwell Pond, wet meadow habitat and the middle snowmaking pond near the Alpine Meadows base terminal. Alternative 4 would affect some of the seasonal streams and wetlands under Alternative 3. Just as for Alternative 2, no SNYLF were observed in this habitats during the July 20, August 10–11, and September 30, 2017, surveys. The existing ephemeral drainages and wetlands under Alternative 4 may provide a migration route from the Five Lakes area down into Bear Creek valley during snowmelt. Just as described in Impact 4.14-1 for Alternative 2, the Caldwell Pond and the Alpine Meadows snowmaking pond do not provide suitable breeding habitat for SNYLF.

Alternative 4 would indirectly affect less land cover habitats by, removing less upland land cover habitat than Alternative 2 or Alternative 3, specifically removing up to 2.49 acres of upland land cover habitat due to the construction of the project elements. Alternative 4 would directly affect 10.27 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance (see Table 4.14-6). Alternative 4 would indirectly affect aquatic habitat by remove slightly more wetland and stream habitat, up to 0.46 acre when comparing to Alternative 2 (0.43 acres), but less than Alternative 3 (0.53). Alternative 4 would directly affect up to 1.28 acre of wetland and stream habitat through short-term changes in habitat quality due to temporary construction disturbance (see Table 4.14-7).

The construction components for Alternative 4 are the same as those under Alternative 2 and Alternative 3 and thus would have similar impacts. These construction components include vegetation removal/clearing, grading, rock blasting, drill locations for tower and tower installation, mid-stations construction, access route use, trench work for underground utilities at the base terminals, and/or other utilities. Because Alternative 4 would indirectly or directly remove suitable aquatic habitat and upland habitat, Alternative 4 also has the potential to kill or injure SNYLF during construction activities.

The location of the Gazex system for Alternative 4 is the same as for Alternative 2 and Alternative 3; thus, the analysis and conclusion for Alternative 4 are the same as for Alternative 2 and Alternative 3.

Skiing into the GCW from Squaw Valley KT-22 Express or from Alpine Meadows Summit Express Chair lift is currently allowed and is done so at the risk of the skier as this area is outside of the ski area boundary and requires some level of traversing and hiking. Because skiing into the GCW requires hiking, it is not hugely frequented by skiers. Some snow enthusiasts also hike the GCW through the Five Lakes trail system via snowshoes. The discussion of Impact 4.1-1 (Alt. 2) in Section 4.1, “Recreation,” indicates that Alternative 3 could adversely affect the dispersed recreation due to an increase in visitors. Furthermore, this increase in visitation could also occur during transitional seasons, or periods of inconsistent snow cover, during which the gondola (and two ski areas) would be operational and at the same time, southern aspect slopes would be dry enough for foot traffic to access the GCW by hiking. During these periods, the additional access provided by the gondola to skiers could increase current use. Barstool Lake and the Five Lakes area receive visitation during both winter and nonwinter season as evidenced by trash observed during initial surveys (i.e., ski pole and glove, water bottles and granola bar wrappings). An increase in use could have a detrimental effect on SNYLF and its habitat, through an increase of trash and visitation to Barstool Lake and suitable habitats within the Five Lakes area. However, any impacts would be lesser than those discussed for Alternative 2 since the Alpine Meadows mid-station under Alternative 4 would be lower in the valley area and not adjacent to known occupied breeding habitat and skiers would not be able to disembark adjacent to this occupied habitat. This issue is also addressed in Section 4.3, “Wilderness.”

Seasonal stream and wetland habitat and associated upland habitat for SNYLF exist within the Alternative 4 alignment. Indirect effects via permanent loss of habitat would include up to 2.49 acres of upland land cover habitat due to the construction of the project elements similar to those described under Alternative 2. Alternative 4 would directly affect 10.27 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance. Within these indirect and direct effects, Alternative 4 would permanently remove up to 0.26 acre of SNYLF upland habitat and would temporarily alter up to 1.34 acres of SNYLF upland habitat; compared to Alternative 2, 1.72 acres and 3.72 acres for permanent removal and short-term alteration, respectively (Table 4.14-8). Alternative 4 would also indirectly affect up to 0.46 acre of wetland and stream habitat through removal, and up to 1.28 acre of wetland and stream habitat would be

directly affected through short-term change in habitat quality due to vegetation clearing and other temporary ground disturbance.

Implementation of the same biological resource RPMs as for Alternative 2, would reduce these effects on SNYLF and its aquatic and upland habitat: RPMs MUL-1 through MUL-7 relate to identifying and protecting resources through implementing surveys and protection measures, monitoring construction activities, designing and implementing a worker environmental awareness training program, and completing project construction in a single construction season. RPMs HAZ-1, HAZ-3, and HAZ-6 through HAZ-8 involve providing training regarding hazardous materials, preparing a safety plan and modifying existing plans so they include further guidance on the storage and uses of hazardous substances, and disposing of hazardous materials in accordance with applicable laws and regulations. RPM BIO-1 requires the presence of qualified biological monitors during construction. RPM BIO-7 requires the use of weed-free construction materials. RPMs BIO-18, BIO-19, and BIO-21 through BIO-26 relate to the identification and avoidance of aquatic and riparian habitats and compensation for these habitats where they cannot be avoided. RPM BIO-27 relates to removing trash and food from the work site each day, and RPM BIO-28 forbids pets and firearms from the project area. RPM BIO-29 forbids the harm, harassment, or collection of wildlife species. RPMs BIO-30 through BIO-32 relate to developing a restoration plan and reclaiming and revegetating disturbed areas. RPM BIO-33 requires evidence of resource agency notification regarding existence of wetlands, streams and/or vernal pools on the project site. RPM BIO-34 requires proper construction fencing adjacent to wetland preservation easements and other protected areas. RPM BIO-35 requires a verified wetland report. RPM BIO-36 requires approval or issuance of a building permit that addresses compensation for wetland/riparian impacts. RPM BIO-39 requires preparation of an MMRP. RPMs SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, and SOILS 12 relate to controlling erosion on the project site. RPMs WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20 relate to projecting water quality and sensitive water resources during project construction. RPM TREE-1 requires protecting waters of the United States and State, including wetlands, when removing trees. RPMs TREE-6 and TREE-7 relate to siting landings in areas that would not threaten aquatic habitats and designated buffer zones.

Alternative 4 would likely produce same elevated noise levels during construction activities as a result of the presence of construction equipment (including helicopters, tracked machinery, rock blasting, pickup trucks, and all-terrain vehicles [ATVs]); this impact would be short term and would be reduced upon completion of construction. Construction and operation of Alternative 4 would require the use of hazardous materials, such as oils, lubricants, and fuels. This impact would be reduced through training, self-reporting, working in accordance with applicable laws and regulations. Alternative 4 would likely cause some erosion and sedimentation during construction activities; this impact would be short term and would be reduced upon completion of construction. RPMs applicable to these resource areas are also identified in the following sections of this EIS/EIR: Sections 4.6, “Public Safety”; 4.9, “Noise”; 4.16, “Soils, Geology, and Seismicity”; and 4.17, “Hydrology and Water Quality.” As mentioned above, a comprehensive list of RPMs is included in Appendix B. Sections 4.6, 4.9, 4.16, and 4.17 list the RPMs that would also reduce impacts on SNYLF and incorporate the RPMs as mitigation measures under CEQA. Although the RPMs reduce indirect and direct effects on SNYLF and its habitat, implementation of Alternative 4 would remove suitable aquatic and upland habitat for this species. For these reasons, Alternative 4 **may affect and is likely to adversely affect** SNYLF and its habitat.

NEPA Effects Conclusion

Implementation of Alternative 4 would result in direct and indirect effects on suitable upland and aquatic habitat for SNYLF via the removal and/or short-term alteration or degradation of landcover and aquatic habitat. Alternative 4 would remove less acreage of land cover (2.49 acres) compared to Alternative 2 (4.02 acres) or Alternative 3 (4.27 acres) and has a short-term alteration or degradation of upland cover habitat of 10.27 acres, compared to 14.28 acres for Alternative 2 or 11.17 acres for Alternative 3. Alternative 4 would permanently remove up to 0.26 acre of SNYLF upland and dispersal habitat and temporarily alter up to 1.34 acres of SNYLF upland and dispersal habitat (see Table 4.14-8). Alternative 4 would also have a short-term change in habitat quality through temporary effects to 1.28 acres of aquatic habitat which is slightly greater than for Alternative 2 (1.09 acres) or Alternative 3 (0.91 acre). Alternative 4 removes about the same

amount of aquatic habitat (0.46 acres) when comparing to Alternative 2 (0.43 acre), but less than Alternative 3 (0.53 acre). The location of Alternative 4 Alpine Meadows mid-station location is further east and not near Barstool Lake or Five Lakes nor within the 984-foot upland habitat area of the lakes, and thus any impacts on these areas would be less than for Alternative 2. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to SNYLF would be less **adverse** than Alternative 2 since overall it removes less habitat than Alternative 2, and effects to occupied breeding habitat would be less than Alternative 2 since project elements for Alternative 4 are not near Barstool Lake or Five Lakes**.** Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20; TREE-1, TREE-6, and TREE-7 would partially mitigate the effects on these resources through habitat avoidance, habitat restoration, and direct species protection measures. See Sections 4.6, 4.9, 4.16, and 4.17, which list additional RPMs that would reduce effects on special-status aquatic wildlife. However, the RPMs do not contain mechanisms for compensating for the loss of suitable habitat or for actions leading to unintentionally killing of frogs. These effects are addressed by Mitigation Measure 4.14-1 (Alt. 4).

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, an endangered species would be affected either directly or indirectly. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on these resources; however, the impact on SNYLF would not be reduced to a less-than-significant level as the loss of individuals and habitat could still occur. Therefore, this impact would remain **potentially significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20; TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 as mitigation measures reduces this significant impact, but not to a less-than-significant level because the loss of individuals and critical habitat is not addressed in the RPMs. Therefore, this impact would remain potentially significant.

Mitigation Measure 4.14-1 (Alt. 4): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog and its Habitat through Consultation with Permitting Agencies

Implement Mitigation Measure 4.14-1 (Alt. 2).

Significance after Mitigation

Consultation between the Forest Service, USFWS, and CDFW would ensure that temporary and permanent impacts on critical habitat for SNYLF would be minimized and mitigated fully to the satisfaction of the resource agencies. The 3:1 ratio requirement would ensure that there would not be a reduction in suitable habitat for this species, nor would the alternative substantially reduce the number or restrict the range of the species or result in the population dropping below self-sustaining levels. This impact would be reduced to a **less-than-significant** level.

Impact 4.14-2 (Alt. 4): Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat

Implementation of Alternative 4 would result in direct and indirect effects to SNYLF habitat with unutilized potential (not occupied) within critical habitat and it would remove primary constituent elements: non-breeding aquatic habitat and upland habitat for SNYLF. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF critical habitat would be **adverse** because non-breeding aquatic habitat PCE and upland habitat PCE would be temporarily modified or removed. Implementation of the project **may affect and is likely to adversely affect** SNYLF critical habitat. Implementation of the project **may affect and is likely to adversely affect** breeding and rearing aquatic habitat PCE. Implementation of the project **may affect and is likely to adversely affect** non-breeding aquatic habitat PCE, and upland habitat PCE. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, SNYLF critical habitat would be affected either indirectly (removal of habitat) or directly through temporary habitat modifications. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on this species; however, the impact on SNYLF critical habitat would not be reduced to a less-than-significant level as the loss of occupied habitat would still occur. Under CEQA, this impact would remain **potentially significant**.

Impact 4.14-2 (Alt. 4) would be slightly similar to Impact 4.14-2 (Alt. 2), since the study area for Alternative 4 is 75.28 percent within critical habitat, which is smaller than Alternative 2 or Alternative 3. The major difference between Alternative 4 and Alternative 2 is that Alternative 4 by being further east than Alternative 2, Alternative 4 is further east from the Five Lakes and Barstool Lake and is also outside of the 984-foot SNYLF upland habitat area. Just like for Alternative 2, upland habitat for SNYLF within the study area for Alternative 4 includes the upland areas 82 feet from seasonal streams and the upland area up to 984 feet from the lakes. This PCE also includes upland areas (catchments) adjacent to and surrounding both breeding and nonbreeding aquatic habitat that provide for the natural hydrologic regime of aquatic habitats. These upland areas allow for the maintenance of sufficient water quality to provide for the various life stages of the frog and its prey base.

Implementation of Alternative 4 would directly affect through temporary disturbance associated with vegetation clearing and other temporary ground disturbance up to 6.85 acres of upland land cover within critical habitat designation. Alternative 4 would indirectly affect, through permanent habitat removal up to 2.07 acres of upland land cover associated with new construction of project elements (Table 4.14-6). Alternative 4 would indirectly affect through permanent removal up to 0.26 acre of SNYLF upland and dispersal habitat and would directly affect through temporarily alteration of the habitat, up to 1.34 acres of SNYLF upland and dispersal habitat (see Table 4.14-8) which corresponds to Upland Habitat PCE. Implementation of Alternative 4 would indirectly affect through habitat removal up to 0.46 acre of wetland and stream habitat, and directly affect up to 1.28 acres of wetland and stream habitat through short-term change in habitat quality due to temporary vegetation removal or other temporary construction activity (Table 4.14-7). All of the wetlands and stream habitat present in Alternative 4 are within critical habitat designation. These indirect and direct wetland and seasonal stream habitat effects correspond to non-breeding aquatic habitat PCE since they do not hold water long enough for the frog to complete its metamorphosis and they are not deep enough to prevent freezing. The location of Alternative 4 Alpine Meadows mid-station location is further east and not near Barstool Lake or Five Lakes nor within the 984-foot upland habitat area of the lakes, and thus any effects on these areas would be less than for Alternative 2, however, because of the distance, Alternative 4 is not expected to affect SNYLF breeding aquatic habitat PCE.

The mechanism of effects to SNYLF critical habitat would be similar to those described on SNYLF habitat in Impact 4.14-1 (Alt. 2). Implementation of Alternative 4 **may affect and is likely to adversely affect** critical habitat, including direct and indirect effects to nonbreeding aquatic habitat PCE and direct and indirect effects to SNYLF upland habitat PCE.

NEPA Effects Conclusion

Implementation of Alternative 4 would result in indirect and direct effects on SNYLF critical habitat and PCEs. Alternative 4 would indirectly affect up to 2.07 acres of land cover vegetation by removal and would directly affect 6.85 acres of land cover vegetation associated with vegetation clearing and other temporary ground disturbance within critical habitat. Similarly, up to 0.26 acre of wetland and stream habitat would be indirectly affected by removal and up to 1.28 acre of wetland and stream habitat would be directly affected by short-term alteration or degradation. Within these indirect and direct effects to existing landcover habitat, Alternative 4 would permanently remove up to 0.26 acre of SNYLF upland and dispersal habitat and temporarily alter up to 1.34 acres of SNYLF upland and dispersal habitat. The location of Alternative 4 Alpine Meadows mid-station location is further east and not near Barstool Lake or Five Lakes nor within the 984-foot upland habitat area of the lakes, and thus any direct impacts on these areas would be less than for Alternative 2, however, because of the distance Alternative 4 is not expected to affect SNYLF breeding aquatic habitat PCE. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts on SNYLF critical habitat including PCEs under Alternative 4 would be **adverse** because the project would temporarily affect and permanently remove non-breeding aquatic habitat PCE and would remove upland habitat PCE. Implementation of the project **may affect and is likely to adversely affect** SNYLF non-breeding aquatic habitat PCE. Although Alternative 4 has a greater short-term change in non-breeding aquatic habitat quality than Alternative 2 or Alternative 3, and Alternative 4 has about the same effect on permanent loss of non-breeding aquatic habitat than Alternative 2, Alternative 4 affects less land cover habitats and upland habitat PCE. Implementation of Alternative 4 **may affect and is likely to adversely affect** non-breeding aquatic habitat and upland habitat PCE. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would partially mitigate the effects on critical habitat through habitat avoidance, habitat restoration, and direct species protection measures. See Sections 4.6, 4.9, 4.16, and 4.17, which list additional RPMs that would reduce effects on SNYLF and other aquatic wildlife. However, the RPMs do not contain mechanisms for compensating for the loss of critical habitat. These effects are addressed by Mitigation Measure 4.14-2 (Alt. 4).

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be potentially significant prior to consideration of RPMs because without implementation of RPMs, direct and indirect effects on SNYLF critical habitat would occur. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on these resources; however, the impact on SNYLF critical habitat would not be reduced to a less-than-significant level as the loss of critical habitat could still occur. Therefore, this impact would remain **potentially significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 as mitigation measures reduces this significant impact, but not to a less-than-significant level because the loss critical habitat is not addressed in the RPMs. Therefore, this impact would remain potentially significant.

Mitigation Measure 4.14-2 (Alt. 4): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog Critical Habitat through Consultation with Permitting Agencies

Implement Mitigation Measure 4.14-1 (Alt. 2).

Significance after Mitigation

Consultation between the Forest Service, USFWS, and CDFW would ensure that indirect and direct effects on SNYLF critical habitat would be minimized and mitigated fully to the satisfaction of the resource agencies. The 3:1 ratio requirement would ensure that there would not be a reduction in suitable habitat for this species. This impact would be reduced to a **less-than-significant** level.

Impact 4.14-3 (Alt. 4): Direct and Indirect Effects on Southern Long-Toed Salamander

Implementation of Alternative 4 would result in direct and indirect effects, such as loss of individual southern long-toed salamander. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. Under CEQA, and using the CEQA criteria, this impact would be **potentially significant** prior to consideration of RPMs because without implementation of RPMs, state-protected species would be affected either directly through temporary habitat modifications or indirectly through habitat removal that leads to injury or death of individual southern long-toed salamander. Implementation of RPMs MUL-1 through MUL-6, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would reduce the impact on this species to a **less than significant** level. Because this species has no federal status, this impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided.

Southern long-toed salamander is designated as a California species of special concern. The aquatic breeding, and aquatic non-breeding habitat described under Impact 4.14-1 (Alt. 2) for SNYLF would also be suitable for the southern long-toed salamander. Aquatic and terrestrial habitat under Alternative 4 provides suitable habitat for the southern long-toed salamander. Loss of habitat would include up to 2.49 acres of upland land cover habitat due to the construction of the Squaw Valley mid-station and the Alpine Meadows mid-station, towers and other project elements. Alternative 4 would temporarily affect 10.27 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance. Up to 0.46 acre of wetland and stream habitat would be removed by construction activities, and up to 1.28 acre of wetland and stream habitat would be temporarily affected from implementation of Alternative 4. Southern long-toed salamander has been observed in some of the aquatic habitats that would be removed or disturbed during project construction. The terrestrial habitats within the disturbance area could also provide suitable upland habitat (e.g., shelter) for this species. Removing or temporarily affecting these habitats could lead to the injury or mortality of southern long-toed salamander individuals, if they are present there during construction.

Construction and operation of the project also could introduce contaminants to the habitat as described in Impact 4.14-1 (Alt. 2), and the southern long-toed salamander could be temporarily displaced because of human presence and noise.

NEPA Effects Conclusion

Because this species has no federal status, this impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided.

CEQA Determination of Effects

Alternative 3 would require the removal or would modify the aquatic habitat suitable for the southern long-toed salamander, including at locations where the species has been observed. Without measures to minimize and compensate for disturbances or loss of aquatic habitat and wetland habitats, up to 0.46 acre of wetland and

stream habitat would be removed permanently, and up to 1.28 acre of wetland and stream habitat would be temporarily affected. Removal or disturbance of this habitat while occupied by the southern long-toed salamander could lead to the injury or death of southern long-toed salamander individuals. Under CEQA, and using the CEQA criteria, the effect on southern long-toed salamander would be potentially significant. However, implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 of this EIS/EIR, would avoid or reduce potential construction-related disturbance or loss of salamanders and suitable habitat. Specifically, RPM BIO-36 requires pre-project surveys for amphibians and actions to protect amphibian eggs, tadpoles, larvae, juveniles, and adults from construction-related impacts. Additionally, RPMs BIO-24, and BIO-26 require minimizing and compensating for the loss of wetland/aquatic habitats which would reduce and compensate for the potential loss of aquatic habitats suitable for southern long-toed salamander. Therefore, with implementation of these RPMs, project implementation is not expected to substantially affect the local or regional populations of southern long-toed salamander. Although there is still a small possibility for harm to individual salamanders, the alternative would not substantially reduce the number or restrict the range of the species or result in the population dropping below self-sustaining levels. This impact would be reduced to a **less-than-significant** level.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 and RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17 of this EIS/EIR as mitigation measures would reduce this potentially significant impact on southern long-toed salamander to a less-than-significant level.

Impact 4.14-4 (Alt. 4): Direct and Indirect Effects on Management Indicator Species

Implementation of Alternative 3 would result in direct and indirect effects on Management Indicator Species habitat. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to temporary disturbance or loss of MIS habitats would be slightly **adverse** because small quantities of habitat for Forest Service MIS would be lost. Although some loss of habitat would occur, implementation of the project is not likely to result in a downward trend in the population of MIS. Implementation of RPMs MUL-1 through MUL-7, HAZ-1, HAZ-3, HAZ-6 through HAZ-8, BIO-1, BIO-7, BIO-18, BIO-19, BIO-21 through BIO-36, BIO-39, SOILS-1, SOILS-3 through SOILS-5, SOILS-9, SOILS-11, SOILS-12, WQ-1, WQ-4 through WQ-6, WQ-8 through WQ-20, TREE-1, TREE-6, and TREE-7 would mitigate these effects. This impact analysis is specific to a NEPA indicator and is not responsive to CEQA criteria. No CEQA determination of effect is provided.

The MIS report prepared for the project (U.S. Forest Service 2018e) evaluated habitat for 13 MIS required for consideration on NFS lands. The MIS report concluded that representative habitat for the following MIS is present in the project area within NFS lands: aquatic macroinvertebrates (lacustrine/riverine habitat); yellow warbler (*Dendroica petechia*; riparian habitat); Pacific tree frog (*Pseudacris regilla;* freshwater emergent wetland); mountain quail (*Oreortyx pictus*; early and mid-seral coniferous forest); and hairy woodpecker (*Picoides villosus*; snags in green forest) (Table 4.14-3). Effects on the habitat or ecosystem components where these species would occur are the same as those addressed in Section 4.12, “Vegetation”: alteration or loss of upland habitats (early seral coniferous forest [Sierran mix conifer], and snags in green forest) an Section 4.15, “Wetlands”: alteration or loss of wetlands, lacustrine/riverine and riparian habitat, with impacts considered less than significant. A summary of the analysis for the MIS is presented here. These summaries also include an evaluation of cumulative effects consistent with the methodologies and templates used for MIS analyses. The information on cumulative effects from the MIS report is provided here to assist in providing a more thorough understanding of the overall effects on MIS. The analysis for each of

these species is provided in the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project MIS Report that is on file at the TNF office.

Aquatic Macroinvertebrates
Implementation of Alternative 4 would result in indirect and direct effects to riverine habitat through short-term change in habitat quality of up to 0.03 acre and permanent removal of up to 0.13 acre within the Alpine Meadows SUP and would also result in direct effects on lacustrine habitat through short-term change in habitat quality of up to 0.26 acre. The short-term disturbance of riverine and lacustrine habitat would be restored to original contour and revegetated after construction. Additionally, implementation of RPMs (See Appendix B) would avoid or minimize and compensate for potential impacts on aquatic habitat. Project design and incorporation of applicable RPMs would reduce project impacts on aquatic resources, and most potential residual impacts on aquatic habitat functions would not be considered substantial.

Cumulative Effects to Habitat in the Analysis Area: The spatial and temporal scale for the cumulative effects of the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project on MIS habitat are the same as those described above for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat.

The list of past, present, and reasonably foreseeable future projects considered in this cumulative effects analysis is the same as for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat analysis.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in these watersheds include logging, grazing, fuels management, recreational development and activities, urban and commercial development, and habitat restoration and enhancement projects. Some present and future projects expected to improve habitats for aquatic macroinvertebrates through restoration or enhancement include the Five Creeks Project and Squaw Creek restoration project.

Cumulative Effects Conclusion: Some past and current projects in the region have contributed to an adverse cumulative effect on aquatic habitats. Reasonably foreseeable future projects that encompass or are near aquatic habitats, could further contribute to this cumulative effect, although various laws and regulations (e.g., CWA, Fish and Game Code Section 1602, local ordinances, and Forest Service regulations) would minimize these effects.

As described previously, under Alternative 2, construction activities such as vegetation clearing, tower installation, creation of temporary access ways, and staging near aquatic habitats could temporarily result in adverse impacts on invertebrates and aquatic habitat, including removal of riparian vegetation, accidental spill and contamination from construction chemicals, fuels, or other hazardous materials; and direct mortality of aquatic species cause by equipment use within aquatic habitats. However, the project's design, construction methods, incorporation of several RPMs designed to avoid and protect aquatic resources, would minimize, avoid, and compensate for these potential impacts on aquatic habitats. Specifically, these measures require that (1) aquatic habitat be avoided to the extent feasible; (2) aquatic habitats that cannot be avoided be restored following construction; (3) any unavoidable losses be compensated for in a manner that results in no net loss of aquatic habitats; and (4) project implementation be consistent with the aquatic and riparian habitat protection provisions of CWA, RWQCB, Fish and Game Code Section 1602, and the Forest Service. Because any residual effects on aquatic habitats would be minor, temporary, and mitigated; the no net loss standard would be implemented; and there would be no permanent impacts on the quality, amount, or function of aquatic habitats, implementation of Alternative 3 would not make a considerable contribution to any cumulative impact related to aquatic macroinvertebrate habitat. In addition, habitat enhancements that could occur as a result of other projects in the study area may also improve the condition of aquatic macroinvertebrate habitat in the study area.

Forest Level Effects: The above effects include disturbance and removal of riverine habitat due to project implementation and increase winter recreation. Based on the stable trend in the RIVPACS scores, implementation of the project would not likely result in a downward trend in the habitat or aquatic macroinvertebrates.

Yellow Warbler
Approximately 0.64 acre of montane riparian habitat on NFS lands occurs in the study area for Alternative 4. No montane riparian habitat would be permanently removed or temporarily disturbed under Alternative 4 (Table 3 in Forest Service MIS Report [U.S. Forest Service 2018e]) since the project elements would bypass these areas within the Alpine Meadows SUP area.

Implementation of Alternative 4 would not result in loss of montane riparian habitat for yellow warbler. Implementation of RPMs, such as BIO-34 require placement of exclusion fencing to protect sensitive resources, including sensitive habitats such as riparian areas. (Full descriptions of all RPMs are provided in Appendix B, Resource Protection Measures). For Alternative 4, project elements are outside of montane riparian areas, and will not result in effects on riparian habitat or yellow warbler.

Pacific Tree (Chorus) Frog
Construction of the project, under Alternative 4, would result in removal of approximately 0.07 acre of wetland habitat and would result in the short-term change in habitat quality of approximately 0.11 acre due to temporary ground disturbance. Construction and operation of the Gazex avalanche mitigation system is not expected to have direct or indirect effects to wetlands. Implementation of RPMs to protect water quality, as described in Section 4.16, "Soils, Geology, and Seismicity," and Section 4.17, "Hydrology and Water Quality," would prevent direct effects to wetlands by preventing erosion and runoff into adjacent wetlands and require any temporarily disturbed areas to be restored and revegetated.

Overall, implementation of Alternative 4 would not cause a substantial permanent loss of freshwater emergent wetland habitat for Pacific tree frog because ground vegetation removal or overhead vegetation trimming/removal within these areas would typically not be required due to the short height of vegetation; towers are outside of wetland features and the Gondola would span most or all of these areas. As part of the project, RPMs described previously for Lacustrine/Riverine Habitat (Aquatic Macroinvertebrates) will be implemented to minimize impacts on aquatic habitats. Although some freshwater emergent habitat suitable for Pacific tree frog may still be disturbed or removed during project construction, very little is expected to be permanently removed and temporary affected and would have to be replaced in a no net loss of wetland habitat.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for freshwater emergent habitat are the same as those described above for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat.

Cumulative Effects Conclusion: Minor construction short term alteration and loss to a small amount of freshwater emergent wetland habitat on NFS lands would occur as a result of Alternative 4. However, because the amount of unavoidable habitat disturbance and loss would be very small relative to the total amount available in the area, and the fact that any habitat disturbance or loss would have to be mitigated so that there would be no net loss of wetland habitat, any potential contribution to cumulative effects would be expected to be minor.

Forest Level Effects: Because the amount of loss and short-term disturbance of freshwater emergent wetland habitat would be very small (0.07 acre and 0.11 acre, respectively) and relative to the total amount available in the area (61,247 acres), Alternative 3 would not alter existing trends in wet meadow or freshwater emergent wetland habitat, nor would it lead to a change in distribution of pacific tree frog across the Sierra Nevada bioregion.

Mountain Quail
Construction of Alternative 4 within NFS Lands would disturb up to 0.17 acre of Sierran Mixed Conifer habitat. This acreage is divided into overstory (limb trimming and tree topping) and temporary effects. In general, much of the forest habitat throughout the study area is evenly split between early seral and mid-seral with few occurrences of large trees.

Tree surveys conducted for Alternative 4 identified 947 trees >6 inches in diameter at breast height (dbh) (Under the Trees 2017). Construction of Alternative 4 within NFS Lands would require the removal of 14 trees (approximately 1.5 percent of the total for the whole alignment). Construction would also require the trimming or topping of trees that are within the corridor of the Gondola, up to 79 trees (8.3 percent of the total for the whole alignment).

While up to 0.17 acre of early and mid-seral coniferous forest, 14 conifer trees would be permanently affected, and 79 trees would be temporarily affected due to overhead trimming during construction of Alternative 4, the loss of this amount of common habitat from the region would not substantially reduce the quantity or quality of this habitat in the region and would not change the distribution or viability of any MIS. Some of the loss of conifer forest vegetation would be compensated for through new plantings or payment of tree replacement mitigation fees. Additionally, implementation of RPMs would require that vegetation removal be minimized to the extent feasible and that habitat be restored to pre-project conditions in temporary construction areas.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for early and mid-seral conifer forest are the same as those described above for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in the region include logging, grazing, fuels management, habitat restoration, recreational development and activities, urban and commercial development, and ROW maintenance and operation activities. Projects that may interact with the proposed project on a cumulative basis are the same as those described for Alternative 2 Lacustrine/Riverine (aquatic macroinvertebrate) habitat. Development and recreation projects planned in the study area could contribute to an adverse cumulative effect on early and mid-seral coniferous forest habitat.

Cumulative Effects Conclusion: Implementation of Alternative 4 would result in the removal of early and mid-seral coniferous forest for mountain quail. However, the tree species and stand types that would be removed are common locally and regionally and occur within common coniferous habitat types that are abundant in the region. RPMs have been incorporated into the project design to avoid and minimize vegetation removal to the extent feasible and project early and mid-seral coniferous forest removal would not result in substantial changes in stand structure or composition or in the distribution or abundance of tree species or coniferous communities in the region. Because loss of early and mid-seral coniferous forest habitat would occur along a narrow linear corridor and would be small relative to the total available in the study area, implementation of Alternative 4 would not result in substantial contribution to an adverse cumulative effect on common early and mid-seral coniferous forest.

Forest Level Effects: Implementation of the Alternative 4 would result in disturbances and removal of early and mid-seral conifer forest habitat for mountain quail. However, the tree species and stand types that would be removed are common locally and regionally and occur within common coniferous forest types that are abundant in the region. RPMs have been incorporated into the project design to minimize vegetation and tree removal to the extent feasible and project tree removal would not result in substantial changes in stand structure or composition or in the distribution or abundance of tree species or forest communities in the region. Because the disturbance and loss of early and mid-seral coniferous forest would occur along a narrow linear corridor and would be small (0.17 acre) relative to the total available in the region (there are currently 530,851 acres of early seral and 2,776,022 acres of mid-seral coniferous forest habitat on NFS lands in the Sierra Nevada), implementation of Alternative 4 would not alter existing trends in early and mid-seral coniferous forest habitat, nor would implementation of Alternative 4 lead to a change in distribution of mountain quail across the Sierra Nevada bioregion.

Hairy Woodpecker

The dominant forest habitat type is Sierra Nevada coniferous woodland within NFS lands, but stands of white fir, Jeffrey pine, and red fir are also common outside of NFS lands. The study area has not been inventoried

for snags as part of this analysis; however, medium and large snags exist within forested habitats that could be affected by project implementation. Based on observations during reconnaissance-level biological surveys, medium and large snags are not uncommon in the study area and vicinity.

Construction under Alternative 4 would remove snags in association with vegetation clearance necessary for project construction, including clearance of the 60-foot construction corridor, temporary access roads, staging areas, and other areas outside of the 60-foot construction corridor that would require clearing for project construction. As part of the vegetation management activities associated with maintenance of the ROW, hazard trees (dead, dying, diseased, decaying, or infested) would also be removed. Hazard tree removal may extend beyond the 60-foot construction corridor more distant trees are tall enough to fall and damage the Gondola, Gondola lines, or towers. Under Alternative 4, a total of 1.72 acres of coniferous woodland occurs within the proposed Gondola corridor on NFS lands (Table 4.14-1). Although only 0.01 acre of coniferous woodland would be removed and up to 0.22 acre of coniferous woodland would experience a short-term change in habitat quality due to overhead vegetation removal or temporary ground disturbance, the number and quality of medium and large snags that may require removal within this area are unknown. Snag retention needs for wildlife would be taken into consideration in areas where temporary vegetation removal associated with project construction would occur, but generally snags that are also considered hazard trees that have potential to fall onto and damage the Gondola, Gondola cables, towers or any component of the project would be removed.

Cumulative Effects to Habitat in the Analysis Area. The spatial scale, past and present activities, reasonably foreseeable future activities, and approach used in the cumulative effects analysis for snags in green forest are the same as those described above for Alternative 2 lacustrine/riverine (aquatic macroinvertebrate) habitat.

Past, present, and reasonably foreseeable future activities that have affected or may affect biological resources, including MIS habitats, in the region include logging, grazing, fuels management, habitat restoration, recreational development and activities, urban and commercial development. Development and recreation projects planned in the study area are the same as those described for Alternative 2 lacustrine/riverine (aquatic macroinvertebrates) and could contribute to an adverse cumulative effect on snags on green forest habitat.

Cumulative Effects Conclusion: An unknown number of medium to large snags would likely be removed as a result of project implementation. However, due to the narrow and linear distribution of the project, and the relative small acreage of coniferous woodland that would be removed in the study area, the number of medium to large snags potentially removed relative to the amount available in the region is not expected to be substantial. Therefore, the project's contribution to a cumulative effect on the abundance, distribution, and availability of medium and large snags in the region would be negligible.

Forest Level Effects: Hairy woodpecker is a common species in the study area and the region, and suitable habitat for this species is abundant. Implementation of Alternative 4, includes clearance of the 60-foot construction corridor, temporary access roads, staging areas, and other areas outside of the 60-foot construction corridor that would require clearing for project construction. As part of the vegetation management activities associated with maintenance of the Gondola corridor, hazard trees (dead, dying, diseased, decaying, or infested) would also be removed. A total of 0.01 acre of coniferous forest would be removed and up to 0.22 acre of coniferous forest would experience a short-term change in habitat quality due to overhead vegetation removal or temporary ground disturbance under Alternative 4 on NFS lands. However, the number and quality of medium and large snags that may require removal within this area are unknown. Snag retention needs for wildlife would be taken into consideration in areas where temporary vegetation removal associated with project construction would occur, but generally snags that are also considered hazard trees that have potential to fall onto and damage the Gondola, Gondola cables, towers or any component of the project would be removed. However, due to the narrow and linear distribution of the project, and the overall abundance of snags in the study area and vicinity, the potential number of medium to large snags removed relative to the amount available in the region is not expected to be substantial. Therefore, implementation of the project under Alternative 4 would not alter the existing trend in the

ecosystem component, nor would it lead to a change in the distribution of hairy woodpecker across the Sierra Nevada bioregion.

NEPA Effects Conclusion (NFMA MIS Finding)
The detailed MIS analysis concluded that implementation of Alternative 4 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion (U.S. Forest Service 2018e).

CEQA Determination of Effects
This impact analysis is specific to a NEPA indicator and is not responsive to CEQA criteria. No CEQA determination of effect is provided.

Mitigation Measures

No mitigation measures are required.

Impact 4.14-5 (Alt. 4): Direct and Indirect Effects on Special-Status Terrestrial Wildlife

Implementation of Alternative 4 would result in indirect and direct effects of habitat either occupied or potentially occupied by special-status terrestrial wildlife species. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to disturbance or loss of special-status terrestrial wildlife would be **adverse** because special-status species and their habitat would be lost. Implementation of the project may affect individuals but would not be likely to cause a trend toward federal listing or loss of viability of any of the Forest Service sensitive species. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because without implementation of RPMs, state-protected species would be affected either directly or indirectly**.** Implementation of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34would require a range of surveys and other actions that would minimize and avoid effects on these species and their habitat. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Impact 4.14-2 (Alt. 4) would be slightly similar to Impact 4.14-2 (Alt. 2), Alternative 4 removes less upland land cover habitat than Alternative 2. Alternative 4 would indirectly affect upland land cover types suitable for special-status terrestrial wildlife by removing up to 2.49 acres of upland land cover habitat due to the construction of the project elements (Alternative 2 removes up to 4.02 acres and Alternative 3 removes up to 4.27). Alternative 4 would also directly affect these land cover types due to short-term changes in habitat quality affecting 10.27 acres of upland land cover associated with vegetation clearing and other temporary ground disturbance (Alternative 2 affects 14.28 acres and Alternative 3 affects 11.17) [see Table 4.14-6]. Due to the shift in the alignment as compared to Alternative 2 or Alternative 3, Alternative 4 indirectly affects less aquatic habitat up to 0.46 acre. Alternative 4 would directly affect up to 1.28 acre of wetland and stream habitat due to short-term changes in habitat quality related to overhead vegetation trimming or temporary construction activities (see Table 4.14-7). Tree surveys for Alternative 4 identified 947 trees, implementation of Alternative 4 would remove up to 38 trees. Out of these, 7 would be potentially suitable for nesting for the golden eagle and 20 would be potentially suitable for nesting for the bald eagle (or 0.7 percent and 2.1 percent, respectively, of the total trees surveyed for Alternative 4). No nests attributable for golden eagle or bald eagle were observed within or adjacent to the survey area.

Impact Mechanisms
Because the project elements for Alternative 4 are the same as those for Alternative 2. The impact mechanism for Alternative 4 would be the same as those described for Alternative 2.

Implementation of the same biological resources RPMs, as those described under Alternative 2, would reduce potential project effects on these species and their habitats. RPMs BIO-12 through BIO-16 and RPM BIO-20 relate to identifying the presence of biological resources and avoiding habitat loss in buffer areas.

RPM BIO-21 provides direction if a special-status species previously unknown in the project area is detected near project activities. RPM BIO-22 requires that a biological monitor inspect all tower placement locations and areas of active construction for trapped wildlife. RPM BIO-24 requires the minimization of ground disturbance and vegetation removal. RPM BIO-37 requires that nesting raptor surveys be conducted prior to any grading or tree removal and that any no-construction buffers be included in the Placer County Improvement Plan submittal. RPM MUL-1 requires implementation of surveys and protection measures if new sites are identified for disturbance during project construction. RPM MUL-2 requires the clear demarcation of construction areas and retaining activities within those areas. RPM MUL-3 requires the use of existing roads and limits development of new access routes. RPM MUL-5 requires that at least one environmental monitor be present during all construction activities. RPM MUL-6 requires the design and implementation of a worker environmental awareness training program. RPM MUL-7 relates to completing project construction in a single construction season. RPM BIO-34 requires the use of exclusion fencing to prevent sensitive wildlife from entering construction areas.

Alternative 4 would produce the same elevated noise levels during construction activities, as Alternative 2, as a result of the presence of construction equipment (including helicopters, blasting, tracked machinery, pickup trucks, and ATVs); this impact would be short term and would be reduced upon completion of construction. Construction and operation of Alternative 4 would require the use of hazardous materials, such as oils, lubricants, and fuels. This impact would be reduced through training, self-reporting, working in accordance with applicable laws and regulations. RPMs applicable to these resource areas are identified in Section 4.6, “Public Safety,” and Section 4.9, “Noise.” As mentioned above, a comprehensive list of RPMs is included in Appendix B. See Sections 4.6 and 4.9, which list RPMs that would also reduce impacts on special-status terrestrial wildlife and incorporate the RPMs as mitigation measures under CEQA.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to special-status terrestrial wildlife habitat under Alternative 4would be **adverse** but minimal because small amounts of habitat would be disturbed compared to available habitat in the surrounding area. Similarly, the effect on the USFWS birds of conservation concern would be **adverse** because construction activities could affect these species but at a lesser extent than Alternative 2 since overall less habitat would be affected. Implementation of Alternative 3 **may affect individuals, but it is not likely to result in a trend toward federal listing or loss of viability for Forest Service sensitive species.** These effects would be mitigated through implementation of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34. Alternative 4 would likely produce elevated noise levels during construction activities as a result of the presence of construction equipment (including helicopters, tracked machinery, pickup trucks, and ATVs); this impact would be short term and would end upon completion of construction. RPMs applicable to these resource areas are also identified in Section 4.6, “Public Safety.” As mentioned above, a comprehensive list of RPMs is included in Appendix B. See Sections 4.6 and 4.9, which list the specific RPMs that would also reduce impacts on special-status terrestrial wildlife.

CEQA Determination of Effects

Alternative 4 involves construction and operation activities that would remove or modify habitat suitable for the species evaluated above. Without proper implementation of RPMs, implementation of Alternative 4 could result in adverse effects on these species through habitat loss, disturbance, or direct mortality. Under CEQA, and using the CEQA criteria, this impact on these special-status species would be significant. However, implementing RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34 would protect these special-status species by requiring preconstruction surveys for nesting birds, nesting raptors, roosting bats; providing construction monitoring through all phases of construction; creating no-disturbance buffers; excluding construction activity from sensitive resource areas; and coordinating with the appropriate regulatory agencies. Also see Sections 4.6 and 4.9, which list RPMs related to noise and hazardous materials that would also reduce impacts on special-status terrestrial wildlife habitat and incorporate the RPMs as mitigation measures under CEQA. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34 as mitigation measures would reduce this significant impact on special-status terrestrial wildlife species to a less-than-significant level.

Also, see Sections 4.6 and 4.9, which list RPMs related to noise and hazardous materials that would reduce impacts on special-status terrestrial wildlife species, and incorporate the RPMs as mitigation measures under CEQA.

Impact 4.14-6 (Alt. 4): Disturbance or Loss of Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites

Implementing Alternative 4 could interfere with the movement of native resident or migratory wildlife, or with established wildlife corridors, or impede the use of native wildlife nursery sites. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to disturbance or loss of wildlife movement, wildlife corridors, and native wildlife nursery sites would be **adverse** because construction activities have the potential to displace wildlife and disturb native breeding wildlife, but less adverse than Alternative 2 due to a reduction in effects to available habitat. Because Alternative 4 is further east than Alternative 2 and thus is not near Barstool Lake or Five Lakes, or within the 982 feet surrounding these lakes, Alternative 4 would have no effect on SNYLF breeding habitat; however, Alternative 4 through impacts on seasonal drainages would affect potential dispersal habitat for the frog. Alternative 4 may affect and is likely to adversely affect movement of SNYLF. Implementation of the project may affect individuals but is not likely to cause a trend toward federal listing of loss of viability for any of the Forest Service sensitive species. Implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37 would mitigate this adverse effect. Under CEQA, and using the CEQA criteria, direct and indirect impacts related to disturbance or loss of wildlife movement and wildlife corridors would be **less than significant** prior to consideration of RPMs because wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative 4 would not prohibit the passage of wildlife between the forested areas west and east of KT-22, and the direct and indirect impacts on native wildlife nursery sites would be **significant** prior to consideration of RPMs because Alternative 4 would impede the use of these nursery sites. Implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, which require preconstruction wildlife surveys, no-disturbance buffers, construction monitoring, minimizing vegetation and sensitive habitat area impacts, and limiting the operation of the gondola to winter months, would reduce this impact to a less-than-significant level or all species except SNYLF. For SNYLF the impact remains **significant**.

The study areas for the action alternatives are at the northeastern edge of the Sturdevant Ridge–Mosquito Ridge/Crystal Ridge ECA. This ECA connects natural landscape blocks from around Sturdevant Ridge in El Dorado County up through the Crystal Ridge northbound to approximately the summit of Granite Chief, encompassing 171,457 acres (Spencer et al. 2010).

The main function of the ECA is to connect natural landscape block between the two end points. The Alternative 3 alignment is located at the edge of the ECA, toward one of the end points. Implementing Alternative 3 would not interfere with the main function of the ECA because it would not prevent the movement of wildlife between the two end points or prevent the movement of wildlife to adjacent natural landscape blocks.

Wildlife in the study area typically use riparian and forested areas as migration routes and typically avoid disturbed areas and areas with high levels of human presence. Noise and human presence associated with construction activities have the potential to temporarily affect wildlife traveling west to east and vice versa primarily near the summit of KT-22 because the adjacent terrain and lack of cover create natural barriers for

wildlife. However, this is not the only available route for movement; wildlife can and do travel through Squaw Valley and Alpine Meadows and the Bear River riparian corridor. Although some wildlife may be temporarily displaced during construction, wildlife would not be physically prevented from moving around project construction areas since most wildlife will move through the area in the evening or early morning hours when construction is not yet occurring. Additionally, operation of the gondola would occur mostly during the winter months, when migration activities have been completed, and no operation, except for maintenance or limited movement of cabins, may occur during nonwinter time, when migration and wildlife movement typically occur.

Alternative 3 is further east than Alternative 2 and thus also further to Barstool Lake and the Five Lakes. Alternative 3 is not expected to have an effect on these lakes that provide suitable breeding habitat for SNYLF. Alternative 3 is also outside of the 984 feet buffer surrounding these lakes and thus avoiding the upland habitat around Barstool Lake and the Five Lakes area that the frog could utilize for movement. However, Alternative 3 would affect seasonal streams and wetlands within the study area and thus affects dispersal habitat. This impact is addressed in the discussions of Impact 4.14-1 and Impact 4.14-2.

The Gazex avalanche control system would be used only during the winter months, outside of the typical nesting season, and thus would not have an effect on nursery or breeding activities. With the exception of minimal maintenance activities during the summer months, the gondola would be operated during the winter months, outside of the wildlife breeding season. However, construction activities have the potential to affect breeding wildlife in vicinity of the Alternative 3 alignment, through tree removal, vegetation clearing, grading, rock blasting, drilling for tower placement, helicopter use, access road usage, filling of wetlands/streams if these activities take place in proximity to breeding wildlife. The land cover types present within the Alternative 3 alignment provide suitable breeding habitat for wildlife species including special-status species (see Impacts 4.14-1 [Alt. 2], 4.14-5 [Alt. 2], 4.14-1 [Alt. 3], 4.14-5 [Alt. 3], 4.14-1 [Alt. 4] and 4.14-5 [Alt. 4]). Potential disturbance or impacts on nesting/denning/roosting wildlife would be avoided through implementation of biological resources RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, which include preconstruction surveys for breeding amphibians, denning mammals, nesting birds, and nursery bat roosts; implementation of no-disturbance buffers; construction monitoring; requiring minimizing vegetation and sensitive habitat area impacts; and limiting operation of the gondola to winter months.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to wildlife movement and wildlife corridors under Alternative 3 would be minimally **adverse** because although wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative 3 would not prohibit the passage of wildlife between the forested areas west and east of KT-22, construction activities could nonetheless displace wildlife albeit temporarily. Implementation of Alternative 3 may affect and is likely to adversely affect SNYLF movement because construction activities would disturb seasonal streams and wetlands suitable for dispersal.

Absent RPMs and/or mitigation, direct and indirect impacts related to wildlife nurseries would be **adverse** because construction activities have the potential to disturb native breeding wildlife. Implementation of the project may affect individuals but is not likely to cause a trend toward federal listing of loss of viability for any of the Forest Service sensitive species. These effects would be mitigated through implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37. Furthermore, implementation of Mitigation Measure 4.14-6 would address potential effects to dispersing SNYLF.

CEQA Determination of Effects

Alternative 2 would result in construction activities that would affect wildlife. Under CEQA, and using the CEQA criteria, direct and indirect impacts related to wildlife movement and wildlife corridors under Alternative 2 would be less than significant because although construction activities could temporarily displace wildlife, wildlife would still be able to move through the area before and after construction hours, and the construction and design of Alternative 2 would not prohibit the passage of wildlife between the forested areas west and east of KT-22.

Without proper implementation of RPMs, Alternative 2 would affect wildlife nurseries because construction activities have the potential to disturb native breeding wildlife. Under CEQA, and using the CEQA criteria, if wildlife nurseries would be affected, this would be a significant impact. However, with implementation of RPMs MUL-1 through MUL-7, BIO-1, BIO-12, BIO-13 through BIO-16, BIO-18, BIO-20, BIO-21, BIO-24 through BIO-26, and BIO-37, the following actions would be required: preconstruction surveys for nesting, roosting, denning, and breeding wildlife; avoidance; construction monitoring; and implementation of no-disturbance buffers. With implementation of these RPMs, this impact would be reduced to a less-than-significant level for all species except SNYLF. For SNYLF the impact remains **significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the MMRP for the project. The adoption of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 as mitigation measures would reduce this impact on nursery sites but would not reduce it to a less than significant effect for SNYLF.

Additional Mitigation Measure 4.14-6 (Alt. 4): Compensate for Impacts on Sierra Nevada Yellow-Legged Frog Dispersal Habitat through Consultation with Permitting Agencies.

Implement Mitigation Measure 4.14-1 (Alt. 2).

<u>Significance after Mitigation</u>

Consultation between the Forest Service, USFWS, and CDFW would ensure that indirect and direct effects on Sierra Nevada yellow-legged frog and its habitat (including breeding habitat) would be minimized and mitigated fully to the satisfaction of the resource agencies. This impact would be reduced to a **less-than-significant** level.

4.14.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.14-9 provides a summary of potential effects on SNYLF.

Table 4.14-9 Summary of Potential Effects (Acres) on Sierra Nevada Yellow-Legged Frog

Habitat Disturbance/Loss Type	Alternative 2	Alternative 3	Alternative 4
Land Cover Disturbance or Loss[1]			
Temporary construction disturbance	14.28	11.17	10.27
Permanent ground disturbance	4.02	4.27	2.49
Total	**18.3**	**15.44**	**12.76**
Land Cover Disturbance or Loss in Critical Habitat			
Temporary construction disturbance	14.03	10.87	6.85
Permanent ground disturbance	3.89	4.15	2.07
Total	**17.92**	**15.02**	**8.92**
Aquatic Habitat Alteration or Loss[2]			
Short-term change in habitat quality	1.09	0.91	1.28
Permanent loss in habitat quantity	0.43	0.53	0.46
Total	**1.52**	**1.44**	**1.75**
Disturbance or Loss of Non-Breeding Aquatic Habitat PCE in Critical Habitat			
Short-term change in habitat quality	1.09	0.91	1.28
Permanent loss in habitat quantity	0.43	0.53	0.46
Total	**1.52**	**1.44**	**1.75**

Table 4.14-9 Summary of Potential Effects (Acres) on Sierra Nevada Yellow-Legged Frog

Habitat Disturbance/Loss Type	Alternative 2	Alternative 3	Alternative 4
Upland Habitat Disturbance[3]			
Short-term change in habitat quality	3.72	3.11	1.34
Permanent loss in habitat quantity	1.17	0.42	0.26
Total	**4.89**	**3.53**	**1.60**
Upland Habitat PCE Disturbance in Critical Habitat			
Short-term change in habitat quality	3.72	3.11	1.34
Permanent loss in habitat quantity	1.17	0.42	0.26
Total	**4.89**	**3.53**	**1.60**

Notes:

[1] See Table 4.14-6 in this Draft EIS/EIR for a detailed breakdown of land cover disturbance and loss.

[2] See Table 4.14-7 in this Draft EIS/EIR for a detailed breakdown of aquatic habitat alteration and loss.

[3] See Table 4.14-8 in this Draft EIS/EIR for a detailed breakdown of upland habitat disturbance.

Sources: EcoSynthesis 2017; data provided by SE Group in 2015, 2016, 2017; adapted by Ascent Environmental in 2018

For Alternative 1, the No Action Alternative, there would be no impact for all NEPA indicators and CEQA criteria evaluated.

Impact 4.14-1, Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog, would be adverse when considering the NEPA indicators for all three alternatives and potentially significant when considering the CEQA criteria for all three alternatives. The largest amount of stream and wetland habitat, would be removed and altered under Alternative 3. The largest amount of land cover habitat adjacent to occupied habitat in SNYLF critical habitat would be removed under Alternative 2 because of the three alignments, the alignment for Alternative 2 is closest to Barstool Lake and Five Lakes. The least amount of land cover habitat, as well as stream and wetland habitat, would be removed and altered under Alternative 4. Overall, Alternative 2 would have the greatest adverse effect on SNYLF because the alignment is close to occupied and breeding habitat for the frog, a substantial amount of upland habitat for the frog would be removed or altered, and the frog would be potentially affected during operation of the gondola and the Alpine Meadows mid-station. Alternative 3 would also have an adverse effect on the frog but less than Alternative 2 because although more aquatic habitat would be removed under Alternative 3 than Alternative 2, these habitats are not adjacent to known breeding or occupied habitat, and the Alternative 3 alignment is also outside of the 984-foot upland area buffer surrounding Barstool Lake and Five Lakes. Alternative 4 would be the least adverse of the three alternatives. Although aquatic and upland habitat would be removed under the alternative, the amount of habitat that would be lost would be about the same as Alternative 2 and less than Alternative 3, the acreage that would be removed is not immediately adjacent to occupied or breeding habitat, and the alignment is outside the 984-foot upland area buffer surrounding Barstool Lake and Five Lakes.

Impact 4.14-2, Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat, would be adverse when considering the NEPA indicators for all three alternatives. This impact would be potentially significant considering the CEQA criteria for all three alternatives. Alternative 2 would have the greatest adverse effect on SNYLF critical habitat because its alignment is close to occupied habitat, potential direct effects on aquatic breeding and non-breeding habitat PCE would occur, and the greatest amount of upland habitat PCE would be removed. Alternative 3 would have a moderate adverse effect when comparing to Alternative 2 since although it removes or alters the greatest quantity of aquatic habitat, this habitat is considered non-breeding aquatic habitat. Because of the location of its alignment, Alternative 3 is not expected to have an effect on breeding aquatic habitat PCE. Alternative 4 would be the least adverse of the three alternatives. Although aquatic habitat would be removed under the alternative, the amount of non-breeding aquatic habitat PCE that would be lost would be about the same as Alternative 2 and less than Alternative 3, and the acreage that would be removed is not immediately adjacent to occupied or breeding

habitat, and the alignment is outside the 984-foot upland area buffer surrounding Barstool Lake and Five Lakes. Alternative 4 removes the least amount of upland habitat PCE from all three alternatives. Because of the location of its alignment, Alternative 4 is not expected to have an effect on breeding aquatic habitat PCE.

Impact 4.14-3, Direct and Indirect Effects on Southern Long-Toed Salamander, is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA effects conclusion is provided. This impact would be potentially significant when considering the CEQA criteria for all three alternatives. Alternative 3 would have the greatest significant effect because the largest amount of aquatic habitat and land cover would be removed under this alternative. Alternative 2 would remove the least aquatic habitat of all action alternatives, but removes more upland land cover than Alternative 4, but less than Alternative 3. Alternative 4 would have the least significant effect because although a slightly greater amount of aquatic habitat would be removed under Alternative 4 than under Alternative 2, Alternative 4 has the least amount of terrestrial habitat disturbance.

Impact 4.14-4, Effects on Management Indicator Species, is specific to an NFMA MIS indicator and is not responsive to a NEPA indicator or CEQA criterion. No NEPA effects conclusion or CEQA determination of effects is provided. This impact would be slightly adverse on Forest Service MIS, because small quantities of habitat for MIS within Forest Service lands would experience a short-term change in habitat quality or loss. Although some loss or short-term changes in habitat quality would occur, implementation of any of the action alternatives would not likely result in a downward trend in the population of MIS. Alternative 4 would directly and indirectly affect more acreage (0.89 acre) of MIS habitats, through short-term habitat quality changes and removal, than Alternative 2 or Alternative 3. Alternative 2 would affect the least amount of acreage (0.72 acre) of MIS habitats of the three action alternatives (Table 4.14-10).

Table 4.14-10 Pre- and Post-Construction Acres per Alternative

Pre-Project MIS Habitat (Same as No Action for Alt. 2)	Alt. 2: Post-Project MIS Habitat	Change in MIS Habitat Acre	Pre-Project MIS Habitat (Same as No Action for Alt. 3)	Alt. 3: Post-Project MIS Habitat	Change in MIS Habitat Acres	Pre-Project MIS Habitat (Same as No Action for Alt. 4)	Alt. 4: Post-Project MIS Habitat	Change in MIS Habitat Acres
Lacustrine (LAC) –	–	–	Lacustrine (LAC) 0.52	0.52	Temporary -0.16	Lacustrine (LAC) 0.64	0.64	Temporary -0.26
Riverine (RIV) 0.17	0.07	Temporary -0.07 Permanent -0.10	Riverine (RIV) 0.40	0.37	Temporary -0.07 Permanent -0.13	Riverine (RIV) 0.37	0.24	Temporary - 0.03 Permanent -0.13
Riparian 0.64	0.64	Temporary -0.39	Riparian 0.48	0.48	–	Riparian 0.40	0.40	–
Wetland 0.07	0.02	Permanent -0.05	Wetland 0.87	0.80	Temporary -0.17 Permanent -0.07	Wetland 0.44	0.37	Temporary -0.11 Permanent -0.07
Early and Mid-Seral Coniferous Forest 0.79	0.76	Temporary -0.08 Permanent -0.03	Early Seral Coniferous Forest 2.33	2.33	Temporary 0.17	Early Seral Coniferous Forest 1.72	1.71	Temporary -0.22 Permanent <-0.01
Medium and large snags in green forest –	–	–	Medium and large snags in green forest <0.01	<0.01	–	Medium and large snags in green forest <0.01	<0.01	<0.01

Source: Data received from Forest Service in 2017 for the year 2016; adapted by Ascent Environmental in 2018

Impact 4.14-5, Effects on Special-Status Terrestrial Wildlife, would be adverse when considering the NEPA indicators for all three action alternatives. This impact would be potentially significant considering the CEQA criteria for all action alternatives. Alternative 2 would have the greatest adverse effect on special-status wildlife because it would directly and indirectly affect more land cover types (18.3 acres) through permanent ground disturbance and short-term changes in habitat quality. Alternative 3 (15.44 acres) would have a moderate significant effect on special-status terrestrial wildlife since it would directly and indirectly affect less land cover type acreage through permanent removal and short-term changes in habitat quality than Alternative 2 but more than Alternative 4. Alternative 4 (12.76 acres) would have the least adverse effect since it directly or indirectly would affect less acreage than Alternative 2 or Alternative 3. Since the land cover types present within the alternative alignments provide suitable habitat (i.e., breeding, foraging, resting) for special-status wildlife species, the greater the impact on the habitat, the greater the potential for affecting these species.

Regarding Impact 4.14-6, Disturbance or Loss of Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites, the loss of wildlife corridors would be considered slightly adverse for all three alternatives since none of the action alternatives would prevent the use of existing wildlife corridors. Alternative 2 would have the greatest adverse effect on native wildlife nursery areas since the greatest amount of land cover types (18.3 acres) would be removed or temporarily altered under this alternative. Because its alignment is close to occupied SNYLF breeding habitat, Alternative 2 is the only alternative that has the potential to affect SNYLF breeding and rearing habitat. Although more land cover type acreage or aquatic habitat acreage would be removed under Alternative 3 than Alternative 2, Alternative 3 is not expected to have an effect on SNYLF occupied breeding or rearing habitat. Similarly, Alternative 4 would have the least adverse effect on wildlife nursery areas since less acreage of both land cover types and aquatic habitats would be removed under Alternative 4 than under Alternative 2 or 3. Alternative 4 is not expected to have an effect on SNYLF occupied breeding or reading habitat.

Table 4.14-11 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

Table 4.14-11 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.14-1: Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog	Quantification (acres) and qualification of existing wildlife habitat and proposed alteration, fragmentation, or removal of wildlife habitat, by species. Include specifically an analysis of riparian and wetland habitat for the federally endangered Sierra Nevada yellow-legged frog containing: ◢ quantification of impacts in suitable habitat; ◢ indirect effects resulting from hydrology, alterations from natural streamflow patterns, sedimentation, water temperatures, cover; and ◢ direct effects resulting from the alteration of migration patterns, introduction of contaminants, and construction and operation activity in the area	No effect	More Adverse under NEPA; less-than-significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA	Less adverse under NEPA; less than significant with mitigation under CEQA
	Disclosure of effects to terrestrial Proposed, Threatened, Endangered, and Sensitive (PTES), MIS, and migratory birds. Include specifically impacts to the Sierra Nevada yellow-legged frog resulting from the introduction of hazardous materials (oils, fuels, lubricants, metals, equipment coatings)	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Moderately adverse under NEPA; less than significant with mitigation under CEQA	Less adverse under NEPA; less than significant with mitigation under CEQA

Table 4.14-11 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Quantification and qualification of compensatory mitigation for impacts to Sierra Nevada yellow-legged frog or other relevant species habitat	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Moderately adverse under NEPA; less than significant with mitigation under CEQA	Less adverse under NEPA; less than significant with mitigation under CEQA
	Discussion of impacts of construction and operation of the proposed project (including both Gazex and gondola infrastructure) on wildlife, particularly the Sierra Nevada yellow-legged frog, including noise impacts (helicopters, ATVs, Gazex exploders), visual impacts, and changing skier-use patterns	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA
	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, polices, or regulations, or by CDFW or USFWS	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA	Less adverse under NEPA; less than significant with mitigation under CEQA
	Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate an animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Moderately adverse under NEPA; less than significant with mitigation under CEQA	Less adverse under NEPA; less than significant with mitigation under CEQA
4.14-2: Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat	Quantification (acres) and qualification of existing wildlife habitat and proposed alteration, fragmentation, or removal of wildlife habitat, by species. Include specifically an analysis of riparian and wetland habitat for the federally endangered Sierra Nevada yellow-legged frog containing: ◢ discussion of designated critical habitat; ◢ quantification of impacts in suitable habitat; ◢ indirect effects resulting from hydrology, alterations from natural streamflow patters, sedimentation, water temperatures, cover; and ◢ direct effects resulting from the alteration of migration patterns, introduction of contaminants, and construction and operation activity in the area	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Moderately adverse under NEPA; less than significant with mitigation under CEQA	Less adverse under NEPA; less than significant with mitigation under CEQA
	Disclosure of effects to terrestrial Proposed, Threatened, Endangered, and Sensitive (PTES), MIS, and migratory birds. Include specifically impacts to the Sierra Nevada yellow-legged frog resulting from the introduction of hazardous materials (oils, fuels, lubricants, metals, equipment coatings)	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Moderately adverse under NEPA; less than significant with mitigation under CEQA	Less adverse under NEPA; less than significant with mitigation under CEQA

Table 4.14-11 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Quantification and qualification of compensatory mitigation for impacts to Sierra Nevada yellow-legged frog or other relevant species habitat	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Moderately adverse under NEPA; less than significant with mitigation under CEQA	Less adverse under NEPA; less than significant with mitigation under CEQA
	Discussion of impacts of construction and operation of the proposed project (including both Gazex and gondola infrastructure) on wildlife, particularly the Sierra Nevada yellow-legged frog, including noise impacts (helicopters, ATVs, Gazex exploders), visual impacts, and changing skier-use patterns	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA
	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, polices, or regulations, or by CDFW or USFWS	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA
	Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate an animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA, less than significant with mitigation under CEQA
4.14-3: Direct and Indirect Effects on Southern Long-Toed Salamander	Quantification (acres) and qualification of existing wildlife habitat and proposed alteration, fragmentation, or removal of wildlife habitat, by species	No effect	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA
	Disclosure of effects to terrestrial Proposed, Threatened, Endangered, and Sensitive (PTES), MIS, and migratory birds	No effect	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA
	Discussion of impacts of construction and operation of the proposed project (including both Gazex and gondola infrastructure) on wildlife, particularly the Sierra Nevada yellow-legged frog, including noise impacts (helicopters, ATVs, Gazex exploders), visual impacts, and changing skier-use patterns	No effect	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA
	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, polices, or regulations, or by CDFW or USFWS	No effect	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA
	Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate an animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species	No effect	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA	Less than significant, with mitigation, under CEQA

Table 4.14-11 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.14-4; Direct and Indirect Effects on Management Indicator Species	Quantification (acres) and qualification of existing wildlife habitat and proposed alteration, fragmentation, or removal of wildlife habitat, by species	No effect	The detailed MIS analysis concluded that implementation of Alternative 2 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion. However, Alternative 2 removes the lesser acreage of MIS habitat of all three alternatives.	The detailed MIS analysis concluded that implementation of Alternative 3 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion. Alternative 3 removes the same amount of MIS habitat as Alternative 4, however, affects more acreage than Alternative 4 due to short-term changes in habitat quality.	The detailed MIS analysis concluded that implementation of Alternative 4 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion. Alternative 4 removes the same amount of MIS habitat as Alternative 3, however, affects more acreage than Alternative 3 or 2 due to short-term changes in habitat quality.
	Disclosure of effects to terrestrial Proposed, Threatened, Endangered, and Sensitive (PTES), MIS, and migratory birds	No effect	The detailed MIS analysis concluded that implementation of Alternative 2 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion. However, Alternative 2 removes the lesser acreage of MIS habitat of all three alternatives.	The detailed MIS analysis concluded that implementation of Alternative 3 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion. Alternative 3 removes the same amount of MIS habitat as Alternative 4, however, affects more acreage than Alternative 4 due to short-term changes in habitat quality.	The detailed MIS analysis concluded that implementation of Alternative 4 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion. Alternative 4 removes the same amount of MIS habitat as Alternative 3, however, affects more acreage than Alternative 3 or 2 due to short-term changes in habitat quality.

Table 4.14-11 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.14-5: Direct and Indirect Effects on Special-Status Terrestrial Species	Quantification (acres) and qualification of existing wildlife habitat and proposed alteration, fragmentation, or removal of wildlife habitat, by species	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Moderately adverse under NEPA; less than significant, with mitigation, under CEQA	Less adverse under NEPA; Less than significant, with mitigation, under CEQA
	Disclosure of effects to terrestrial Proposed, Threatened, Endangered, and Sensitive (PTES), MIS, and migratory birds	No effect	More adverse under NEPA; less than significant with mitigation under CEQA	Moderately adverse under NEPA; less than significant, with mitigation, under CEQA	Less adverse under NEPA; Less than significant, with mitigation, under CEQA
	Identification of impacts to avian species as a result of tree removal and helicopter activity	No effect	Moderately adverse under NEPA; less than significant under CEQA	More adverse under NEPA; less than significant under CEQA	Less adverse under NEPA; less than significant under CEQA
	Discussion of impacts of construction and operation of the proposed project (including both Gazex and gondola infrastructure) on wildlife, including noise impacts (helicopters, ATVs, Gazex exploders), and changing skier-use patterns	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA
	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, polices, or regulations, or by CDFW or USFWS	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA
	Substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate an animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA
4.1-6: Disturbance or Loss of Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites	Quantification (acres) and qualification of existing wildlife habitat and proposed alteration, fragmentation, or removal of wildlife habitat, by species. Include specifically an analysis containing: ◢ direct effects resulting from the alteration of migration patterns, introduction of contaminants, and construction and operation activity in the area	No effect	Adverse under NEPA; Significant under CEQA for wildlife movement and corridors and significant for wildlife nursery sites; less than significant with mitigation.	Adverse under NEPA; Significant under CEQA for wildlife movement and corridors and significant for wildlife nursery sites; less than significant with mitigation.	Adverse under NEPA; Significant under CEQA for wildlife movement and corridors and significant for wildlife nursery sites; less than significant with mitigation.
	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	No effect	Adverse under NEPA; Significant under CEQA for wildlife movement and corridors and significant for wildlife nursery sites; less than significant with mitigation.	Adverse under NEPA; Significant under CEQA for wildlife movement and corridors and significant for wildlife nursery sites. Less than significant with mitigation.	Adverse under NEPA; Significant under CEQA for wildlife movement and corridors and significant for wildlife nursery sites. Less than significant with mitigation.

4.14.4 Cumulative Effects

4.14.4.1 METHODS AND APPROACH

The spatial scope used for the analysis of cumulative impacts on wildlife and aquatic species that are known or have the potential to occur in the project area is the Squaw Creek, Bear Creek, and the Five Lakes watersheds and a portion of the Truckee River watershed between Squaw Creek and Bear Creek. This spatial scope is sufficient to include potential effects of the gondola project to the species considered and is sufficient to encompass the past, present, and reasonably foreseeable future activities that may combine with effects of the proposed project to result in cumulative effects on these species.

Current resource conditions are used to represent the composite of past actions. The area encompassing the cumulative spatial scope of the analysis (i.e., the Squaw Creek, Bear Creek, and the Five Lakes watersheds and a portion of the Truckee River watershed between Squaw Creek and Bear Creek) includes Olympic Valley and Bear Creek Valley, which both have long histories of human activity ranging from timber harvests over a century ago, to the winter Olympics at Squaw Valley in 1960, to ongoing residential, commercial, and residential development over the last 50 years. A specific temporal timeframe for the identification or analysis of past actions would not provide information not already expressed in the description of current resource conditions and could exclude historic activities that have influenced these current conditions. In general, past activities that have affected the current cumulative condition for terrestrial and aquatic wildlife in the Squaw Creek, Bear Creek, and Five Lakes watersheds include logging, grazing, fuels management, recreational development and activities, urban and commercial development, and right-of-way maintenance and operation activities.

The temporal scope for present and reasonably foreseeable future actions that could interact on a cumulative basis with the proposed project typically includes the gondola construction period (6–8 months beginning in late spring 2019) as well as the operational period of the gondola (winter season); however, for wildlife and aquatic species, the temporal scope for reasonably foreseeable future actions is more broadly defined because disturbance and/or loss of suitable habitat and various direct and indirect effects would contribute to the cumulative condition no matter when it occurs. For this analysis, the temporal cumulative effects timeframe for present and future actions is 20-years. This is generally consistent with the longest implementation times for “Cumulative Effects Projects” listed in Table 3-3 and applicable to the spatial scope of this analysis; a 20-year estimated buildout period for the Village at Squaw Valley Specific Plan (Item #2 in Table 3-3) and a projection to 2039 for General Development in Olympic Valley (Item #10 in Table 3-3), This provides a reasonable timeframe to describe changes to wildlife habitat and landscape patterns that may influence the distribution and abundance of species within the gondola project area and surrounding watersheds.

Based on the overall list of Cumulative Effects Projects provided in Table 3-3, present or reasonably foreseeable future projects in the spatial analysis area for cumulative effects that have the potential to create impacts on wildlife and aquatic species are listed below. Each project is unlikely to affect all wildlife and aquatic species considered, but would at least affect potential habitat for one or more species.

Project	Potential Impacts
Alpine Meadows Master Plan Development (Includes Rollers Chair)	Habitat loss and degradation, disturbance, mortality
Village at Squaw Valley Specific Plan	Habitat loss and degradation, disturbance, mortality
Squaw Valley Red Dog Lift Replacement	Habitat loss and degradation, disturbance, mortality
Alpine Meadows Hot Wheels Lift Replacement	Habitat loss and degradation, disturbance, mortality

Project	Potential Impacts
Timberline Twister	Habitat loss and degradation, disturbance, mortality
Squaw Valley Olympic Museum and Winter Sports Heritage Center	Disturbance
White Wolf Development (aka Caldwell Property)	Habitat loss and degradation, disturbance, mortality
General Development in Olympic Valley	Habitat loss and degradation, disturbance, mortality
General Development in Alpine Meadows	Habitat loss and degradation, disturbance, mortality
TNF LRMP	Habitat modification, disturbance, mortality
Sierra Nevada Forest Plan Amendment	Habitat modification, disturbance, mortality
TNF Motorized Travel Management Plan	Habitat modification, disturbance, mortality
Tahoe West Project	Habitat modification, disturbance, mortality
Truckee River Tributaries Project	Habitat loss and degradation, disturbance, mortality
Five Creeks Project	Habitat modification, disturbance, mortality
Alpine Stables Equestrian SUP	Habitat degradation, disturbance

4.14.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Under Alternative 1 – No Action Alternative, there would be no new construction, and therefore, no project-related direct or indirect effects on special-status aquatic or terrestrial wildlife species or their habitat. There would be no contribution to an existing cumulative impact on special-status aquatic or terrestrial wildlife species.

Alternative 2

Cumulative Effects on Sierra Nevada Yellow-Legged Frog

As stated above in the discussion of cumulative impact analysis methods, the spatial scope used for this cumulative impact analysis consists of the Squaw Creek, Bear Creek, and the Five Lakes watersheds and a portion of the Truckee River watershed between Squaw Creek and Bear Creek. The Five Lakes watershed covers approximately 18,545 acres. The combined Squaw Creek and Bear Creek watersheds and the included portion of the Truckee River watershed between the two creeks, covers approximately 9,935 acres. Within these areas, these three watersheds support approximately 194 acres of aquatic habitat, including lacustrine and riverine).

Given the rarity of SNYLF in the cumulative analysis area, and they fact that SNYLF no longer appear to be present in several water bodies where they were previously recorded, the existing cumulative condition is adverse. Historic and ongoing losses of suitable aquatic and terrestrial habitat from development has resulted in a reduction of available habitat, including migratory habitat for the frog. Historic introduction of non-native predatory fish within historically fishless areas, such as Five Lakes, contributed to the reduction in the population, range or extirpation of SNYLF in some areas. Year-round recreational activities within Squaw Valley, Alpine Meadows, and the Five Lakes area have resulted in increased human presence in the

area. Increased human disturbance/activity in the project area has resulted in some adverse changes in habitat quality and quantity.

Reasonably foreseeable future projects within the spatial scope of the cumulative analysis that result in development (i.e., residential, commercial, and recreational projects) could compound habitat losses and degradation depending on their location. Where projects, or portions of projects intersect potential SNYLF aquatic or upland habitat, the habitat could be converted to development or other land covers and reduce the overall availability of potential habitat in the area. These could include projects like Timberline Twister, White Wolf Development, General Development in Olympic Valley and Alpine Meadows. However, reasonably foreseeable future projects would be subject to laws and regulations such as NEPA, CEQA, ESA, and CESA. Reasonably foreseeable future projects would avoid and/or compensate for effects on SNYLF consistent with these laws, minimizing the potential for an ongoing adverse cumulative effect.

Future projects that include restoration efforts at Squaw Creek (e.g., Village at Squaw Valley Specific Plan) and Bear Creek could potential benefit SNYLF; however, restoration efforts would also benefit native and non-native trout and thus these streams would remain unsuitable for the frog due to the presence of predatory fish.

Future projects that include forest vegetation and fuels treatment projects in the area (e.g., implementing elements of the TNF LRMP) could result in a long-term habitat enhancement that would benefit SNYLF. Fuel treatments would reduce available fuels that could otherwise fuel fires that would result in hotter fires and potential loss of vegetative cover. Vegetation treatments could also help remove, reduce invasive plant species or open some riparian areas and thus provide sunning spots for the SNYLF.

Implementation of Alternative 2 would result in conversion of up to 4.02 acres of land cover, 0.43 acre of aquatic habitat, and short-term change in habitat quality of up to 1.09 acres of aquatic habitat and 14.28 acres of land cover. The loss of land cover from implementation of Alternative 2 is approximately 0.01 percent of the available land cover habitat in the cumulative analysis area and the loss of wetland habitat represents approximately 0.22 percent of the available habitat. However, implementation of RPMs and Mitigation Measure 4.14-1 (Alt. 2) would minimize and offset any potential cumulative impact on SNYLF. Therefore, Alternative 2 would not make a considerable contribution to any cumulative effect related to SNYLF.

The ESA utilizes a definition of cumulative effects different from NEPA and CEQA, encompassing only effects of future state or private activities reasonably certain to occur within the project area. This limitation on the projects/activities considered in the analysis does not alter the conclusion above. Although removing federal activities from the list of reasonably foreseeable future projects considered in the cumulative impact analysis may limit recognition of some of the beneficial activities undertaken by the Forest Service, this does not alter the minimal contribution of Alternative 2 to overall cumulative effects, or the requirement for future non-federal projects/activities to comply with laws and regulations such as NEPA, CEQA, ESA, and CESA. Reasonably foreseeable future projects would avoid and/or compensate for effects on SNYLF consistent with these laws, minimizing the potential for an ongoing adverse cumulative effect. There would not be a substantial adverse effect on SNYLF under Alternative 2 with implementation of RPMs and Mitigation Measure 4.14-1 (Alt. 2), Alternative 2 would fully mitigate for any contribution it might have to cumulative effects on SNYLF.

Cumulative Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat

The area of SNYLF designated critical habitat that encompasses the proposed project site is smaller than the identified spatial scope for the cumulative analysis (see Exhibit 4.14-2). Therefore, the spatial scope for the analysis of cumulative impacts on SNYLF critical habitat is the Five Lakes critical habitat subunit shown in Exhibit 4.14-2.

Critical habitat for the SNYLF was designated in 2016, however, historic and ongoing losses of suitable aquatic and terrestrial habitat within the designated critical habitat area from development and recreational development has resulted in a reduction of available habitat, including migratory habitat for the frog. The

mechanisms described above for how past and present projects have degraded/removed potential habitat for SNYLF would also apply to critical habitat. Similarly, the potential for reasonably foreseeable future projects to both degrade and improve habitat conditions for SNYLF described above would also apply to critical habitat.

The Five Lakes critical habitat subunit consists of approximately 3,758 hectares (9,286 acres), of which 2,396 hectares (5,921 acres) are on federal land and 1,362 hectares (3,365 acres) are on private land. Implementation of Alternative 2 would result in conversion of up to 0.43 acre of aquatic non-breeding habitat and short-term change in habitat quality of up to 1.09 acres of aquatic non-breeding habitat and 14.28 acres of land cover within critical habitat. Alternative 2 would indirectly affect, through permanent removal, up to 1.17 acres of SNYLF upland and dispersal habitat and would directly affect through temporarily alteration of the habitat, up to 3.72 acres of SNYLF upland and dispersal habitat. As stated above, the Five Lakes critical habitat subunit totals 9,286 acres, stream habitat from the NWI data totals 50.25 acres within the Five Lakes critical habitat subunit. The loss of upland habitat from implementation of Alternative 2 is approximately 0.03 percent of the total acreage within the critical habitat subunit and the loss of riverine habitat represents approximately 0.85 percent of the available habitat in the critical habitat subunit. However, implementation of RPMs and Mitigation Measure 4.14-2 (Alt. 2) would offset any potential cumulative impact on SNYLF critical habitat. Given the small amount of critical habitat affected by Alternative 2, the requirement to offset these affects, and the fact that reasonably foreseeable future projects would be required to implement similar measures to comply with existing laws and regulations, Alternative 2 would not make a considerable contribution to any cumulative effect related to SNYLF. Similarly, under the ESA definition of cumulative effects, state and private actions that are reasonably certain to occur would avoid and/or compensate for effects on SNYLF critical habitat consistent with applicable laws, minimizing the potential for an ongoing adverse cumulative effect. There would not be a substantial adverse effect on SNYLF under Alternative 2 with implementation of RPMs and Mitigation Measure 4.14-1 (Alt. 2), Alternative 2 would fully mitigate for any contribution it might have to cumulative effects on SNYLF critical habitat.

Cumulative Effects on Southern Long-Toed Salamander

Because the southern long-toed salamander utilizes the same habitat that is suitable for the SNYLF, and is susceptible to the same impact mechanisms (e.g., loss of habitat, habitat degradation from introduction of predatory fish), cumulative effects and conclusions to the southern long-toed salamander would be same as those for the SNYLF. Implementation of Alternative 2 would result in conversion and/or degradation of suitable habitat for this species, however, implementation of RPMs and Mitigation Measure 4.14-1 (Alt. 2) would minimize and offset any potential cumulative impact. Therefore, Alternative 2 would not make a considerable contribution to any cumulative effect related to southern long-toed salamander.

Cumulative Effects on Management Indicator Species

Impact analysis 4.14-4 (Alt. 2) provides a summary of the Management Indicator Species Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018e) prepared for the project. Within this summary, cumulative effects on MIS are include. The reader is directed to the Impact 4.14-4 for the cumulative analysis on MIS. In summary, the MIS analysis concluded that implementation of Alternative 2 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion (U.S. Forest Service 2018e). For these reasons, the slight loss of MIS habitat from implementation of the project would not result in long term negative cumulative effects to MIS habitat attributes.

Cumulative Effects on Special-Status Terrestrial Species

Golden Eagle and Bald Eagle

No nests for the bald eagle or nests or scrapes for the golden eagles were observed within the gondola survey area or within the vicinity of the action alternatives. The CWHR data analysis shows that there are 2,622 acres (approximately 28 percent) of medium to high suitability habitat within the 9,232 acres bald eagle and 7,620 acres (or 84 percent) of medium to high suitability habitat within the 9,232 acres golden

eagle analysis area. However, available data and direct survey observations indicate that there is little use of the analysis area by these two species. Both natural habitat conditions and the influence of past and present projects have resulted in the analysis area not providing high quality habitat for these two species. Reasonably foreseeable future projects would result in continued habitat alternations; however, given the limited use of the area by these species, and the presence of various laws and regulations that would result in the avoidance and minimization of effects on these species if they were found to be present, the reasonably foreseeable future projects would not result in local extirpation or substantial degradation of bald eagle and golden eagle occurrences, or threaten the species' viability locally or rangewide, individually or cumulatively.

The Alternative 2 survey area supports potential habitat for bald eagle and golden eagle consisting of 3.03 acres of coniferous woodland, and up to 0.06 acre (<0.01 percent for both species) would be directly affected by implementation of Alternative 2. The trees that form this coniferous woodland habitat are distributed over a long narrow alignment, have an open canopy, and only a small number of trees would be considered suitable for nesting for bald eagle and golden eagle as described in Impact 4.14-5 (Alt. 2). Additionally, RPMs have been incorporated into the project design to minimize, avoid, and reduce potential direct and indirect impacts on bald eagle and golden eagle by identifying nest locations through preconstruction surveys, and protecting them if found with no disturbance buffers and exclusion areas and compensating for habitat losses through mitigation or another USFWS/Forest Service/CDFW agreeable method (i.e., planting of conifer trees) and restoring habitat temporarily disturbed to pre-project conditions. As a result of these avoidance and compensation measures, and the small percentage of habitat removal (<0.01 percent) compared to existing habitat, Alternative 2 would not make a substantial contribution to any existing cumulative effect to bald eagle and golden eagle in the project area.

Peregrine Falcon

No peregrine falcon eyries were observed within or in the immediate vicinity of the action alternatives. The closest known eyrie is located 2.5 miles east of the survey area of the action alternatives, as such no effects on this nest are expected. Available data and direct survey observations indicate that there is little use of the analysis area by this species. Both natural habitat conditions and the influence of past and present projects have resulted in the analysis area not providing high quality habitat for the peregrine falcon. Reasonably foreseeable future project would result in continued habitat alternations; however, given the limited use of the area by peregrine falcon, and the presence of various laws and regulations that would result in the avoidance and minimization of effects on these species if they were found to be present, the reasonably foreseeable future projects would not result in local extirpation or substantial degradation of peregrine falcon occurrences, or threaten the species' viability locally or rangewide, individually or cumulatively.

The upland land cover types under Alternative 2 provide suitable foraging habitat for the peregrine falcon. Alternative 2 would remove up to 4.02 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 14.28 acres of upland land cover associated with temporary disturbances such as vegetation clearing and other temporary ground disturbances. The CWHR data analysis shows that there are approximately 8,934 acres (approximately 97 percent) of high quality suitable habitat within the 9,232 acres peregrine falcon analysis area for Alternative 2. Due to the presence of suitable prey species within the survey area, the whole area would be considered suitable foraging habitat for this species. Alternative 2 would result in the loss of 0.04 percent of available foraging habitat. Additionally, RPMs have been incorporated into the project design to minimize, avoid, and reduce potential direct and indirect impacts on peregrine falcon by identifying nest locations through preconstruction surveys, and protecting them if found with no disturbance buffers and exclusion areas and restoring habitat temporarily disturbed to pre-project conditions. As a result of the implementation of the RPMs, and the small percentage of habitat removal (0.04 percent) compared to existing adjacent habitat, Alternative 2 would not make a substantial contribution to any existing cumulative effect to peregrine falcon in the project area.

Yellow Warbler

Impact 4.14-4 (Alt. 2) Direct and Indirect Effects on MIS which includes yellow warbler and contains a summary for the effects analysis which also includes cumulative analysis for this species.

Rufous Hummingbird

The rufous hummingbird takes nectar from many species of flowering plants; also eats insects, spiders, and tree sap. Trees and shrubs in many habitats provide cover, including lowland riparian, open woodland, scrub, and chaparral, also mountain meadows extending to and above treeline. The CWHR data analysis shows that there are approximately 1,324 acres (approximately 14 percent) of medium to high quality habitat within the 9,232 acres rufous hummingbird cumulative analysis area. Given the variety of habitats used by this species, various reasonably foreseeable future projects would remove land covers that could provide habitat for rufous hummingbird. However, given the amount of habitat available, and the dispersed nature of the habitat (from lowland riparian to mountain meadows above the treeline) the reasonably foreseeable future projects would not result in local extirpation or substantial degradation of rufous hummingbird occurrences, or threaten the species' viability locally or rangewide, individually or cumulatively.The upland land cover types under Alternative 2 provide suitable nesting and foraging habitat for rufous hummingbird. Alternative 2 would remove up to 4.02 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 14.28 acres of upland land cover associated with temporary disturbances such as vegetation clearing and other temporary ground disturbances. This would result in the removal of 0.3 percent of suitable nesting and foraging habitat within the cumulative study area. Implementation of RPM BIO-12 would avoid or minimize disturbances or removal of active nests of rufous hummingbird, and mortality or injury to rufous hummingbird. In addition, all the RPMs that would protect and minimize removal of trees and other vegetation resources or result in revegetation of disturbed areas described in the impact analysis would also reduce and partially compensate for potential effects on this species. Effects on hummingbird foraging habitat would not be substantial relative to the amount available in and adjacent to the study area. As a result of the implementation of RPMs, and the small percentage of habitat removal (0.3 percent) compared to existing habitat in the cumulative analysis area, Alternative 2 would not make a substantial contribution to any existing cumulative effect to rufous hummingbird in the project area.

Williamson's Sapsucker, Lewis's Woodpecker, Olive-Sided Flycatcher

Williamson's sapsucker, Lewis's woodpecker, and olive-sided flycatcher can all be found in open coniferous forest. This habitat is abundant in the cumulative analysis area. Given the abundance of open coniferous forest, virtually all of the reasonably foreseeable future projects would remove or alter at least some acreage of this habitat type. However, given the amount and widespread nature of this habitat, the reasonably foreseeable future projects would not result in local extirpation or substantial degradation of Williamson's sapsucker, Lewis's woodpecker, and olive-sided flycatcher occurrences, or threaten these species' viability locally or rangewide, individually or cumulatively.

The survey area for Alternative 2 contains 3.03 acres of coniferous woodland, and up to 0.04 acres would be indirectly affected by removal due to implementation of Alternative 2. This would result in the removal of less than 0.01 percent of the available habitat for these species within the analysis area. Implementation of RPM BIO-12 would avoid or minimize disturbances or removal of active nests of these species, and mortality or injury to these species. In addition, all the RPMs that would protect and minimize removal of trees and other vegetation resources or result in revegetation of disturbed areas described in the impact analysis would also reduce and partially compensate for potential effects on this species. Effects on bird foraging habitat would not be substantial relative to the amount available in and adjacent to the study area. As a result of the implementation of RPMs, and the small percentage of habitat removal (0.01 percent) compared to existing habitat in the cumulative analysis area, Alternative 2 would not make a substantial contribution to any existing cumulative effect to Williamson's sapsucker, Lewis's woodpecker, or olive-sided flycatcher in the project area.

Pallid Bat

There are no documented occurrences of pallid bat in the project vicinity. Coniferous forest may provide suitable roosting habitat in trees and snags, and foraging habitat in relatively open areas. Rock crevices in rock outcrops, and rock talus may also provide suitable day roost habitat although pallid bat appears to mostly use trees for roosting in northern California forested ecosystems. The CWHR data analysis shows that there are approximately 1,343 acres (approximately 15 percent) of medium to high quality habitat within the 9,232-acre pallid bat analysis area. Reasonably foreseeable future project would result removal or disturbance of these habitats. However, given the apparent limited use of the area by pallid bat, and the presence of various laws and regulations that would result in the avoidance and minimization of effects on this species (particularly roost sites) if they were found to be present, the reasonably foreseeable future projects would not result in local extirpation or substantial degradation of pallid bat occurrences, or threaten the species' viability locally or rangewide, individually or cumulatively.

In the survey area for Alternative 2, potentially suitable habitat for pallid bat is present in the 3.03 acres of coniferous forest and 16.53 acres of rock outcrops/talus habitat. Implementation of Alternative 2 would result in the short-term change in habitat quality to 1.53 acres of coniferous woodland habitat and would remove up to 0.06 acres of coniferous woodland and 1.27 acres of rock/tallus and rock outcrop habitat. Alternative 2 would result in the short-term change in habitat quality of up to 4.74 acres of rock/talus and rock outcrop habitat. Overall, this would result in the removal of approximately 0.09 percent of suitable habitat in the analysis area. Implementation of RPM BIO-20 would avoid or minimize disturbances or removal of active roost sites for pallid bat, and mortality or injury to bats. In addition, all the RPMs that would protect and minimize removal of trees and other vegetation resources or result in revegetation of disturbed areas described in the impact analysis would also reduce and partially compensate for potential effects on pallid bat. Effects on bat foraging and roosting habitat would not be substantial relative to the amount available in and adjacent to the study area; and disturbances to foraging behavior would be mostly avoided due to the temporal separation between construction activity and bat foraging activity. As a result of the implementation of RPMs, and the small percentage of habitat removal (0.09 percent) compared to existing habitat in the cumulative analysis area, Alternative 2 would not make a substantial contribution to any existing cumulative effect to pallid bat in the project area.

Cumulative Effects on Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites

As stated above in the discussion of cumulative impact analysis methods, the spatial scope used for this cumulative impact analysis consists of the Squaw Creek, Bear Creek, and the Five Lakes watersheds and a portion of the Truckee River watershed between Squaw Creek and Bear Creek. The Five Lakes watershed covers approximately 18,545 acres. The combined Squaw Creek and Bear Creek watersheds and the included portion of the Truckee River watershed between the two creeks, covers approximately 9,935 acres. Within these areas, these three watersheds support approximately 194 acres of aquatic habitat (including lacustrine and riverine).

Historic and ongoing losses of suitable aquatic and terrestrial habitat from development have resulted in a reduction of available habitat, including migratory habitat for wildlife. However, in most cases, ample terrestrial habitat is available for terrestrial wildlife species to continue to use migratory routes and move across the landscape. Also, past projects have not typically generated direct physical blockages to wildlife movement but have resulted in habitat modifications that reduce the quality of migration corridors. It is typically aquatic species, which are limited to linear aquatic features for movement, that have experienced adverse effects from past projects degrading, blocking, and or removing aquatic habitats.

Reasonably foreseeable future projects within the spatial scope of the cumulative analysis that result in development (i.e., residential, commercial, and recreational projects) could compound habitat losses and degradation depending on their location. It is unlikely that important movement corridors for terrestrial wildlife would be adversely affected given that NEPA, CEQA, and other regulations require consideration of effects on these resources. However, where portions of projects intersect aquatic, the habitat could be converted to development or other land covers and reduce the overall availability of dispersal or migratory habitat for aquatic species. Although laws and regulations also require the consideration of these effects,

given the more limited availability of linear aquatic habitat, aquatic species would be more sensitive to losses of the habitat.

Forest vegetation and fuels treatment projects in the area are expected to result in a long-term habitat enhancement that would benefit wildlife. Fuel treatments would reduce available fuels that could otherwise fuel fires that would result in hotter fires and potential loss of vegetative cover that would reduce cover used as wildlife corridors. Vegetation treatments could also help remove, reduce invasive plant species or open some riparian areas and thus provide nursery habitat for some species.

Implementation of Alternative 2 would result in conversion of up to 4.02 acres of land cover, 0.43 acre of aquatic habitat, and short-term change in habitat quality of up to 1.09 acres of aquatic habitat and 14.28 acres of land cover, The loss of land cover from implementation of Alternative 2 is approximately 0.01 percent of the available land cover habitat in the cumulative analysis area and the loss of wetland habitat represents 0.22 percent of the available habitat. However, implementation of RPMs and Mitigation Measure 4.14-1 (Alt. 2), required for implementation of Alternative 2, would offset any potential cumulative impact on SNYLF but would also benefit other aquatic breeding species. Vegetation restoration required as part of the project (i.e., riparian, timber replanting, and restoration of temporary habitat disturbance) would offset any potential cumulative impact on terrestrial breeding species. Therefore, Alternative 2 would not make a substantial contribution to any existing cumulative effect on wildlife movement, wildlife corridors, and native wildlife nursery sites.

Cumulative Effects of Noise on Wildlife

The existing noise environment in the project area is relatively quiet. Most activity is during the winter months, and is focused on the base areas for Squaw Valley and Alpine Meadows and snow sport activities at these resorts. During the summer months, activity at the ski resorts is typically less (other than for special-events at Squaw Valley) and hikers and other recreationists are the primary noise sources away from the resort base areas. Construction of Alternative 2 would result in a new summer noise source in the project area. Operational noise generation would primarily be limited to the winter months.

Terrestrial wildlife may be temporarily displaced from an area and may avoid the surrounding area due to human presence and noise. Noise may also affect wildlife behavior. For example, noise could result in wildlife species abandoning nests, or roosts that are otherwise perfectly suitable; noise can be stressful and interfere with foraging, sleep and other activities; intense noise can cause permanent damage to the auditory system; and noise can interfere with acoustic communication by masking important sounds or sound components. However, actual noise effects on wildlife are based on factors related to site-specific and project-specific characteristics and conditions, including distance between the noise source and nearby wildlife; barriers between wildlife and noise sources that reduce sound levels (e.g., topography, vegetation); and the timing, frequency, pattern, and duration of the noise event (e.g., consistent “hum” of a generator versus individual blasting events). A cumulative noise impact could occur if a gondola related activity combined with other nearby activity, resulting in a substantial increase in noise adversely affecting a wildlife or aquatic species.

Considering noise generated by construction, given the foreseeable future development in the area, construction activities associated with the Alpine Meadows Master Plan, Village at Squaw Valley Specific Plan, Alpine Sierra subdivision, and the Timberline Twister could potentially occur at the same time as construction for Alternative 2 and result in a cumulative increase in noise.

During construction of Alternative 2, noise from increased human activity, heavy equipment operations, vehicle traffic, blasting, and helicopter operations may temporarily displace wildlife during construction and alter behavior patterns. A reduction in fitness or survivorship may occur if wildlife are displaced into lower-quality habitats or change their behavior in a way that reduces their survival or the survival of their offspring.

Construction noise and vibration would vary depending on the activity (e.g., off-road equipment, blasting, helicopter use). Nonetheless, all construction activity would occur during one season and would take place only during daytime hours. Therefore, noise from construction of Alternative 2 would not disturb wildlife

during the night, when diurnal species, if disturbed, could be more susceptible to predation from nocturnal species. As discussed in Section 4.9, "Noise," numerous noise-related RPMs are in place that would ensure that all construction activity complies with Placer County code and policies, and they would ensure that all measures are implemented to reduce construction noise to the extent feasible. These same regulatory standards, reducing construction noise generation and limiting/eliminating nighttime construction would also be applied to the reasonably foreseeable future projects.

Most of the proposed construction activities for Alternative 2 would take place in remote areas, more than a mile from reasonably foreseeable future projects that could be under construction concurrently with the Alternative 2. Therefore, the potential for noise generation from multiple projects to interact in a cumulative manner in locations where wildlife and aquatic species are present is greatly reduced.

Given the short-term nature of construction activities, the limited area where construction of Alternative 2 and other reasonably foreseeable projects could be heard simultaneously, and the inclusion of RPMs to reduce noise generation, construction activity associated with Alternative 2 would not make a substantial contribution to any cumulative noise effect on wildlife and aquatic species.

Most wildlife and aquatic species of concern are either not present, or inactive during the winter months when the gondola would be in operation. Therefore, there would not be an opportunity for a winter time cumulative noise effect on these species. For species that may be present, winter is outside the breeding and nesting season, therefore, these activities would not have the potential to be disrupted by any potential cumulative winter time operational noise effect.

Future development in the area that could combine with project-generated operational noise are the same as those identified for construction noise: Alpine Meadows Master Plan, Village at Squaw Valley Specific Plan, White Wolf project, Alpine Sierra subdivision, and the Timberline Twister. Although operation of these projects may generate a general increase in noise and activity at and around each project site during the summer months, offsite noise generation would typically be limited to increased travel by hikers and similar recreational users, which are not high noise generating activities. Operation of the gondola itself would also not generate high levels of operational noise during the summer months, only being run occasionally for maintenance and testing. Given the limited potential for noise generation from project operations, the seasonal timing of operations, and the locations where Alternative 2 and reasonably foreseeable future projects are anticipated to generate operational noise, operation of Alternative 2 would not make a substantial contribution to any cumulative noise effect on wildlife and aquatic species.

Alternative 3

Cumulative Effects on Sierra Nevada Yellow-Legged Frog

Cumulative effects related to SNYLF under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect. Implementation of Alternative 3 would result in conversion of up to 4.27 acres of land cover, 0.53 acre of aquatic habitat, and short-term change in habitat quality of up to 0.91 acres of aquatic habitat and 11.17 acres of land cover.

Implementation of Alternative 2 would result in conversion of up to 4.02 acres of land cover, 0.43 acres of aquatic habitat, and short-term change in habitat quality of up to 1.09 acres of aquatic habitat and 14.28 acres of land cover.

Therefore, Alternative 3 contributes a slightly greater amount to the cumulative conversion of land cover and aquatic habitat and contributes a slightly lesser amount to the cumulative short-term change in habitat quality for aquatic habitat and land cover. However, Alternative 3 does not place a project facility in the vicinity of a known SNYLF occurrence (Barstool Lake), and therefore makes less of a contribution to overall cumulative effects via this mechanism.

Implementation of RPMs and Mitigation Measure 4.14-1 are equally effective in minimize and compensating for these effects for both alternatives.

Therefore, like for Alternative 2, there would not be a substantial adverse effect on SNYLF under Alternative 3 with implementation of RPMs and Mitigation Measure 4.14-1, and Alternative 3 would fully mitigate for any contribution it might have to cumulative effects on SNYLF.

Cumulative Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat

Cumulative effects related to SNYLF critical habitat under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect. Implementation of Alternative 3 would result in conversion of up to 0.53 acre of aquatic non-breeding habitat and short-term change in habitat quality of up to 0.91 acre of aquatic non-breeding habitat and 10.87 acres of land cover within critical habitat. Alternative 3 would indirectly affect, through permanent removal up to 0.42 acre of SNYLF upland and dispersal habitat and would directly affect due to short-term changes in habitat quality up to 3.11 acres of SNYLF upland and dispersal habitat.

Implementation of Alternative 2 would result in conversion of up to 0.43 acre of aquatic non-breeding habitat and short-term change in habitat quality of up to 1.09 acres of aquatic non-breeding habitat and 14.28 acres of land cover within critical habitat. Alternative 2 would indirectly affect, through permanent removal, up to 1.17 acres of SNYLF upland and dispersal habitat and would directly affect through temporarily alteration of the habitat, up to 3.72 acres of SNYLF upland and dispersal habitat.

For most habitat categories, Alternative 2 contributes a slightly greater amount to cumulative effects on SNYLF critical habitat. In addition, because Alternative 3 is further east than Alternative 2, and no effects to breeding and rearing aquatic habitat (i.e., Barstool Lake) are expected, Alternative 3 would not contribute to an adverse cumulative condition on SNYLF breeding and rearing aquatic habitat.

Implementation of RPMs and Mitigation Measure 4.14-2 are equally effective in minimize and compensating for these effects for both alternatives. Therefore, like for Alternative 2, there would not be a substantial adverse effect on SNYLF critical habitat under Alternative 3 with implementation of RPMs and Mitigation Measure 4.14-2, and Alternative 3 would fully mitigate for any contribution it might have to cumulative effects on SNYLF critical habitat.

Cumulative Effects on Southern Long-Toed Salamander

Because the southern long-toed salamander utilizes the same habitat that is suitable for the SNYLF, and is susceptible to the same impact mechanisms (e.g., loss of habitat, habitat degradation from introduction of predatory fish), cumulative effects and conclusions to the southern long-toed salamander would be same as those for the SNYLF. Implementation of Alternative 3 would result in conversion and/or degradation of suitable habitat for this species, however, implementation of RPMs and Mitigation Measure 4.14-1 (Alt. 3) would minimize and offset any potential cumulative impact. Therefore, Alternative 3 would not make a considerable contribution to any cumulative effect related to southern long-toed salamander.

Cumulative Effects on Management Indicator Species

Impact analysis 4.14-4 (Alt. 3) provides a summary of the Management Indicator Species Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018e) prepared for the project. Within this summary, cumulative effects on MIS are include. The reader is directed to the Impact 4.14-4 for the cumulative analysis on MIS. In summary, the MIS analysis concluded that implementation of Alternative 3 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion (U.S. Forest Service 2018e). For these reasons, the slight loss of MIS habitat from implementation of the project would not result in long term negative cumulative effects to MIS habitat attributes.

Cumulative Effects on Special-Status Terrestrial Species

Golden Eagle and Bald Eagle

Cumulative effects related to golden eagle and bald eagle under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

The Alternative 3 survey area supports potential habitat for bald eagle and golden eagle consisting of 7.22 acres of coniferous woodland, and up to 0.57 acre would be directly affected by implementation of Alternative 3.

The Alternative 2 survey area supports potential habitat for bald eagle and golden eagle consisting of 3.03 acres of coniferous woodland, and up to 0.06 acre would be directly affected by implementation of Alternative 2.

Alternative 3 contributes a slightly greater amount to cumulative effects on bald eagle and golden eagle habitat. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for both alternatives. Therefore, although the contribution to the cumulative effect is slightly greater under Alternative 3, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 3 would not make a substantial contribution to any significant cumulative effect to bald eagle and golden eagle in the project area.

Peregrine Falcon

Cumulative effects related to peregrine falcon under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

Implementation of Alternative 3 would remove up to 4.27 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 11.17 acres of upland land cover associated with temporary disturbances such as vegetation clearing and other temporary ground disturbances.

Implementation of Alternative 2 would remove up to 4.02 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 14.28 acres of upland land cover.

Alternative 3 contributes a slightly greater amount to cumulative effects on peregrine falcon resulting from removal of upland cover and contributes a slightly smaller amount to cumulative effects from short-term changes in habitat quality. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for both alternatives. Therefore, like for Alternative 2, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 3 would not make a substantial contribution to any significant cumulative effect to peregrine falcon.

Yellow Warbler

Impact 4.14-4 (Alt. 3) Direct and Indirect Effects on MIS, which includes yellow warbler, and contains a summary for the effects analysis which also includes cumulative analysis for this species.

Rufous Hummingbird

Cumulative effects related to rufous hummingbird under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

Alternative 3 would remove up to 4.27 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 11.17 acres of upland land cover associated with temporary disturbances such as vegetation clearing and other temporary ground disturbances.

Alternative 2 would remove up to 4.02 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 14.28 acres of upland land cover.

Alternative 3 contributes a slightly greater amount to cumulative effects on rufous hummingbird resulting from removal of upland cover and contributes a slightly smaller amount to cumulative effects from short-term changes in habitat quality. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for both alternatives. Therefore, like for Alternative 2, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 3 would not make a substantial contribution to any significant cumulative effect to rufous hummingbird.

Williamson's Sapsucker, Lewis's Woodpecker, and Olive-Sided Flycatcher

Cumulative effects related to Williamson's sapsucker, Lewis's woodpecker, and olive-sided flycatcher under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

The survey area for Alternative 3 contains 7.22 acres of coniferous woodland, and up to 0.57 acre would be directly affected by implementation of Alternative 3, and up to 1.9 acres would have a short-term change in habitat quality due to overhead vegetation trimming or temporary construction disturbance.

The survey area for Alternative 2 contains 3.03 acres of coniferous woodland, and up to 0.04 acres would be indirectly affected by removal due to implementation of Alternative 2.

Alternative 3 contributes a slightly greater amount to cumulative effects on Williamson's sapsucker, Lewis's woodpecker, and olive-sided flycatcher resulting from removal of coniferous woodland. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for both alternatives. Therefore, like for Alternative 2, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 3 would not make a substantial contribution to any significant cumulative effect to Williamson's sapsucker, Lewis's woodpecker, and olive-sided flycatcher.

Pallid Bat

Cumulative effects related to pallid bat under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

Potentially suitable habitat for pallid bat is present in the 7.22 acres of coniferous forest and 11.26 acres of rock outcrops/talus habitat in the survey area for Alternative 3. Implementation of Alternative 3 would result in the removal of up to 1.9 acres of coniferous woodland habitat and would remove up to 0.96 acres of rock/tallus and rock outcrop habitat.

In the survey area for Alternative 2, potentially suitable habitat for pallid bat is present in the 3.03 acres of coniferous forest and 16.53 acres of rock outcrops/talus habitat. Implementation of Alternative 2 would result in the short-term change in habitat quality to 1.53 acres of coniferous woodland habitat and would remove up to 0.06 acres of coniferous woodland and 1.27 acres of rock/tallus and rock outcrop habitat.

Alternative 3 contributes a greater amount to cumulative effects on pallid bat. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for both alternatives. Therefore, like for Alternative 2, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 3 would not make a substantial contribution to any significant cumulative effect to pallid bat.

Cumulative Effects on Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites

Cumulative effects related to wildlife movement, wildlife corridors, and native wildlife nursery sites under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

Implementation of Alternative 3 would result in conversion of up to 4.27 acres of land cover, and 0.53 acre of aquatic habitat. Implementation of Alternative 3 would result in the short-term change in habitat quality of up to 0.91 acres of aquatic habitat and 11.17 acres of land cover.

Implementation of Alternative 2 would result in conversion of up to 4.02 acres of land cover, 0.43 acre of aquatic habitat, and short-term change in habitat quality of up to 1.09 acres of aquatic habitat and 14.28 acres of land cover,

For most impact categories Alternative 3 contributes a greater amount to cumulative effects on wildlife movement, wildlife corridors, and native wildlife nursery sites. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for both alternatives. Also, as previously mentioned in the analysis of SNYLF, Alternative 3 is further east than Alternative 2 and no effects on SNYLF breeding or rearing habitat are expected to occur from implementation of Alternative 3. Therefore, like for Alternative 2, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 3 would not make a substantial contribution to any significant cumulative effect related to wildlife movement, wildlife corridors, and native wildlife nursery sites.

Cumulative Effects of Noise on Wildlife

Although the alignment of Alternative 3 differs from Alternative 2, the overall potential for cumulative effects of construction and operational noise on wildlife and aquatic species under Alternative 3 would be the same as described above for Alternative 2. Alternative 3 would not make a substantial contribution to any cumulative noise effect on wildlife and aquatic species.

Alternative 4

Cumulative Effects on Sierra Nevada Yellow-Legged

Cumulative effects related to SNYLF under Alternative 4 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect. Implementation of Alternative 4 would result in conversion of up to 2.49 acres of land cover, 0.46 acre of aquatic habitat, and short-term change in habitat quality of up to 1.28 acres of aquatic habitat and 10.27 acres of land cover,

Implementation of Alternative 3 would result in conversion of up to 4.27 acres of land cover, 0.53 acre of aquatic habitat, and short-term change in habitat quality of up to 0.91 acre of aquatic habitat and 11.17 acres of land cover.

Implementation of Alternative 2 would result in conversion of up to 4.02 acres of land cover, 0.43 acre of aquatic habitat, and short-term change in habitat quality of up to 1.09 acres of aquatic habitat and 14.28 acres of land cover.

Alternative 4 contributes a slightly greater amount to some impact categories compared to Alternatives 2 and 3 and contributes slightly less for other categories. However, Alternative 4 does not place a project facility in the vicinity of a known SNYLF occurrence (Barstool Lake), and therefore makes less of a contribution to overall cumulative effects via this mechanism.

Implementation of RPMs and Mitigation Measure 4.14-1 are equally effective in minimize and compensating for these effects for all three alternatives.

Therefore, like for Alternatives 2 and 3, there would not be a substantial adverse effect on SNYLF under Alternative 4 with implementation of RPMs and Mitigation Measure 4.14-1, and Alternative 4 would fully mitigate for any contribution it might have to cumulative effects on SNYLF.

Cumulative Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat

Cumulative effects related to SNYLF critical habitat under Alternative 3 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect. Implementation of Alternative 4 would result in conversion of up to 2.07 acres of land cover habitat, 0.46 acre of aquatic non-breeding habitat and short-term change in habitat quality of up to 1.28 acres of aquatic non-breeding habitat and 6.85 acres of land cover within critical habitat. Alternative 4 would indirectly affect, through permanent removal up to 0.26 acre of SNYLF upland and dispersal habitat and would directly affect due to short-term changes in habitat quality up to 1.34 acres of SNYLF upland and dispersal habitat.

Implementation of Alternative 3 would result in conversion of up to 0.53 acre of aquatic non-breeding habitat and short-term change in habitat quality of up to 0.91 acre of aquatic non-breeding habitat and 10.87 acres of land cover within critical habitat. Alternative 3 would indirectly affect, through permanent removal up to 0.42 acre of SNYLF upland and dispersal habitat and would directly affect due to short-term changes in habitat quality up to 3.11 acres of SNYLF upland and dispersal habitat.

Implementation of Alternative 2 would result in conversion of up to 0.43 acre of aquatic non-breeding habitat and short-term change in habitat quality of up to 1.09 acres of aquatic non-breeding habitat and 14.28 acres of land cover within critical habitat. Alternative 2 would indirectly affect, through permanent removal, up to 1.17 acres of SNYLF upland and dispersal habitat and would directly affect through temporarily alteration of the habitat, up to 3.72 acres of SNYLF upland and dispersal habitat.

Alternative 4 contributes a slightly greater amount to some impact categories compared to Alternatives 2 and 3 and contributes slightly less for other categories. However, Alternative 4 does not place a project facility in the vicinity of breeding and rearing aquatic habitat (Barstool Lake), and therefore makes less of a contribution to overall cumulative effects via this mechanism.

Implementation of RPMs and Mitigation Measure 4.14-2 are equally effective in minimize and compensating for these effects for all three alternatives. Therefore, like for Alternatives 2 and 3, there would not be a substantial adverse effect on SNYLF critical habitat under Alternative 4 with implementation of RPMs and Mitigation Measure 4.14-12 and Alternative 4 would fully mitigate for any contribution it might have to cumulative effects on SNYLF critical habitat.

Cumulative Effects on Southern Long-Toed Salamander

Because the southern long-toed salamander utilizes the same habitat that is suitable for the SNYLF, and is susceptible to the same impact mechanisms (e.g., loss of habitat, habitat degradation from introduction of predatory fish), cumulative effects and conclusions to the southern long-toed salamander would be same as those for the SNYLF. Implementation of Alternative 4 would result in conversion and/or degradation of suitable habitat for this species, however, implementation of RPMs and Mitigation Measure 4.14-1 (Alt. 4) would minimize and offset any potential cumulative impact. Therefore, Alternative 4 would not make a considerable contribution to any cumulative effect related to southern long-toed salamander.

Cumulative Effects on Management Indicator Species

Impact analysis 4.14-4 (Alt. 4) provides a summary of the Management Indicator Species Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2018e) prepared for the project. Within this summary, cumulative effects on MIS are include. The reader is directed to the Impact 4.14-4 for the cumulative analysis on MIS. In summary, the MIS analysis concluded that implementation of Alternative 4 would not (1) result in substantial loss of habitat for any MIS relative to the amount and quality available within and near the study area or (2) alter existing trends in any MIS habitat or lead to a change in distribution of an MIS across the Sierra Nevada bioregion (U.S. Forest Service 2018e). For these reasons, the slight loss of MIS habitat from implementation of the project would not result in long term negative cumulative effects to MIS habitat attributes.

Cumulative Effects on Special-Status Terrestrial Species

Golden Eagle and Bald Eagle

Cumulative effects related to golden eagle and bald eagle under Alternative 4 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

The Alternative 4 survey area supports potential habitat for bald eagle and golden eagle consisting of 2.91 acres of coniferous woodland, and up to 0.18 acre would be directly affected by implementation of Alternative 4,

The Alternative 3 survey area supports potential habitat for bald eagle and golden eagle consisting of 7.22 acres of coniferous woodland, and up to 0.57 acre would be directly affected by implementation of Alternative 3.

The Alternative 2 survey area supports potential habitat for bald eagle and golden eagle consisting of 3.03 acres of coniferous woodland, and up to 0.06 acre would be directly affected by implementation of Alternative 2.

Alternative 4 contributes a slightly lesser amount to cumulative effects on bald eagle and golden eagle habitat. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for all three alternatives. As a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 4 would not make a substantial contribution to any significant cumulative effect to bald eagle and golden eagle in the project area.

Peregrine Falcon

Cumulative effects related to peregrine falcon under Alternative 4 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

Implementation of Alternative 4 would remove up to 2.49 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 10.27 acres of upland land cover associated with temporary disturbances such as vegetation clearing and other temporary ground disturbances.

Implementation of Alternative 3 would remove up to 4.27 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 11.17 acres of upland land cover.

Implementation of Alternative 2 would remove up to 4.02 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 14.28 acres of upland land cover.

Alternative 4 contributes a slightly lesser amount to cumulative effects on peregrine falcon resulting from removal of upland cover and short-term changes in habitat quality than both Alternatives 2 and 3. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for all three alternatives. As a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 4 would not make a substantial contribution to any significant cumulative effect to peregrine falcon.

Yellow Warbler

Impact 4.14-4 (Alt. 4) Direct and Indirect Effects on MIS which includes yellow warbler and contains a summary for the effects analysis which also includes cumulative analysis for this species.

Rufous Hummingbird

Cumulative effects related to rufous hummingbird under Alternative 4 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

Alternative 4 would remove up to 2.49 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 10.27 acres of upland land cover associated with temporary disturbances such as vegetation clearing and other temporary ground disturbances.

Alternative 3 would remove up to 4.27 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 11.17 acres of upland land cover.

Alternative 2 would remove up to 4.02 acres of upland land cover due to construction of project elements and would result in the short-term change in habitat quality of up to 14.28 acres of upland land cover.

Alternative 4 contributes a slightly lesser amount to cumulative effects on rufous hummingbird resulting from removal of upland cover and short-term changes in habitat quality compared to Alternatives 3 and 4. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for all three alternatives. Therefore, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 4 would not make a substantial contribution to any significant cumulative effect to rufous hummingbird.

Williamson's Sapsucker, Lewis's Woodpecker, Olive-Sided Flycatcher

Cumulative effects related to Williamson's sapsucker, Lewis's woodpecker, and olive-sided flycatcher under Alternative 4 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

The survey area for Alternative 4 contains 2.91 acres of coniferous woodland, and up to 0.18 acre would be directly affected by implementation of Alternative 4, and up to 0.71 acre would have a short-term change in habitat quality due to overhead vegetation trimming or temporary construction disturbance.

The survey area for Alternative 3 contains 7.22 acres of coniferous woodland, and up to 0.57 acre would be directly affected by implementation of Alternative 3, and up to 1.9 acres would have a short-term change in habitat quality due to overhead vegetation trimming or temporary construction disturbance.

The survey area for Alternative 2 contains 3.03 acres of coniferous woodland, and up to 0.04 acre would be indirectly affected by removal due to implementation of Alternative 2.

Alternative 4 contributes a slightly greater amount to cumulative effects on Williamson's sapsucker, Lewis's woodpecker, and olive-sided flycatcher resulting from removal of coniferous woodland compared to Alternative 2, but contributes less of an effect compared to Alternative 3. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for all three alternatives. Therefore, like for Alternative 2, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 4 would not make a substantial contribution to any significant cumulative effect to Williamson's sapsucker, Lewis's woodpecker, and olive-sided flycatcher.

Pallid Bat

Cumulative effects related to pallid bat under Alternative 4 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

Potentially suitable habitat for pallid bat is present in 2.91 acres of coniferous forest and 15.58 acres of rock outcrop and rock/talus habitat present in Alternative 4. Implementation of Alternative 4 would result in the short-term change in habitat quality to 0.71 acre of coniferous woodland habitat and would remove up to 0.18 acre of coniferous woodland habitat. Alternative 4 would remove up to 0.17 acre of rock/tallus and

rock outcrop habitat and would result in the short-term change in habitat quality of up to 1.71 acres of rock/talus and rock outcrop habitat.

Potentially suitable habitat for pallid bat is present in the 7.22 acres of coniferous forest and 11.26 acres of rock outcrops/talus habitat in the survey area for Alternative 3. Implementation of Alternative 3 would result in the removal of up to 1.9 acres of coniferous woodland habitat and would remove up to 0.96 acre of rock/tallus and rock outcrop habitat.

In the survey area for Alternative 2, potentially suitable habitat for pallid bat is present in the 3.03 acres of coniferous forest and 16.53 acres of rock outcrops/talus habitat. Implementation of Alternative 2 would result in the short-term change in habitat quality to 1.53 acres of coniferous woodland habitat and would remove up to 0.06 acres of coniferous woodland and 1.27 acres of rock/tallus and rock outcrop habitat.

In some habitat/impact categories Alternative 4 contributes a slightly greater amount to cumulative effects on pallid bat compared to either Alternative 2 or Alternative 3, and in some categories contributes a slightly lesser amount. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for all three alternatives. Therefore, like for Alternative 2, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 4 would not make a substantial contribution to any significant cumulative effect to pallid bat.

Cumulative Effects on Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites

Cumulative effects related to wildlife movement, wildlife corridors, and native wildlife nursery sites under Alternative 4 would be the same as those described above for Alternative 2, except for the contribution of each alternative to the overall cumulative effect.

Implementation of Alternative 4 would result in conversion of up to 2.49 acres of land cover, and 0.46 acre of aquatic habitat. Implementation of Alternative 4 would result in the short-term change in habitat quality of up to 1.28 acres of aquatic habitat and 10.27 acres of land cover.

Implementation of Alternative 3 would result in conversion of up to 4.27 acres of land cover, and 0.53 acre of aquatic habitat. Implementation of Alternative 3 would result in the short-term change in habitat quality of up to 0.91 acres of aquatic habitat and 11.17 acres of land cover.

Implementation of Alternative 2 would result in conversion of up to 4.02 acres of land cover, 0.43 acre of aquatic habitat, and short-term change in habitat quality of up to 1.09 acres of aquatic habitat and 14.28 acres of land cover,

In some habitat/impact categories Alternative 4 contributes a slightly greater amount to cumulative effects related to wildlife movement, wildlife corridors, and native wildlife nursery sites compared to either Alternative 2 or Alternative 3, and in some categories contributes a slightly lesser amount. Implementation of applicable RPMs are equally effective in minimize and compensating for these effects for all three alternatives. Also, as previously mentioned in the analysis of SNYLF, Alternative 4 is further east than Alternative 2 and no effects on SNYLF breeding or rearing habitat are expected to occur from implementation of Alternative 4. Therefore, like for Alternative 2, as a result of applicable avoidance and compensation measures, and the small amount of habitat removal compared to existing habitat, Alternative 4 would not make a substantial contribution to any significant cumulative effect related to wildlife movement, wildlife corridors, and native wildlife nursery sites.

Cumulative Effects of Noise on Wildlife

Although the alignment of Alternative 4 differs from Alternative 2, the overall potential for cumulative effects of construction and operational noise on wildlife and aquatic species under Alternative 4 would be the same as described above for Alternative 2. Alternative 4 would not make a substantial contribution to any cumulative noise effect on wildlife and aquatic species.