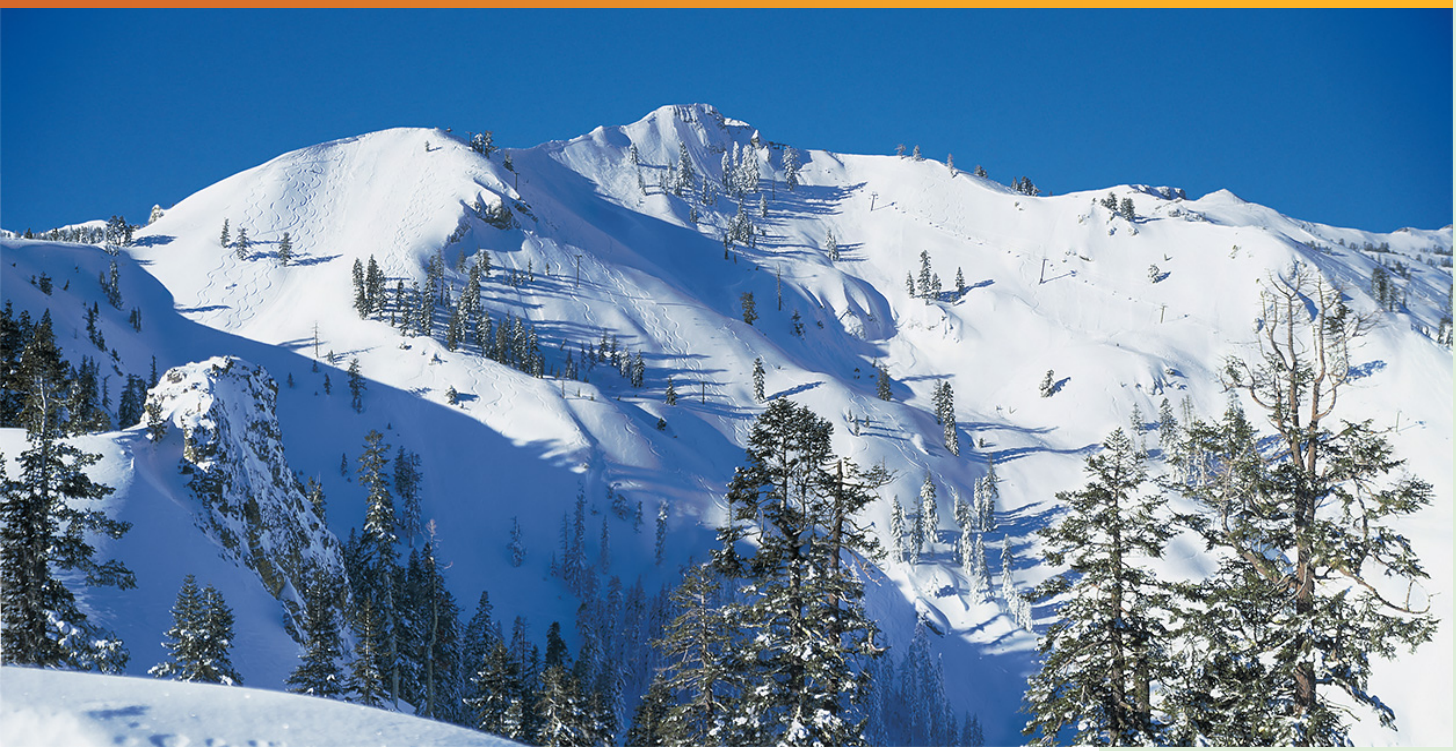
Volume 1

Squaw Valley | Alpine Meadows Base-to-Base Gondola Project

Final EIS/EIR

SCH# 2016042066



April 2019

PREPARED FOR:

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3091 County Center Drive
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Squaw Valley | Alpine Meadows
Base-to-Base Gondola Project

Final Environmental Impact Statement/Environmental Impact Report

Lead Federal Agency: U.S. Forest Service, Tahoe National Forest
Lead State Agency: Placer County
Responsible Federal Official: Eli Ilano, Tahoe National Forest Supervisor
April 2019

Abstract:

The U.S. Forest Service, Tahoe National Forest (Forest Service) proposes to amend the Alpine Meadows Ski Area term permit to authorize the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project (The Project). The Project consists of a proposed gondola connecting Alpine Meadows and Squaw Valley, with two mid-stations and multiple towers along the alignment in Placer County, California. This final environmental impact statement/environmental impact report (Final EIS/EIR) has been prepared by the Forest Service and Placer County in accordance with the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), respectively.

The Forest Service purpose for the project is to improve developed winter recreation opportunities in the Scott Management Area, consistent with the 1990 Tahoe National Forest Land and Resource Management Plan; the overall purpose of the project under CEQA is to enhance the visitor wintertime experience at both Squaw Valley and Alpine Meadows by providing direct access between the ski areas for more convenient access to skiable terrain and resort amenities. Three action alternatives (consisting of different alignments for the proposed gondola) are analyzed in detail within this Final EIS/EIR to achieve this project purpose. Additionally, a No Action Alternative is analyzed as required by NEPA and CEQA.

Responsible Agencies:

In addition to the requisite Forest Service and Placer County approvals, consultation with the following entities, or permits from these entities, may be required to implement the project: U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife (Region 2), California State Office of Historic Preservation, Lahontan Regional Water Quality Control Board, and Placer County Air Pollution Control District.

Public Review and Comment on the Draft EIS/EIR:

The Forest Service and County issued a Draft EIS/EIR for public review on April 27, 2018. Two public meetings were held as follows: Forest Service open house on May 22, 2018; and Placer County Planning Commission Meeting on May 24, 2018. The Final EIS/EIR includes responses to substantive comments on the Draft EIS/EIR, and revisions to the Draft EIS/EIR based on comments and additional information received.

Final EIS/EIR:

The Final EIS/EIR is available online at https://www.placer.ca.gov/2680/Squaw-Valley-Alpine-Meadows-Base-to-Base. Printed copies are available at the Tahoe City and Truckee libraries, Placer County offices in Auburn and Tahoe City, and Tahoe National Forest offices in Nevada City and Truckee.

For further information, please contact Joe Flannery, U.S. Forest Service, Tahoe National Forest, 631 Coyote Street, Nevada City, CA, 95959, or email jflannery@fs.fed.us; or Heather Beckman, Placer County Planning Services Division, 775 North Lake Boulevard, Tahoe City, CA 96165, or email HBeckman@placer.ca.gov.

Produced in cooperation with the USDA Forest Service, which is an equal opportunity service provider, employer, and lender.

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April 2019

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LIST OF ABBREVIATIONS

˚F	degrees Fahrenheit
°C	degrees Celsius
2017 Scoping Plan	*California's 2017 Climate Change Scoping Plan*
AAUNAC	Avalanche Artillery Users of North America Committee Standards
AB	Assembly Bill
ADT	average daily traffic
afy	acre-feet per year
Alpine Meadows	Alpine Meadows Ski Area
amsl	above mean sea level
ANSI	American National Standards Institute, Inc.
asl	above sea level
ATS	average travel speed
BACT	best available control technology
BEIG	Built Environment Image Guide
CAA	federal Clean Air Act
CAAA	federal Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalPeco	California Pacific Electric Company
CAP	criteria air pollutant
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCC	Comfortable Carrying Capacity
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	community noise equivalent level
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
County	Placer County

CPUC	California Public Utilities Commission
CRPR	California Rare Plant Ranks
CTR	California Toxics Rule
CUP	Conditional Use Permit
CWA	Clean Water Act
CWC	California Water Code
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
dbh	diameter at breast height
DWR	California Department of Water Resources
EcoSynthesis	EcoSynthesis Scientific & Regulatory Services
EIS/EIR	environmental impact statement/environmental impact report
EO 12898	Executive Order 12898
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FGC	California Fish and Game Code
Forest Plan	Tahoe National Forest Land and Resource Management Plan
Forest Service	U.S. Forest Service
FTEE	full-time equivalent employee
GCW	National Forest System-Granite Chief Wilderness
General Plan	*Placer County General Plan*
GHG	greenhouse gas
HAP	hazardous air pollutant
HCM	*Highway Capacity Manual*, sixth edition
HDPE	high-density polyethylene
Hz	hertz
IBC	International Building Code
IPCC	Intergovernmental Panel on Climate Change
kV	kilovolt
kWh	kilowatt hour
lb/day	pounds per day
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night sound level

L_{eq}	equivalent continuous sound level
L_{max}	maximum sound level
LOS	level of service
LRMP	*Tahoe National Forest Land and Resource Management Plan*
Management Plan	*Olympic Valley Groundwater Management Plan*
MCAB	Mountain Counties Air Basin
MCL	maximum contaminant level
mm	millimeter
MMIP	Mitigation Monitoring Implementation Program
MMRP	mitigation monitoring and reporting program
MOU	memorandum of understanding
mPa	micro-pascals
mph	miles per hour
MPO	metropolitan planning organization
MRF	Material Recovery Facility
MS4	municipal separate storm sewer system
MT CO_2e/year	metric tons of CO_2 equivalent per year
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NDEP	Nevada Division of Environmental Protection
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NESHAP	national emissions standards for hazardous air pollutants
NFIP	National Flood Insurance Program
NFMA	National Forest Management Act
NFS	National Forest System
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO_2	nitrogen dioxide
NOP	notice of preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NTR	National Toxics Rule
NWPS	National Wilderness Preservation System
OSMRE	Office of Surface Mining Reclamation and Enforcement
PAHA	Potential Avalanche Hazard Area
PCAPCD	Placer County Air Pollution Control District

PCCP	*Placer County Conservation Plan*
PCE	primary constituent element
pcph	passenger cars per hour
PCT	Pacific Crest National Scenic Trail
PlumpJack	PlumpJack Squaw Valley Inn
PM_{10}	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
PPV	peak particle velocity
project	Squaw Valley | Alpine Meadows Base-to-Base Gondola Project
PSD	Prevention of Significant Deterioration
PTSF	Percent Time Spent Following
RMS	root-mean-square
ROD	Record of Decision
ROG	reactive organic gases
ROS	Recreation Opportunity Spectrum
RPF	Registered Professional Forester
RPM	Resource Protection Measure
RWQCB	regional water quality control board
SACOG	Sacramento Area Council of Governments
SANDAG	*San Diego Association of Governments*
SB	Senate Bill
SCS	sustainable communities strategy
sec/veh	seconds per vehicle
SGMA	Sustainable Groundwater Management Act of 2014
Sierra Nevada Framework	Sierra Nevada Forest Plan Amendment
SIP	state implementation plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SNFPA	Sierra Nevada Forest Plan Amendment
SNFPA	Sierra Nevada Forest Plan Amendment Record of Decision Final Supplemental EIS
SNYLF	Sierra Nevada yellow-legged frog
SO_2	sulfur dioxide
SP	sound pressure level
Squaw Valley	Squaw Valley Ski Area
SR	State Route
SUP	special use permit
SVGPLUO	*Squaw Valley General Plan and Land Use Ordinance*
SVMWC	Squaw Valley Mutual Water Company

SVPSD	Squaw Valley Public Service District
SVSH	Squaw Valley Ski Holdings, LLC
SWMP	stormwater management plan
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCCR	transportation corridor concept report
the Settlement Act	Truckee-Carson-Pyramid Lake Water Rights Settlement Act
TMDL	total maximum daily load
TNF	Tahoe National Forest
TPY	tons per year
TROA	Truckee River Operating Agreement
TRWQMP	Truckee River Water Quality Monitoring Plan
UAIC	United Auburn Indian Community of the Auburn Rancheria
USACE	U.S. Army Corps of Engineers
USBM	U.S. Bureau of Mines
USC	United States Code
V/C ratio	volume-to-capacity ratio
VdB	vibration decibels
VMS	Visual Management System
VMT	vehicle miles traveled
VQO	Visual Quality Objectives

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The U.S. Forest Service (Forest Service) and Placer County (County) have prepared a joint environmental document for the proposed Squaw Valley | Alpine Meadows Base-to-Base Gondola Project (project). The document is an environmental impact statement (EIS) for the Forest Service prepared pursuant to the National Environmental Policy Act (NEPA) (42 U.S. Code 4321-4347), the Council on Environmental Quality (CEQ) Regulations Implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and Forest Service Handbook 1909.15; and an environmental impact report (EIR) for the County pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et seq.). Both agencies have determined that an EIS/EIR is needed to review, analyze, and document the potential effects on the human, physical, and biological environment anticipated to result from construction, operation, and maintenance of the project. Squaw Valley Ski Holdings, LLC (SVSH) is the project proponent.

This EIS/EIR will be used by the Forest Service and Placer County to render decisions regarding approval of project elements within their jurisdiction and selection of an alternative.

ES.1.1 Project Area and Background

The Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows) are separate ski facilities northwest of Lake Tahoe. They are proximate to each other, and are both under ownership of, and operated by, the project proponent. One lift ticket (or season pass) provides access to both facilities. Squaw Valley and Alpine Meadows each offer a different winter sports and resort amenity experience. Between the two ski areas, Squaw Valley has a higher percentage of advanced/expert terrain and more resort amenities (e.g., accommodations, restaurants, shopping, entertainment). Alpine Meadows, however, has more beginner and intermediate terrain and limited amenities. A shuttle bus currently provides roadway access between the ski areas throughout the day. This interresort access is often considered inconvenient because it requires skiers/boarders to exit the mountain, walk with their equipment to the shuttle stop, wait up to 30 minutes for the shuttle, and travel approximately 15 minutes to the shuttle stop at the other ski area. The project is being proposed to enhance the visitor experience at both Squaw Valley and Alpine Meadows by providing more direct access to existing ski terrain and/or resort amenities via a gondola lift system with limited waiting times to board the gondola and an approximately 16-minute transit time between ski areas. The more direct access would also allow the Squaw Valley ski and snowboard schools improved access to the beginner terrain at Alpine Meadows.

In September 2015 and October 2015, the Tahoe National Forest (TNF) and County, respectively, accepted applications from SVSH to install, operate, and maintain an aerial ropeway system (gondola) connecting the Squaw Valley and Alpine Meadows ski areas. The original proposal also included an alteration of current avalanche mitigation techniques through the installation of eight Gazex exploders along or near a segment of the Alpine Meadows side of the proposed gondola alignment. (Since publication of the Draft EIS/EIR, the proposed Gazex avalanche mitigation system was removed from all action alternatives. See Chapter 1, “Introduction,” for additional details.) Implementation of the proposal would require an amendment to the existing Forest Service special use permit (SUP) issued for the operation and maintenance of Alpine Meadows. The proposal is consistent with the *Alpine Meadows Ski Area Master Development Plan* (Tahoe National Forest 2015) and passed the screening criteria for consideration to use National Forest System (NFS) lands and amend the existing permit consistent with Forest Service land use regulations. Permitting from the County includes a conditional use permit and General Plan amendment to the *Squaw Valley General Plan and Land Use Ordinance* (SVGPLUO) (Placer County 2006) to allow for a new ski lift.

Alpine Meadows conducts its operations—including the lift and trail network, guest service facilities, infrastructure, and other assets—on private, state, and NFS lands administered by TNF in Placer County. Located in the Lake Tahoe region, Alpine Meadows is approximately 3.3 miles west of State Route (SR) 89, about 7 miles northwest of Tahoe City, and about 13 miles south of Truckee.

Squaw Valley conducts its operations—including the lift and trail network, guest service facilities, infrastructure, and other assets—almost entirely on private lands in Placer County. Approximately 195 acres of Squaw Valley's operation are under Forest Service SUP on NFS lands. No portions of the infrastructure and improvements included in the alternatives would be located on NFS lands at Squaw Valley. Squaw Valley is approximately 2.5 miles west of SR 89, about 9 miles northwest of Tahoe City, and about 11 miles south of Truckee. At the closest point, Squaw Valley is approximately 1.2 miles from Alpine Meadows.

ES.1.2 Purpose, Need, and Objectives

ES.1.2.1 FOREST SERVICE PURPOSE AND NEED

The Forest Service's purpose for the project is to improve developed winter recreation opportunities in the Scott Management Area, consistent with the Forest Plan. SUPs, and amendments to SUPs, are issued by the Forest Service and are required by law to be consistent with the Forest Plan. Desired future conditions for recreation management in the Forest Plan relevant to the alternatives direct the TNF to "provide a variety of opportunities for developed and dispersed recreation experiences" (U.S. Forest Service 1990:V-5). The Alpine Meadows SUP, which applies to the Scott Management Area, allows for development of additional winter sports facilities and support services as part of the desired future condition of the management area (U.S. Forest Service 1990:V-446–449).

The TNF needs to respond to SVSH's land use application, which proposes amendment of its SUP to improve connectivity between Alpine Meadows and Squaw Valley. The need, as expressed by SVSH, for improved connectivity between the ski areas is based on several factors. The developed snow sports trail network at Squaw Valley has limited terrain suitable for beginners and teaching; Alpine Meadows has additional intermediate and beginner terrain. Squaw Valley has more resort amenities (e.g. accommodations, restaurants, shopping, entertainment); Alpine Meadows, in contrast, has limited amenities. Although guests can currently access both ski areas on the same lift ticket, they must drive or ride a shuttle bus between the two areas to access all the different terrain and amenities offered at both locations.

ES.1.2.2 CEQA PROJECT OBJECTIVES

Placer County's responsibility under CEQA is predicated upon the review of an application for a conditional use permit and SVGPLUO amendment. Consideration of these actions is a discretionary decision by the County and qualifies as a project under CEQA. Under CEQA, an EIR must include a statement of objectives of the proposed project.

The overall purpose of the project is to enhance the visitor wintertime experience at both Squaw Valley and Alpine Meadows by providing direct connection between the ski areas for more convenient access to skiable terrain and resort amenities.

The project has the following objectives[1]:

1. Enhance the visitor experience at Squaw Valley and Alpine Meadows by providing easy, and potentially faster, interresort access to terrain and amenities at both ski areas.

[1] The Draft EIS/EIR included a 6th project objective related to avalanche mitigation technology (Gazex); however, that objective was removed from the Final EIS/EIR because the project was modified to remove the proposed Gazex facilities from the proposal.

2. Reduce visitor and resort shuttle system travel on roadways between the resorts.

3. Provide opportunities for skiers to offload at mid-stations to provide easier access to existing skiable terrain.

4. Provide a system where the gondola segment between the Squaw Valley base terminal and mid-station can operate independently from the remainder of the gondola so that this segment can potentially function as a ski lift if the remainder of the gondola is not operational because of weather, maintenance, or other factors.

5. Use a facility alignment that allows vehicles and equipment to reach gondola cabins from the ground to evacuate people from the cabins, if necessary, during an emergency situation.

ES.2 SUMMARY OF PUBLIC INVOLVEMENT

ES.2.1 Scoping Process

In accordance with NEPA regulations (40 CFR Section 1508.22), the Forest Service initiated the scoping comment period by publishing a notice of intent in the *Federal Register* on April 29, 2016, with a designated scoping period ending on May 31, 2016. In accordance with CEQA (14 CCR Section 15082), Placer County published a notice of preparation (NOP) with the State Clearinghouse on April 22, 2016, with a 30-day review period ending on May 23, 2016.

The Forest Service prepared and distributed a scoping package to individuals and organizations. Placer County prepared the CEQA Initial Study Checklist for the project, which, along with the NOP, was posted on the Placer County project website and mailed to individuals and organizations on the mailing list.

Two joint Forest Service and Placer County public scoping meetings were held on May 9, 2016. Both meetings were held at the Resort at Squaw Creek, Monument Peak Room, 400 Squaw Creek Road, Olympic Valley, California. The first meeting was held from 2:00 to 4:00 p.m., and the second was held from 6:00 to 8:00 p.m. Individuals were able to obtain information and submit comments at this public scoping meeting. Scoping comments were also accepted through mail, fax, telephone, and email to both agencies and through the Forest Service project website.

Following the close of the public scoping period, the Forest Service and Placer County decided to combine the NEPA/CEQA processes and produce a joint EIS/EIR. The Forest Service and Placer County announced this change through a press release and revised NOP published on September 2, 2016, and Placer County accepted additional scoping comments until October 3, 2016.

The notices and scoping materials are included in Appendix A.

ES.2.2 Resources Addressed in the EIS/EIR

Based on the results of public scoping and analysis contained in the initial study, specific areas of concern have been identified and classified as being "*key issues*," "*issues,*" or "*resources/issues dismissed from further documentation*." Both *key issues* and *issues* generally require in-depth analysis and disclosure, and *key issues* may warrant the generation of an alternative. *Resources/issues dismissed from further documentation* are described in Section 1.7.2, "Resources/Issues Dismissed from Further Documentation in This EIS/EIR." The Forest Service Handbook directs the Forest Service to focus the analysis on *key issues* and include brief rationale for other topics not analyzed in detail. Similarly, the State CEQA Guidelines directs lead agencies to focus an EIR discussion on significant environmental effects and may limit discussion on other effects to brief explanations about why they are not significant (PRC Section 21002.1, CCR Section 15128).

The Forest Service and the County have determined that the project has the potential to result in significant environmental impacts on the following resources, which are addressed in detail in this Final EIS/EIR (see Sections 4.1 through 4.17):

- Recreation;
- Visual Resources;
- Wilderness;
- Land Use;
- Socioeconomics and Environmental Justice;
- Public Safety;
- Transportation and Circulation;
- Utilities;
- Noise;
- Air Quality;
- Greenhouse Gas Emissions and Climate Change;
- Vegetation;
- Botany;
- Wildlife and Aquatics;
- Wetlands;
- Soils, Geology, and Seismicity; and
- Hydrology and Water Quality.

"*Key issues*" that helped inform the development of alternatives include visual resources, wilderness, and Sierra Nevada yellow-legged frog. For example, Alternative 3 addresses issues such as proximity to the Granite Chief Wilderness and proximity to occupied habitat for Sierra Nevada yellow-legged frog at Barstool Lake. Alternative 4 likewise addresses issues such as proximity to the Granite Chief Wilderness and proximity to occupied habitat for Sierra Nevada yellow-legged frog at Barstool Lake, as well as visibility of the project, and proximity to residences. Other *issues*, including those in the above bulleted list, were also considered in the development of alternatives. See Chapter 2, "Description of Alternatives," for additional details.

ES.2.3 Areas of Controversy

Based on the comments received during the scoping period, the major areas of interest associated with the project, and which warrant further analysis, are:

- scenic values,
- Granite Chief Wilderness,
- botanical, wildlife, and aquatic resources,
- relationship with federal and local planning documents,
- cumulative effects,
- recreation,
- alternatives,
- traffic and parking,
- noise,
- air quality and greenhouse gas emissions,
- avalanche hazards,
- project purpose and need,
- water and wetlands, and
- health and safety.

A more detailed description of the comments received is provided in Appendix A. All of the substantive environmental issues raised in the scoping comment letters and at the scoping meetings have been addressed or otherwise considered during preparation of this Final EIS/EIR.

ES.2.4 Issues to Be Resolved

As it relates to Forest Service approvals, the Responsible Official, the Forest Supervisor for the TNF, will decide whether to select Alternative 2 (Proposed Action Alternative provided by the applicant), one of the other action alternatives (i.e. Alternatives 3 or 4), or the No Action Alternative. Selection of one of the action alternatives would be a decision by the Forest Supervisor to amend Alpine Meadows' existing SUP to authorize the project. In

addition, the Forest Supervisor will decide whether to amend the Forest Plan. Other decisions to be made by the Forest Service are described in Chapter 1, "Introduction," in Section 1.9.1, "Forest Service Decisions."

As the CEQA lead agency, Placer County is responsible for considering the adequacy of the environmental analysis and determining whether the overall project should be approved. Other actions and planning entitlements requested by the project applicant from the County are listed in Chapter 1, "Introduction," in Section 1.9.2, "Placer County Decisions."

Other federal, state, and local agencies may also need to grant permits or approvals for the project as well; these are listed in Chapter 1, "Introduction," in Section 1.10, "Other Necessary Permits, Licenses, and/or Consultation."

ES.2.5 Public Review of the Draft EIS/EIR

The Draft EIS/EIR was distributed to interested agencies, stakeholder organizations, and individuals for a comment period of 45 days, from April 27, 2018, to June 11, 2018. This distribution was meant to ensure that interested parties had an opportunity to express their views regarding the environmental effects of the project and to ensure that information pertinent to permits and approvals was provided to decision makers. The Draft EIR/EIS was available for review by the public during normal business hours at the Tahoe City and Truckee libraries, Placer County offices in Auburn and Tahoe City, and Tahoe National Forest offices in Nevada City and Truckee. The document was also available online.

A public hearing on the Draft EIS/EIR was conducted on May 24, 2018, as part of the Placer County Planning Commission meeting in Kings Beach, California. A Forest Service open house was conducted on May 22, 2018 at the Truckee Ranger District Office in Truckee, CA.

All comments received on the Draft EIS/EIR during the public comment period, as well as several comments received within two weeks after the close of the comment period, are included along with written responses in Volume 2 of this Final EIS/EIR. An additional letter was received in December 2018, more than 6 months after the end of the comment period, and is not responded to in this Final EIS/EIR.

ES.3 SUMMARY DESCRIPTION OF ALTERNATIVES

NEPA and CEQA require the analysis of a reasonable range of alternatives that meet the purpose and need/objectives of the project (40 CFR Section 1502.14[a] and 14 CCR Section 15126.6[a]). The Forest Service and Placer County have identified the following four alternatives: Alternative 1 – No Action Alternative, Alternative 2 – Proposed Action Alternative, Alternative 3, and Alternative 4. These alternatives are described in greater detail in Chapter 2, "Description of the Alternatives."

As noted above, alternatives were developed, in part, in response to issues identified internally by the Forest Service and Placer County, and externally by the public during the scoping process.

ES.3.1 Alternative 1 – No Action Alternative

The No Action/No Project Alternative, required by NEPA and CEQA (40 CFR 1502.14 and 14 CCR Section 15126.6[e]), provides a baseline for comparing the effects of the action alternatives. NEPA uses the term "No Action Alternative," and CEQA uses the term "No Project Alternative." For the purposes of this EIS/EIR, the term "No Action Alternative" is used for both NEPA and CEQA. Under the No Action Alternative, neither the Forest Service nor Placer County would provide authorizations to SVSH to construct a gondola. The No Action Alternative essentially reflects a continuation of existing interresort transportation management practices without changes, additions, or upgrades. The existing shuttle system between Squaw Valley and Alpine

Meadows would continue to operate. The gondola connecting Alpine Meadows and Squaw Valley would not be implemented under the No Action Alternative, and existing conditions would not be changed at the project site.

ES.3.2 Alternative 2 – Proposed Action Alternative

Alternative 2 includes amendment of the Alpine Meadows SUP, issuance of a conditional use permit, rezone to accommodate the Alpine Meadows base terminal, and amendment of the SVGPLUO to authorize construction, operation, and maintenance of a gondola connecting Alpine Meadows and Squaw Valley (total length of approximately 13,000 feet) with mid-stations for Alpine Meadows and Squaw Valley located above *the Buttress* area and on the Squaw Saddle, respectively.

ES.3.3 Alternative 3

Alternative 3 includes a gondola connecting Alpine Meadows and Squaw Valley in a different alignment (segments of which would be located further to the east of Alternative 2; total length of approximately 12,600 feet) with a mid-station for Alpine Meadows located on the Caldwell property (private lands located between Squaw Valley and Alpine Meadows ski resorts) and a mid-station for Squaw Valley located on the Squaw Saddle. Alternative 3 includes amendment of the Alpine Meadows SUP, issuance of a conditional use permit, rezone to accommodate the Alpine Meadows base terminal, and amendment of the SVGPLUO.

ES.3.4 Alternative 4

Alternative 4 includes a gondola connecting Alpine Meadows and Squaw Valley in a different alignment (the entire alignment further to the east than Alternatives2 and portions of Alternative 3; total length of approximately 11,700 feet) with a mid-station for Alpine Meadows located on the Caldwell property (private lands located between Squaw Valley and Alpine Meadows ski resorts) and a mid-station for Squaw Valley located on the Squaw Saddle. Alternative 4 includes amendment of the Alpine Meadows SUP, issuance of a conditional use permit, rezone to accommodate the Alpine Meadows base terminal, and amendment of the SVGPLUO.

ES.4 COMPARATIVE FEATURES OF THE ALTERNATIVES

Chapter 2, "Description of Alternatives," provides a detailed description of each of the alternatives under consideration. Table ES-1 provides a comparison of key project elements associated with each alternative, including length of the aerial ropeway system (gondola), and number of towers and terminals; this information is further divided by whether it would occur on private or NFS land.

Table ES-1 Comparison of Alternatives

	Alternative 1 – No Action Alternative	Alternative 2 – Proposed Action Alternative	Alternative 3	Alternative 4
Aerial Ropeway System (length)				
Private Land	0	9,700 feet	10,200 feet	9,400 feet
NFS Land	0	3,300 feet	2,400 feet	2,300 feet
Total	**0**	**13,000 feet**	**12,600 feet**	**11,700 feet**
Towers				
Private Land	0	25	29	28
NFS Land	0	10	5	5
Total	**0**	**35**	**34**	**33**

Table ES-1 Comparison of Alternatives

	Alternative 1 – No Action Alternative	Alternative 2 – Proposed Action Alternative	Alternative 3	Alternative 4
Terminals				
Private Land	0	1 base terminal, 1 mid-station	1 base terminal, 2 mid-stations	1 base terminal, 2 mid-stations
NFS Land	0	1 base terminal, 1 mid-station	1 base terminal	1 base terminal
Total	**0**	**2 base terminals, 2 mid-stations**	**2 base terminals, 2 mid-stations**	**2 base terminals, 2 mid-stations**
Avalanche Mitigation System				
Private Land	0	0	0	0
NFS Land	0	Removes seven existing 105-mm Howitzer targets	Removes two existing 105-mm Howitzer targets	Removes two existing 105-mm Howitzer targets

Notes: mm = millimeter; NFS = National Forest System

Table ES-2 provides a comparison of the amount of ground disturbance that would occur from the installation of key project elements associated with each alternative.

Table ES-2 Comparison of Disturbance of Alternatives

Alternative 1 – No Action Alternative	Alternative 2 – Proposed Action Alternative	Alternative 3	Alternative 4
Alpine Meadows Base Terminal (permanent ground disturbance)			
0 acre	1.9 acre	1.5 acre	1.5 acre
Alpine Meadows Mid-Station (permanent ground disturbance)			
0 acre	0.5 acre	0.9 acre	0.5 acre
Squaw Valley Mid-Station (permanent ground disturbance)			
0 acre	1.5 acre	1.6 acre	0.6 acre
Squaw Valley Base Terminal (permanent ground disturbance)			
0 acre	1 acre	1 acre	0.4 acre
Gondola Corridor (overstory vegetation removal, temporary construction disturbance)			
0 acre	11.2 acres	8 acres	7.9 acres
Gondola Tower Disturbance (permanent tower footing, temporary construction disturbance)			
0 acre	0.4 acre	0.4 acre	0.4 acre
Access Route (temporary ground disturbance)			
0 acre	3.3 acres	1.1 acre	2.7 acres

Note: Slight differences in acreage between project disturbance and resource disturbance is due to GIS shapefiles and rounding

ES.5 ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Chapter 4, "Affected Environment and Environmental Consequences," of this Final EIS/EIR describes in detail the environmental effects that would result from implementation of the project alternatives. For the NEPA analysis, environmental effects are concluded to be: (1) no effect, (2) adverse when there are detrimental or negative effects, or (3) beneficial when there are positive effects. For some NEPA effects conclusions, "minorly" is used to characterize adverse and beneficial effects (i.e., minorly adverse or minorly beneficial), in an effort to further distinguish the effects of the action alternatives. For the CEQA analysis, environmental effects are determined to be: (1) no effect; (2) less than significant; (3) significant or potentially significant (mitigation measures are required); and (4) significant and unavoidable (changes in the environment that cannot be feasibly reduced to a less-than-significant levels with mitigation measures).

The project includes resource protection measures (RPMs) developed to avoid, minimize, or compensate for the potential environmental effects of the project. These RPMs are listed in Appendix B and are more comprehensively discussed in Chapters 2, "Description of Alternatives," and 3, "Approach to the Analysis." The RPMs are considered part of the project and will be conditions of approval of the Placer County Conditional Use Permit (CUP). Where effects are identified that are not addressed by these RPMs, or where the RPMs are not adequate to reduce effects to less-than-significant levels, the EIS/EIR recommends mitigation measures. RPMs will be incorporated into the Mitigation Monitoring and Reporting Program developed for this project.

Table ES-3 (at the end of this chapter) summarizes the potential environmental effects that would result from implementation of the alternatives; describes RPMs and mitigation measures to address significant and potentially significant environmental effects; and identifies the significance of effects both before and after mitigation.

ES.6 ENVIRONMENTAL SUPERIOR ALTERNATIVE

CEQA calls for the identification of an environmentally superior alternative in an EIR but gives no specific definition for the term (State CEQA Guidelines Section 15126.6(e)(2)); however, the term can be generally defined as the alternative that results in the least amount of environmental impact. CEQA further specifies that if the environmentally superior alternative is the "no project" alternative, the EIR must identify an environmentally superior alternative among the other alternatives.

From the standpoint of minimizing environmental effects, Alternative 1 - No Action Alternative would be the environmentally superior alternative. Under Alternative 1, no construction would take place and the project site would remain consistent with existing conditions. No change to the existing environment would occur under Alternative 1. However, Alternative 1 would not meet any of the basic project objectives related to providing a connection between the Alpine Meadows and Squaw Valley base areas.

Table 2-3 in Chapter 2, "Description of Alternatives," identifies the significant and potentially significant impacts of each alternative for each environmental issue area evaluated in this EIS/EIR. As shown in Table 2-3, based solely on impact significance conclusions, there is little difference in effects among the action alternatives. Using this coarse comparison method, the primary difference between alternatives is that Alternative 3 has one CEQA noise impact that does not occur under Alternatives 2 and 4 and results from the Alpine Meadows mid-station under Alternative 3 being located in close proximity to existing residences. This impact is significant and is reduced to a less-than significant level with mitigation. Without a clear distinction between alternatives in Table 2-3, a more detailed evaluation of the differences in effects among alternatives is necessary.

For several environmental issue areas, the same effects occur for each action alternative. For example, each action alternative is assumed to result in the same potential increase in visitation; therefore, each action alternative results in the same generation of utility demand. Consequently, there is no difference in utility impacts across the three action alternatives. For the following issue areas, environmental effects are the same for all action alternatives and these issue areas were not considered in the determination of the environmentally superior alternative:

- Section 4.4, "Land Use,"
- Section 4.5, "Socioeconomics and Environmental Justice,"
- Section 4.7, "Transportation and Circulation,"
- Section 4.8, "Utilities,
- Section 4.10, "Air Quality," and
- Section 4.11, "Greenhouse Gas Emissions and Climate Change."

Further information on why effects were considered the same across action alternatives for each environmental issue area is provided in the referenced sections of this EIS/EIR.

ES.6.1 Alternative 2

Due to its location, Alternative 2 results in several different, or more severe environmental effects than Alternatives 3 and 4. The key significant environmental effects of Alternative 2 concern the alternative's close proximity to both the Granite Chief Wilderness (GCW) and known occupied habitat for the Sierra Nevada yellow-legged frog (SNYLF). Other environmental issue areas where Alternative 2 would have different or more severe effects than Alternatives 3 and 4 include biological resources, land use conflicts, and public safety. All are described in greater detail below.

As described in Chapter 2, "Description of Alternatives," and shown in Exhibit 2-2, the central portion of the Alternative 2 alignment, between the Squaw Valley and Alpine Meadows mid-stations, is located just east of the GCW and would cross private lands within the Congressionally-Mapped GCW. This close proximity to the GCW would result in effects related to visual resources, noise, and wilderness. This middle segment would traverse a distance of approximately 3,000 feet along or near the ridgeline between the two resorts, and therefore has the greatest effect on visual character among the three action alternatives (see Section 4.2, "Visual Resources"). Due to the close proximity of Alternative 2 to the GCW, this alternative would have the greatest noise effect on the GCW during project construction.

With the Alpine Meadows mid-station near Barstool Lake, Alternative 2 is the only action alternative with facilities in close proximity (within 100 feet) to known occupied habitat for SNYLF (see Section 4.14, "Wildlife and Aquatics"). As the SNYLF is an endangered species and Alternative 2 is the only alternative that would have a significant impact on SNYLF, Alternative 2 would have a greater effect on SNYLF than would Alternatives 3 or 4.

Alternative 2 would result in approximately 21 acres of ground disturbance, which is greater than the amount that would be disturbed by Alternatives 3 or 4. This greater area of ground disturbance, results in an increased potential for the introduction and establishment of invasive plant species (see Section 4.13, "Botany") and for erosion (see Section 4.17, "Hydrology and Water Quality") compared with Alternatives 3 and 4.

Finally, among the action alternatives, the gondola as proposed under Alternative 2 would also be the most difficult to evacuate in the event of an emergency (see Section 4.6, "Public Safety").

In some areas, Alternative 2 has less environmental effect than Alternatives 3 and 4, such as the least exposure to avalanche risk due to the location near the top of the ridgeline (see Sections 4.6, "Public Safety," and 4.16, "Soils, Geology, and Seismicity") and least effect on aquatic habitats and associated aquatic and botanical species (see Sections 4.13, "Botany," 4.14, "Wildlife and Aquatics," and 4.15, "Wetlands"). However, this difference in habitat effects is small, ranging from a fraction of an acre to approximately 1 acre depending on the alternative and habitat types being compared.

While Alternative 2 may have lesser impacts compared to Alternatives 3 and 4 for the limited environmental issue areas discussed above, these areas of less effect are not sufficient to counterbalance the areas where Alternative 2 has greater adverse effects, or adverse effects unique to this alternative. Alternative 2's greater impacts on the resources discussed above, and in particular those related to visual effects, the GCW, and SNYLF, are sufficient to eliminate it from further consideration as the environmentally superior alternative.

ES.6.2 Alternatives 3 and 4

With Alternative 2 eliminated from consideration as the environmentally superior alternative, it must be chosen from Alternatives 3 and 4.

While there are environmental issue areas where Alternatives 3 and 4 both clearly have lesser impacts than Alternative 2, differences between Alternatives 3 and 4 themselves are frequently more subtle. For example,

while the alignments for Alternatives 3 and 4 both cross the Five Lakes Trail between the trailhead near Alpine Meadows and the ultimate destination of the Five Lakes within GCW, Alternative 4 would be the closest alignment to the trailhead. This area currently supports limited development, including other ski lift infrastructure (i.e., "KT South" on the private Caldwell property). By encountering the new infrastructure in closer proximity to existing development and infrastructure, the new development under Alternative 4 would represent less of a contrast with the existing landscape than under Alternative 3. Alternative 4's alignment is also generally the most distant from the Pacific Crest Trail (see Section 4.1, "Recreation").

Alternatives 3 and 4 both avoid adverse effects related to close proximity to the GCW (see Section 4.3, "Wilderness"). While Alternative 3 would locate the Squaw Valley mid-station closer to the GCW than Alternative 4, the mid-station under Alternative 4 would be on a peak and would therefore be more visible to the surrounding area than the Alternative 3 mid-station location (see Section 4.2, "Visual Resources"). As such, Alternative 3 has slightly less effect on visual character compared with Alternative 4.

Alternatives 3 and 4 have similar risks related to avalanche effects and similar characteristics regarding undertaking an emergency evacuation of the gondola (see Section 4.6, "Public Safety"). Both Alternatives 3 and 4 have the potential to generate construction and operational noise that could affect nearby residences; however, Alternative 4 has the potential to affect fewer residences due to the distance of the alignment and the base terminal and mid-station from residences (see Section 4.9, "Noise").

Among Alternatives 3 and 4, Alternative 3 has the least effect on aquatic habitats and associated wildlife and botanical species (see Sections 4.13, "Botany," 4.14, "Wildlife and Aquatics," and 4.15, "Wetlands"). However, this difference in habitat effects is small, ranging up to approximately 1.5 acres. Alternative 4 has a slightly greater effect on potential aquatic habitat for SNYLF compared to Alternative 3; however, Alternative 4 has less of an effect on potential upland habitat. Alternative 4 includes less of the alignment within the area designated by the U.S. Fish and Wildlife Service (USFWS) as critical habitat for SNYLF (see Section 4.14, "Wildlife and Aquatics"). As SNYLF and its habitat are of critical importance, Alternative 4 is the environmentally superior alternative because it affects less critical SNYLF habitat designated by USFWS.

Comparing overall ground disturbance, Alternative 3 disturbs approximately 18 acres whereas Alternative 4 disturbs approximately 15 acres, resulting in Alternative 4 having less potential for introduction and establishment of invasive plant species (see Section 4.13, "Botany") and for erosion (see Section 4.17, "Hydrology and Water Quality") compared with Alternative 3.

Alternative 3 is estimated to require the removal of 104 trees, with 133 additional trees at risk of removal. Alternative 4 is estimated to require the removal of 38 trees with an additional 176 trees at risk of removal. Thus, the estimated amount of tree removal and total amount of potential tree removal is less for Alternative 4 than for Alternative 3.

ES.6.3 Conclusion

While Alternative 3 has less of an effect than Alternative 4 in some areas, such as disturbance of aquatic habitats, Alternative 4 results in less of an effect in multiple areas such as recreation, noise, total ground disturbance, tree removal, and SNYLF upland habitat. Therefore, overall, Alternative 4 is determined to have less of an adverse environmental effect compared to Alternative 3, and is considered to be the environmentally superior alternative.

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
4.1 Recreation					
Impact 4.1-1: Recreation Experience, Access, and Visitation	Alt 1 = NE Alt 2 = B, Adv Alts 3, 4 = B, Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs MUL-7, and REC-1 through REC-4	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.1-2: Adverse Effects Associated with New or Expanded Recreation Facilities	N/A	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	N/A	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.1-3: Consistency with Land Use Plans	Alts 1, 2, 3, 4 = NE	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	Alts 1, 2, 3, 4 = NE	Alt 1 = NE Alts 2, 3, 4 = LTS
4.2 Visual Resources					
Impact 4.2-1: Consistency with Federal, State, and Local Regulations	Alt 1, 3, 4 = NE Alt 2 = Minorly Adv	Alt 1 = NE Alt 2 = LTS Alts 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3	Alt 1, 3, 4 = NE Alts 2 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.2-2: Visual Character (General Impact on Visual Character)	Alt 1 = NE Alt 2 = Adv Alts 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs SCE-1 through SCE-4, SCE-6, and SCE-7	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = SU
Impact 4.2-3: Night Lighting and Glare	Alt 1, 3, 4 = NE Alt 2 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs SCE-5 and SCE-8	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
4.3 Wilderness					
Impact 4.3-1: Effects on Untrammeled Wilderness	Alts 1, 2, 3, 4 = NE	N/A	No mitigation measures are required	Alts 1, 2, 3, 4 = NE	N/A
Impact 4.3-2: Effects on Undeveloped Wilderness	Alts 1, 2, 3, 4 = NE	N/A	No mitigation measures are required	Alts 1, 2, 3, 4 = NE	N/A
Impact 4.3-3: Effects on Natural Wilderness	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	N/A	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	N/A
Impact 4.3-4: Effects on Opportunities for Solitude or Primitive and Unconfined Recreation	Alt 1 = NE Alt 2 = Adv Alts 3, 4 = Minorly Adv	N/A	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs SCE-1 and SCE-2	Alt 1 = NE Alts 2, 3, 4 = Mitigated	N/A

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Impact 4.3-5: Effects on Potential Wilderness Characteristics on Private Lands within the Congressionally Mapped Granite Chief Wilderness	Alts 1, 3, 4 = NE Alt 2 = Adv	N/A	No mitigation measures are required	Alts 1, 3, 4 = NE Alt 2 = Adv	N/A
4.4 Land Use					
Impact 4.4-1: Consistency with Relevant Federal and Local Rules and Regulations	Alt 1 = NE Alts 2, 3, 4 = NE (with General Plan amendment and rezone)	Alt 1 = NE Alts 2, 3, 4 = LTS (with General Plan amendment and rezone)	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = NE (with General Plan amendment and rezone)	Alt 1 = NE Alts 2, 3, 4 = LTS (with General Plan amendment and rezone)
4.5 Socioeconomics and Environmental Justice					
Impact 4.5-1: Visitor Spending Impacts	Alt 1 = NE Alts 2, 3, 4 = Minorly B	N/A	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly B	N/A
Impact 4.5-2: Employment Impacts	Alt 1 = NE Alts 2, 3, 4 = Minorly B	N/A	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly B	N/A
Impact 4.5-3: Town/County Tax Revenue Impacts	Alt 1 = NE Alts 2, 3, 4 = Minorly B	N/A	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly B	N/A
4.6 Public Safety					
Impact 4.6-1: Health and Safety	Alts 1, 2, 3, 4 = NE	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alt 2, 3, 4 = RPMs HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4	Alt 1, 2, 3, 4 = NE	Alt 1 = NE Alt 2, 3, 4 = LTS
Impact 4.6-2: Operations Efficiency	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	N/A	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	N/A
4.7 Transportation and Circulation					
Impact 4.7-1: Impacts on Placer County Roadways	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Impact 4.7-2: Impacts on Placer County Intersections	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-2 (Alt. 2) **Mitigation Measure 4.7-2 (Alt. 2): Conduct Traffic Management at Squaw Valley Road/Chamonix Place Intersection** Prior to October 15th annually, Squaw Valley Ski Holdings (SVSH) shall submit to Placer County Department of Public Works and Facilities a traffic management plan that shall include traffic management associated with Squaw Valley Road and intersecting roadways, including Chamonix Place and Squaw Creek Road. The traffic management plan shall include lessons learned from the previous season as well as modifications for the upcoming season and shall identify operational details and safety provisions to ensure both effective and safe management of traffic congestion. Upon approval of the traffic management plan, SVSH shall implement the traffic management plan with approval of an encroachment permit from Placer County Department of Public Works and Facilities. The traffic management plan may include, but not be limited to, employing traffic management personnel at intersections during the afternoon peak periods of peak weekend ski days. Traffic control personnel may manage traffic on Squaw Valley Road to assign right-of-way to vehicles on Chamonix Place and Squaw Creek Road. This type of traffic control is in effect at other intersections along Squaw Valley Road including at Wayne Road, which operates at an acceptable LOS.	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.7-3: Impacts on Caltrans Intersections	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
Impact 4.7-4: Impacts on Vehicular Queuing at Caltrans Intersections	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-4 (Alt. 2) **Mitigation Measure 4.7-4 (Alt. 2): Coordinate with Caltrans to Increase Maximum Amount of Green Time Provided for Northbound Left-Turn Movement at SR 89/Alpine Meadows Road Intersection** The project applicant shall coordinate with Caltrans to implement signal timing modifications that provide a greater amount of green time for this movement during peak winter AM periods. Caltrans staff (Brake, pers. comm., 2015) has indicated that they support the idea of modifying signal timing in response to changes in travel demand. Because there are so few competing movements at this intersection during the AM peak hour, it is possible to provide longer green times for this movement without adversely affecting queuing in the southbound right-turn and eastbound left- and right-turn movements.	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = SU
Impact 4.7-5: Impacts on Caltrans Highways	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.7-6: Impacts on Transit	Alts 1, 2, 3, 4 = NE	Alts 1, 2, 3, 4 = NE	No mitigation measures are required	Alts 1, 2, 3, 4 = NE	Alts 1, 2, 3, 4 = NE
Impact 4.7-7: Impacts on Vehicle Safety Related to Roadway Design Features	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-7 (Alt. 2) **Mitigation Measure 4.7-7 (Alt. 2): Advise Motorists of "Parked Out" Conditions before They Enter Squaw Valley Road or Alpine Meadows Road Using Traffic Control Personnel, Changeable Message Signs on SR 89, Online Mobile App, or Other Means** Prior to October 15th annually, SVSH shall submit to Placer County Department of Public Works and Facilities a traffic management plan that shall include an advanced messaging system to alert motorists of parking availability at the Squaw	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant	N/A = Not applicable		NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
			Valley and Alpine Meadows Ski Resorts. The traffic management plan shall include lessons learned from the previous season as well as modifications for the upcoming season. SVSH will be responsible to engage and coordinate affected agencies, including Caltrans, Placer County and the California Highway Patrol. Upon approval of the traffic management plan by all affected agencies, SVSH shall implement the traffic management plan with approval of any necessary encroachment permits from Caltrans and/or Placer County. Potential advanced messaging system(s) may include, but not be limited to, one or more of the following measures: ◢ California Highway Patrol or other traffic control personnel, accompanied by advisory signage or other means of disseminating information, present at the Squaw Valley Road and Alpine Meadows Road intersections on SR 89; ◢ portable or permanent changeable message signs placed in both directions of SR 89 (i.e., in the southbound direction north of Squaw Valley Road and in the northbound direction south of Alpine Meadows Rad) during peak days (fed with “real-time” parking availability information); and ◢ other methods, such as smartphone mobile apps that provide “real-time” information related to existing parking availability at each resort and travel times to each resort (both inbound and outbound).		

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Impact 4.7-8: Construction Impacts on Transportation Facilities	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-8 (Alt. 2) **Mitigation Measure 4.7-8 (Alt. 2): Develop Construction Traffic Management Plan** Prior to the issuance of any grading or demolition permits, the project applicant shall prepare a Construction Traffic Management Plan to the satisfaction of the Forest Service, and Placer County Department of Public Works and the Engineering and Surveying Division. The plan shall include (but not be limited to) items such as: ◢ guidance on the number and size of trucks per day entering and leaving the project site; ◢ identification of arrival/departure times that would minimize traffic impacts; ◢ approved truck circulation patterns; ◢ locations of staging areas; ◢ locations of employee parking and methods to encourage carpooling and use of alternative transportation; ◢ methods for partial/complete street closures (e.g., timing, signage, location and duration restrictions); ◢ criteria for use of flaggers and other traffic controls; ◢ preservation of safe and convenient passage for bicyclists and pedestrians through/around construction areas; ◢ monitoring for roadbed damage and timing for completing repairs; ◢ limitations on construction activity during peak/holiday weekends and special events; ◢ preservation of emergency vehicle access;	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
			◢ coordination with any other ongoing construction activities elsewhere within Olympic Valley, at Alpine Meadows, or at other locations along SR 89 to minimize potential additive construction traffic disruptions, avoid duplicative efforts (e.g., multiple occurrences if similar signage), and maximize effectiveness of traffic mitigation measures (e.g., joint employee alternative transportation programs); and ◢ provide a point of contact for Olympic Valley and Alpine Meadows residents and guests to obtain construction information, have questions answered, and convey complaints. The Construction Traffic Management Plan should be developed such that the following minimum set of performance standards is achieved throughout project construction. It is anticipated that additional performance standards would be developed once details of more project construction are better known. 1) Delivery trucks do not idle/stage on Squaw Valley Road, Alpine Meadows Road, or SR 89. 2) Squaw Valley Road and Alpine Meadows Road do not feature any construction-related lane closures on peak activity days. 3) All construction employees shall park in designated lots owned by Squaw Valley Ski Holdings. 4) Roadways, sidewalks, crosswalks, and bicycle facilities shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety.		

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Cumulative Impact 4.7-9: Impacts on Placer County Roadways	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-9 (Alt. 2) **Mitigation Measure 4.7-9 (Alt. 2): Conduct Traffic Management along Squaw Valley Road** Prior to October 15th annually, SVSH shall submit to Placer County Department of Public Works and Facilities a traffic management plan that shall include traffic management on ski days on which traffic on Squaw Valley Road is projected to exceed 13,500 ADT. The traffic management plan shall include operation of the three-lane coning program during both the AM and PM peak periods. The traffic management plan shall include lessons learned from the previous season as well as modifications for the upcoming season. Upon approval of the traffic management plan, SVSH shall implement the traffic management plan with approval of an encroachment permit from Placer County. Although it is noted that these types of traffic management techniques were implemented during the 2016–2017 season, they have not always been used during peak conditions. This mitigation measure is therefore intended to reestablish the need for this traffic management during such conditions.	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS
Cumulative Impact 4.7-10: Impacts on Placer County Intersections	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-10 (Alt. 2) **Mitigation Measure 4.7-10 (Alt. 2): Conduct Traffic Management at Squaw Valley Road/Chamonix Place and Squaw Valley Road/Squaw Creek Road Intersections** Implement Mitigation Measure 4.7-2 (Alt. 2).	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Cumulative Impact 4.7-11: Impacts on Caltrans Intersections	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-11 (Alt. 2) **Mitigation Measure 4.7-11 (Alt. 2): Pursue Strategies to Reduce Vehicle Trips Generated during the Sunday PM Peak Hour on Peak Ski Days** Prior to Improvement Plan approval, the applicant shall provide evidence to the Department of Public Works and Facilities of compliance with the Placer County Trip Reduction Ordinance, including a detailed accounting of Transportation Demand Management strategies currently provided for or planned by Squaw Valley. These strategies may include, but not be limited to, one or more of the following: ◢ operating a complementary and convenient shuttle between resorts and off-site park-and-ride lots (i.e., within Truckee or Tahoe City); ◢ implementing programs to better disperse the departures of skiers during peak afternoons, through entertainment options and other incentives; and ◢ joining/renewing membership in the Truckee North Tahoe Transportation Management Association.	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = SU
Cumulative Impact 4.7-12: Impacts on Vehicular Queuing at Caltrans Intersections	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-12 (Alt. 2) **Mitigation Measure 4.7-12 (Alt. 2): Pursue Strategies to Reduce Vehicle Trips Generated during the Sunday PM Peak Hour on Peak Ski Days** Implement Mitigation Measure 4.7-11 (Alt. 2).	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = SU
Cumulative Impact 4.7-13: Impacts on Caltrans Highways	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-12 (Alt. 2) **Mitigation Measure 4.7-13 (Alt. 2): Pursue Strategies to Reduce Vehicle Trips Generated during the Sunday PM Peak Hour on Peak Ski Days** Implement Mitigation Measure 4.7-11 (Alt. 2).	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = SU

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Cumulative Impact 4.7-14: Impacts on Transit	Alts 1, 2, 3, 4 = NE	Alts 1, 2, 3, 4 = NE	No mitigation measures are required	Alts 1, 2, 3, 4 = NE	Alts 1, 2, 3, 4 = NE
Cumulative Impact 4.7-15: Impacts on Vehicle Safety Related to Roadway Design Features	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = Mitigation Measure 4.7-7 (Alt. 2) **Mitigation Measure 4.7-15 (Alt. 2): Advise Motorists of "Parked Out" Conditions before They Enter Squaw Valley Road or Alpine Meadows Road Using Traffic Control Personnel, Changeable Message Signs on SR 89, Online Mobile App, or Other Means** Implement Mitigation Measure 4.7-7 (Alt. 2).	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS
Cumulative Impact 4.7-16: Construction Impacts on Transportation Facilities	Alts 1, 2, 3, 4 = NE	Alts 1, 2, 3, 4 = NE	No mitigation measures are required	Alts 1, 2, 3, 4 = NE	Alts 1, 2, 3, 4 = NE
4.8 Utilities					
Impact 4.8-1: Water Supply Impacts	Alt 1 = NE Alts 2, 3, 4 = NE	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = NE	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.8-2: Inefficient, Wasteful, and Unnecessary Consumption of Energy Resources	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alt 2, 3, 4 = RPMs AQ-9 and AQ-18	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.8-3: Increased Generation of Solid Waste	N/A	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	N/A	Alt 1 = NE Alts 2, 3, 4 = LTS
4.9 Noise					
Impact 4.9-1: Construction Noise Impacts	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alt 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs MUL-7 and NOI-1 through NOI-6	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = SU
Impact 4.9-2: Construction Vibration Impacts	Alt 1= NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alt 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs NOI-4 and NOI-6	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Impact 4.9-3: Exposure of Existing Sensitive Receptors to Operational Noise from Proposed Gondola	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 4 = LTS Alt 3 = S	Alts 1, 2, 4 = No mitigation measures are required Alt 3 = Mitigation Measure 4.9-3 (Alt. 3) **Mitigation Measure 4.9-3 (Alt. 3): Reduce Noise Exposure to Existing Sensitive Receptors from Proposed Stationary Noise Sources** The location of the proposed gondola components (e.g., stations, towers) under Alternative 3 shall be located, at a minimum, 200 feet from any existing sensitive land use.	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.9-4: Exposure of Existing Sensitive Receptors to Operational Project-Generated Transportation Noise Sources	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS
4.10 Air Quality					
Impact 4.10-1: Short-Term, Construction-Generated Emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions)	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.10-2: Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursors	Alt 1= NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alt 2, 3, 4 = RPMs AQ-9 and AQ-23	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.10-3: Mobile-Source CO Concentrations	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS
4.11 Greenhouse Gas Emissions and Climate Change					
Impact 4.11-1: Greenhouse Gas Emissions	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs AQ-17 and AQ-18	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.11-2: Impacts of Climate Change on the Project	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	No mitigation measures are required	Alt 1 = NE Alts 2, 3, 4 = Minorly Adv	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
4.12 Vegetation					
Impact 4.12-1: Ground Disturbance and Overstory Vegetation Removal Effects	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.12-2: Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.12-3: Conflict with Any Local Policies or Ordinances Protecting Biological Resources	N/A	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs REV-3, TREE-10, and TREE-11	N/A	Alt 1 = NE Alts 2, 3, 4 = LTS
4.13 Botany					
Impact 4.13-1: Disturbance or Loss of Federally Listed, Forest Service Sensitive, and Other Special-Status Botanical Species	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.13-2: Result in the Introduction or Spread of Invasive Plant Species	Alt 1 = NE Alts 2, 3, 4 = Adv	N/A	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs BIO-2 through BIO-8, BIO-30, and BIO-31	Alt 1 = NE Alts 2, 3, 4 = Mitigated	N/A
4.14 Wildlife and Aquatics					
4.14-1: Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs MUL-1 through MUL-6, HAZ-1, 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; RPMS related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17; and Mitigation Measure 4.14-1 (Alt. 2)	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
			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.		

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
4.14-2: Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs MUL-1 through MUL-6, HAZ-1, 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; RPMs related to noise, hazardous materials, and water quality provided in Sections 4.6, 4.9, 4.16, and 4.17; and Mitigation Measure 4.14-2 (Alt. 2) **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).	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
4.14-3: Direct and Indirect Effects on Southern Long-Toed Salamander	N/A	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs MUL-1 through MUL-6, HAZ-1, 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	N/A	Alt 1 = NE Alts 2, 3, 4 = LTS
4.14-4; Direct and Indirect Effects on Management Indicator Species	Alt 1 = NE Alts 2, 3, 4 = Adv	N/A	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs MUL-1 through MUL-7, HAZ-1, 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	Alt 1 = NE Alts 2, 3, 4 = Mitigated	N/A
4.14-5: Direct and Indirect Effects on Special-Status Terrestrial Wildlife	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs BIO-12 through BIO-17, BIO-22, MUL-1 through MUL-3, MUL-5, MUL-6, and BIO-34	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
4.1-6: Disturbance or Loss of Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = 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 and Mitigation Measure 4.14-6 (Alt. 2) **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).	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
4.15 Wetlands					
Impact 4.15-1: Loss and Degradation of Wetlands and Other Waters	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = S	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, SOILS-1 through SOILS-12, and WQ-1 through WQ-20	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
4.16 Soils, Geology, and Seismicity					
Impact 4.16-1: Exposure of People and Structures to Mass Wasting Events	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPM NOI-4 and Mitigation Measure 4.16-1 (Alt. 2) **Mitigation Measure 4.16-1 (Alt. 2): Develop and Implement a Rock Blasting Plan** To minimize the risk of mass wasting because of rock blasting during construction activities, a rock blasting plan shall be prepared by the contractor and submitted to the County at least 30 days prior to the blasting addressed in the plan. The blasting plan shall be site-specific, based on the locations of required blasting, and based on the results of a project-specific geotechnical investigation. The blasting plan shall include a description of the planned blasting methods, an inventory of receptors potentially affected by the planned blasting, calculations to determine the area affected by the planned blasting, and a description of measures that have been taken to minimize the risk of triggering mass wasting events by the blasting. The blasting plan shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement.	Alt 1 = NE Alts 2,3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Impact 4.16-2: Exposure of People and Structures to Avalanches	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPM NOI-4 and Mitigation Measure 4.16-1 (Alt. 2) **Mitigation Measure 4.16-2 (Alt. 2): Develop and Implement an Avalanche Hazard Mitigation Plan** Prior to issuance of permits, the project applicant shall provide the Forest Service and Placer County with a complete Avalanche Hazard Mitigation Plan for the project. The plan shall be subject to review and approval by the Forest Service and County, and permit approval will be conditioned based on ongoing implementation of the plan. The plan shall include, but shall not be limited to, the following elements: ◢ Prior to opening of the gondola, the project applicant shall develop avalanche notification protocols in consultation with the Squaw Valley Fire Department (SVFD), North Tahoe Fire Protection District (contracted through Alpine Springs County Water District), Squaw Valley, and Alpine Meadows operations. The protocols shall specify conditions that warrant consultation with these agencies regarding potential avalanche risks. ◢ If there is a substantial risk of avalanche, then the gondola and any public areas within the PAHA shall be closed to the public, and signs erected that explain that the closures are because of the avalanche risk. These areas shall be secured from entry until the risk of avalanche has abated. ◢ On-site structures: The Building Services Division shall review building permit applications for structures within or near moderate PAHAs to confirm that they incorporate the structural specifications to address avalanche risk. ◢ Up-slope conditions: Policy procedures and necessary agreements and permissions shall be included to ensure that operations on the ski terrain of Squaw Valley and Alpine Meadows continue to implement avalanche	Alt 1 = NE Alts 2,3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant	SU = Significant and unavoidable	
			mitigation programs and that slope development and management avoids the creation of new long continuous openings that could increase the potential for avalanche release and movement that could affect the gondola. No new large openings shall be created on slopes steeper than 30 degrees that could influence avalanche runouts leading to the gondola.		
Impact 4.16-3: Risk Associated with Soil Limitations	Alt 1 = NE Alts 2, 3, 4 = NE, Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12	Alt 1 = NE Alts 2,3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.16-4: Excessive Erosion during Construction	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs SOILS-1 through SOILS-12 and MUL-3	Alt 1 = NE Alts 2,3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
4.17 Hydrology and Water Quality					
Impact 4.17-1: Impacts from Erosion and Sedimentation Caused by Construction-Related Activities	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10	Alt 1 = NE Alts 2,3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.17-2: Impacts form Erosion and Sedimentation Caused by Long-Term Implementation of the Project	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs SOILS-9, BIO-30, and BIO-38	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.17-3: Water Quality Impacts from Acute or Diffuse Releases of Contaminants Used during Project Implementation	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = LTS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS

Table ES-3 Summary of Resource Topics with Impacts and RPMs and/or Mitigation Measures

Resource Topics/Impacts	Environmental Effects before Mitigation (by Alternative)		RPMs and/or Mitigation Measures	Environmental Effects after Mitigation (by Alternative)	
	NEPA	CEQA		NEPA	CEQA
Adv = Adverse B = Beneficial LTS = Less than significant N/A = Not applicable			NE = No effect PS = Potentially significant S = Significant SU = Significant and unavoidable		
Impact 4.17-4: Impacts on Groundwater from Increased Visitation and Groundwater Demand	Alts 1, 2, 3, 4 = NE	Alt 1 = NE Alt 2, 3, 4 = LTS	No mitigation measures are required	Alt 1, 2, 3, 4 = NE	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.17-5: Localized Flooding from Changes in Site Drainage Patterns	Alt 1 = NE Alts 2, 3, 4 = Adv	Alt 1 = NE Alts 2, 3, 4 = PS	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs WQ-9 and WQ-10	Alt 1 = NE Alts 2, 3, 4 = Mitigated	Alt 1 = NE Alts 2, 3, 4 = LTS
Impact 4.17-6: Impacts on Riparian Conservation Objectives in Riparian Conservation Areas	Alt 1 = NE Alts 2, 3, 4 = Adv	N/A	Alt 1 = No mitigation measures are required Alts 2, 3, 4 = RPMs in the RCO report	Alt 1 = NE Alts 2, 3, 4 = Mitigated	N/A

1 INTRODUCTION

Based on preliminary internal U.S. Forest Service (Forest Service) and Placer County (County) scoping, external public scoping, completion of an initial study under the California Environmental Quality Act (CEQA), and evaluation of the context and intensity factors contained in Title 36 of the Code of Federal Regulations (CFR) Section 1508.27, the Forest Service and Placer County have determined that a joint environmental impact statement/environmental impact report (EIS/EIR) is necessary to review, analyze, and document the potential effects on the human, physical, and biological environment anticipated to result from the construction, operation, and maintenance of the proposed Squaw Valley | Alpine Meadows Base-to-Base Gondola Project (project). This EIS/EIR analyzes the direct and indirect effects of the alternatives that would occur on both National Forest System (NFS) lands and private lands within Placer County, California. The effects of past, present, and reasonably foreseeable future activities that could interact with effects resulting from implementation of the alternatives are analyzed as cumulative effects.

The National Environmental Policy Act (NEPA) applies to federal actions (40 CFR Section 1507.1), including the Forest Service's issuance of an amendment to the proponent's current special use permit (SUP) to authorize the project on NFS lands. Similarly, CEQA applies to discretionary actions of all state, regional, or local agencies (14 California Code of Regulations [CCR] Section 15002[b][1]–[2]), including Placer County's issuance of a conditional use permit and amendment of the *Squaw Valley General Plan and Land Use Ordinance* (SVGPLUO) (Placer County 2006). Both NEPA and CEQA encourage cooperation between federal, state, and local agencies to reduce duplication of the NEPA and CEQA processes (40 CFR Section 1506.2 and 14 CCR Section 15221). In this manner, the Forest Service and Placer County are co-leading the development of this joint EIS/EIR. Squaw Valley Ski Holdings, LLC (SVSH) is the project proponent.

After publication of the Draft EIS/EIR for the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project, installation of Gazex facilities for avalanche mitigation was removed as a component of the project by the proponent, SVSH. At this time, installation of a gondola connecting the Squaw Valley and Alpine Meadows base areas is a higher priority for SVSH than installation of Gazex facilities to supplement existing avalanche mitigation techniques at Alpine Meadows. Existing avalanche mitigation techniques utilized by snow safety personnel at Alpine Meadows, including use of hand-charges, Avalaunchers, and the 105-millimeter Howitzer, provide effective and efficient means for reducing avalanche risk at the resort to a level that is acceptable for recreational use by guests. SVSH will continue to evaluate the efficacy of Gazex facilities for avalanche mitigation, as well as other, new forms of avalanche mitigation that are emerging as leading technologies in the field, for potential implementation in the future.

All changes made to text and tables in this Final EIS/EIR since publication of the Draft EIS/EIR, including those related to removal of Gazex facilities from the proposal, are identified in this Final EIS/EIR. All changes made to this EIS/EIR after publication of the Draft EIS/EIR are identified in this Final EIS/EIR with a vertical line in the margin, directly next to any text changes. To identify exact changes that occurred between the Draft EIS/EIR and the Final EIS/EIR, view the two documents side-by-side, navigate to any text in the Final EIS/EIR with a vertical line in the margin, and compare that text with the same section in the Draft EIS/EIR.

Changes made to the Final EIS/EIR after publication of the Draft EIS/EIR include but are not limited to:

- the removal of Proposed Action text identifying and explaining the Gazex facilities component of the project, as well as any mention of new Gazex facilities throughout the resource analysis sections;
- the modification of effects analysis that was initially conducted with the assumption that Gazex facilities would be included in the proposal;

- clarification and enhancement of several Resource Protection Measures (RPMs) reflecting input provided by the U.S. Fish and Wildlife Service during the Tahoe National Forest's (TNF's) Endangered Species Act consultation for Sierra Nevada yellow-legged frog;
- various edits made in response to detailed public comments submitted during the Draft EIS/EIR public comment period; and
- other, minor edits related to syntax or grammatical errors throughout the document.

Identifying revisions with vertical lines in the margin was not possible for exhibits, so this paragraph summarizes the revisions made to the exhibits. The primary reason for revising exhibits was to remove reference to Gazex exploders and their related features. Exhibit 2-7, "Typical Gazex Exploder," and Exhibit 2-8, "Typical Gazex Shelter," were removed, and the remaining exhibits in Chapter 2 were renumbered accordingly. The following exhibits were retained, but elements and text referring to Gazex exploders and related features were removed (numbering reflects removal of Exhibits 2-7 and 2-8):

- Exhibit 1-2, "Gondola Alignments Associated with Each Alternative"
- Exhibit 2-1, "Topographic Map of Gondola Alignment Associated with Each Action Alternative"
- Exhibit 2-2, "Overview of Gondola Alignment and Construction Access Route under Alternative 2"
- Exhibit 2-3, "Close-up of Alpine Meadows Base Terminal under Alternative 2, along with Tower Zones A and B"
- Exhibit 2-4, "Close-up of Alpine Meadows Mid-Station under Alternative 2, along with Tower Zones B and C"
- Exhibit 2-7, "Overview of Gondola Alignment and Construction Access Route under Alternative 3"
- Exhibit 2-8, "Close-up of Alpine Meadows Base Terminal under Alternative 3"
- Exhibit 2-11, "Overview of Gondola Alignment and Construction Access Route under Alternative 4"
- Exhibit 2-12, "Close-up of Alpine Meadows Base Terminal under Alternative 4"
- Exhibit 3-1, "Cumulative Projects"
- Exhibit 4.2-3, "Viewpoint Locations"
- Exhibit 4.3-1, "Tower Construction Overview"
- Exhibit 4.4-1, "Forest Plan Management Areas in the Project Area, including Management Area 086 – Scott (Scott Management Area)"
- Exhibit 4.4-2, "Existing Local Land Use Designations"
- Exhibit 4.4-3, "Existing Local Zoning Designations"
- Exhibit 4.9-1, "Existing Noise and Vibration Sensitive Land Uses and Proposed Project Components"
- Exhibit 4.14-1, "Aquatic Resources in the Study Area"
- Exhibit 4.14-2, "Sierra Nevada Yellow-Legged Frog Critical Habitat in the Study Area"
- Exhibit 4.15-1, "Wetland Habitats"

- Exhibit 4.16-1, “Topography of Project Area”
- Exhibit 4.16-3, “Geology of Project Area”
- Exhibit 4.16-4, “Soils of Project Area”
- Exhibit 4.17-2, “Hydrology Features”

1.1 BACKGROUND

The Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows) are separate ski facilities northwest of Lake Tahoe. They are proximate to each other, and are both under ownership of, and operated by, the project proponent. One lift ticket (or season pass) provides access to both facilities. Squaw Valley and Alpine Meadows each offer a different winter sports and resort amenity experience. Between the two ski areas, Squaw Valley has a higher percentage of advanced/expert terrain and more resort amenities (e.g., accommodations, restaurants, shopping, entertainment). Alpine Meadows, however, has more beginner and intermediate terrain and limited amenities. A shuttle bus currently provides roadway access between the ski areas throughout the day. This interresort access is often considered inconvenient because it requires skiers/boarders to exit the mountain, walk with their equipment to the shuttle stop, wait up to 30 minutes for the shuttle, and travel approximately 15 minutes to the shuttle stop at the other ski area. The project is being proposed to enhance the visitor experience at both Squaw Valley and Alpine Meadows by providing more direct access to existing ski terrain and/or resort amenities via a gondola lift system with limited waiting times to board the gondola and an approximately 16-minute transit time between ski areas. The more direct access would also allow the Squaw Valley ski and snowboard schools improved access to the beginner terrain at Alpine Meadows.

In September 2015 and October 2015, the TNF and County, respectively, accepted applications from SVSH to install, operate, and maintain an aerial ropeway system (gondola) connecting the Squaw Valley and Alpine Meadows ski areas. The original proposal also included an alteration of current avalanche mitigation techniques through the installation of eight Gazex exploders along or near a segment of the Alpine Meadows side of the proposed gondola alignment. However, as described above, Gazex was removed from the proposal after publication of the Draft EIS/EIR. Implementation of the proposal would require an amendment to the existing Forest Service SUP issued for the operation and maintenance of Alpine Meadows. The proposal is consistent with the *Alpine Meadows Ski Area Master Development Plan* (Tahoe National Forest 2015) and passed the screening criteria for consideration to use NFS lands and amend the existing permit consistent with Forest Service land use regulations. Permitting from the County includes a conditional use permit and General Plan amendment to the SVGPLUO (Placer County 2006) to allow for a new ski lift.

Alpine Meadows conducts its operations—including the lift and trail network, guest service facilities, infrastructure, and other assets—on private, state, and NFS lands administered by TNF in Placer County. Located in the Lake Tahoe region, Alpine Meadows is approximately 3.3 miles west of State Route (SR) 89, about 7 miles northwest of Tahoe City, and about 13 miles south of Truckee.

Squaw Valley conducts its operations—including the lift and trail network, guest service facilities, infrastructure, and other assets—almost entirely on private lands in Placer County. Approximately 195 acres of Squaw Valley’s operation are under Forest Service SUP on NFS lands. No portions of the infrastructure and improvements included in the alternatives would be located on NFS lands at Squaw Valley. Squaw Valley is approximately 2.5 miles west of SR 89, about 9 miles northwest of Tahoe City, and about 11 miles south of Truckee. At the closest point, Squaw Valley is approximately 1.2 miles from Alpine Meadows. Refer to Exhibit 1-1 below for a regional map of the project area.

1.2 RELATIONSHIP TO PREVIOUS ANALYSES AND APPROVALS

This EIS/EIR is consistent with and incorporates by reference several documents that are related to the management of Squaw Valley and Alpine Meadows:[1]

- 1990 TNF Land and Resource Management Plan (LRMP) (U.S. Forest Service 1990),
- 2004 Sierra Nevada Forest Plan Amendment Supplemental Environmental Impact Statement and Record of Decision (ROD) (U.S. Forest Service 2004a, 2004b),
- 2015 *Alpine Meadows Ski Area Master Development Plan* (Tahoe National Forest 2015), and
- 2016 Village at Squaw Valley Specific Plan Final EIR (Placer County 2016).

1.3 PURPOSE AND NEED AND PROJECT OBJECTIVES

NEPA, the federal environmental review process, requires an EIS to briefly describe the underlying purpose and need for the federal lead agency's proposed and alternative actions (40 CFR 1502.13). Similarly, CEQA, the state environmental review process, requires an EIR to contain a statement of the goals and objectives of the project proponent in proposing the project and alternatives. Although the NEPA purpose and need and CEQA project objectives serve similar functions (that is, to explain why the project is being considered and assist in the decision-making process), the Forest Service and Placer County have different statutory obligations and authorities regarding this element of environmental review and decision making and thus have separate needs and objectives.

This section presents a purpose and need statement and list of objectives that meets the requirements of both NEPA and CEQA.

1.3.1 Forest Service Purpose and Need

The Forest Service's purpose for the project is to improve developed winter recreation opportunities in the Scott Management Area, consistent with the LRMP. SUPs, and amendments to SUPs, are issued by the Forest Service and are required by law to be consistent with the LRMP. Desired future conditions for recreation management in the LRMP relevant to the alternatives direct the TNF to "provide a variety of opportunities for developed and dispersed recreation experiences" (U.S. Forest Service 1990:V-5). The Alpine Meadows SUP, which applies to the Scott Management Area, allows for development of additional winter sports facilities and support services as part of the desired future condition of the management area (U.S. Forest Service 1990:V-446–449).

The TNF needs to respond to SVSH's land use application, which proposes amendment of its SUP to improve connectivity between Alpine Meadows and Squaw Valley. The need, as expressed by SVSH, for improved connectivity between the ski areas is based on several factors. The developed snow sports trail network at Squaw Valley has limited terrain suitable for beginners and teaching; Alpine Meadows has additional intermediate and beginner terrain. Squaw Valley has more resort amenities (e.g. accommodations, restaurants, shopping, entertainment); Alpine Meadows, in contrast, has limited amenities. Although guests can currently access both ski areas on the same lift ticket, they must drive or ride a shuttle bus between the two areas to access all the different terrain and amenities offered at both locations.

[1] These documents are part of the project file for this EIS/EIR and are available for review at the Truckee Ranger District Office and the Placer County Tahoe City Office.

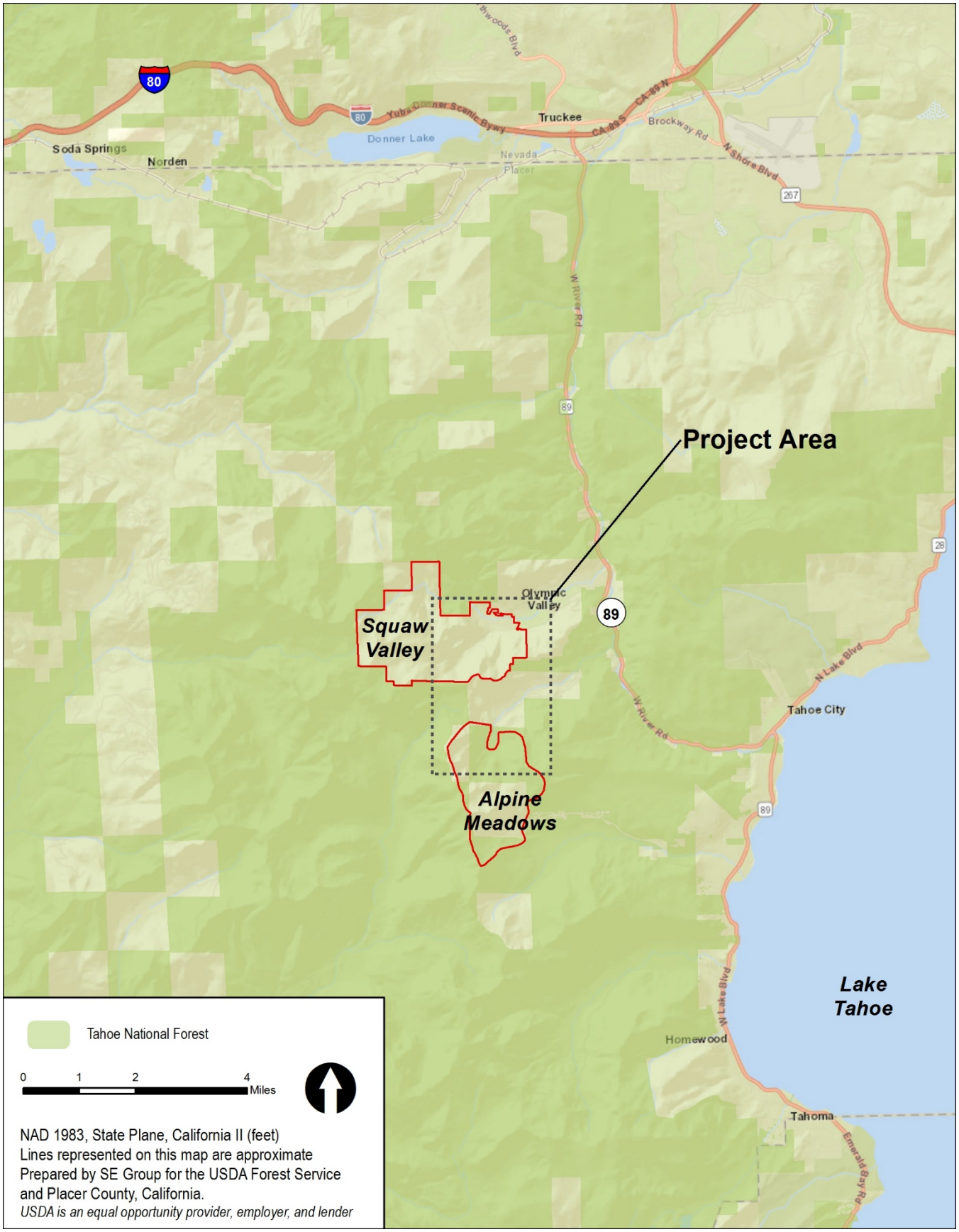

Exhibit 1-1 Regional Map of Project Area

1.3.2 CEQA Project Objectives

Placer County's responsibility under CEQA is predicated upon the review of an application for a conditional use permit and SVGPLUO amendment. Consideration of these actions is a discretionary decision by the County and qualifies as a project under CEQA. Under CEQA, an EIR must include a statement of objectives of the proposed project.

The overall purpose of the project is to enhance the visitor wintertime experience at both Squaw Valley and Alpine Meadows by providing direct connection between the ski areas for more convenient access to skiable terrain and resort amenities.

The project has the following objectives[2]:

1. Enhance the visitor experience at Squaw Valley and Alpine Meadows by providing easy, and potentially faster, interresort access to terrain and amenities at both ski areas.

2. Reduce visitor and resort shuttle system travel on roadways between the resorts.

3. Provide opportunities for skiers to offload at mid-stations to provide easier access to existing skiable terrain.

4. Provide a system where the gondola segment between the Squaw Valley base terminal and mid-station can operate independently from the remainder of the gondola so that this segment can potentially function as a ski lift if the remainder of the gondola is not operational because of weather, maintenance, or other factors.

5. Use a facility alignment that allows vehicles and equipment to reach gondola cabins from the ground to evacuate people from the cabins, if necessary, during an emergency situation.

1.4 SUMMARY OF THE ALTERNATIVES

NEPA and CEQA require the analysis of a reasonable range of alternatives that meet the purpose and need/objectives of the project (40 CFR Section 1502.14[a] and 14 CCR Section 15126.6[a]). The Forest Service and Placer County have identified the following four alternatives: Alternative 1 – No Action Alternative, Alternative 2 – Proposed Action Alternative, Alternative 3, and Alternative 4. These alternatives are described in greater detail in Chapter 2, "Description of the Alternatives."

Alternatives were developed, in part, in response to issues identified internally by the Forest Service and Placer County, and externally by the public during the scoping process. Alternative 3 addresses issues such as proximity to the Granite Chief Wilderness and proximity to occupied habitat for Sierra Nevada yellow-legged frog at Barstool Lake. Alternative 4 addresses issues such as proximity to the Granite Chief Wilderness, visibility of the project, and proximity to residences.

1.4.1 Alternative 1 – No Action Alternative

The No Action/No Project Alternative, required by NEPA and CEQA (40 CFR 1502.14 and 14 CCR Section 15126.6[e]), provides a baseline for comparing the effects of the action alternatives. NEPA uses the term

[2] The Draft EIS/EIR included a 6th project objective related to avalanche mitigation technology (Gazex); however, that objective was removed from the Final EIS/EIR because the project was modified to remove the proposed Gazex facilities from the proposal.

"No Action Alternative," and CEQA uses the term "No Project Alternative." For the purposes of this EIS/EIR, the term "No Action Alternative" is used for both NEPA and CEQA. Under the No Action Alternative, neither the Forest Service nor Placer County would provide authorizations to SVSH to construct a gondola. The No Action Alternative essentially reflects a continuation of existing interresort transportation management practices without changes, additions, or upgrades. The existing shuttle system between Squaw Valley and Alpine Meadows would continue to operate. The gondola connecting Alpine Meadows and Squaw Valley would not be implemented under the No Action Alternative, and existing conditions would not be changed at the project site.

1.4.2 Alternative 2

Alternative 2 would be located at Section 31, Township 16N, Range 16E; Section 5, Township 15N, Range 16E; and Section 8, Township 15N, Range 16E (see Exhibit 1-2 for a map of the gondola alignments associated with each action alternative). This alternative includes amendment of the Alpine Meadows SUP, issuance of a conditional use permit, rezone to accommodate the Alpine Meadows base terminal, and amendment of the SVGPLUO to authorize construction, operation, and maintenance of a gondola connecting Alpine Meadows and Squaw Valley (total length of approximately 13,000 feet) with mid-stations for Alpine Meadows and Squaw Valley located above *the Buttress* area and on the Squaw Saddle, respectively.

1.4.3 Alternative 3

Alternative 3 would be located at Section 31, Township 16N, Range 16E; Section 5, Township 15N, Range 16E; and Section 8, Township 15N, Range 16E (Exhibit 1-2). This alternative includes a gondola connecting Alpine Meadows and Squaw Valley in a different alignment (segments of which would be located further to the east of Alternative 2; total length of approximately 12,600 feet) with a mid-station for Alpine Meadows located on the Caldwell property (private lands located between Squaw Valley and Alpine Meadows ski resorts) and a mid-station for Squaw Valley located on the Squaw Saddle. Alternative 3 includes amendment of the Alpine Meadows SUP, issuance of a conditional use permit, rezone to accommodate the Alpine Meadows base terminal, and amendment of the SVGPLUO.

1.4.4 Alternative 4

Alternative 4 would be located at Section 32, Township 16N, Range 16E; Section 31, Township 16N, Range 16E; Section 5, Township 15N, Range 16E; and Section 8, Township 15N, Range 16E (Exhibit 1-2). This alternative includes a gondola connecting Alpine Meadows and Squaw Valley in a different alignment (the entire alignment further to the east than Alternatives 2 and portions of Alternative 3; total length of approximately 11,700 feet) with a mid-station for Alpine Meadows located on the Caldwell property (private lands located between Squaw Valley and Alpine Meadows ski resorts) and a mid-station for Squaw Valley located on the Squaw Saddle. Alternative 4 includes amendment of the Alpine Meadows SUP, issuance of a conditional use permit, rezone to accommodate the Alpine Meadows base terminal, and amendment of the SVGPLUO.

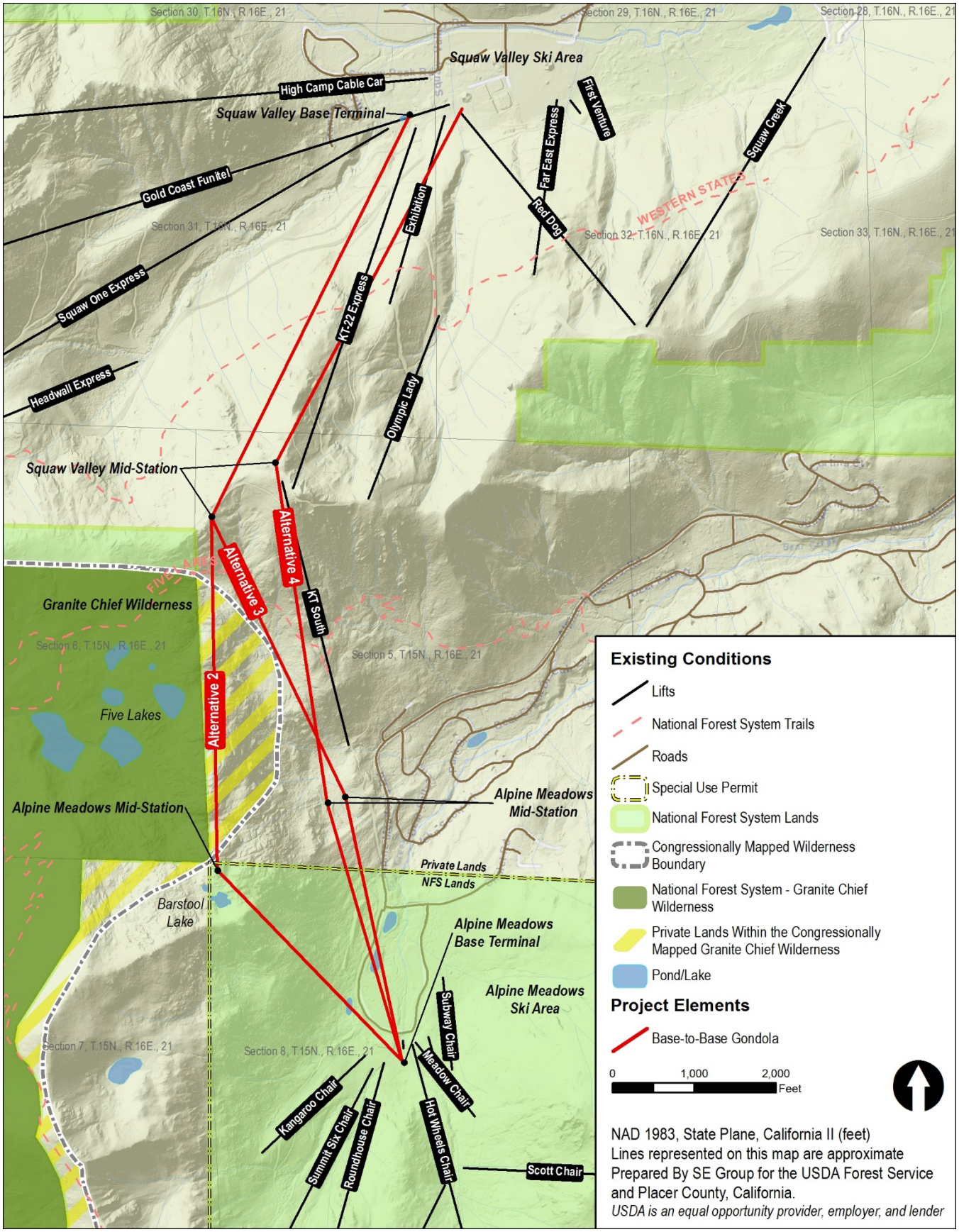

Exhibit 1-2 Gondola Alignments Associated with Each Alternative

1.5 INTERAGENCY COORDINATION

In accordance with regulatory direction—and in furtherance of cooperative management among federal agencies charged with oversight of environmental and natural resources—federal, state, local, and tribal entities with a likely interest in and/or jurisdiction over the project were sent scoping notices, EIS/EIR materials, and/or consulted before and throughout the NEPA/CEQA process.

Under NEPA regulations, any federal or public agency, other than the lead agencies, that has jurisdiction or special expertise relative to a project may request to be a cooperating agency in the NEPA process. No requests from any federal or public agencies to act as cooperating agencies have been received at the time of this writing.

Under CEQA, a responsible agency is a public agency that proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR or negative declaration. The term *responsible agency* includes all public agencies other than the lead agency that have discretionary approval power over the project. Examples of agencies that could act as responsible agencies for the project include the California Department of Fish and Wildlife, the Lahontan Regional Water Quality Control Board, and the Placer County Air Pollution Control District.

1.6 PUBLIC INVOLVEMENT

1.6.1 Scoping

Scoping is an open process to determine the scope of issues to be addressed in an environmental document (40 CFR 1501.7). Under NEPA, the scoping process remains open throughout project planning, whereas, under CEQA, the scoping process is typically limited to a 30-day period following publication of the notice of preparation (NOP) to allow time for issues to be addressed.

In accordance with NEPA regulations (40 CFR Section 1508.22), the Forest Service initiated the scoping comment period by publishing a notice of intent in the *Federal Register* on April 29, 2016, with a designated scoping period ending on May 31, 2016. In accordance with CEQA (14 CCR Section 15082), Placer County published an NOP with the State Clearinghouse on April 22, 2016, with a 30-day review period ending on May 23, 2016.

The Forest Service prepared a scoping package containing a brief description of the Proposed Action, description of the purpose of and need for the action, and two illustrative maps. The package was distributed to 51 individuals and organizations. Placer County prepared the CEQA Initial Study Checklist for the project, which included a brief description of the project and project objectives and an initial evaluation of potential environmental effects. The Initial Study Checklist and NOP were posted on the Placer County project website (Initially posted at: https://placer.ca.gov/departments/communitydevelopment/envcoordsvcs/eir/squawvalleygondolaproject; currently available at: https://www.placer.ca.gov/2680/Squaw-Valley-Alpine-Meadows-Base-to-Base) and mailed to individuals and organizations on the mailing list.

Two joint Forest Service and Placer County public scoping meetings were held on May 9, 2016. Both meetings were held at the Resort at Squaw Creek, Monument Peak Room, 400 Squaw Creek Road, Olympic Valley, California. The first meeting was held from 2:00 to 4:00 p.m., and the second was held from 6:00 to 8:00 p.m. Individuals were able to obtain information and submit comments at this public scoping meeting. Scoping comments were also accepted through mail, fax, telephone, and email and through the Forest Service project website. On the Forest Service project website, an e-mail address and comment form were provided for submitting electronic comments.

Following the close of the public scoping period, the Forest Service and Placer County decided to combine the NEPA/CEQA processes and produce a joint EIS/EIR. The Forest Service and Placer County announced this change through a press release and revised NOP published on September 2, 2016, and Placer County accepted additional scoping comments until October 3, 2016.

The notices and scoping materials are included in Appendix A.

1.6.2 Public Review of the Draft EIS/EIR

The Draft EIS/EIR was distributed to interested agencies, stakeholder organizations, and individuals for a comment period of 45 days, from **April 27, 2018, to June 11, 2018**. This distribution was undertaken to ensure that interested parties had an opportunity to express their views regarding the environmental effects of the project and to ensure that information pertinent to permits and approvals was provided to decision makers. The Draft EIR/EIS was available for review by the public during normal business hours at the Tahoe City and Truckee libraries, Placer County offices in Auburn and Tahoe City, and Tahoe National Forest offices in Nevada City and Truckee. The document was also available online.

A public hearing on the Draft EIS/EIR was conducted on May 24, 2018, as part of the Placer County Planning Commission meeting in Kings Beach, California. A Forest Service open house was conducted on May 22, 2018 at the Truckee Ranger District Office in Truckee, CA.

All comments received on the Draft EIS/EIR during the public comment period, as well as several comments received within two weeks after the close of the comment period, are included along with written responses in Volume 2 of this Final EIS/EIR.

1.6.3 NEPA Comment Submittal

Pursuant to 36 CFR 218.25, comments on the Squaw Valley |Alpine Meadows Base-to-Base Gondola Project Draft EIS/EIR were accepted for 45 days beginning on the first day after the date of publication of the Notice of Availability (NOA) of the Draft EIS/EIR in the Federal Register, which was April 27, 2018.

1.6.4 Distribution of the Final EIS/EIR

This Final EIS/EIR is being distributed to interested agencies, stakeholder organizations, and individuals. The Final EIR/EIS is available for review by the public during normal business hours at the following locations:

Tahoe City Library
740 N. Lake Boulevard
Tahoe City, CA 96145

Truckee Library
10031 Levon Avenue
Truckee, CA 96161

Placer County
3091 County Center Drive, Suite 190
Auburn, CA 95603

Placer County
775 N. Lake Boulevard
Tahoe City, CA 96145

Tahoe National Forest
Supervisor's Office
631 Coyote Street
Nevada City, CA 95959

Tahoe National Forest
Truckee Ranger District
10811 Stockrest Springs Road
Truckee, CA 96161

The Final EIS/EIR is available online at:
https://www.placer.ca.gov/2680/Squaw-Valley-Alpine-Meadows-Base-to-Base.

Placer County will hold two public meetings (at the Squaw Valley Municipal Advisory Council [SVMAC] and the North Tahoe Regional Advisory Council [NTRAC] and two public hearings (Planning Commission and Board of

Supervisors) on the Final EIS/EIR as part of the project decision-making process. The times, dates, and locations of these hearings/meetings will be noticed through the normal County public meeting noticing mechanisms.

Following lead agency consideration of all comments received during public review of the Draft EIS/EIR and circulation of the Final EIS/EIR, each of the lead agencies (the Forest Service and Placer County) will follow their respective agency processes, which are detailed in Section 1.9, "Decisions to Be Made."

1.6.5 NEPA Objection Provisions

The project is subject to objection pursuant to 36 CFR 218, Subparts A and B. Only those who submitted project-specific written comments during scoping or the Draft EIS/EIR public review and comment period are eligible to file an objection. Issues raised in objections must be based on previously submitted comments unless based on new information arising after the designated comment periods.

Objections must be submitted within 45 calendar days following the publication of a legal notice in Grass Valley's *The Union* and the *Tahoe World*. The publication date in the newspaper of record is the exclusive means for calculating the time to file an objection. Those wishing to object should not rely upon dates or timeframes provided by any other source. It is the objector's responsibility to ensure evidence of timely receipt (36 CFR 218.9).

Objections must be submitted to the reviewing officer: Regional Forester, USDA Forest Service; Attn: Base to Base Gondola Project Objection; 1323 Club Drive, Vallejo, CA 94592. Ph. (707) 562-8737. Objections may be submitted via mail, FAX (707-562-9229), or delivered during business hours (M-F 8:00 a.m. to 4:00 p.m.). Electronic objections, in common (.doc, .pdf, .rtf, .txt) formats, may be submitted to: objections-pacificsouthwest-regional-office@fs.fed.us with Subject: Base to Base Gondola Project.

Objections must include the following information (36 CFR 218.8[d]): (1) objector's name and address, with a telephone number, if available; (2) objector's signature or other verification of authorship; (3) identification of a single lead objector when applicable; (4) project name, Responsible Official name and title, and name of affected National Forest(s) and/or Ranger District(s); (5) reasons for, and suggested remedies to resolve, the objection; and (6) description of the connection between the objection and the objector's prior comments. Documents incorporated by reference must adhere to 36 CFR 218.8(b).

Following completion of the pre-decisional objection process, the decision may be implemented immediately upon signing of the ROD.

1.7 SCOPE OF THE ANALYSIS

1.7.1 Resources/Issues Addressed in the EIS/EIR

Based on the results of public scoping and analysis contained in the initial study (Appendix A), specific areas of concern have been identified and classified as being "*key issues*," "*issues,*" or "*resources/issues dismissed from further documentation*." Both *key issues* and *issues* generally require in-depth analysis and disclosure, and *key issues* may warrant the generation of an alternative. *Resources/issues dismissed from further documentation* are described below in Section 1.7.2. The Forest Service Handbook directs the Forest Service to focus the analysis on *key issues* and include brief rationale for other topics not analyzed in detail.

Under CEQA and in accordance with the State CEQA Guidelines, a lead agency shall focus an EIR discussion on significant environmental effects and may limit discussion on other effects to brief explanations about why they are not significant (Public Resources Code [PRC] Section 21002.1, CCR Section 15128). A determination of

which impacts would be potentially significant was made for this project based on review of the information presented in the initial study prepared for the project and comments received as part of the public scoping process (Appendix A), as well as additional research and analysis of relevant project data during preparation of this EIS/EIR.

The Forest Service and the County have determined that the project has the potential to result in significant environmental impacts on the following resources, which are addressed in detail in this EIS/EIR (see Sections 4.1 through 4.17):

- Recreation;
- Visual Resources;
- Wilderness;
- Land Use;
- Socioeconomic and Environmental Justice;
- Public Safety;
- Transportation and Circulation;
- Utilities;
- Noise;
- Air Quality;
- Greenhouse Gas Emissions and Climate Change;
- Vegetation;
- Botany;
- Wildlife and Aquatics;
- Wetlands;
- Soils, Geology, and Seismicity; and
- Hydrology and Water Quality.

"*Key issues*" that helped inform the development of alternatives include visual resources, wilderness, and Sierra Nevada yellow-legged frog. For example, and as noted above, Alternative 3 addresses issues such as proximity to the Granite Chief Wilderness and proximity to occupied habitat for Sierra Nevada yellow-legged frog at Barstool Lake. Alternative 4 addresses issues such as proximity to the Granite Chief Wilderness, visibility of the project, and proximity to residences. Other issues, including those in the above bulleted list, were also considered in the development of alternatives. See Chapter 2, "Description of Alternatives," for additional details.

1.7.2 Resources/Issues Dismissed from Further Documentation in This EIS/EIR

Pursuant to NEPA and CEQA, the discussion of potential effects on the environment is focused on those impacts that are potentially significant. *Resources/issues dismissed from further documentation* are beyond the scope of the environmental document; are already decided by law, regulation, or policy; are not relevant to the decision; or are conjectural and not supported by scientific or factual evidence. The use of *issues* to frame environmental analyses under NEPA is outlined in the Forest Service Handbook and Council on Environmental Quality regulations (Forest Service Handbook 1909.15 Section 11.5, Section 12.4, Section 15.24, 40 CFR 1501.7 and 1500.4). Based on a review of the information presented in the Initial Study prepared for the project and comments received as part of the public scoping process (Appendix A) as well as additional research and analysis of relevant project data during preparation of this Draft EIS/EIR, the following were identified as resources that would not experience any potential environmental impacts from the project. Accordingly, these resources are not addressed further in this EIS/EIR, but are identified below with a brief explanation as to why impacts to each resource are not anticipated.

1.7.2.1 Agriculture and Forest Resources (as Defined by CEQA)

There is no agricultural land in the project area, and the project would not be located on or adjacent to farmland. The project area contains pockets of trees that would meet the CEQA definitions of forest land and timberland (PRC Sections 12220(g) and 4526). However, the dispersed removal of individual trees would not result in the loss of forest land or conversion of forest land to a non-forest use. Therefore, no significant impacts related to agriculture or forest resources (as defined by CEQA) would occur and this issue is not discussed further in this EIS/EIR. Potential impacts related to the functions and values provided by trees in the project area are addressed in Section 4.2, "Visual Resources," and Section 4.12, "Vegetation."

1.7.2.2 Mineral Resources

There are no identified mineral resource zones in the project area. No loss of availability of a known mineral resource that would be of value to the region and the residents of the state would occur. Further, there are no locally important mineral resource recovery sites delineated on a local general plan, specific plan, or other land use plan that include the project area. Therefore, no impacts to mineral resources would occur and this issue is not discussed further in this EIS/EIR.

1.7.2.3 Cultural Resources

Based on cultural resources surveys of the project area conducted in 2015 and 2016 (which included searches of available records, pedestrian archaeological surveys, and contacts with the local tribal representative), there are no archaeological or historic (e.g., historic buildings, foundations) resources on the site of any of the action alternatives and no evidence of paleontological resources occurring in the project area. As of March 2018, the State Historic Preservation Officer has concurred that no historic properties are listed on, or eligible for listing on, the National Register of Historic Places within the project's area of potential effect, and therefore, no historic properties would be affected by the project.

It is highly unlikely that currently unknown subsurface cultural resources could be located in the area considered for project alternatives given the steep slopes found within of much of the project area, preponderance of exposed granite, and previous ground disturbance in the locations of the base terminals. Although there is no evidence that cultural or paleontological resources occur in the area considered for the project alternatives, there are RPMs that would be applied to all action alternatives addressing the potential for encountering previously unknown cultural and paleontological resources and evaluation and protection of these finds. The role of RPMs in project implementation and minimizing environmental affects is described in more detail in Section 2.2.6, "Resource Protection Measures." All RPMs are provided in Appendix B and those related to cultural and paleontological resources are RPMs CUL-1 through CUL-4.

Assembly Bill (AB) 52 requires consideration of tribal cultural resources (TCRs). AB 52, as provided in PRC Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of an NOP of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration.

On December 17, 2015, Placer County sent letters to representatives of the Washoe Tribe of California and Nevada, United Auburn Indian Community of the Auburn Rancheria (UAIC), the Shingle Springs Band of Miwok Indians, and the T'Si-Akim Maidu offering the opportunity to consult.

On January 12, 2016, the Shingle Springs Rancheria forwarded a letter noting they are unaware of cultural resources on the project site but requesting copies of any cultural reports prepared for the project. On February 3, 2016, the Washoe Tribe similarly noted via letter that they are unaware of cultural resources that may be affected by the project but requested any cultural reports prepared for the project. On February 8, 2016, UAIC requested to receive copies of cultural reports prepared for the project as well as any future environmental documents. On February 1, 2018, the County provided all requesting tribes with a copy of the *Cultural Resource Inventory and Evaluation* prepared for the project in December 2017.

On February 1, 2018, the County sent an email confirmation to UAIC that consultation was considered closed as of January 16, 2016. On February 5, 2018, UAIC responded affirmatively via email to the close of consultation. On February 1, 2018, the County sent a similar email confirmation to the Washoe Tribe, and on February 2, 2018 received an affirmative response from the tribe to the close of consultation. On February 1, 2018, the County sent an email to Shingle Springs Rancheria confirming that consultation would be considered closed as of March 5, 2018. No further correspondence has been received from Shingle Springs Rancheria. Therefore, consultation with the tribes resulted in the conclusion that there are no resources on the project site that the tribes consider to be a TCR identified as described under AB 52 and defined in PRC

Section 21074. In addition, no archaeological or historic resources have been identified on the project site. Therefore, the project would have no impact to TRCs as defined in PRC Section 21074.

1.7.2.4 Population and Housing

The project would not include construction of new housing or commercial businesses. Therefore, no direct population growth would result from project implementation. The project would not extend roads or other infrastructure to new areas that would induce growth in new locations. The project's construction effort would be relatively modest and short term (approximately 6–8 months), and is not expected to result in employees relocating to the project area due to this short duration. Approximately 10 new employees (to fill two new full-time, year-round employment positions and eight full-time, seasonal positions) would be needed for project operation during the winter months. This increase in employees would be minimal compared to the seasonal and year-round employee pool available, and is analyzed further in Section 4.5, "Socioeconomics and Environmental Justice." The project would not include removal of any homes or structures. Therefore, no significant impacts related to population and housing would occur and this issue will not be discussed further in this EIS/EIR. The potential for growth-inducing effects, however, is considered, as required by CEQA, in Chapter 5, "Other Required NEPA and CEQA Analyses." Operation of the project would require.

1.7.2.5 Public Services

Although the project may result in an increased number of skiers in the project area, the new gondola would not increase the number of residents or businesses in the project vicinity. The project would have a minimal increase in the demand for fire and police protection services, and the existing fire and police stations and other available fire protection resources in the region (e.g., Forest Service, California Department of Forestry and Fire Protection) are adequately staffed and equipped to provide the level of service needed for the project. Project operation would not require the construction of new, or alteration of existing on-site or off-site fire or police protection facilities or services. Therefore, the project would have a less-than-significant impact on fire and police protection services and this issue will not be discussed further in this EIS/EIR. Potential impacts related to emergency response/rescue are addressed in Section 4.6, "Public Safety."

The nearest school is 1.5 miles from the project area and the project would not directly affect any schools. In addition, the project would not include development of new residences and, therefore, would not result in a substantial effect on the permanent population in the area that would increase the demand for educational services. Project operation would generate two new year-round jobs (i.e., full-time equivalent positions), which would not be sufficient to generate substantial demand for school facilities. Further, schools throughout the region have available capacity. Therefore, no significant impacts related to schools would occur and this issue will not be discussed further in this EIS/EIR. Potential impacts to recreation resources are addressed in Section 4.1, "Recreation."

1.8 CONSISTENCY WITH FOREST SERVICE AND PLACER COUNTY POLICY

1.8.1 Forest Service Policy

SVSH's operations carried out on NFS lands must comply with management direction provided in the LRMP as required by the National Forest Management Act. The LRMP provides two levels of management direction: (1) forestwide direction and (2) area-specific direction. Portions of all action alternatives on NFS

lands are located within the Scott Management Area. The LRMP includes the following direction for development in the Scott Management Area:[3]

> Development of private sector ski area maintenance, operation, and planning will be emphasized during the planning period. This may include development of bed space at the ski base facility. Project-level planning will coordinate increased capacities with off-site capabilities.

As part of this analysis, the project alternatives and purpose and need were reviewed to determine consistency with the forestwide goals and objectives, as well as the specific standards and guidelines for the Scott Management Area. The action alternatives were compared against pertinent forestwide and Scott Management Area standards and guidelines. Consistency with the standards and guidelines is analyzed in relevant sections of Chapter 4.

The purpose and need are consistent with the LRMP General Recreation Standards and Guidelines. The LRMP includes the following guideline for recreation:

> Provide a broad spectrum of dispersed and developed recreation opportunities in accordance with identified needs and demands.

The ROD and final Supplemental Environmental Impact Statement for the Sierra Nevada Forest Plan Amendment (SNFPA) amended the LRMP for the Tahoe National Forest and for the 10 other national forests in the Sierra Nevada to improve protection of old forests, wildlife habitats, watersheds, and communities in the Sierra Nevada and Modoc Plateau (U.S. Forest Service 2004a, 2004b). The SNFPA establishes vegetation management practices for the Sierra Nevada to improve forest health throughout the region, as well as provides standards and guidelines applicable to riparian areas, wildlife, botany, and invasive species. The SNFPA does not include management direction specific to recreation projects. Applicable guidance for overstory vegetation removal is incorporated into this analysis.

1.8.2 Placer County Policy

The *Placer County General Plan* (General Plan) (Placer County 2013) provides an overall framework for the development of the County and protection of its natural and cultural resources. A total of 23 community plans have been adopted under the General Plan to provide a more detailed focus on specific geographic areas within the unincorporated County. The goals and policies included within the community plans supplement, but do not supersede, the goals and policies contained within the General Plan. The SVGPLUO (Placer County 2006) and *Alpine Meadows General Plan* (Placer County 1968) are the community plans for Squaw Valley and Alpine Meadows, respectively. Project consistency with these plans is discussed in Section 4.4, "Land Use."

1.9 DECISIONS TO BE MADE

1.9.1 Forest Service Decisions

Based on internal Forest Service scoping and external public scoping as well as on evaluation of the context and intensity factors contained in 40 CFR 1508.27, the Forest Service has determined that an EIS is necessary to review, analyze, and document the potential impacts on the human and biological environment anticipated to result from implementation of the project. This EIS/EIR is a disclosure rather than a decision document, and its purpose is to provide environmental analysis sufficient to support a ROD.

[3] A portion of Alternative 2 is located on private lands that are within the Granite Chief Management Area where Forest Service management does not apply to the private lands. Additionally, portions of Alternatives 2, 3, and 4 are located on private lands within the Tinkers Management Area, where Forest Service management also does not apply.

Based on the analysis documented within this EIS/EIR, the Responsible Official, the Forest Supervisor for the TNF, will decide whether to select Alternative 2 (Proposed Action Alternative provided by the applicant), one of the other action alternatives, or the No Action Alternative. Selection of one of the action alternatives would be a decision by the Forest Supervisor to amend Alpine Meadows' existing SUP to authorize the project. However, the Forest Supervisor is not required to choose any of the alternatives described herein but may instead select components of the alternatives. In addition to determining which alternative to select, the Forest Supervisor will determine whether any additional mitigation measures or modifications to the RPMs are required. The Forest Supervisor may require additional mitigation measures or modifications to RPMs not discussed within this document and may require that the mitigation measures or RPMs be monitored beyond the monitoring requirements provided in existing mitigation measures and RPMs. In addition, the Forest Supervisor will decide whether to amend the LRMP.

In compliance with Forest Service Handbook 1909.15 Chapter 18, the Forest Service will continually review the relevancy of the analysis and subsequent decision for new and changed conditions as any other approved projects are advanced for implementation.

1.9.2 Placer County Decisions

As the CEQA lead agency, Placer County is responsible for considering the adequacy of the environmental analysis and determining whether the overall project should be approved. Specifically, the project proponent is requesting the following actions and planning entitlements from Placer County:

- certification of the Final EIS/EIR,
- adoption of a mitigation monitoring and reporting program that includes all the RPMs and mitigation measures identified in the Final EIS/EIR,
- approval of a conditional use permit to allow the proposed gondola as a new conditional use,
- approval of a rezone from Neighborhood Commercial to Open Space for the Alpine Meadows General Plan, and
- amendment of the SVGPLUO (Placer County 2006) to add the proposed gondola to the SVGPLUO map(s) of existing and new ski lifts (see additional discussion below).

The SVGPLUO contains text indicating that new ski lifts would be limited to those shown on maps included in the SVGPLUO (i.e., Squaw Valley General Plan Map and the Future Potential Ski Lifts Map). These maps do not include the proposed gondola; therefore, a General Plan amendment would be required. The proposed amendment to the SVGPLUO is also addressed in Section 4.4, "Land Use."

1.10 OTHER NECESSARY PERMITS, LICENSES, AND/OR CONSULTATION

The Forest Service decision would apply only to NFS lands analyzed within this EIS/EIR and would not apply to private property. The Placer County decision would apply to private lands on the project site. Other federal, state, and local entities also may have jurisdiction. Decisions by agencies to issue or not issue approvals related to this proposal may be aided by the analyses presented in this EIS/EIR. Although the Forest Service and Placer County assume no responsibility for enforcing laws, regulations, or policies under the jurisdiction of other governmental agencies, Forest Service and Placer County regulations require permittees to abide by applicable laws and conditions imposed by other jurisdictions. In addition to the requisite Forest Service and Placer County approvals, consultation with the following entities, or permits from these entities, may be required to implement the project:

Federal

- U.S. Army Corps of Engineers: Compliance with Section 404 of the Clean Water Act if discharge of fill to waters of the United States occurs and /or if any wetlands are identified and cannot be avoided by the project.

- U.S. Environmental Protection Agency: Concurrence with Clean Water Act Section 404 permit if waters of the United States and wetlands cannot be fully avoided.

- U.S. Fish and Wildlife Service: Compliance with Section 7 of the federal Endangered Species Act.

State

- California Department of Fish and Wildlife, Region 2: Compliance with the California Endangered Species Act; potential permits under Section 2081 of the California Fish and Game Code if take of listed species is likely to occur; Section 1602 streambed alteration agreement if any construction activities occur within the bed or bank of adjacent waterways.

- California State Office of Historic Preservation: Compliance with Section 106 of the National Historic Preservation Act (in coordination with the Forest Service).

- Lahontan Regional Water Quality Control Board: National Pollutant Discharge Elimination System construction stormwater permit (notice of intent to proceed under general construction permit) for disturbance of more than 1 acre, discharge permit for stormwater, and Clean Water Act Section 401 water quality certification or waste discharge requirements.

Local

- Placer County Air Pollution Control District: Authority to construct (for devices that emit air pollutants); permit to operate; air quality management plan consistency determination.

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2 DESCRIPTION OF ALTERNATIVES

This chapter describes a reasonable range of alternatives consistent with the requirements of NEPA and CEQA. The action alternatives carried forward for detailed evaluation and consideration in this Final EIS/EIR have each been formulated to accomplish most of the basic objectives of the project, discussed in Section 1.3, "Purpose and Need and Project Objectives."

2.1 INTRODUCTION

2.1.1 Requirements for the Project and Alternatives

Consideration of alternatives that would achieve the basic objectives of a project, while reducing the project's significant environmental impacts, is required under NEPA and CEQA. Additionally, CEQA requires the identification of a proposed project, against which alternatives are compared. To aid informed decision making and public participation, three action alternatives (including the Proposed Action Alternative) were developed that comply with NEPA and CEQA and meet the underlying purpose and need and objectives of the project (described in Section 1.3, "Purpose and Need and Project Objectives"). This Final EIS/EIR also describes and evaluates the No Action Alternative (Alternative 1) to provide the decision makers and the public with an overview of what could reasonably be expected to occur if none of the action alternatives were approved and implemented, as required by NEPA and CEQA. This chapter also describes various alternatives that were considered but eliminated from detailed evaluation because they are either infeasible, do not meet most of the basic project objectives, or do not avoid or substantially lessen one or more of the potentially significant effects of other alternatives (see Section 2.3, "Alternatives and Design Components Considered but Not Evaluated Further," below).

2.1.1.1 NATIONAL ENVIRONMENTAL POLICY ACT

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

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

2.1.1.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 15124 of the State CEQA Guidelines requires that certain information is contained in the project description, including the project location, a statement of project objectives (see Section 1.3.2 of this document), and a description of project characteristics. Alternative 2 is referred to as the Proposed Action Alternative.

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

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

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

- evaluate the comparative merits of the alternatives.

The environmental effects and the comparative merits of each alternative are identified in the various resource analysis sections in Chapter 4. In addition to the guiding principles for selection of alternatives set forth above, the State CEQA Guidelines require that the environmental document evaluate a no project alternative (that is, the consequences of taking no action); identify alternatives that were initially considered but then eliminated from detailed evaluation and provide the reasoning for their dismissal; and identify the "environmentally superior alternative." An environmentally preferable/environmentally superior alternative is identified in Chapter 5. In addition, CEQA Guidelines Section 15126.6(f)(2)(A) requires that the analysis of alternatives identify whether any of the potentially significant effects of the project would be avoided or substantially lessened by placing the project in another feasible location. Accordingly, this document includes a discussion of potential off-site alternatives that were considered but rejected for detailed evaluation and the reasons for their rejection (see Section 2.3, "Alternatives and Design Components Considered but Not Evaluated Further," below).

As required by NEPA, this document provides a comparable level of detail in the analysis of each action alternative. A full range of reasonable alternatives (including the alternative originally submitted by the applicant, identified as the Proposed Action Alternative) is presented for public review. The alternatives described and evaluated in detail in this document include variations on alignments to provide flexibility to the Forest Service and Placer County in selecting the alternative that best meets the basic project objectives while taking into account the significant or potentially significant impacts on the human and physical environments.

2.2 ALTERNATIVES CONSIDERED IN DETAIL

As described in Chapter 1, "Introduction," the Forest Service purpose for the project is to improve developed winter recreation opportunities in the Scott Management Area, consistent with the *1990 Tahoe National Forest Land and Resource Management Plan*; the overall purpose of the project under CEQA is to enhance the visitor wintertime experience at both Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows) by providing direct access between the ski areas for more convenient access to skiable terrain and resort amenities. In addition to the Proposed Action (Alternative 2), two other action alternatives (Alternatives 3 and 4) are analyzed in detail within this Final EIS/EIR to achieve this project purpose. Additionally, a No Action Alternative is analyzed as required by NEPA and CEQA.

Alternatives 3 and 4 were developed, in part, in response to issues identified internally by the Forest Service and Placer County during the environmental review process, and externally by the public during the scoping process. The input received during the scoping process is provided in Appendix A.

2.2.1 Alternative 1 – No Action Alternative

The No Action Alternative, required by NEPA and CEQA (40 CFR 1502.14 and 14 CCR Section 15126.6[e]), provides a baseline for comparing the effects of the action alternatives. Under the No Action Alternative, neither Forest Service nor Placer County would provide authorizations to Squaw Valley Ski Holdings, LLC (SVSH) to construct a gondola. The No Action Alternative essentially reflects a continuation of existing interresort transportation management practices without changes, additions, or upgrades. The existing shuttle system between Squaw Valley and Alpine Meadows would continue to operate. The gondola connecting the ski and base areas of Alpine Meadows and Squaw Valley would not be implemented under the No Action Alternative and existing conditions would not be changed at the project site.

2.2.2 Alternative 2 – Proposed Action Alternative

The Alternative 2 - Proposed Action Alternative would be located at Section 31, Township 16N, Range 16E; Section 5, Township 15N, Range 16E; and Section 8, Township 15N, Range 16E. Alternative 2 includes amendment of the Alpine Meadows Special Use Permit (SUP), issuance of a conditional use permit (CUP), rezone to accommodate the Alpine Meadows base terminal, and amendment of the *Squaw Valley General Plan and Land Use Ordinance* to authorize construction, operation, and maintenance of a gondola connecting the ski and base areas of Alpine Meadows and Squaw Valley (total length of approximately 13,000 feet) with mid-stations for Alpine Meadows and Squaw Valley located above *the Buttress* area and on the Squaw Valley Saddle, respectively.

These actions are described in detail below. The proposed rezone and general plan amendment are discussed in Section 1.9.2, "Placer County Decisions." Maps illustrating Alternative 2 are included in Exhibits 2-1, 2-2, 2-3, 2-4, 2-5, and 2-6. Alternative 2 also includes Resource Protection Measures (RPMs) to decrease or eliminate resource impacts and protect resources. Refer to Appendix B for a comprehensive list of the RPMs included as part of Alternative 2 and all other action alternatives. RPMs are also discussed further below in Section 2.2.6.

In addition, it is important to note that the responsible official may modify the Proposed Action or alternatives under consideration prior to issuing a Final EIS/EIR. In such cases, the responsible official may consider the incremental changes as alternatives to the Proposed Action. The documentation of these incremental changes to a Proposed Action or alternatives shall be included or incorporated by reference in accordance with 40 CFR 1502.21. The intent of the regulation is to encourage collaboration throughout the analysis and decision-making process. Ongoing collaboration may often result in modification of a Proposed Action or alternatives, resulting in a better proposal and ultimately a better decision. Such changes may not necessarily require the development of a new alternative if they can be accommodated through modification of an existing alternative. Incremental modifications that occur as a result of collaboration should be clearly described and documented in the analysis record, so that interested parties have a clear understanding of the nature of and reasons for the incremental changes.

Alternative 2 is the project, as proposed by the applicant. Alternative 2 is also the proposed project, as identified in accordance with CEQA Guidelines Section 15124.

2.2.2.1 BASE-TO-BASE GONDOLA

SVSH proposes to install, operate, and maintain a gondola connecting the Squaw Valley and Alpine Meadows base areas. As described in the Forest Service *Alpine Meadows Ski Area Master Development Plan*, the proposed lift would be configured as an eight-passenger gondola and have a design capacity of approximately 1,400 persons per hour in each direction (Tahoe National Forest 2015). Both base terminals would be primary drive stations for the lift, meaning that each base terminal provides the necessary power for the gondola to operate. In addition, each side of the gondola would be capable of operating independently if the other half of the system were not operational; that is, the segment from the Squaw Valley base terminal to the Squaw Valley mid-station could operate (powered by the Squaw Valley base terminal) even if the Alpine Meadows portion of the gondola were not operational, and the Alpine Meadows base terminal to the Squaw Valley mid-station could operate (powered by the Alpine Meadows base terminal) even if the Squaw Valley portion of the gondola were not operational. In total, the lift would be approximately 13,000 feet in length (based on plan length), of which approximately 3,300 feet (25 percent) would be sited on NFS lands, including the Alpine Meadows mid-station and the Alpine Meadows base terminal. Travel time between the ski areas is estimated at approximately 16 minutes via the gondola. The existing shuttle system between Squaw Valley and Alpine Meadows would not operate when the gondola is open.

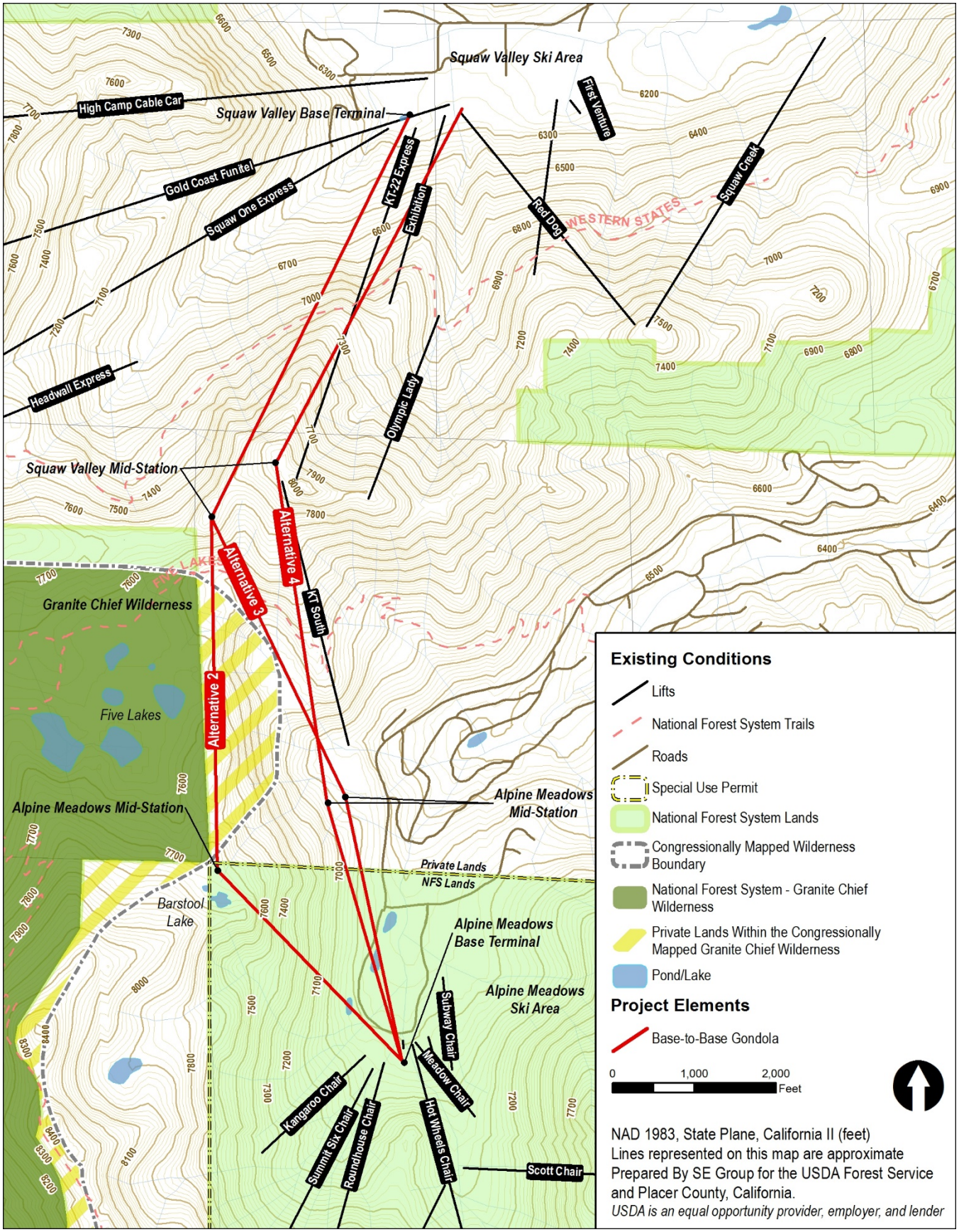

Exhibit 2-1 Topographic Map of Gondola Alignment Associated with Each Action Alternative

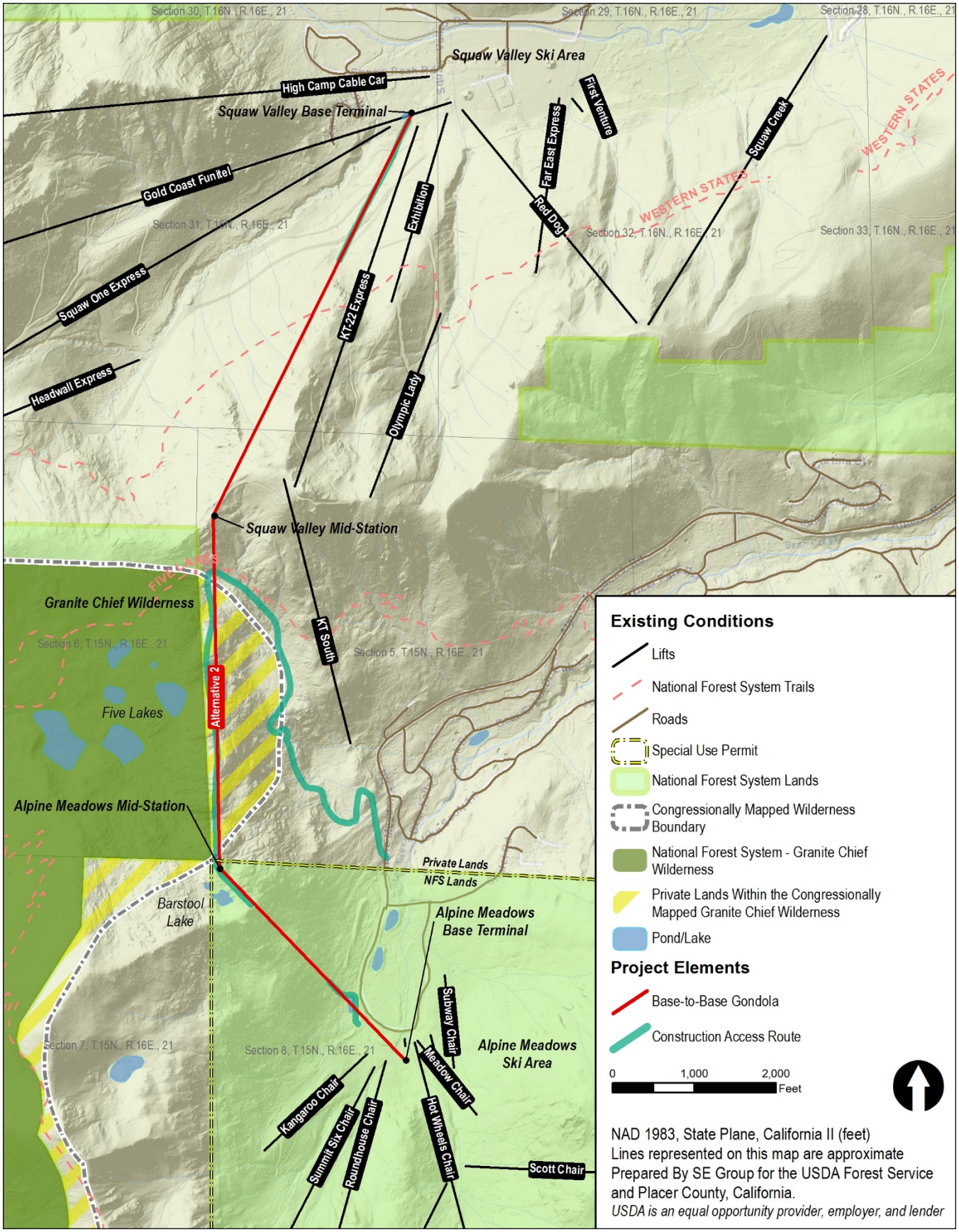

Exhibit 2-2 Overview of Gondola Alignment and Construction Access Route under Alternative 2

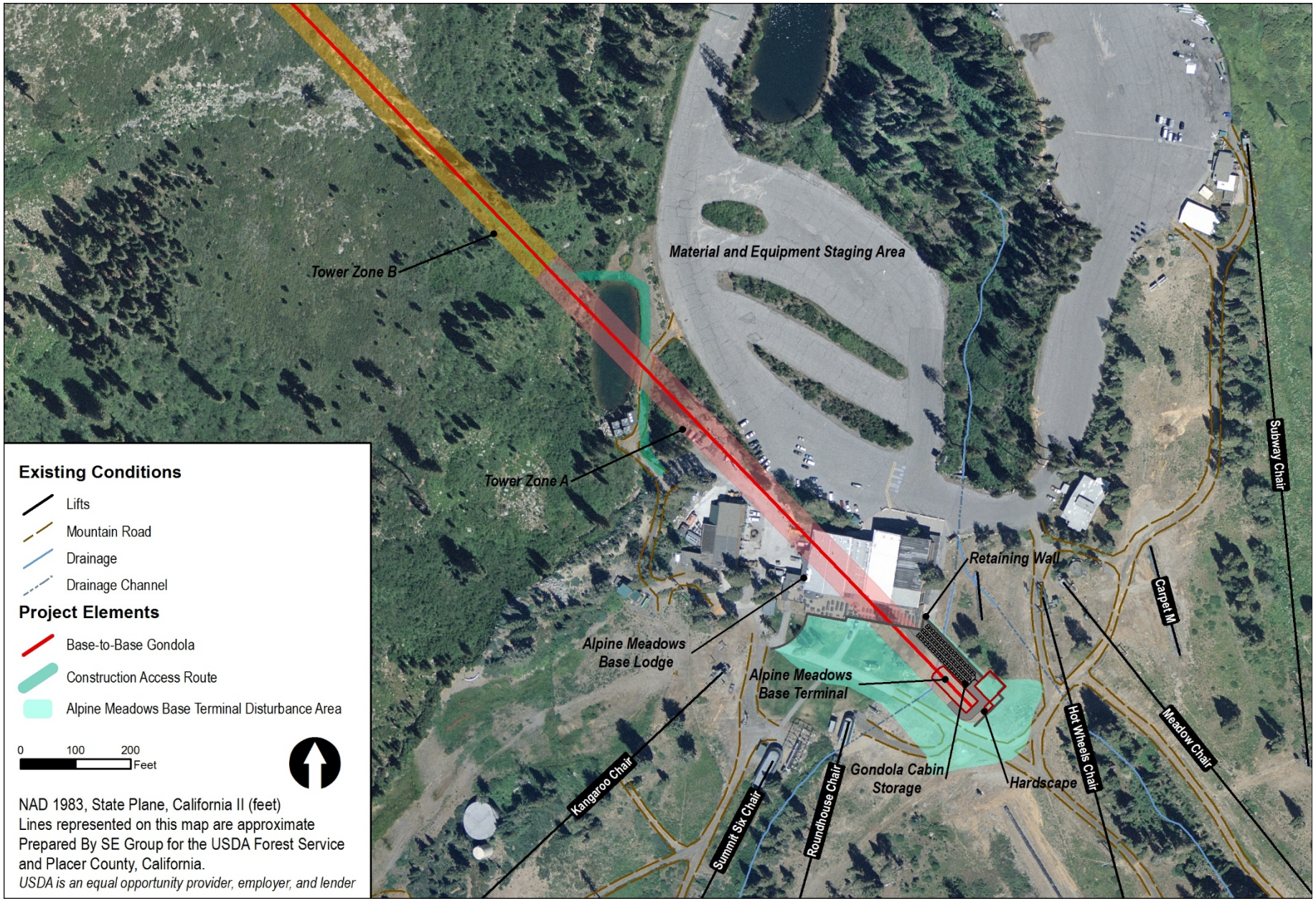

Exhibit 2-3 Close-up of Alpine Meadows Base Terminal under Alternative 2, along with Tower Zones A and B

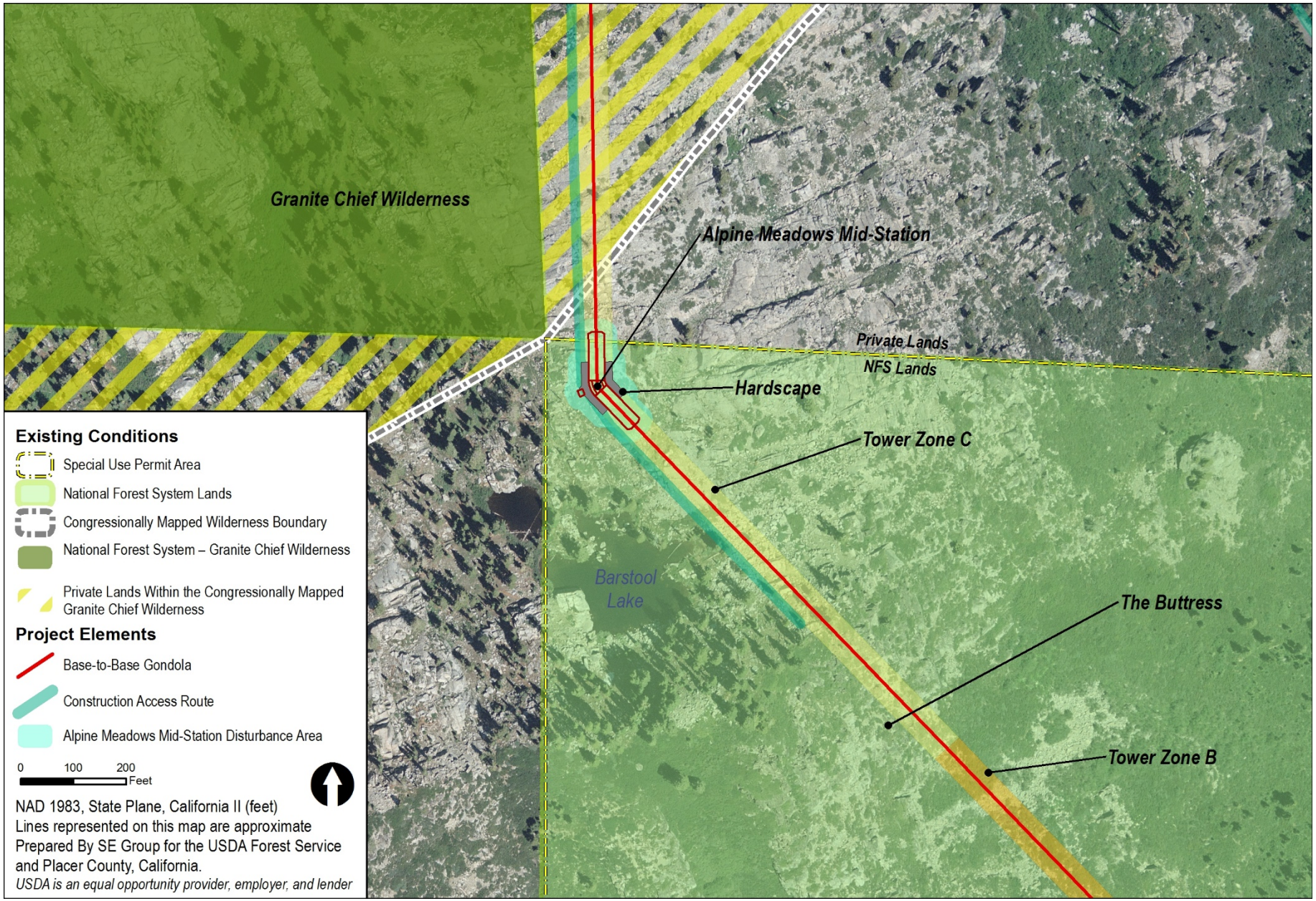

Exhibit 2-4 Close-up of Alpine Meadows Mid-Station under Alternative 2, along with Tower Zones B and C

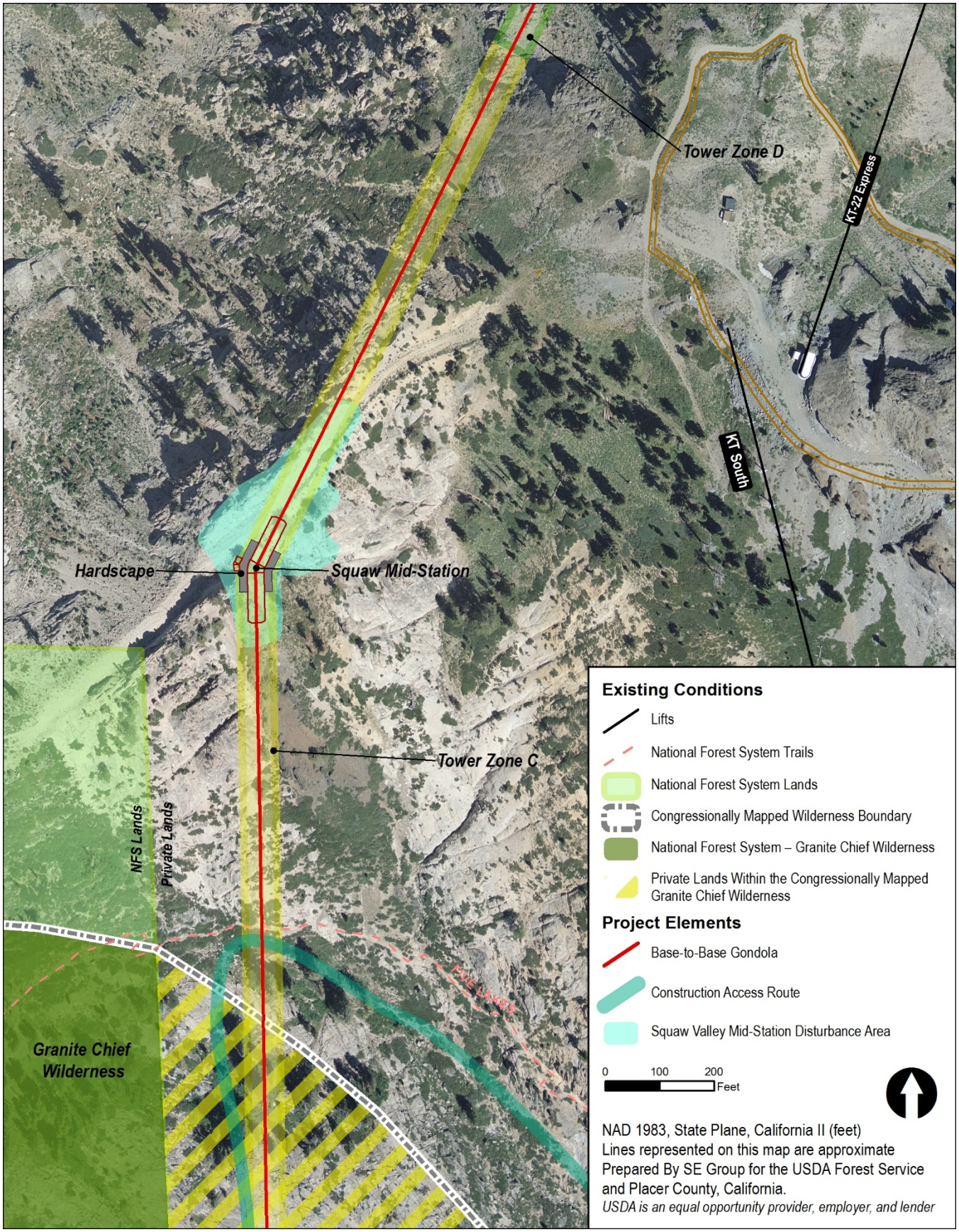

Exhibit 2-5 Close-up of Squaw Valley Mid-Station under Alternative 2, along with Tower Zones C and D

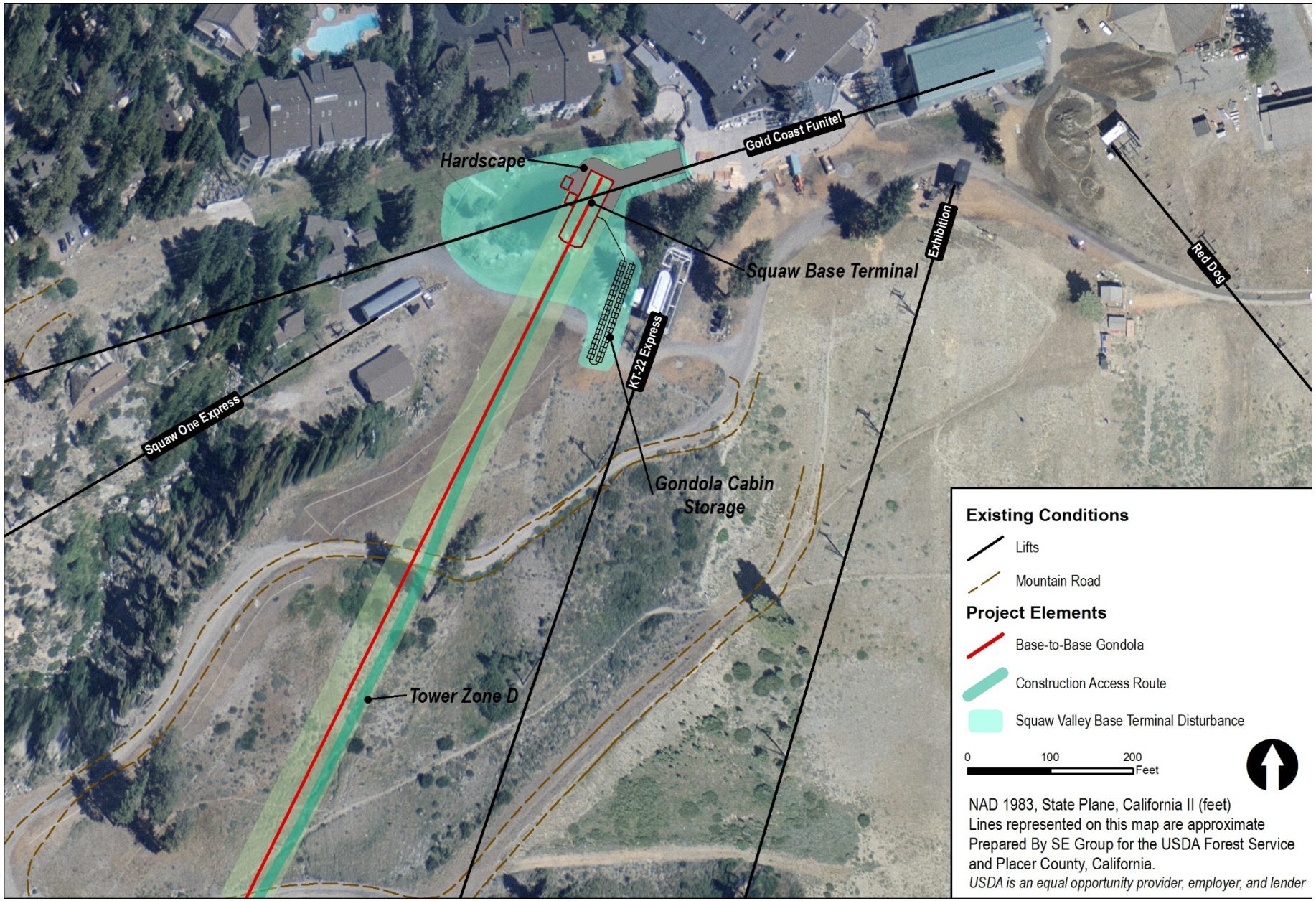

Exhibit 2-6 Close-up of Squaw Valley Base Terminal under Alternatives 2 and 3, along with Tower Zone D

While only one quarter of the proposed lift would be located on NFS lands, a segment of the lift (approximately 3,200 feet), located on private property (i.e., Caldwell property), would cross through the private lands within the congressionally mapped Granite Chief Wilderness (GCW). However, the Wilderness Act of 1964 does not apply to private property and this private property is not managed, maintained, or considered part of the NFS (Exhibit 2-1); refer to Section 4.3, "Wilderness," for more information.

Base Terminals and Mid-Stations

Alpine Meadows Base Terminal

The Alpine Meadows base terminal would be located on NFS lands and situated to the southeast of the Alpine Meadows base lodge between the Roundhouse Express and the Hot Wheels Chair (see Exhibit 2-3). This site would be accessed via existing base area roads and parking areas. There are two existing drainages that ultimately flow into Bear Creek that run through underground culverts at, or near, the proposed location of the Alpine Meadows base terminal. One of the culverts is entirely buried, and one is partially covered with a series of metal grates that allows some daylight to enter the culverted drainage. Under all action alternatives, these culverted drainages would remain in place and continue to perform their current function. The series of grates over one of the culverts would either be covered to seal off the culvert, or a "sleeve" would be installed in the existing culvert to create a sealed below-grade culvert. Construction equipment (including tracked excavators and a crane) would be staged in the existing Alpine Meadows parking area, which is adjacent to the proposed base terminal (approximately 500 feet away). Electrical service would be provided directly to this facility from the base area utility system. The overall disturbance for all elements of this facility, including grading, would be approximately 1.9 acres.

This facility would resemble a typical base terminal of a detachable lift, with a small hardscape at ground level connecting the base terminal to the lodge. The terminal would have a footprint of approximately 30 feet by 84 feet and would be approximately 30 feet tall. It would be designed to blend with the natural environment to the maximum extent possible.

This terminal would also include an aboveground, enclosed gondola cabin storage facility. Cabins would be colored white to improve blending with the natural environment during winter and minimize visual impacts. The terminal would be on an elevated foundation and no material would be excavated or removed from the facility footprint. Minimal ground disturbance would be required where the foundation footers are anchored. No modifications to the culverted stream in this vicinity are anticipated.

Grading is included in the proposed base terminal design at the Alpine Meadows base area to improve the connectivity between the base lodge and the Summit and Roundhouse lifts. Fill material would be added (approximately 7,500 cubic yards) to reduce the slope between the lodge and the lifts. Importation of fill material from off-site would be required, and the area would be revegetated using appropriate Forest Service approved seed mixes and consistent with applicable RPMs provided in Appendix B.

Alpine Meadows Mid-Station

One mid-station would be located about 650 feet north-northwest of *The Buttress* in the northern portion of the Alpine Meadows SUP area (on NFS lands) as shown in Exhibit 2-4. Passengers would be allowed to embark or disembark at this mid-station. This mid-station would be elevated above a granite outcropping, requiring minimal excavation and material export for the terminal and foundations. The mid-station could be anchored directly to the rock or to concrete caps poured directly on the rock. Some rock blasting may be required, and this material would be scattered on site. The overall disturbance area would be approximately 0.5 acre.

The Alpine Meadows mid-station would resemble a typical base terminal of a detachable lift. The facility would include two stations arranged end-to-end to create an angle, which is necessary to redirect the gondola to the base terminal. Each mid-station would have an angled footprint of approximately 30 feet by 175 feet and would be approximately 30 feet tall. It would be designed to blend with the natural environment to the maximum extent possible.

Materials for this station would be transported to the site primarily via helicopter. The helicopter and materials would be staged in the Alpine Meadows parking lot. Additionally, construction equipment (including a tracked excavator and spider excavator[1]) and materials (lift equipment, generator, and tools) would be transported to the site via a temporary construction access route primarily on private lands (approximate route is depicted in Exhibit 2-2). This route would be approximately 15 feet wide and would be utilized during construction in snow-free conditions, and potentially by over-the-snow machinery if snow remains in some areas when construction begins. Construction would only occur when soil conditions are such that there will not be excessive disturbance from machinery, grading, or construction activities that would lead to erosion. All-terrain vehicles would also use the identified route to access the site (primarily for construction crew transport) once the area is clear of snow. Further details regarding this access route, including the alignment and permitted machinery, would be developed prior to implementation as part of a Route Plan developed by the project applicant and provided to the Forest Service and Placer County for review and approval. All temporary access routes would be approved by both the Forest Service and Placer County prior to construction, in accordance with RPM MUL-3. Winter maintenance and emergency access would be provided to this facility over-the-snow using snowmobiles and snowcats along the same temporary construction access route identified in Exhibit 2-2. There would be no long-term summer maintenance route to this facility; a permanent access road to the mid-station is not proposed. The temporary construction access route would be restored to its previous condition after construction is complete.

Installation of an electric power line to the Alpine Meadows mid-station is not proposed. Instead, necessary operating current would be supplied via a "line generator" which uses the moving lift to generate the power necessary for operation. During non-operational periods, a small portable generator would supply power to the mid-station electrical equipment for periodic maintenance.

Squaw Valley Mid-Station

A second mid-station would be located on private lands along the ridgeline at Squaw Valley (i.e., Squaw Valley Saddle), approximately 1,100 feet southwest of the KT-22 lift top terminal (on private lands) as shown in Exhibit 2-5. It is anticipated that grading, earth moving, and potentially rock blasting would be required as part of construction of the Squaw Valley mid-station, including the foundation and skier loading/unloading areas. Overall ground disturbance for the Squaw Valley mid-station would be approximately 1.5 acres. The Squaw Valley mid-station would be accessed via an existing road that extends from the Squaw Valley base area to the upper KT-22 terminal. Power to this mid-station would be supplied via line-generator. During non-operational periods, a small portable generator would supply power to the mid-station's electrical equipment for periodic maintenance.

Similar to the Alpine Meadows mid-station, this facility would resemble a typical base terminal of a detachable lift. The facility would include two stations arranged end-to-end to create an angle, which is necessary to redirect the gondola to the base terminal. Each mid-station would have an angled footprint of approximately 30 feet by 175 feet and would be approximately 30 feet tall. The mid-station would be designed to blend with the natural environment to the maximum extent possible.

Squaw Valley Base Terminal

The Squaw Valley base terminal would be located on private lands between the bottom terminals of the KT-22 and Squaw One express lifts adjacent to Cushing Pond and would be of similar size and configuration as the Alpine Meadows base terminal. Cushing Pond would be partially filled in to provide a stable foundation for the Squaw Valley base terminal. Partially filling the pond would limit the stormwater and snowmelt management functions that the pond provides. To preserve these functions, Cushing Pond would be expanded westward on the site, and the expansion would be designed to accommodate anticipated stormwater and snowmelt flow volumes.

This terminal would also include a hardscape connecting to the Olympic House and a cabin storage facility. Overall ground disturbance for all elements of the Squaw Valley base terminal would be approximately 1

[1] A crawling excavator with "legs" capable of working in very steep terrain.

acre. Electrical service would be provided directly to this facility from the base area utility system. Construction access to the site would be via existing ski area roads.

Towers

A total of 35 towers would be installed along the gondola alignment under Alternative 2, with 25 on private land and 10 on NFS lands. The project applicant has provided preliminary tower locations that are used in this EIS/EIR; however, exact locations and designs for each tower have not been determined at this time. Determination of exact tower placement will be part of final project engineering and design once a single alternative has been selected (i.e., if an alternative is approved at the conclusion of the NEPA/CEQA process). On NFS lands, final engineering and design will require consultation with the Forest Service hydrologist/soil scientist and other technical specialists as appropriate. Placer County will have a similar role in final engineering and design on non-NFS lands. Four "tower zones" (Zones A, B, C, and D) have been delineated in Exhibits 2-3, 2-4, 2-5, and 2-6 to highlight areas with similar site conditions for tower placement. Details about tower construction are discussed below.

Tower heights would average approximately 30 feet, but approximately two to four towers could exceed 50 feet near the Alpine Meadows base area to achieve sufficient clearance over the base lodge. Towers would be a dark galvanized color. Staging areas for tower construction equipment and materials would be located in the parking areas of both Squaw Valley and Alpine Meadows. Helicopters would be used to set most towers. Typically, materials and equipment for portions of the project on NFS lands and south of the Squaw Valley mid-station would be staged in the Alpine Meadows parking lot and materials and equipment for portions of the project north of the Squaw Valley mid-station would be staged at the Squaw Valley parking lot. Access and construction methods for each tower would vary depending on site conditions and location.

Approximately three towers would be constructed on NFS lands in Zone A (lower towers, located on the Alpine Meadows portion of the project area on NFS lands, see Exhibit 2-3). Towers in Zone A would be accessible via existing base area roads and would be constructed using a tracked excavator or a spider excavator. In Zone B (see Exhibits 2-3 and 2-4), approximately two towers would be constructed on NFS lands with a spider excavator, which would be walked up the proposed gondola alignment from the Alpine Meadows base area. Towers in Zone C (located on both NFS and private lands, see Exhibits 2-4 and 2-5) would be accessed via a route through private lands (approximate alignment of construction route shown in Exhibit 2-2) and constructed with a tracked excavator, spider excavator, or anchored directly to the rock, depending on site conditions. Geotechnical review indicates that several of the lift towers could be secured directly to the extensive rock along the line and would therefore not require foundations or excavations in these locations. Towers located in Zone D (on private lands, see Exhibits 2-5 and 2-6) would be accessed from Squaw Valley via existing roads, helicopter, and potentially spider excavator/tracked excavator in some areas.

Blasting may be required for some of the tower foundations. Disturbance for each tower would vary based on its location; towers accessible to an excavator could result in a total disturbance of 600 square feet (including spoil storage) if site conditions allow for a hole to be dug. For towers with more limited construction access, spider excavators could be used to dig a hole for the foundation resulting in approximately 300 square feet of disturbance (including spoil storage). Some towers could be constructed by flattening the surface and pouring a concrete footer above grade, which would not result in any spoils. Towers located on granite outcroppings could require some drilling/blasting, but would likely be secured directly to the rock, or anchored to concrete poured directly on the rock, and would not result in excavated ground disturbance. Material removed for tower footings would be stored adjacent to the tower location in an area of approximately 100 square feet, then scattered on site, likely on top of the footer. The anticipated disturbance area for all towers combined would not exceed 0.5 acre.

General Construction

Project construction would occur over a period of approximately 6–8 months. General construction activities would include grubbing/clearing of on-site vegetation, excavation and relocation of soil on the site, backfilling and compaction of soils, and construction of proposed facilities. It is anticipated that helicopters

would be used during construction to transport personnel and equipment to the project area, and during installation of lift infrastructure. Total helicopter usage over a 180–240-day construction season is not anticipated to exceed approximately 20 days. During peak construction periods, approximately 30-40 workers would be present on the project site.

Overall, the base terminals and mid-stations would disturb approximately 5 acres. Tower footings would disturb a maximum of 0.5 acre (35 towers x 600 square feet maximum disturbance each, including temporary disturbance, access and staging). In total, gondola construction would disturb up to approximately 5.5 acres.

Vegetative clearing for installation of project components would require up to approximately 215—330 trees total to be cleared in the project area. Of this total, approximately 150 trees could need to be cleared on NFS lands. Tree removal would be accomplished via helicopter, skidding, hauling off-site, chipping, or lop-and-scatter, depending on specific site conditions and accessibility. It is anticipated that trees would need to be skidded (the act of moving trees from the site of felling to a loading area or landing) primarily in Tower Zones A and C (refer to Exhibits 2-3, 2-4, and 2-5), and within the Alpine Meadows mid-station disturbance area. Various restrictions on tree removal and skidding practices (e.g., no skidding trees across flowing waterways) are included in the RPMs provided in Appendix B. Removal of trees on NFS lands will be authorized using a timber settlement contract where the Forest Service is compensated for the value of removed timber incidental to some lawful use of NFS lands. In this case, if one of the gondola alternatives is approved, tree removal is not the intent of the project, but is an outcome incidental to installation of the gondola. The project applicant would then compensate the Forest Service for the value of any trees that are removed on NFS lands as part of project construction and operation.

For some portions of the gondola construction, rock blasting may be required. Blasting typically involves drilling holes in the rock for the explosives using pneumatic drilling equipment. Typically, an array of many holes is drilled, loaded, and wired to a detonator, and the array is triggered in a single “shot.” When there is a need to protect structures or sensitive resources, blasting mats would be laid over the array of holes to contain the explosion and reduce the amount of shot rock, or eliminate it, from flying out of the immediate vicinity of the blasting zone. After the blast, excavators may be needed to remove debris and achieve the necessary excavation. The blasted rock would be incorporated into the surrounding disturbance areas.

Operation and Long-Term Maintenance

Future maintenance of the Base-to-Base Gondola on NFS lands would be authorized by the SUP through Alpine Meadows’ Annual Operating Plan, which is to be submitted to the TNF. Unforeseen maintenance activities involving ground disturbance, on NFS lands, could require additional NEPA analysis and those on private lands could require additional CEQA analysis. No temporary or permanent maintenance access roads would be authorized by the TNF or Placer County for use, or created, without additional NEPA or CEQA analysis as well. Squaw Valley and Alpine Meadows would add two new full-time, year-round employment positions and eight full-time, seasonal positions to operate the proposed gondola under Alternative 2. These would translate to six full-time-equivalent positions.

The proposed gondola would transport guests in both directions during the winter season only, providing a ready transportation connection between the two ski areas. For the purposes of this project, the winter/ski season is defined as the period when both Squaw Valley and Alpine Meadows are in operation for winter sports (based on past operations, Alpine Meadows, on average, closes on approximately April 16). The gondola connection between Alpine Meadows and Squaw Valley would not be operational beyond this date unless both resorts are open for the skiing and snowboarding public. For Alternative 2, the Alpine Meadows mid-station may be open to skier entry/exit through April 15. To minimize the potential for adverse effects on Sierra Nevada yellow-legged frog (SNYLF) at Barstool Lake, which provides habitat for the frog, skiers would not be permitted to enter or exit at the Alpine Meadows mid-station after April 15, around which time the frog is known to awaken from hibernation. The gondola would typically operate each day from just before Alpine Meadows and Squaw Valley open until just after closing (approximately 8:00 a.m. to 6:00 p.m.). During the winter season, guests would embark or disembark at both base terminals and/or either of the mid-stations.

The portion of the gondola between the Squaw Valley base terminal and the Squaw Valley mid-station could operate independently if the other portion of the gondola were closed due to weather or other conditions. This would allow this segment of the gondola to operate as a ski lift. The only operation of the gondola during the non-ski season would be for short periods associated with maintenance and testing, including occasionally moving individual cabins, or small numbers of cabins, across the system. Lighting would be required at the terminals and operating buildings to allow for maintenance outside of normal operating hours, and to prepare for daily operations. Lighting fixtures would be shielded and directed downward such that the bulb or ballast is not visible. The gondola cabins would have internal communications and emergency lights, but they would not be operable by the passengers.

While the gondola is not in operation during the summer months, cabins would be removed from the line and stored at the base terminals. Gondola cabins could also be stored off the ropeway at night during the winter, particularly during storm or wind events. Cabin storage would be provided at both base terminals in aboveground, enclosed structures. Approximately 40 percent of the cabins would be stored at Squaw Valley and 60 percent would be stored at Alpine Meadows. To perform maintenance, some cabins would need to be put on the line for limited periods during the summer (fewer than 10 times during the summer for running all cars on the line, and 3–5 days per month for limited numbers of cars moved across the line).

Snowmaking is not proposed for the Alpine Meadows or Squaw Valley mid-stations and grooming around the mid-stations would occur on an as-needed basis (typically after snow and wind events) by snow shoveling and snow cat grooming.

2.2.3 Alternative 3

Alternative 3 responds to several issues raised internally by the Forest Service and Placer County, and externally by the public during the scoping process such as proximity to the GCW, proximity to occupied habitat for SNYLF at Barstool Lake, and visibility of the project along the ridgeline separating the National Forest System-GCW and the Caldwell property. The input received during the scoping process is provided in Appendix A.

The only difference between Alternative 2 and Alternative 3 is that Alternative 3 includes a gondola connecting the base areas of Squaw Valley and Alpine Meadows following a different alignment and the Alpine Meadows mid-station would be in a different location. Alternative 3 is illustrated in Exhibit 2-7, with Exhibits 2-8 through 2-10 providing close-up views of this alternative.

2.2.3.1 BASE-TO-BASE GONDOLA

Under Alternative 3, the lift would still be configured as an eight-passenger gondola and would have a design capacity of approximately 1,400 persons per hour in each direction. Operational characteristics would be as described for Alternative 2. In total, the lift would be roughly 12,600 feet in length (based on plan length), of which approximately 2,400 feet (20 percent) would be sited on NFS lands, including the Alpine Meadows base terminal. A total of 34 towers would be installed along the gondola alignment under Alternative 3, with 29 on private land and five on NFS lands.

The base terminals at Alpine Meadows and Squaw Valley and the Squaw Valley mid-station would be in the same locations as under Alternative 2 and would include the same cabin storage as described above. However, the base terminal at Alpine Meadows would be rotated slightly to account for the altered gondola alignment, (see Exhibit 2-8, which shows the base terminal at Alpine Meadows under Alternative 3). Like under Alternative 2, under Alternative 3 construction of the Squaw Valley base terminal would require partial filling of Cushing Pond, but the pond would not be expanded to replace the filled area (potential effects of not replacing the ponds stormwater management capacity are evaluated in the impact analysis of this EIS/EIR). A mid-station, identified in Exhibits 2-7 and 2-9 as the Alpine Meadows mid-station, would be located on private lands (the Caldwell property) approximately 900 feet north of the Alpine Meadows SUP

boundary. The Alpine Meadows mid-station design and disturbance would be similar to the mid-stations described for Alternative 2, and power would be provided from utilities currently serving the Caldwell property. Construction access to this site would not require any new temporary or permanent roads; the construction access route shown in Exhibits 2-7 and 2-9 already exists and would be used to provide construction access along the gondola alignment, including for excavation of footings for each gondola tower and selective tree removal.

With the exception of the property owners and/or guests of the residences proposed to be built with the Caldwell property development, passengers would not be allowed to embark or disembark at this mid-station. However, the Caldwell property development is proposed on the Caldwell property in proximity to the site of the Alpine Meadows mid-station associated with Alternative 3. The Caldwell property development proposes a 38-unit subdivision and associated amenities and is described briefly in Table 3-3, "Cumulative Effects Projects"; it is one of the reasonably foreseeable future projects included in the analysis of cumulative effects in this EIS/EIR. If the Caldwell property development is implemented, property owners and their guests would be permitted to enter and exit at this Alpine Meadows mid-station.

Under Alternative 3, fill required for the grading proposed at the Alpine Meadows base area (described above for Alternative 2) would be generated from the Alpine Meadows mid-station site. The Squaw Valley mid-station, as depicted in Exhibits 2-7 and 2-10, would be in the same location as described for Alternative 2, but the angle of the terminal would be slightly different. The mid-station design and access would be similar to those of the Squaw Valley mid-station included in Alternative 2.

2.2.4 Alternative 4

Alternative 4 responds to several issues raised internally by Forest Service and Placer County, and externally by interested parties and public and private landowners during the scoping process such as proximity to the GCW, proximity to occupied habitat for SNYLF at Barstool Lake, visibility of the project along the ridgeline separating the National Forest System-GCW and the Caldwell property, and proximity to residences.

The only differences between Alternative 2 and Alternative 4 are that Alternative 4 includes a gondola connecting the base areas of Squaw Valley and Alpine Meadows following a different alignment further to the east, the Squaw Valley base terminal would be in a different location, and the Squaw Valley and Alpine Meadows mid-stations would be in different locations. Alternative 4 is illustrated in Exhibit 2-11, with Exhibits 2-12 through 2-15 providing close-up views of this alternative.

2.2.4.1 BASE-TO-BASE GONDOLA

Under Alternative 4, the lift would still be configured as an eight-passenger gondola and would have a design capacity of approximately 1,400 persons per hour in each direction. Operational characteristics would be as described for Alternative 2. In total, the lift would be roughly 11,700 feet in length (based on plan length), of which approximately 2,300 feet (20 percent) would be sited on NFS lands, including the Alpine Meadows base terminal. A total of 33 towers would be installed along the gondola alignment under Alternative 4, with 28 on private land and five on NFS lands.

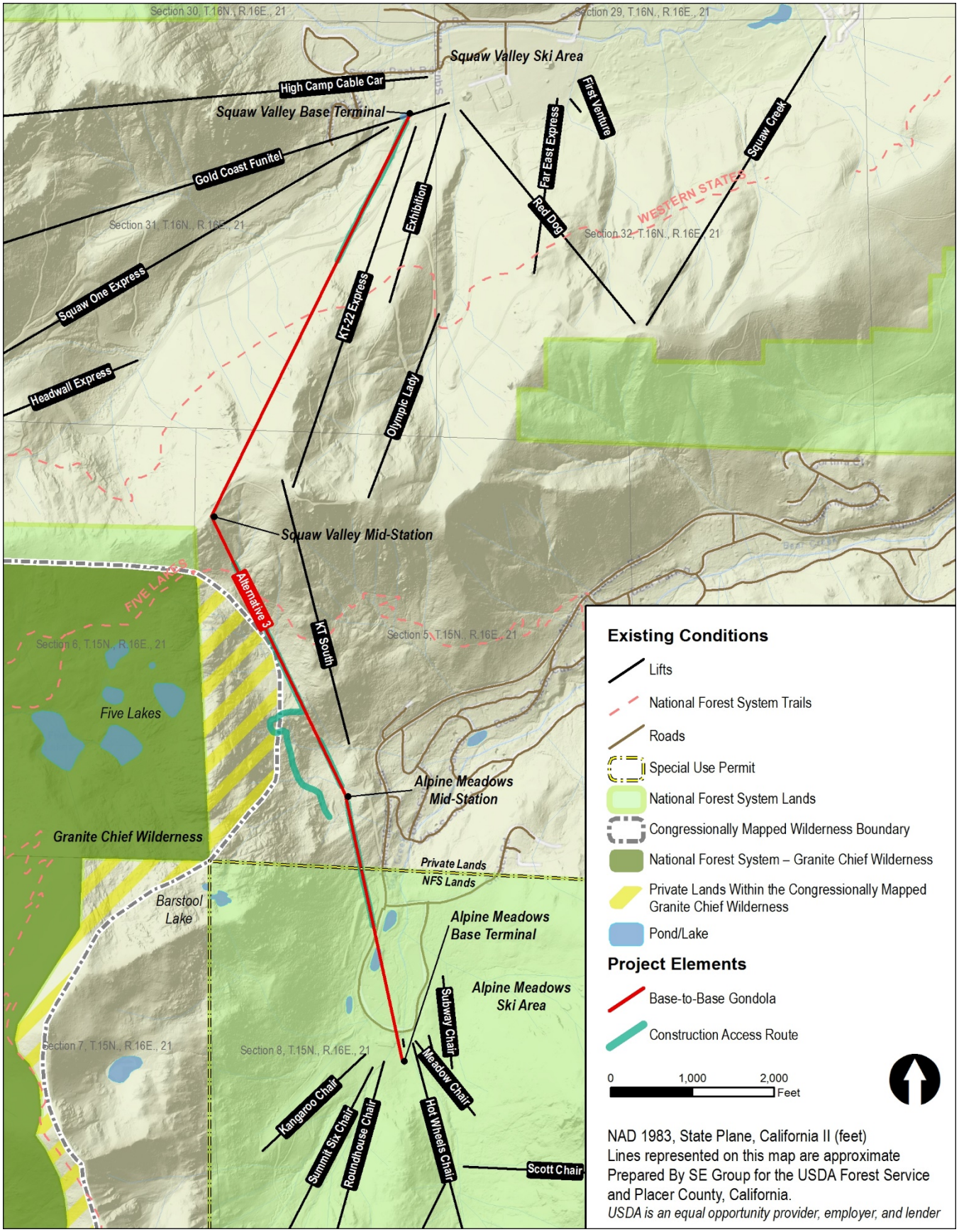

Exhibit 2-7 Overview of Gondola Alignment and Construction Access Route under Alternative 3

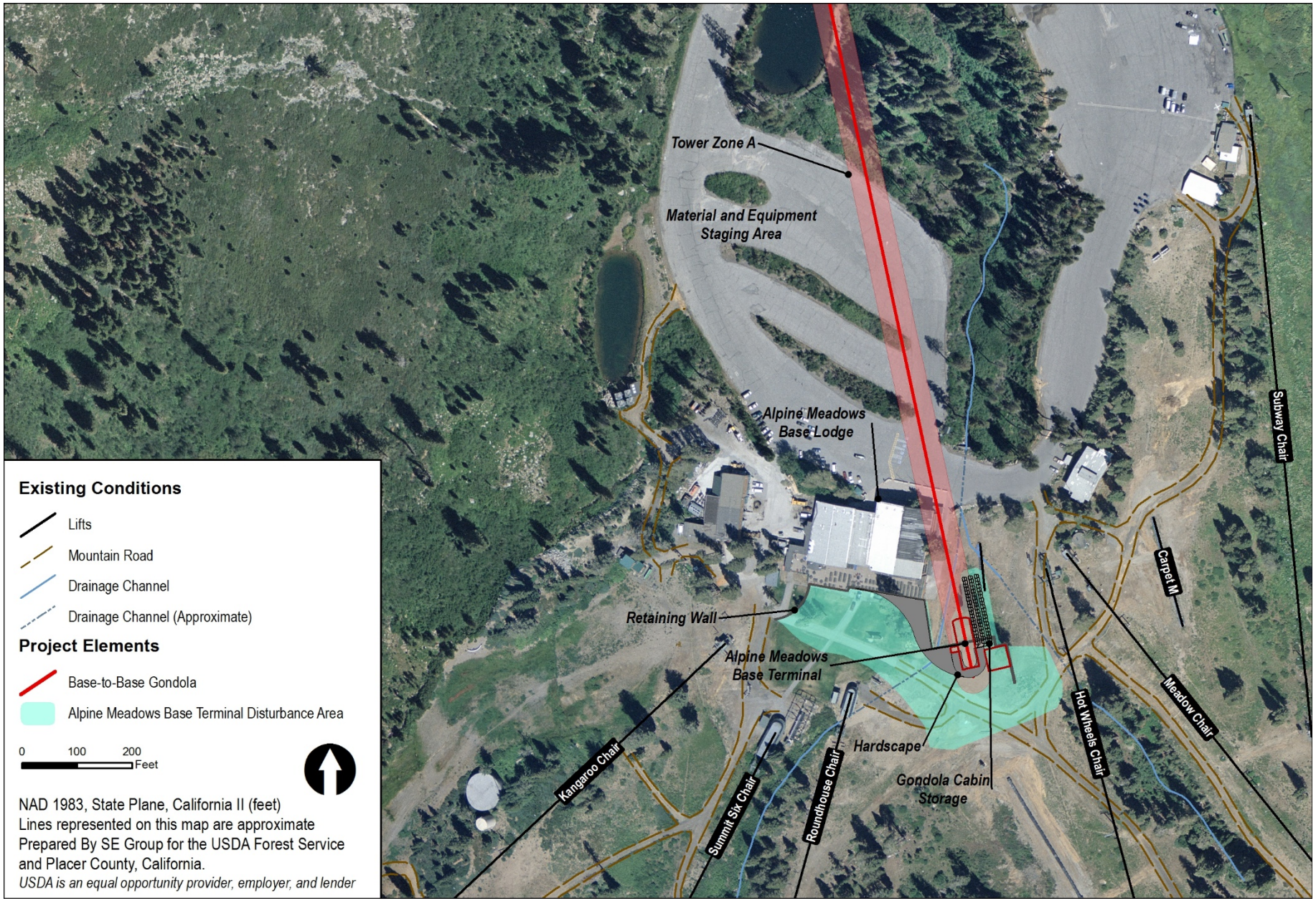

Exhibit 2-8 Close-up of Alpine Meadows Base Terminal under Alternative 3

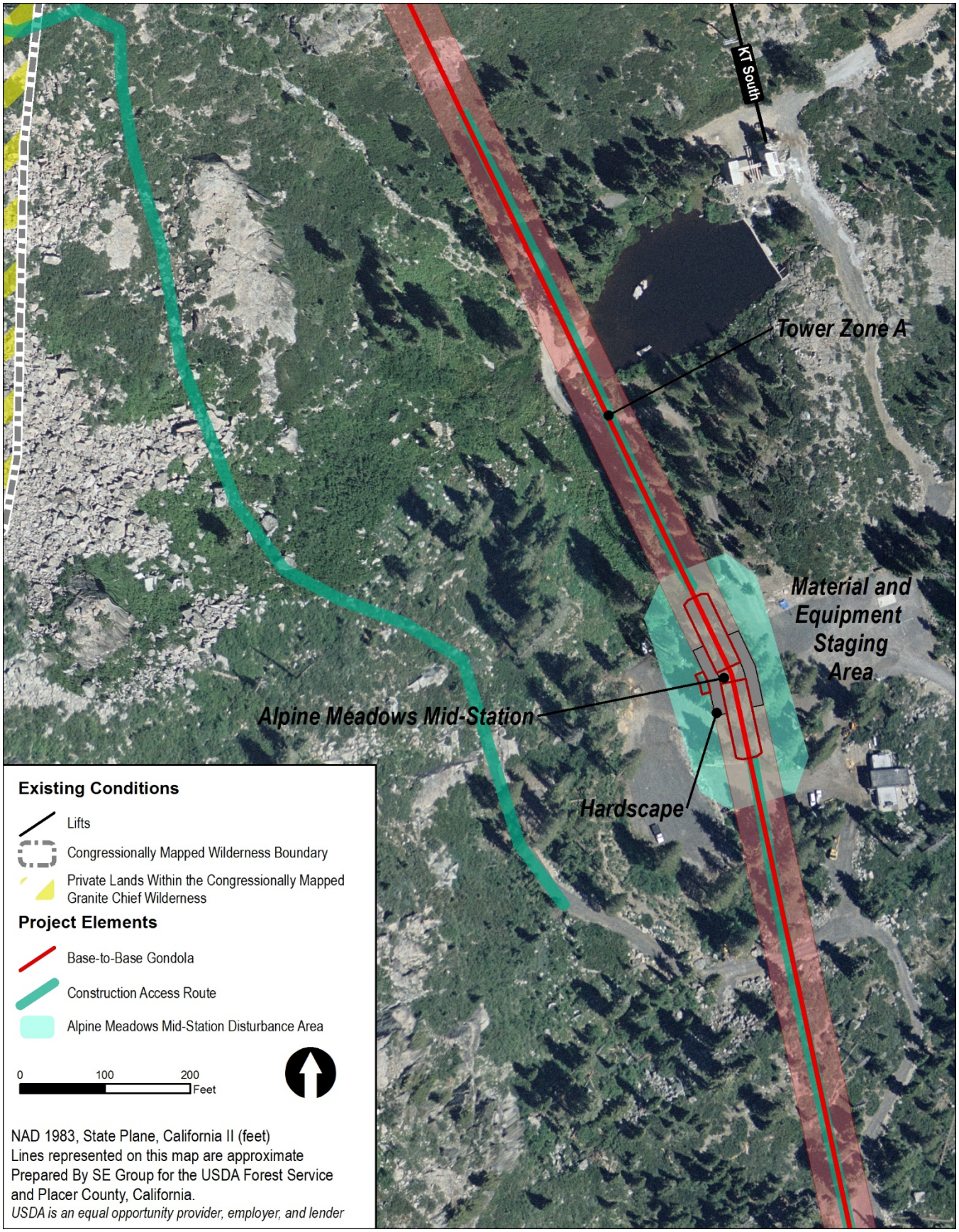

Exhibit 2-9 Close-up of Alpine Meadows Mid-Station under Alternative 3

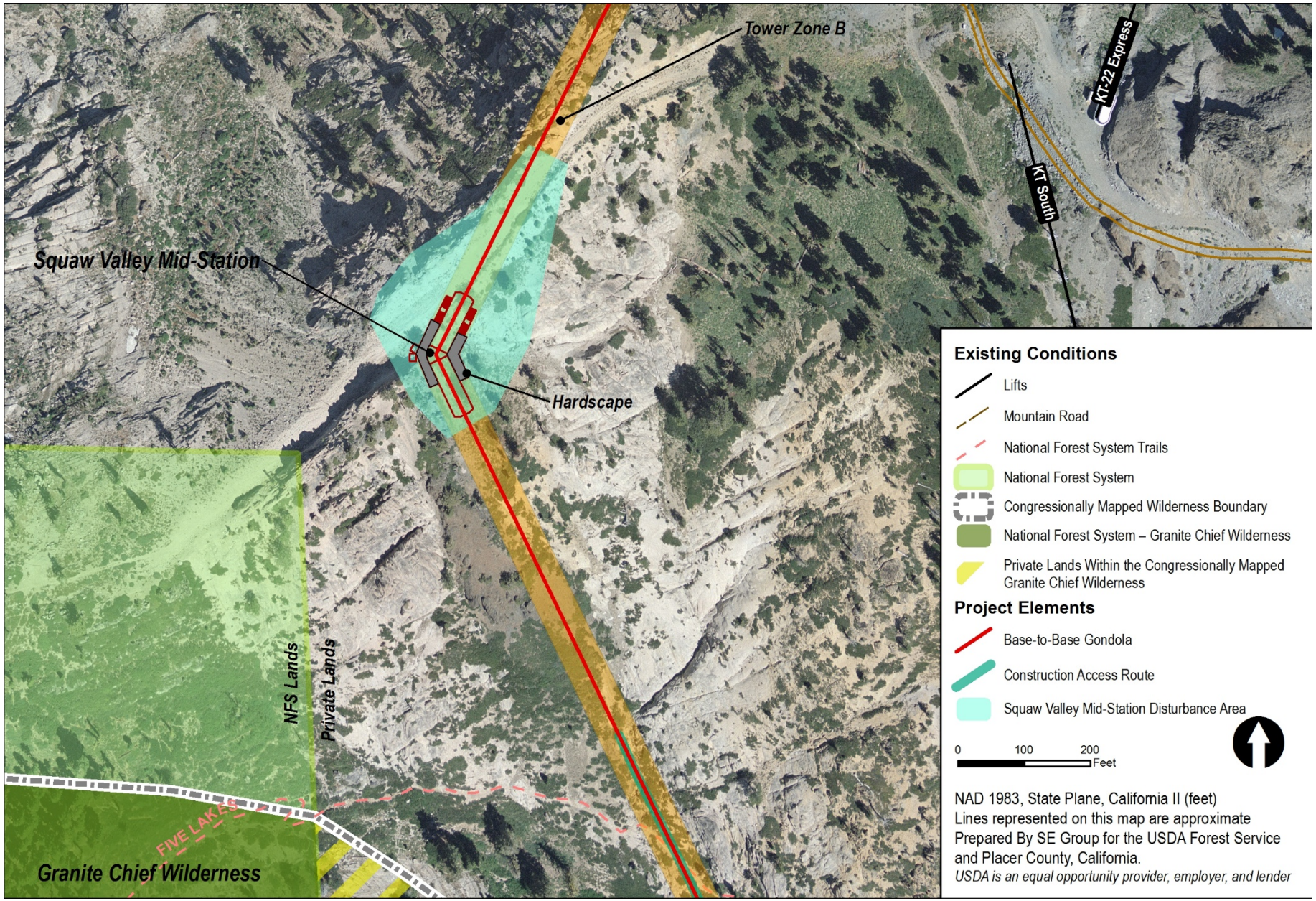

Exhibit 2-10 Close-up of Squaw Valley Mid-Station under Alternative 3

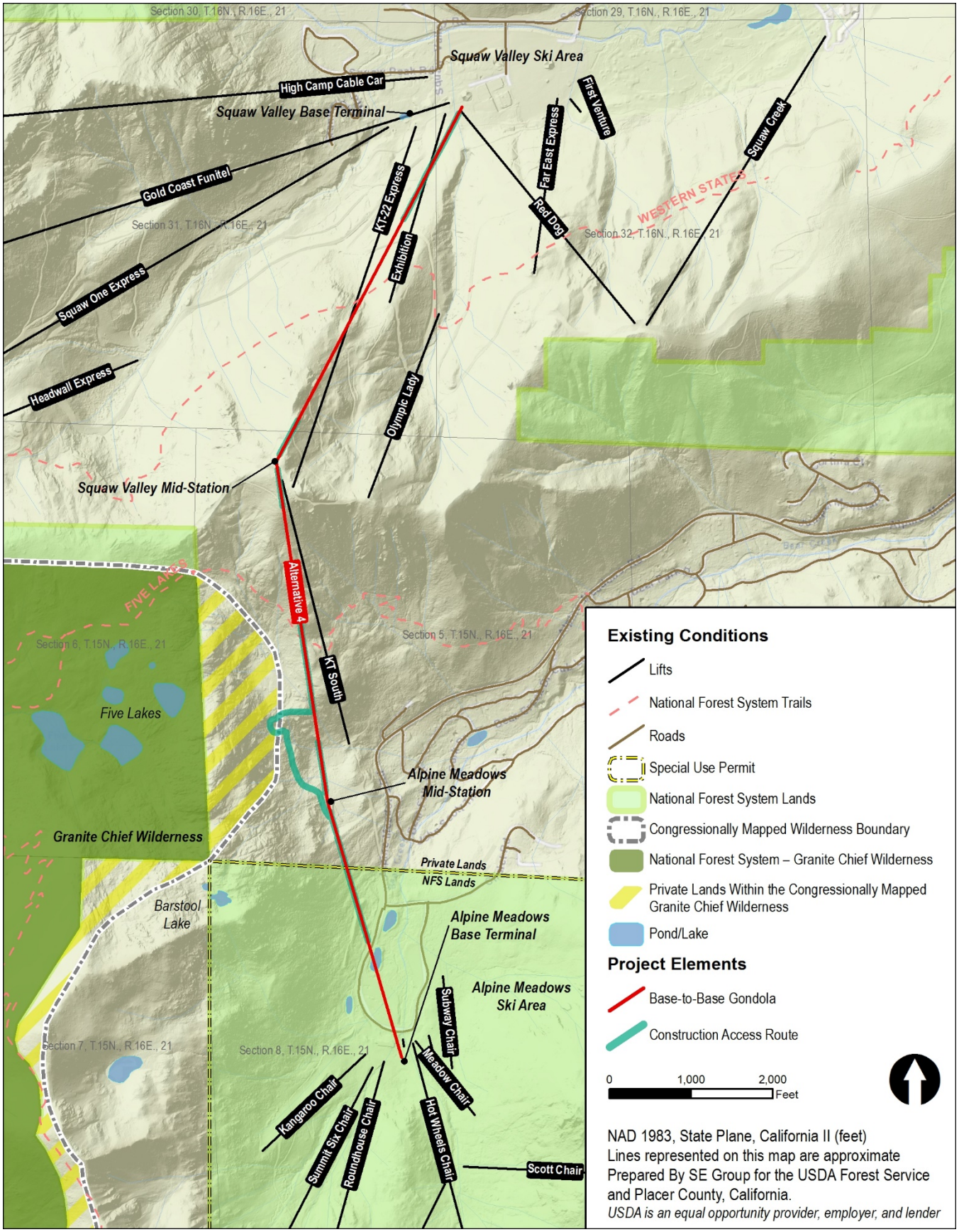

Exhibit 2-11 Overview of Gondola Alignment and Construction Access Route under Alternative 4

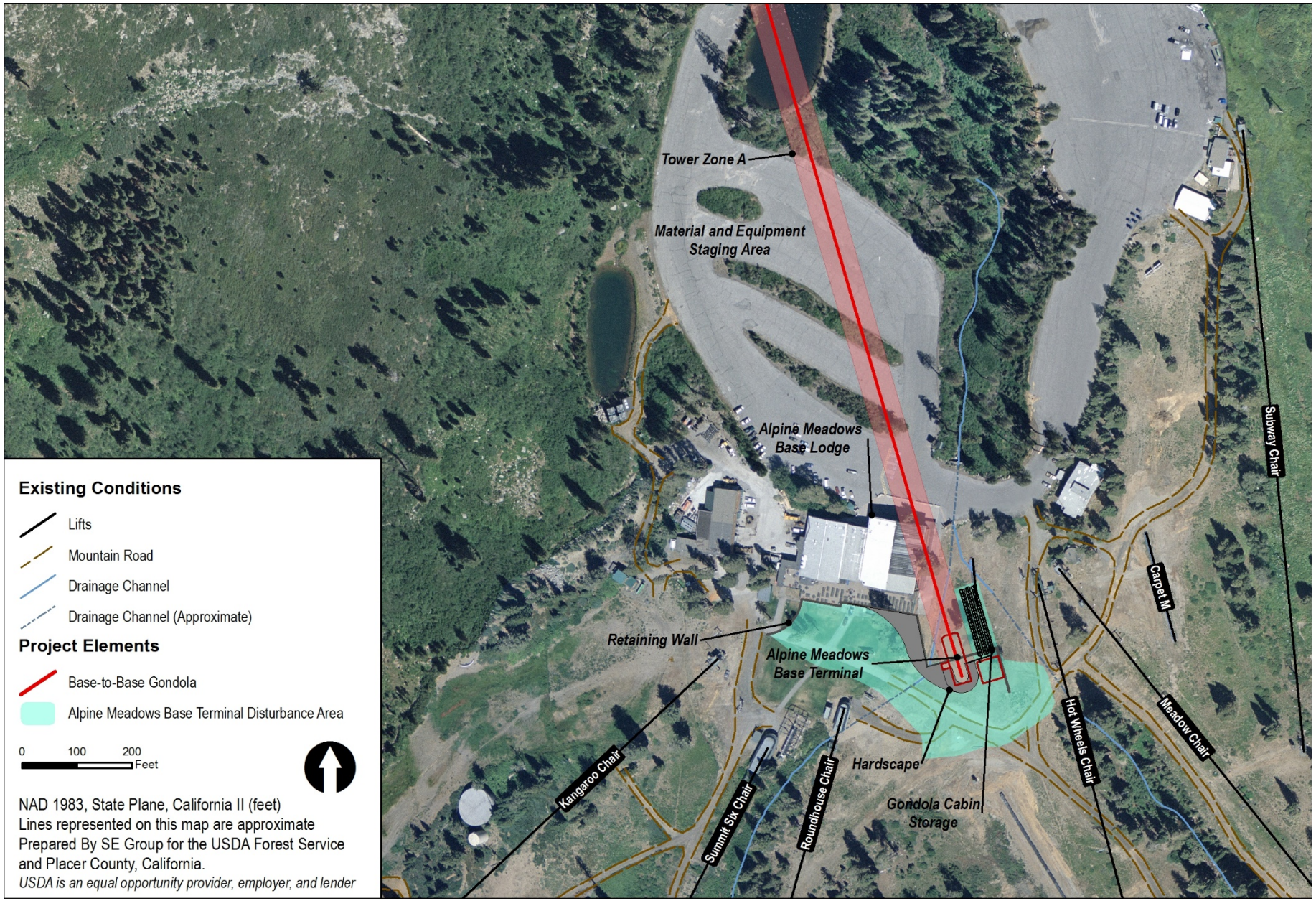

Exhibit 2-12 Close-up of Alpine Meadows Base Terminal under Alternative 4

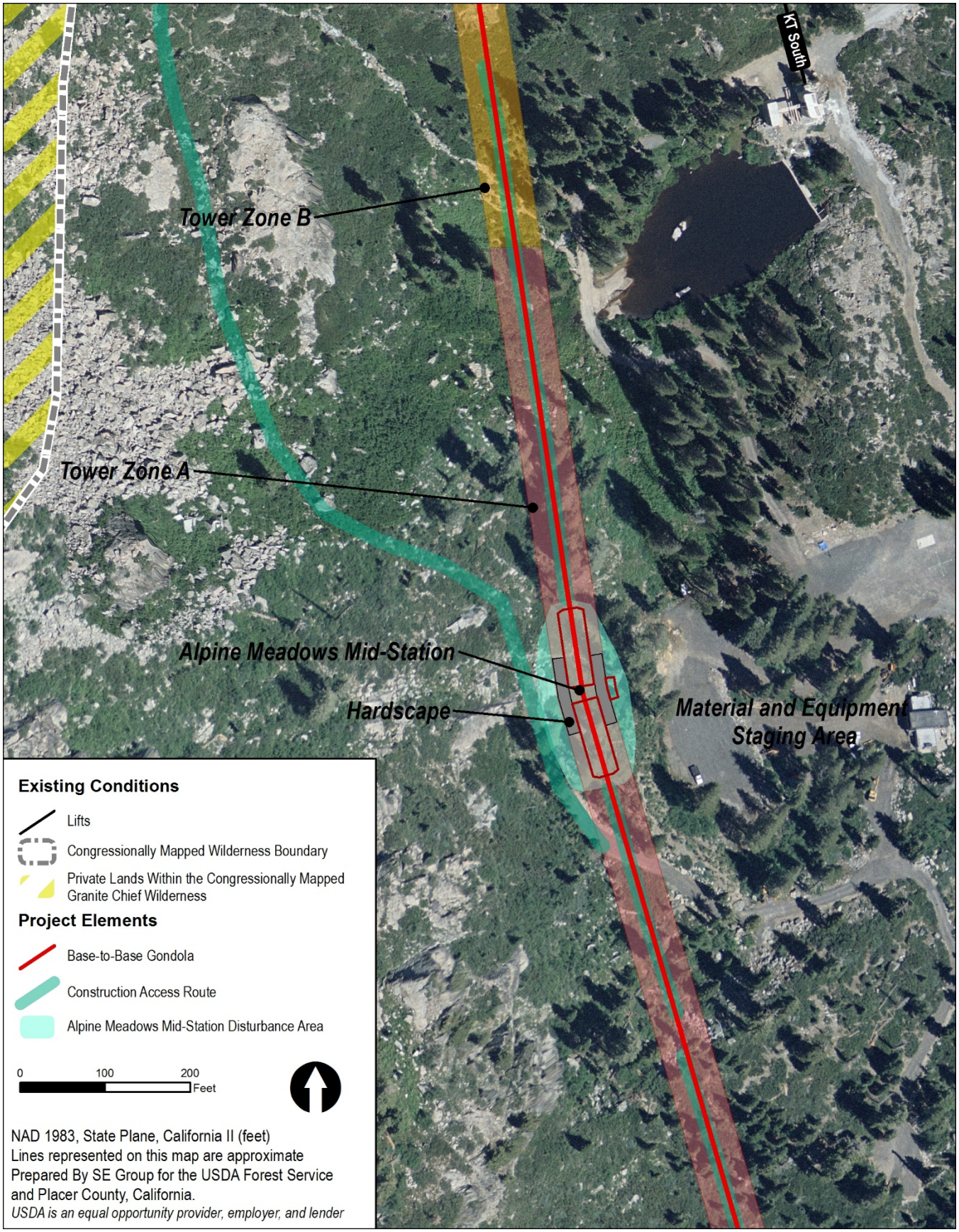

Exhibit 2-13 Close-up of Alpine Meadows Mid-Station under Alternative 4

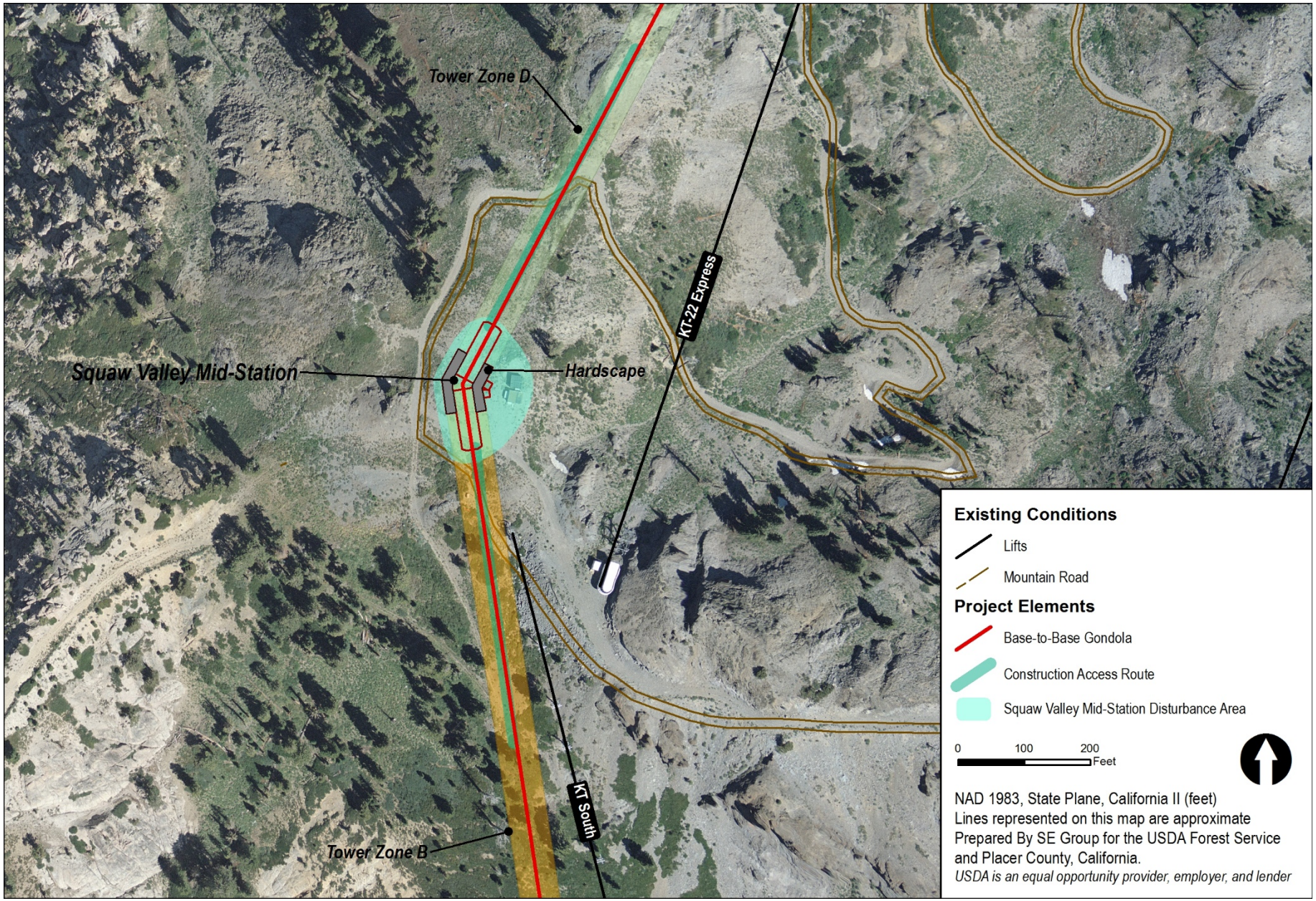

Exhibit 2-14 Close-up of Squaw Valley Mid-Station under Alternative 4

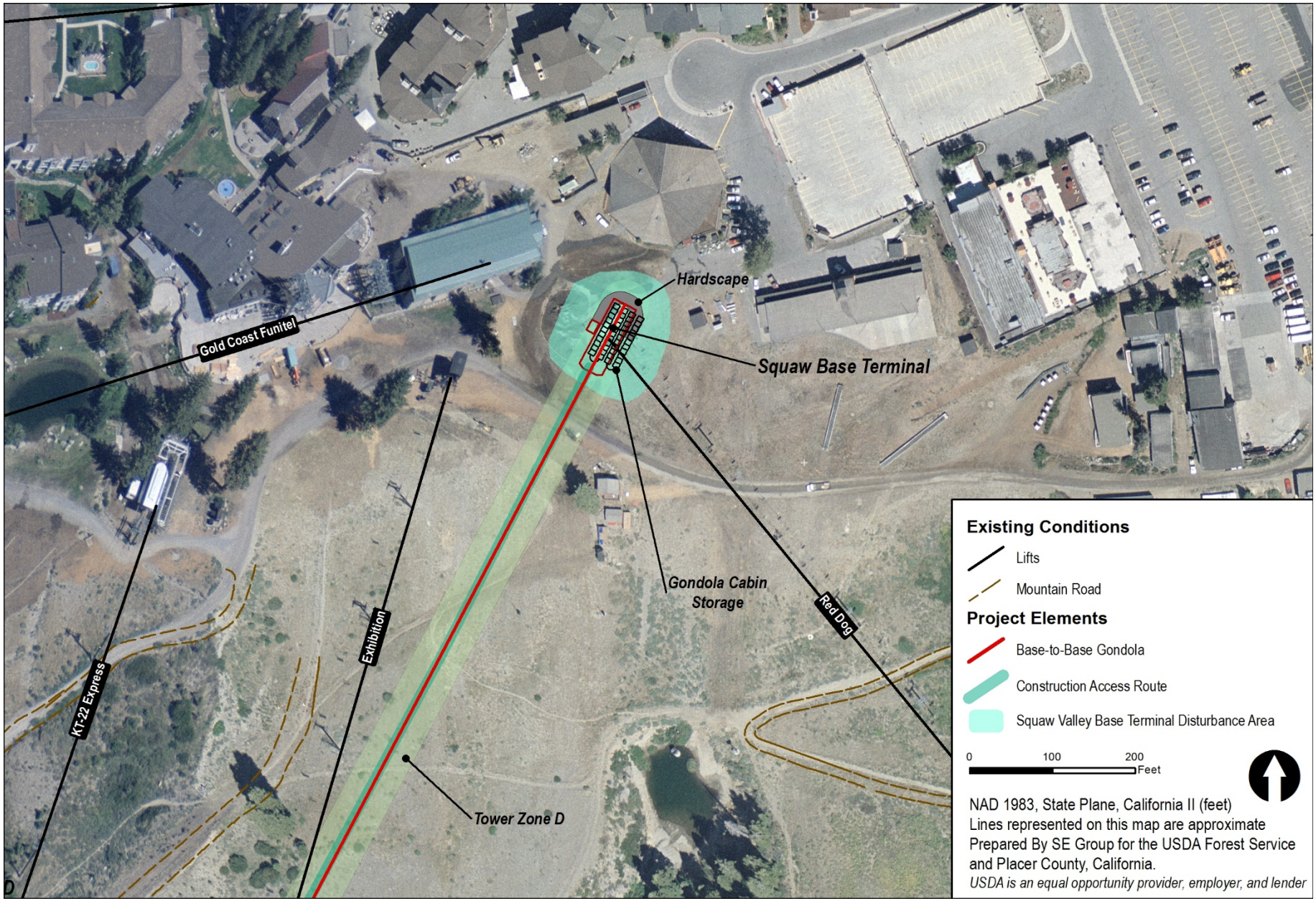

Exhibit 2-15 Close-up of Squaw Valley Base Terminal under Alternative 4

The base terminal at Alpine Meadows would be in the same location as described for Alternative 2 (see Exhibit 2-12). Under Alternative 4, cabin storage would be located in an enclosed facility at the Alpine Meadows base area and the Squaw Valley base area. Under Alternative 4, the Squaw Valley base terminal would be located in a slightly different location than under the other action alternatives (see Exhibit 2-15). Specifically, the Squaw Valley base terminal would be co-located with the Red Dog lift terminal and the overall disturbance area would match what is shown in Exhibit 2-15. A mid-station, identified in Exhibits 2-11 and 2-13 as the Alpine Meadows mid-station, would be located on private lands (the Caldwell property) approximately 1,600 feet north of the Alpine Meadows SUP boundary.

Under Alternative 4, the Alpine Meadows mid-station would be located approximately 200 feet to the west and slightly uphill of the Alpine Meadows mid-station location proposed for Alternative 3. The Alpine Meadows mid-station design and disturbance would be similar to the mid-stations described for Alternative 2, and power would be provided from the Caldwell property. Construction of this mid-station would require approximately 25,000 cubic yards of excavation, of which approximately 5,000 cubic yards would remain onsite. Construction access to the Alpine Meadows mid-station would not require any new temporary or permanent roads; the construction access route shown in Exhibits 2-11 and 2-13 already exists and would be used to provide construction access along the gondola alignment, including for excavation of footings for each gondola tower and selective tree removal.

Access to this site would require construction of a segment of new permanent road on the Caldwell property. Like for Alternative 3, passengers would not be allowed to embark or disembark at this mid-station. However, this mid-station site is also close to the site of the proposed Caldwell property development. If the Caldwell property development is implemented, property owners and their guests would be permitted to enter and exit at this Alpine Meadows mid-station.

The Squaw Valley mid-station, depicted in Exhibit 2-14, would be located on the Olympic Ridge, just west of the top terminal of the existing KT-22 Express lift. Under Alternative 4, the Squaw Valley mid-station would be located slightly to the east of the Squaw Valley mid-station location proposed for Alternatives 2 and 3. The mid-station design and access would be similar to the Squaw Valley mid-station included in Alternative 2, and power would be provided via line generator. Under Alternative 4, fill required for the grading proposed at the Alpine Meadows base area (described above for Alternative 2) would be generated from the Alpine Meadows mid-station site. Winter access to the lift is possible from both Squaw Valley and the Caldwell property.

2.2.5 Design Comparison of the Alternatives

Table 2-1 provides a comparison of project elements associated with each alternative.

Table 2-1 Comparison of Alternatives

	Alternative 1 – No Action Alternative	Alternative 2 – Proposed Action Alternative	Alternative 3	Alternative 4
Aerial Ropeway System (length)				
Private Land	0	9,700 feet	10,200 feet	9,400 feet
NFS Land	0	3,300 feet	2,400 feet	2,300 feet
Total	**0**	**13,000 feet**	**12,600 feet**	**11,700 feet**
Towers				
Private Land	0	25	29	28
NFS Land	0	10	5	5
Total	**0**	**35**	**34**	**33**

Table 2-1 Comparison of Alternatives

	Alternative 1 – No Action Alternative	Alternative 2 – Proposed Action Alternative	Alternative 3	Alternative 4
Terminals				
Private Land	0	1 base terminal, 1 mid-station	1 base terminal, 2 mid-stations	1 base terminal, 2 mid-stations
NFS Land	0	1 base terminal, 1 mid-station	1 base terminal	1 base terminal
Total	**0**	**2 base terminals, 2 mid-stations**	**2 base terminals, 2 mid-stations**	**2 base terminals, 2 mid-stations**
Avalanche Mitigation System				
Private Land	0	0	0	0
NFS Land	0	Removes seven 105-mm Howitzer targets	Removes two 105-mm Howitzer targets	Removes two 105-mm Howitzer targets

Notes: mm = millimeter; NFS = National Forest System

Table 2-2 provides a comparison of the disturbance of key project elements associated with each alternative.

Table 2-2 Comparison of Disturbance of Alternatives

Alternative 1 – No Action Alternative	Alternative 2 – Proposed Action Alternative	Alternative 3	Alternative 4
Alpine Meadows Base Terminal (permanent ground disturbance)			
0 acre	1.9 acre	1.5 acre	1.5 acre
Alpine Meadows Mid-Station (permanent ground disturbance)			
0 acre	0.5 acre	0.9 acre	0.5 acre
Squaw Valley Mid-Station (permanent ground disturbance)			
0 acre	1.5 acre	1.6 acre	0.6 acre
Squaw Valley Base Terminal (permanent ground disturbance)			
0 acre	1 acre	1 acre	0.4 acre
Gondola Corridor (overstory vegetation removal, temporary construction disturbance)			
0 acre	11.2 acres	8 acres	7.9 acres
Gondola Tower Disturbance (permanent tower footing, temporary construction disturbance)			
0 acre	0.4 acre	0.4 acre	0.4 acre
Access Route (temporary ground disturbance)			
0 acre	3.3 acres	1.1 acre	2.7 acres

Note: Slight differences in acreage between project disturbance and resource disturbance are attributable to GIS shapefiles and rounding.

2.2.6 Resource Protection Measures

To minimize potential environmental impacts from construction and implementation of the action alternatives, RPMs have been incorporated into all action alternatives. Refer to Appendix B for a comprehensive list of the RPMs. These measures were developed by the Forest Service and Placer County and resource specialists in the pre-analysis and analysis phases to reduce environmental impacts and comply with applicable laws and regulations. They include, but are not limited to, best management practices, Forest Service standards and guidelines, Placer County standard permit conditions, and standard operating procedures. RPMs come from federal, state, and local laws, regulations, and policies; forest plans; scientific research; and the experience provided by lead agencies and consulting specialists in designing

similar projects. Many of the RPMs are common practices that ski area managers have historically used in alpine and sub-alpine environments to prevent or decrease potential environmental impacts. They are highly effective methods that can be planned in advance and adapted to site conditions, as needed.

The potential effects of implementing the action alternatives (provided in Chapter 4) were analyzed as follows: The effect of the action alternatives was determined, relevant RPMs were applied, and the effectiveness of reducing effects was determined. If additional measures were needed to further reduce adverse effects, they were identified.

As it relates to CEQA, the significance of impacts was determined before RPMs were implemented. The analysis then determined whether the RPMs would reduce significant impacts to a less-than-significant level. If significant impacts would remain significant after consideration of applicable RPMs, mitigation measures were added, as feasible, to further reduce the impact. All RPMs as well as any supplemental mitigation measures necessary to further reduce environmental impacts, will be mitigation measures and included in the Placer County mitigation monitoring and reporting program, and their implementation will be ensured by the CUP's conditions of approval. All RPMs are considered roughly proportional and have an essential nexus to the impacts they reduce.

Compliance with the designated RPMs will be a required condition of the Forest Service amendment to the SUP and for Placer County's issuance of the CUP needed for implementation. Responsibility for ensuring that required RPMs are implemented rests with the Forest Service and Placer County; in some cases, it is a joint responsibility, whereas in others it is agency specific. Some RPMs also include participation by regulatory agencies, such as the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, and the Placer County Air Pollution Control District. When the enforcement of an RPM is the responsibility of the Forest Service, the ultimate enforcement mechanism will be compliance with the terms and conditions of the Ski Area Term Permit and associated Construction and Operation Plans administered by the Forest Service Mountain Sports Administrator, the District Ranger, and the Forest Supervisor. When the enforcement of an RPM is the responsibility Placer County, the ultimate enforcement mechanism will be contained within the Mitigation Monitoring and Reporting Program and conditions of approval within the CUP.

2.3 ALTERNATIVES AND DESIGN COMPONENTS CONSIDERED BUT NOT EVALUATED FURTHER

2.3.1 Regulatory Background

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

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

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

2.3.2 Alternatives Considered but Not Evaluated Further

Alternatives not considered in detail may include, but are not limited to, those that fail to meet the purpose and need, are technologically infeasible or illegal, or would result in unreasonable environmental harm. It is important to note that a potential conflict with local or federal law does not automatically render an alternative unreasonable, although such conflicts must be considered. The following alternatives were considered by the Forest Service and Placer County but were eliminated from further analysis for the reasons described below.

2.3.2.1 IMPROVEMENTS TO EXISTING SHUTTLE SYSTEM ALTERNATIVE

Under this alternative, the existing Squaw to Alpine intra-resort shuttle system would be improved and expanded to provide enhanced access between the two ski areas. The fleet of vehicles could be expanded (types, sizes, fuel sources, user amenities) and the timing, location, and scheduling of the route could potentially be changed and shortened.

This alternative was eliminated from detailed analysis in the Final EIS/EIR because it would not adequately meet the purpose and need. A review of intra-resort shuttle ridership data for the 2011/2012 to 2016/2017 winter seasons indicates that, on average, 41,675 persons rode the shuttle one-way each season. When accounting for roundtrip ridership, the average over these five seasons is approximately 21,880 guests per season. This represents about 2.7 percent of total downhill snowsports visits during a given season at Squaw Valley and Alpine Meadows, combined. This particularly low shuttle usage is an indicator that guests do not presently find it convenient and/or effective to shuttle between the two resorts (RRC Associates and SE Group 2018). Similar patterns of resort shuttle use are observed throughout the ski industry. Guests do not perceive time spent riding a shuttle bus to be part of their recreation experience, whereas, time spent on a lift, even if the lift is simply a transit conveyance, is perceived to be part of their skiing day.

Additionally, this alternative is functionally identical to the No Action Alternative, as this alternative would require no analysis or permitting by the Forest Service or Placer County. SVSH is presently in a position to make any operational changes to the resort shuttle system it might deem appropriate.

2.3.2.2 ALTERNATIVE ROUTE ALIGNMENTS

The following alternative alignments were suggested for the proposed gondola:

- relocating the Squaw Valley mid-station to KT saddle, KT top terminal, Olympic Lady top terminal, or west of Red Dog top terminal from where the gondola would descend to the vicinity of Alpine Meadows Road before continuing to the Alpine Meadows base area;
- relocating the Alpine Meadows base terminal closer to the existing Kangaroo lift and maintenance sheds;
- constructing a lift rather than a gondola through private property to the top terminal of KT-22;

- constructing a lift connecting the tops of the two ridges at Squaw Valley and Alpine Meadows, rather than the base areas; and
- approximately 39 additional conceptual alignments connecting Squaw Valley and Alpine Meadows.

Each alternative alignment considered includes specific technical or design challenges. For example, some issues include excessively steep terrain, increased total alignment length, and the involvement of private property that is not currently included in the Proposed Action or alternatives.[2] Extensive consideration of wind directions and velocities played a part in the planning of each alternative evaluated in detail, and many potential alternatives were ultimately eliminated from detailed analysis because of these considerations. Other alternatives considered would travel through private property in the Alpine Meadows area that is not currently included in the Proposed Action or alternatives, and the practical challenges of individual property access would be substantial. For example, for the gondola to cross over an existing inhabited structure, tramway code would require that sprinkler systems be installed in each structure; this would be a substantial intrusion.

Overall, a number of alternative alignments were considered and eliminated due to technical and economic challenges and would not respond to any resource issues that are not already addressed through the creation of Alternatives 3 and 4.

2.3.2.3 BUFFER ZONE AROUND WILDERNESS ALTERNATIVE

Under this alternative, a buffer zone of 0.5 to 1 mile would be established around the GCW. This alternative was identified through public scoping, and the commenter did not indicate a particular alternative alignment for the proposed gondola. Furthermore, the Forest Service has a responsibility to protect congressionally-designated Wilderness areas, but this responsibility is limited to the physical bounds of the Wilderness area and does not include the protection or management of "buffer zones." This condition is supported by the Congressional Record for the U.S. Senate (S126622, October 2, 1984, Section 9 "Buffer Areas") which states:

> The Congress does not intend that the designation of a Wilderness area under this act lead to the creation of protective perimeters or buffer zones around such Wilderness areas. The fact that non-Wilderness activities or uses can be seen or heard from areas within a Wilderness shall not preclude such activities or uses up to the boundary of the Wilderness area.

This alternative was eliminated because it does not meet the purpose and need and is unrelated to the proposal. See Section 4.3, "Wilderness," for more information.

2.3.2.4 ALTERNATIVE TECHNOLOGIES

Alternative technologies to the proposed gondola were considered, including:

- pulse gondola;
- lower capacity gondola; and
- train that would be constructed underground from a terminal at Squaw Valley near the Far East lift to a point on private property, and aboveground along Alpine Meadows Road to the Alpine Meadows base area.

The alternative gondola design technologies were dismissed from detailed analysis because they do not respond to any identified resource issues. These alternatives would still require the same amount of ground

[2] Regarding private property, while the proposed gondola alignment under Alternatives 3 and 4 also would cross private property, the landowner is currently a signatory to the original application to Placer County, and the alignments for Alternative 3 and 4 would not cross over any existing, inhabited structures.

disturbance and would have a minimal impact on capacity. Such capacity changes are not expected to measurably reduce any resource impacts. The train alternative was eliminated because it is technically and economically infeasible. Preliminary analysis indicates that this alternative would be prohibitively expensive and would result in much greater impacts on resources such as soils, geology, and water quality. This alternative would require the excavation of a tunnel approximately 1.5 miles long, which would create substantial challenges for construction.

2.4 SUMMARY COMPARISON OF DIRECT AND INDIRECT ENVIRONMENTAL CONSEQUENCES

Table 2-3 provides a summary comparison of the direct and indirect environmental consequences of the alternatives. Full impact analyses are provided in Chapter 4. More detailed discussions of the differences between the action alternatives are provided below the table for the key issues.

Table 2-3 Summary Comparison of Direct and Indirect Environmental Consequences

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Recreation				
Impact 4.1-1: Recreation Experience, Access, and Visitation	NEPA – No effect CEQA – No effect	NEPA – Beneficial for recreational facilities, access, and visitation; beneficial within ski area facilities; adverse for dispersed recreation CEQA – Less than significant	NEPA – Beneficial for recreational facilities, access, and visitation; beneficial within ski area facilities; minorly adverse for dispersed recreation CEQA – Less than significant	NEPA – Beneficial for recreational facilities, access, and visitation; beneficial within ski area facilities; minorly adverse for dispersed recreation CEQA – Less than significant
Impact 4.1-2: Adverse Effects Associated with New or Expanded Recreation Facilities	NEPA – N/A CEQA – No effect	NEPA – N/A CEQA – Less than significant	NEPA – N/A CEQA – Less than significant	NEPA – N/A CEQA – Less than significant
Impact 4.1-3: Consistency with Land Use Plans	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant
Visual Resources				
Impact 4.2-1: Consistency with Federal, State, and Local Regulations	NEPA – No effect CEQA – No effect	NEPA – Minorly adverse CEQA – Less than significant	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant
Impact 4.2-2: Visual Character	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Minorly adverse CEQA – Significant and unavoidable	NEPA – Minorly adverse CEQA – Significant and unavoidable
Impact 4.2-3: Night Lighting and Glare	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant
Wilderness				
Impact 4.3-1: Effects on Untrammeled Wilderness	NEPA – No effect CEQA – N/A	NEPA – No effect CEQA – N/A	NEPA – No effect CEQA – N/A	NEPA – No effect CEQA – N/A
Impact 4.3-2: Effects on Undeveloped Wilderness	NEPA – No effect CEQA – N/A	NEPA – No effect CEQA – N/A	NEPA – No effect CEQA – N/A	NEPA – No effect CEQA – N/A
Impact 4.3-3: Effects on Natural Wilderness	NEPA – No effect CEQA – N/A	NEPA – Minorly adverse CEQA – N/A	NEPA – Minorly adverse CEQA – N/A	NEPA – Minorly adverse CEQA – N/A
Impact 4.3-4: Effects on Opportunities for Solitude or Primitive and Unconfined Recreation	NEPA – No effect CEQA – N/A	NEPA – Adverse CEQA – N/A	NEPA – Minorly adverse CEQA – N/A	NEPA – Minorly adverse CEQA – N/A
Impact 4.3-5: Effects on Potential	NEPA – No effect	NEPA – Adverse	NEPA – No effect	NEPA – No effect

Table 2-3 Summary Comparison of Direct and Indirect Environmental Consequences

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Wilderness Characteristics on Private Lands within the Congressionally Mapped Granite Chief Wilderness	CEQA – N/A	CEQA – N/A	CEQA – N/A	CEQA – N/A
Land Use				
Impact 4.4-1: Consistency with Relevant Federal and Local Rules and Regulations	NEPA – No effect CEQA – No effect	NEPA – With General Plan amendment and rezone, no effect CEQA – With General Plan amendment and rezone, less than significant	NEPA – With General Plan amendment and rezone, no effect CEQA – With General Plan amendment and rezone, less than significant	NEPA – With General Plan amendment and rezone, no effect CEQA – With General Plan amendment and rezone, less than significant
Socioeconomics and Environmental Justice				
Impact 4.5-1: Visitor Spending Impacts	NEPA – No effect CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A
Impact 4.5-2: Employment impacts	NEPA – No effect CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A
Impact 4.5-3: Town/County Tax Revenue Impacts	NEPA – No effect CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A
Public Safety				
Impact 4.6-1: Health and Safety	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant
Impact 4.6-2: Operations Efficiency	NEPA – No effect CEQA – N/A	NEPA – Minorly adverse CEQA – N/A	NEPA – Minorly adverse CEQA –N/A	NEPA – Minorly adverse CEQA – N/A
Transportation and Circulation				
Impact 4.7-1: Impacts on Placer County Roadways	NEPA – No effect CEQA – No effect	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant
Impact 4.7-2: Impacts on Placer County Intersections	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation
Impact 4.7-3: Impacts on Caltrans Intersections	NEPA – No effect CEQA – No effect	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant
Impact 4.7-4: Impacts on Vehicular Queuing at Caltrans Intersections	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable
Impact 4.7-5: Impacts on Caltrans Highways	NEPA – No effect CEQA – No effect	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant
Impact 4.7-6: Impacts on Transit	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – No effect
Impact 4.7-7: Impacts on Vehicle Safety Related to Roadway Design Features	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation
Impact 4.7-8: Construction Impacts on Transportation Facilities	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA –Less than significant with mitigation	NEPA – Adverse CEQA –Less than significant with mitigation
Cumulative Impact 4.7-9: Impacts on Placer County Roadways	NEPA – N/A CEQA –N/A	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation

Table 2-3 Summary Comparison of Direct and Indirect Environmental Consequences

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Cumulative Impact 4.7-10: Impacts on Placer County Intersections	NEPA – N/A CEQA –N/A	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation
Cumulative Impact 4.7-11: Impacts on Caltrans Intersections	NEPA – N/A CEQA – N/A	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable
Cumulative Impact 4.7-12: Impacts on Vehicular Queuing at Caltrans Intersections	NEPA – N/A CEQA – N/A	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable
Cumulative Impact 4.7-13: Impacts on Caltrans Highways	NEPA – N/A CEQA – N/A	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable
Cumulative Impact 4.7-14: Impacts on Transit	NEPA – N/A CEQA – N/A	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – No effect
Cumulative Impact 4.7-15: Impacts on Vehicle Safety Related to Roadway Design Features	NEPA – N/A CEQA – N/A	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation
Cumulative Impact 4.7-16: Construction Impacts on Transportation Facilities	NEPA – N/A CEQA – N/A	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – No effect
Utilities				
Impact 4.8-1: Water Supply Impacts	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant
Impact 4.8-2: Inefficient, Wasteful, and Unnecessary Consumption of Energy Resources	NEPA – No effect CEQA – No effect	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant
Impact 4.8-3: Increased Generation of Solid Waste	NEPA – N/A CEQA – No effect	NEPA – N/A CEQA – Less than significant	NEPA – N/A CEQA – Less than significant	NEPA – N/A CEQA – Less than significant
Noise				
Impact 4.9-1: Construction Noise Impacts	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable	NEPA – Adverse CEQA – Significant and unavoidable
Impact 4.9-2: Construction Vibration Impacts	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.9-3: Exposure of Existing Sensitive Receptors to Operational Noise from Proposed Gondola	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant
Impact 4.9-4: Exposure of Existing Sensitive Receptors to Operational Project-Generated Transportation Noise Sources	NEPA – No effect CEQA – No effect	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant
Air Quality				
Impact 4.10-1: Short-Term, Construction-Generated Emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant

Table 2-3 Summary Comparison of Direct and Indirect Environmental Consequences

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Impact 4.10-2: Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursors	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.10-3: Mobile-Source CO Concentrations	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Greenhouse Gas Emissions and Climate Change				
Impact 4.11-1: Greenhouse Gas Emissions	NEPA – No effect CEQA – No effect	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant
Impact 4.11-2: Impacts of Climate Change on the Project	NEPA – No effect CEQA – No effect	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant	NEPA – Minorly adverse CEQA – Less than significant
Vegetation				
Impact 4.12-1: Ground Disturbance and Overstory Vegetation Removal Effects	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.12-2: Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant
Impact 4.12-3: Conflict with Any Local Policies or Ordinances Protecting Biological Resources	NEPA – No effect CEQA – No effect	NEPA – N/A CEQA – Less than significant	NEPA – N/A CEQA – Less than significant	NEPA – N/A CEQA – Less than significant
Botany				
Impact 4.13-1: Disturbance or Loss of Federally Listed, Forest Service Sensitive, and Other Special-Status Botanical Species	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.13-2: Result in the Introduction or Spread of Invasive Plant Species	NEPA – No effect CEQA – N/A	NEPA – Adverse CEQA – N/A	NEPA – Adverse CEQA – N/A	NEPA – Adverse CEQA – N/A
Wildlife and Aquatics				
Impact 4.14-1: Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation
Impact 4.14-2: Direct and Indirect Effects on Sierra Nevada Yellow-Legged Frog Critical Habitat	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation
Impact 4.14-3: Direct and Indirect Effects on Southern Long-Toed Salamander	NEPA – N/A CEQA – No effect	NEPA – N/A CEQA – Less than significant	NEPA – N/A CEQA – Less than significant	NEPA – N/A CEQA – Less than significant
Impact 4.14-4: Direct and Indirect Effects on Management Indicator Species	NEPA – No effect CEQA – N/A	NEPA – Adverse CEQA – N/A	NEPA – Adverse CEQA – N/A	NEPA – Adverse CEQA – N/A
Impact 4.14-5: Direct and Indirect Effects on Special-Status Terrestrial Wildlife	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.14-6: Disturbance or Loss of Wildlife Movement, Wildlife Corridors, and Native Wildlife Nursery Sites	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA –Less than significant with mitigation	NEPA – Adverse CEQA –Less than significant with mitigation	NEPA – Adverse CEQA –Less than significant with mitigation

Table 2-3 Summary Comparison of Direct and Indirect Environmental Consequences

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Wetlands				
Impact 4.15-1: Loss and Degradation of Wetlands and Other Waters	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Soils, Geology, and Seismicity				
Impact 4.16-1: Exposure of People and Structures to Mass Wasting Events	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA –Less than significant with mitigation	NEPA – Adverse CEQA –Less than significant with mitigation
Impact 4.16-2: Exposure of People and Structures to Avalanches	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation	NEPA – Adverse CEQA – Less than significant with mitigation
Impact 4.16-3: Risks Associated with Soil Limitations	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.16-4: Excessive Erosion during Construction	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Hydrology and Water Quality				
Impact 4.17-1: Impacts from Erosion and Sedimentation Caused by Construction-Related Activities	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.17-2: Impacts from Erosion and Sedimentation Caused by Long-Term Implementation of the Project	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.17-3: Water Quality Impacts from Acute or Diffuse Releases of Contaminants Used during Project Implementation	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.17-4: Impacts to Groundwater from Increased Visitation and Groundwater Demand	NEPA – No effect CEQA – No effect	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant	NEPA – No effect CEQA – Less than significant
Impact 4.17-5: Localized Flooding from Changes in Site Drainage Patterns	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant	NEPA – Adverse CEQA – Less than significant
Impact 4.17-6: Impacts on Riparian Conservation Objectives in Riparian Conservation Areas	NEPA – No effect CEQA – No effect	NEPA – Adverse CEQA – N/A	NEPA – Adverse CEQA – N/A	NEPA – Adverse CEQA – N/A

2.4.1 Key Issues – Comparison of Alternatives

As described in Section 1.7, "Scope of the Analysis," the results of NEPA and CEQA public scoping, and analysis contained in the CEQA initial study (Appendix A), have helped the Forest Service and Placer County identify specific areas of elevated concern or "*key issues*" that have been evaluated in detail in this EIS/EIR and have generated alternatives to the project. These "*key issues*" include potential impacts associated with visual resources, wilderness, and the SNYLF. These key issues, along with other issues, were evaluated in detail (see Chapter 4) and were of primary concern in the development of alternatives. In addition to these key issues, transportation and circulation and greenhouse gas (GHG) emissions and climate change were expressed as important areas of interest, as evidenced by scoping comments; however, these resources were not identified as strong indicators of impact differences between the action alternatives either because of limited impacts or because substantially reducing these impacts would preclude achieving project objectives. Because all three action alternatives would include construction and operation of a gondola in

the project area, it is assumed that trip generation and, thus, GHG emissions would be similar across the action alternatives.

A summary of the key differences between the action alternatives is provided below.

2.4.1.1 VISUAL RESOURCES

All action alternatives would increase the developed nature of the landscape surrounding the gondola alignment, including in areas that are currently primarily natural as well as areas that are already heavily developed, resulting in adverse effects on visual character; however, the adverse effects on visual character of each action alternative are not identical. With regard to visual character, Alternative 2 would be the most impactful, followed by Alternative 4 and finally Alternative 3.

Alternative 2 would result in adverse effects on visual character because its gondola alignment would traverse the ridgeline separating the National Forest System-GCW and the Caldwell property. The viewpoint analysis indicates that gondola infrastructure would be particularly evident high along this ridgeline from Alpine Meadows Road and the Alpine Meadows base area and would exhibit considerable contrast on this side of the alignment. The prominence of gondola infrastructure along this ridgeline would mean that proposed conditions under Alternative 2 would have the most substantial negative impact on visual character out of all the action alternatives. The infrastructure that would be built near the Squaw Valley base area would contrast less with existing developed nature of that area, like with Alternatives 3 or 4. A viewshed analysis was conducted to estimate the total area from which gondola infrastructure would be visible, or the Zone of Potential Visibility. The viewshed analysis accurately accounts for topographic features but does not incorporate potentially obscuring features such as vegetation or existing built structures, meaning that the viewshed analysis is a conservative approximation of the Zone of Potential Visibility. For Alternative 2, the viewshed analysis indicates that gondola infrastructure would be potentially visible from approximately 17.99 square miles within the surrounding area.

Alternative 3 would result in minorly adverse effects on visual character. Gondola infrastructure under Alternative 3 would introduce development to the surrounding landscape, including in locations from which no development is currently visible. These effects are lesser than those associated with Alternative 2 because under Alternative 3, the gondola alignment would run through Catch Valley, meaning that natural topography would screen the gondola from many locations. Impacts on visual character associated with Alternative 3 are comparable to those associated with Alternative 2 near the Squaw Valley base area, as proposed infrastructure is comparable to existing infrastructure on the Squaw Valley side, which would not vary appreciably between action alternatives. For Alternative 3, the viewshed analysis indicates that gondola infrastructure would be potentially visible from approximately 16.04 square miles within the surrounding area.

Alternative 4 would result in minorly adverse effects on visual character. These effects are lesser than those associated with Alternative 2 but greater than those associated with Alternative 3. This is because under Alternative 4, the gondola alignment would run closer to the floor of Catch Valley, meaning that natural topography would screen the gondola from many locations, but would not traverse Catch Valley via the lowest alignment possible like with Alternative 3. Impacts on visual character associated with Alternative 4 are comparable to those of Alternatives 2 and 3 near the Squaw Valley base area, as proposed infrastructure is comparable to existing infrastructure on the Squaw Valley side, which would not vary appreciably between action alternatives. For Alternative 4, the viewshed analysis indicates that gondola infrastructure would be potentially visible from approximately 19.05 square miles within the surrounding area.

2.4.1.2 WILDERNESS

All action alternatives would result in the construction of gondola infrastructure that would be visible from certain locations within the National Forest System-GCW. This change would cause adverse impacts of varying magnitude on the natural wilderness characteristic and on opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW.

Visibility of additional infrastructure associated with implementation of Alternative 2 could result in adverse effects on opportunities for solitude or primitive and unconfined recreation for users of the National Forest System-GCW; at its closest point under Alternative 2, the gondola would be approximately 75 feet from the National Forest System-GCW. In addition, under Alternative 2, the Squaw Valley and Alpine Meadows mid-stations would improve access to the National Forest System-GCW during the winter, transitional seasons, and periods of inconsistent snow cover, as gondola-users would have the potential to disembark at both mid-stations and enter the National Forest System-GCW. This improved access could increase visitation and subsequently increase the likelihood of visitor encounters within the National Forest System-GCW, thereby reducing opportunities for solitude and primitive or unconfined recreation. Further, implementation of Alternative 2 would introduce development to private lands within the congressionally mapped GCW, which would reduce the untrammeled, undeveloped, and natural qualities of this area, and there would be potentially be fewer opportunities for solitude or primitive and unconfined recreation there. Implementation of Alternative 2 would also result in direct and indirect effects on occupied SNYLF habitat and on habitat with unutilized potential (not occupied) within designated critical habitat and would temporarily modify or remove primary constituent elements. None of the affected SNYLF critical habitat is within the National Forest System-GCW, but there is also SNYLF critical habitat in the National Forest System-GCW near the Alternative 2 alignment; for this reason, the wilderness ecological processes occurring within the National Forest System-GCW would be altered to some degree, meaning that the natural quality of these lands could be reduced.

Visibility of additional infrastructure associated with implementation of Alternative 3 could result in adverse effects on opportunities for solitude or primitive and unconfined recreation for users of the National Forest System-GCW; at its closest point under Alternative 3, the gondola would be approximately 450 feet from the National Forest System-GCW. Gondola infrastructure under Alternative 3 would be much less visible than under Alternative 2 because of its alignment through Catch Valley, which would result in topographical screening for much of the alignment. Compared with Alternative 2, Alternative 3 would result in less of an improvement in access to the National Forest System-GCW, as the location of the Alpine Meadows mid-station is such that gondola-users would not be able to disembark and enter the National Forest System-GCW from there. Gondola-users would only be able to disembark and enter the National Forest System-GCW from the Squaw Valley mid-station, meaning that there would less of a visitation increase. As a result, there would be less of an increased likelihood of visitor encounters within the National Forest System-GCW, and less of a reduction in opportunities for solitude or primitive and unconfined recreation. Implementation of Alternative 3 would not introduce any development to private lands within the congressionally mapped GCW. Implementation of Alternative 3 would result in direct and indirect effects on unutilized potential (not occupied) SNYLF critical habitat and would temporarily modify or remove primary constituent elements. None of this affected SNYLF critical habitat occurs within the National Forest System-GCW and because of the distance of Alternative 3 from the National Forest System-GCW, SNYLF critical habitat within the National Forest System-GCW would only be minimally affected, the wilderness ecological processes occurring within the National Forest System-GCW would not be appreciably altered, and the natural quality of these lands would not be appreciably reduced.

Visibility of additional infrastructure associated with implementation of Alternative 4 could result in adverse effects on opportunities for solitude or primitive and unconfined recreation for users of the National Forest System-GCW; at its closest point under Alternative 4, the gondola would be approximately 1,100 feet from the National Forest System-GCW. Under Alternative 4, gondola infrastructure would be less visible than Alternative 2 from within the National Forest System-GCW because of topographical screening, similar to Alternative 3. Under Alternative 4, the increase in visitation to the National Forest System-GCW would be similar to that described above for Alternative 3, as gondola-users would only be able to disembark and enter the National Forest System-GCW from the Squaw Valley mid-station (although under Alternative 4, the Squaw Valley mid-station is further from the National Forest System-GCW than it is under Alternative 3). Implementation of Alternative 4 would not introduce any development to private lands within the congressionally mapped GCW. Implementation of Alternative 4 would result in direct and indirect effects on unutilized potential (not occupied) SNYLF critical habitat and would temporarily modify or remove primary constituent elements. None of this affected SNYLF critical habitat occurs within the National Forest System-

GCW and because of the distance of Alternative 4 from the National Forest System-GCW, SNYLF critical habitat within the National Forest System-GCW would only be minimally affected, the wilderness ecological processes occurring within the National Forest System-GCW would not be appreciably altered, and the natural quality of these lands would not be appreciably reduced.

2.4.1.3 SIERRA NEVADA YELLOW-LEGGED FROG

The SNYLF is state listed as threatened and is federally listed as endangered. Critical habitat for this species has been designated, and the proposed gondola alignment (for all three action alternatives) falls within the designated critical habitat. Implementation of any of the action alternatives would result in direct and indirect effects, such as potential loss of individual SNYLFs during construction or disturbance or removal of suitable habitat (Impact 4.14-1). Additionally, implementation of the action alternatives would result in direct and indirect effects on SNYLF critical habitat including non-breeding aquatic habitat and upland habitat primary constituent elements (Impact 4.14-2). These effects would be adverse under NEPA and potentially significant under CEQA. Implementation of RPMs would mitigate these effects under NEPA and would reduce these impacts under CEQA, but not to a less-than-significant level. Mitigation has been recommended that would further reduce these impacts under CEQA because consultation between the Forest Service, U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife 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. This same mitigation would apply to all three action alternatives.

Table 2-4 provides a summary of potential effects on SNYLF resulting from implementing any of the action alternatives.

Table 2-4 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	10.26
Permanent ground disturbance	3.95	4.21	2.29
Total	**18.23**	**15.38**	**12.55**
Land Cover Disturbance or Loss in Critical Habitat			
Temporary construction disturbance	14.03	10.87	6.85
Permanent ground disturbance	3.85	4.11	2.06
Total	**17.88**	**14.98**	**8.91**
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**
Upland Habitat Disturbance[3]			
Short-term change in habitat quality	3.72	3.11	1.34
Permanent loss in habitat quality	1.14	0.42	0.26
Total	**4.86**	**3.53**	**1.60**

Table 2-4 Summary of Potential Effects (Acres) on Sierra Nevada Yellow-Legged Frog

Habitat Disturbance/Loss Type	Alternative 2	Alternative 3	Alternative 4
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: PCE = primary constituent element.

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

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

[3] See Table 4.14-8 in this Final 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

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, upland habitat for the frog would also 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.

Alternative 2 would have the greatest adverse effect on SNYLF critical habitat because its alignment is close to occupied habitat at Barstool Lake, potential direct effects on aquatic breeding and non-breeding habitat primary constituent element (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 because 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.

2.4.1.4 TRANSPORTATION AND CIRCULATION

Alternatives 2, 3, and 4 are identical from a transportation perspective. The same mitigation measures would apply to all three action alternatives and would mitigate adverse effects under NEPA and reduce most significant impacts to less-than-significant levels under CEQA; however, some impacts would be significant and unavoidable even after mitigation. A summary of the specific traffic impacts under existing plus project conditions is provided below:

- Although there would be a modest increase in traffic, vehicle trips generated under the action alternatives would not worsen traffic conditions to an unacceptable level on a Placer County roadway (Impact 4.7-1).
- Vehicle trips generated under the action alternatives would worsen unacceptable operations at intersections along Squaw Valley Road, in that the Squaw Valley Road/Chamonix Place intersection would experience a 2.5-second or more increase in the weighted average delay of all movements yielding right-of-way during the Sunday PM peak hour. These conditions meet the *Manual on Uniform Traffic Control Devices for Streets and Highways* traffic signal warrant (Impact 4.7-2).
- Although there would be a modest increase in traffic, vehicle trips generated under the action alternatives would not worsen traffic conditions to an unacceptable level at an intersection on a California Department of Transportation (Caltrans) facility (Impact 4.7-3).
- Vehicle trips generated under the action alternatives would adversely affect turn lane storage at intersections owned/operated by Caltrans. The maximum queue length in the northbound left-turn lane at the State Route 89/Alpine Meadows Road intersection would be extended from 350 to 375 feet, thereby further exceeding the 300 feet of available storage. Even after mitigation, this impact would be significant and unavoidable (Impact 4.7-4).
- Although there would be a modest increase in traffic, vehicle trips generated under the action alternatives would not worsen traffic conditions to an unacceptable level on a Caltrans facility (Impact 4.7-5).
- Implementing the action alternatives would not adversely affect public transit facilities or services or the performance or safety of these services (Impact 4.7-6).
- Vehicle trips generated under the action alternatives could occur on peak winter days when there is no available parking at either resort. This could cause vehicles to turn around along Squaw Valley Road and Alpine Meadows Road, thereby creating additional congestion and safety concerns because these roadways are not designed to accommodate this turning movement (Impact 4.7-7).
- The action alternatives would involve construction activities that could cause temporary impacts on transportation facilities, including degradation of roadway pavement conditions and conflicts with bicyclists and pedestrians. Temporary traffic controls and lane closures may also be required when transporting certain building materials (e.g., poles, columns) (Impact 4.7-8).

2.4.1.5 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Primary components for the action alternatives would be the same (e.g., towers, mid-stations, base terminals). Thus, construction activities and duration would also generally be the same. Further, the gondola would operate in the same manner under each alternative, only with a slightly different alignment. Similarly, the action alternatives would require a similar level of electricity, and would not differ in other ways that would affect operational emissions. Therefore, GHG emissions, modeled for Alternative 2, were not remodeled for Alternatives 3 and 4, and increases in GHG emissions and related impacts are considered the same for all action alternatives. It should be noted that conservative assumptions were used for conducting the emissions modelling, that is, assumptions were used that would result in a higher emissions estimate. Therefore, the emissions estimates provided in this analysis are likely higher than those that would actually occur for any of the alternatives.

Construction and operation of the new gondola, and associated components, would result in GHG emissions, but this would be a small contribution of net GHG emissions to the cumulative global climate change problem (Impact 4.11-1). This would be a minor adverse effect under NEPA and a less-than-significant impact under CEQA for the action alternatives because the project would not exceed applicable Placer County Air Pollution Control District thresholds for GHG emissions. Implementing RPMs would reduce the

amount of construction-related GHG emissions associated with vehicle exhaust, but emissions would not be eliminated. No mitigation measures would be required.

Changes to local weather patterns associated with climate change would result in physical effects in the project area, including increased risk of wildfire, mass wasting (e.g., rockslides), and avalanche (Impact 4.11-2). Because the alignments of all the action alternatives are located in the same vicinity, effects from climate change would affect all the alternatives equally, and there would be a minorly adverse effect under NEPA and a less-than-significant impact under CEQA for all action alternatives. No aspects of any action alternative make it more or less susceptible to, or resilient to, the effects of climate change compared to the other action alternatives. Appropriate fire protection agencies and programs are currently in place, and the gondola would not be operational during periods of wildfire or rockslide risk. No mitigation measures would be required.

3 APPROACH TO THE ANALYSIS

This chapter describes the approach to the environmental analysis, including NEPA and CEQA requirements, common terminology used in this EIS/EIR, and organization of the analysis. Additionally, this chapter discusses the analysis methodology used in the evaluation of cumulative effects, and describes the cumulative setting, including the list of related projects.

3.1 NEPA AND CEQA REQUIREMENTS FOR ENVIRONMENTAL ANALYSES

Both an EIS prepared under NEPA and an EIR prepared under CEQA are public disclosure documents to ensure environmental factors are considered during the governmental decision-making process. While there are some differences between NEPA and CEQA, this joint EIS/EIR meets the analysis requirements for both regulatory processes. The key directives and requirements of NEPA and CEQA are described below, and Section 3.4 describes specifically how this document presents the required information.

3.1.1 NEPA Overview

The Council on Environmental Quality (CEQ) regulations for implementing NEPA specify that a federal agency preparing an EIS must consider the effects of the proposed action and alternatives on the environment; these include effects on ecological, aesthetic, historical, and cultural resources and economic, social, and health effects. Environmental effects include direct, indirect, and cumulative effects. An EIS must also discuss possible conflicts with the objectives of federal, state, regional, and local land use plans, policies, or controls for the area concerned; energy requirements and conservation potential; urban quality; the relationship between short-term uses of the environment and long-term productivity; and irreversible or irretrievable commitments of resources. An EIS must identify relevant, reasonable mitigation measures that are not already included in the proposed action or alternatives that could avoid, minimize, rectify, reduce, eliminate, or compensate for the project's adverse environmental effects. (40 Code of Federal Regulations [CFR] 1502.14, 1502.16, 1508.8.)

3.1.2 CEQA Overview

The State CEQA Guidelines for implementing CEQA explain that the environmental analysis for an EIR must evaluate impacts associated with the project and identify mitigation for any potentially significant impacts. All phases of a proposed project, including construction and operation, must be evaluated in the analysis. California Code of Regulations [CCR] Section 15126.2(a) of the State CEQA Guidelines states:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

An EIR must also discuss inconsistencies between the proposed project and applicable general plans and regional plans (State CEQA Guidelines Section 15125[d]).

3.1.3 Environmental Baseline

Both NEPA and CEQA require a discussion of an environmental baseline against which to compare potential impacts of the Proposed Action and alternatives. For the purposes of this document and pursuant to the NEPA regulations, the No Action Alternative provides a baseline for estimating the effects of the other alternatives (see CEQ's "Forty Most Asked Questions" Answer to Question 3 for more details). Using the No Action Alternative allows the analysis to contrast the impacts of the Proposed Action and alternatives with the existing condition and expected future condition if the Proposed Action were not implemented. In some instances, implementing the No Action Alternative results in a change in existing conditions; for example, if the federal action being evaluated was reauthorizing the continued use of an existing facility on federal land, selection of the No Action Alternative (i.e., not reauthorizing the facility) would result in closing, and potential abandonment or removal of the facility, causing a change in the physical environment compared to existing conditions. However, in many cases, the No Action Alternative results in the continuation of existing conditions, such as when a new facility is being considered on federal land, and selection of the No Action Alternative results in the new facility not being authorized and the site remains in its current condition.

The State CEQA Guidelines (CCR Section 15125[a]) state that:

> An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.

This EIS/EIR includes descriptions of the Environmental Setting (see Section 3.4) and the analysis of a No Action Alternative. Environmental effects of the action alternatives are assessed against the No Action Alternative. For this analysis, implementation of the No Action Alternative would result in a continuation of the existing conditions described in the Environmental Setting; therefore, analysis of the No Action Alternative provides a comparison of the effects of the action alternatives against the existing physical environmental conditions as described in the Environmental Setting.

3.1.4 Effects Analysis and Significance Criteria

Both NEPA and CEQA require the analysis of potential impacts of the Proposed Action and alternatives. While CEQA requires a determination of effect significance for each effect discussed in an EIR based on defined significance criteria, NEPA does not necessarily require this for an EIS. Under NEPA, preparation of an EIS is triggered if a federal action has the potential to "significantly affect the quality of the human environment." All impact analyses in documents prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by or result from the Proposed Action and any alternatives that are evaluated. 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. For the analysis of each resource topic considered in this EIS/EIR analytical indicators are identified to assist in the characterization and evaluation of environmental effects under NEPA (see Sections 3.3 and 3.4 below). Environmental effects that will improve the existing condition are noted, and detrimental impacts are characterized as adverse. For this EIS/EIR, effects described in the context of NEPA are identified as "no effect," "adverse," or "beneficial."

Under CEQA, significance criteria (sometimes called *thresholds of significance*) are used to make a determination of significance for each environmental impact evaluated. An adverse impact that exceeds or crosses the significance criteria is considered significant, and an impact that does not exceed or cross the criteria is considered less than significant. Like described above for NEPA, environmental effects that will improve the existing condition are noted and are considered beneficial. The CEQA significance criteria used in this EIS/EIR are based on CEQA's mandatory findings of significance (as summarized in State CEQA Guidelines Section 15065); the checklist presented in Appendix G of the State CEQA Guidelines (Guidelines in effect when the Draft EIS/EIR was being prepared); Placer County's CEQA checklist; and where appropriate, factual or scientific data and regulatory standards of federal, state, and local agencies. While the significance criteria used in this EIS/EIR are primarily defined in accordance with CEQA guidance, they also encompass the factors taken into account under NEPA to evaluate the context and the intensity of the effects of an action.

The NEPA regulations explicitly require certain impacts to be discussed, including:

- irreversible or irretrievable commitment of resources (40 CFR 1502.16);
- tradeoffs between short term uses of the environment and long-term productivity (40 CFR 1502.16); and
- energy requirements and conservation potential of alternatives (40 CFR 1502.16[e]).

Effects include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and occur later in time or are farther removed in distance, but are still reasonably foreseeable (i.e., likely to occur within the duration of the project). Cumulative effects are the result of the incremental direct and indirect effects of any action when added to other past, present, and reasonably foreseeable future actions, and can result from individually minor but collectively major actions taking place over a period of time (see Section 3.5). Effects must be evaluated for the Proposed Action, the no action alternative, other reasonable courses of action (e.g., other alternatives), and connected actions, which means actions that are closely related to the Proposed Action and alternatives and therefore should be discussed in the same impact analysis (40 CFR 1508.25). The entirety of the proposed gondola project is a single, or connected action. The project cannot be completed without components on both National Forest System (NFS) lands and private lands being constructed. Therefore, the NEPA impact analysis encompasses portions of the project on both NFS and on private lands.

The State CEQA Guidelines (CCR Section 15382) define a significant effect on the environment as:

> …a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

Like NEPA, CEQA requires the analysis of direct, indirect, and cumulative effects, and also requires evaluation of the growth-inducing impacts of a project.

3.1.5 Resource Protection Measures and Mitigation Measures

As described in Section 2.2.6, "Resource Protection Measures," this project (i.e., the Proposed Action [proposed project under CEQA] and all other action alternatives) 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 (provided in Chapter 4) were 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.

Potential impacts to each resource topic considered are analyzed assuming that the RPMs are applied.

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

Both NEPA and CEQA require the provision of mitigation measures. CEQ's NEPA Regulations require an EIS to specifically include a discussion of a means to mitigate adverse environmental effects (if not covered in the alternatives) even if the mitigation measures are outside the jurisdiction of the lead agency or the cooperating agencies. CEQA requires an EIR to present all feasible mitigation for significant adverse impacts (Section 15126.4).

Mitigation under both the CEQ's NEPA Regulations and the State CEQA Guidelines (40 CFR 1508.20; State CEQA Guidelines 15370) is defined as:

a) Avoiding the impact altogether by not taking a certain action or parts of an action.

b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

e) Compensating for the impact by replacing or providing substitute resources or environments.

Responsibility for ensuring that required mitigation measures and RPMs are implemented rests with the Forest Service and Placer County; in some cases it is a joint responsibility, whereas in others it is agency specific. Some mitigation measures and RPMs also include participation by regulatory agencies, such as the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, and the Placer County Air Pollution Control District. When the enforcement of a mitigation measure or RPM is the responsibility of the Forest Service, the ultimate enforcement mechanism will be compliance the terms and conditions of the Ski Area Term Permit and associated Construction and Operation Plans administered by the Forest Service Mountain Sports Administrator, the District Ranger, and the Forest Supervisor. When the enforcement of a mitigation measure or RPM is the responsibility of Placer County, the ultimate enforcement mechanism will be contained within the MMRP and conditions of approval within the Conditional Use Permit.

3.2 APPLICATION OF NEPA AND CEQA PRINCIPLES AND TERMINOLOGY IN THIS EIS/EIR

While many concepts are common to NEPA and CEQA, there are several differences between the two in terminology, procedures, environmental document content, and substantive mandates to protect the environment. For this EIS/EIR, the more rigorous of the two laws was applied in cases in which NEPA and CEQA differ. Table 3-1 compares NEPA and CEQA terminology.

Table 3-1 Correlated NEPA and CEQA Terminology

NEPA Term	Correlating CEQA Term
Environmental Impact Statement	Environmental Impact Report
Notice of Intent	Notice of Preparation
U.S. Environmental Protection Agency Filing/Federal Register Notice and Agency/Public Review (also known as a Notice of Availability)	Notice of Completion/Notice of Availability
Record of Decision	Certification, Findings, Statement of Overriding Considerations, and Notice of Determination
Lead Agency	Lead Agency
Cooperating Agency	Responsible Agency
Purpose and Need Statement	Project Objectives
Action	Project
Proposed Action and Alternatives	Proposed Project and Alternatives
No Action Alternative	No Project Alternative
Affected Environment	Environmental Setting
Effect	Impact
Environmental Consequences	Impact Assessment

This EIS/EIR uses both NEPA and CEQA terminology in certain instances (e.g., in Chapter 1 where the purpose and need statement, and underlying project objectives are discussed). The discussion of environmental consequences, generally a NEPA term, is also known as *environmental impacts* or *environmental effects*. These terms are often considered to be synonymous (e.g., 40 CFR 1508.8), and both *environmental impacts* and *environmental effects* are used in this EIS/EIR.

There are additional key similarities and differences between NEPA and CEQA that are relevant to this EIS/EIR:

1. Baseline for Impact Analysis – For the purposes of NEPA, the baseline for impact analysis is the No Action Alternative. For CEQA, the baseline is existing conditions. As described previously in this chapter, the results of "No Action" for this project is a continuation of the existing condition; therefore, there is no meaningful difference between the No Action Alternative baseline and the existing conditions baseline.

2. No Action Alternative Analysis – For the purposes of NEPA and CEQA, the No Action Alternative is compared to existing conditions.

3. Proposed Action Alternative Analysis – For the purposes of NEPA, the Proposed Action Alternative is compared to the No Action Alternative. For the purposes of CEQA, the Proposed Action Alternative is compared to existing conditions. However, as described previously, for this EIS/EIR, there is no meaningful difference between the No Action Alternative baseline and the existing conditions baseline.

4. Analysis of Other Action Alternatives – For the purposes of NEPA, action alternatives other than the Proposed Action Alternative are compared to the No Action Alternative. For the purposes of CEQA, the environmental effects of the other action alternatives are compared to the environmental effects of the Proposed Action Alternative to identify whether the effects of the other action alternatives are more or less than those of the Proposed Action Alternative.

5. Cumulative Effects Analysis – Cumulative effects analyses under NEPA and CEQA follow the same approach as described above in bullets #3 and #4 describing the analysis of direct and indirect effects for the Proposed Action and alternatives.

This EIS/EIR was prepared to address the distinct legal requirements of NEPA and CEQA, as set forth above.

A variety of terms are used in this EIS/EIR to describe the impacts identified during the course of the environmental analysis. These and other terms are defined below.

For the NEPA analysis, environmental effects will be described as adverse when there are detrimental or negative effects. Effects will be described as beneficial when there are positive effects. When there would be no change, a "no effect" conclusion is used. For some NEPA effects conclusions, "minorly" is used to characterize adverse and beneficial effects (i.e., minorly adverse or minorly beneficial), in an effort to further distinguish the effects of the action alternatives. RPMs may be identified to reduce adverse effects. Where the RPMs are not considered by the Forest Service to be adequate under NEPA to reduce adverse effects, additional mitigation measures may be provided.

For the CEQA analysis environmental effects will be described as indicated below:

- A "less-than-significant impact" is an impact that is adverse but that is not substantial and does not exceed the defined thresholds of significance. An impact may be classified as less than significant either before or after implementation of RPMs. If an impact is less than significant before the implementation of RPMs, applicable RPMs will still be identified because they further reduce or minimize the impact, but they would not be required to determine that an impact is less than significant.

- A "significant impact" is an impact that, after implementation of RPMs, exceeds the defined thresholds of significance and would or could cause a substantial adverse change in the environment. Further mitigation measures, beyond the RPMs, are recommended to eliminate the impact or reduce it to a less-than-significant level. These RPMs will be included as mitigation measures in the MMRP.

- A "potentially significant impact" is an impact for which information may not be definitive, but where it is likely or reasonably foreseeable that a significant impact, after implementation of RPMs, may result. A potentially significant impact is equivalent to a significant impact and requires the identification of feasible mitigation measures beyond the RPMs. These RPMs will be included as mitigation measures in the MMRP.

- A "significant and unavoidable impact" is an impact that exceeds the defined thresholds of significance and that cannot be eliminated or reduced to a less-than-significant level through the implementation of RPMs and mitigation measures. These RPMs will be included as mitigation measures in the MMRP.

- Impacts may be adverse or beneficial.

- "Project site" refers to the disturbance area footprint.

- "Project area" refers to the general vicinity around the project site (roughly one mile in any direction).

- "Project" refers to the proposed Squaw Valley | Alpine Meadows Base-to-Base Gondola Project (i.e., the basic project elements as included in all action alternatives).

For both NEPA and CEQA, a determination of "no effect" can be made if the alternative results in no effect for the particular resource or topic being considered. A determination of no effect would be most common for the No Action Alternative, which typically results in a continuation of the existing physical environmental conditions as described in the Environmental Setting.

3.3 RESOURCE TOPICS CONSIDERED

A CEQA Initial Study was completed early in the EIS/EIR planning process to identify specific areas of concern and classify them as being "*key issues*," "*issues,*" or "*resources/issues dismissed from further documentation*" (see Section 1.7, "Scope of the Analysis," for further details). The *key issues* and *issues* are reflected in the following list of potential resources considered, which was derived from the CEQ regulations for implementing NEPA, Appendix G of the State CEQA Guidelines, Placer County's CEQA checklist, and input received from the public during the project scoping period. The CEQA Initial Study and coordination with the Forest Service specialist review and public scoping process identified the following resources that could be affected by the Proposed Action or alternatives or were identified during scoping as resources of concern and will be addressed in the following EIS/EIR sections:

- Section 4.1, Recreation;
- Section 4.2, Visual Resources;
- Section 4.3, Wilderness;
- Section 4.4, Land Use;
- Section 4.5, Socioeconomics and Environmental Justice;
- Section 4.6, Public Safety;
- Section 4.7, Transportation and Circulation;
- Section 4.8, Utilities;
- Section 4.9, Noise;
- Section 4.10, Air Quality;
- Section 4.11, Greenhouse Gas Emissions and Climate Change;
- Section 4.12, Vegetation;
- Section 4.13, Botany;
- Section 4.14, Wildlife and Aquatics;
- Section 4.15, Wetlands;
- Section 4.16, Soils, Geology, and Seismicity; and
- Section 4.17, Hydrology and Water Quality.

"*Key issues*" that helped inform the development of alternatives include visual resources, wilderness, and Sierra Nevada yellow-legged frog. For example, and as noted above, Alternative 3 addresses issues such as proximity to the Granite Chief Wilderness and proximity to occupied habitat for Sierra Nevada yellow-legged frog at Barstool Lake. Alternative 4 addresses issues such as proximity to the Granite Chief Wilderness, visibility of the project, and proximity to residences. Other issues, including those in the above bulleted list, were also considered in the development of alternatives. See Chapter 2, "Description of Alternatives," for additional details.

Resources/issues dismissed from further documentation are described in Section 1.7.2.

3.4 CONTENTS OF RESOURCE SECTIONS

Sections 4.1 through 4.17 of this Final EIS/EIR are organized into the following major subsections.

- **Affected Environment** includes two sections: "Environmental Setting" and "Regulatory Setting." These sections include the following information.
  - **Environmental Setting** provides an overview of the most current available information on physical environmental conditions in the area at the time of preparation of the Draft EIS/EIR that could be affected by implementation of the Proposed Action and alternatives in accordance with NEPA regulations (40 CFR 1502.15) and State CEQA Guidelines Section 15125.

- **Regulatory Setting** lists and describes applicable laws, regulations, and policies that affect the resource addressed in the particular section, or the assessment of effects on the resource.

- **Analysis Methods** includes the following subsections: "Methods and Assumptions," "Effects Analysis and Significance Criteria," and "Issues Not Discussed Further."

  - **Methods and Assumptions** describes the methods, models, process, procedures, data sources, and/or assumptions used to conduct the effects analysis. Where possible, effects are evaluated quantitatively. Where quantification is not possible, effects of each alternative are evaluated qualitatively.

  - **Effects Analysis and Significance Criteria** provides the criteria used in this document to define the level at which an effect is considered significant in accordance with CEQA, and outlines the NEPA-specific analytical indicators discussed in the section to characterize environmental effects. Each NEPA indicator and CEQA significance threshold is analyzed in the "Direct and Indirect Environmental Consequences" section as part of an "Impact" discussion. The "Impact" discussion number for each indicator or criteria is noted in parentheses following the statement. Some "Impact" discussions encompass multiple indicators.

  - **Issues Not Discussed Further** identifies any significance criteria (or portions thereof) that are not applicable to the evaluation of the Proposed Action and alternatives, and summarizes the rationale for why the issue is not discussed further in the EIS/EIR.

- **Direct and Indirect Environmental Consequences** identifies the potential direct and indirect environmental effects of the Proposed Action and alternatives, which are analyzed at an equal level of detail. The effects are compared with significance criteria and applicable NEPA indicators, and a conclusion is made for each effect. The same methodology is applied to each alternative.

  Project impacts are numbered sequentially for Alternatives 1 through 4 in each section, with the alternative identified in parenthesis in the impact title. For example, impacts for Alternative 1- No Action Alternative are numbered 4.1-1 (Alt. 1), 4.1-2 (Alt. 1), 4.1-3 (Alt. 1), and so on. Impacts for Alternative 2 are numbered 4.2-1 (Alt. 2), 4.2-2 (Alt. 2), 4.2-3 (Alt. 2), and so on. A bold font impact title, a summary of each impact, a characterization of the impact under NEPA (no effect, adverse, or beneficial), and its level of significance under CEQA, precedes the full discussion of each impact. The full impact discussion considers the potential for the alternative to result in environmental impacts both before and after RPMs are applied, and provides the evidence on which conclusions are made. In cases where impacts are still considered significant under CEQA after implementation of applicable RPMs, or the Forest Service determines that RPMs alone are not adequate under NEPA to reduce adverse effects, and feasible mitigation would reduce these effects, a mitigation measure (or measures) is described below the impact discussion, and a NEPA impact characterization and CEQA significance conclusion for the impact after implementation of the mitigation is identified.

  Mitigation measures are numbered to correspond with the impact addressed by the measure; therefore, if Impact 4.1-1 (Alt. 1) is addressed by a single mitigation measure, the measure would be numbered Mitigation Measure 4.1-1 (Alt. 1). If multiple mitigation measures are provided for a single impact, a letter is added to the end of each mitigation measure number. For example, mitigation measures for Impact 4.1-1 (Alt. 1) would be numbered: Mitigation Measure 4.1-1a (Alt. 1), Mitigation Measure 4.1-1b (Alt. 1), and so on.

  Because all alternatives except Alternative 1 – No Action Alternative contemplate some level of development in the project area, the alternatives may have many of the same or similar effects, and mitigation measures where necessary. In these instances, rather than repeating the entire effect discussion and mitigation measures for each alternative, the reader is referred to the initial impact discussion and mitigation descriptions, and any different conditions under the subsequent alternatives are identified.

- **Summary of Direct and Indirect Effects** presents, in narrative and tabular format, a summary of the impact analysis and conclusions provided previously for each alternative to facilitate a comparison of effects across alternatives.

- **Cumulative Effects** presents a discussion of cumulative effects. The incremental effects of each alternative are added to the effects of other past, present, and reasonably foreseeable future projects/actions, and a conclusion is presented as to whether there is a significant contribution to a significant adverse cumulative effect. See Section 3.5, "Cumulative Effects Analysis Methodology," below, for a detailed description of how cumulative effects are analyzed throughout the EIS/EIR.

References and sources of information used in preparing each section are provided in Chapter 8, "References."

3.5 CUMULATIVE EFFECTS ANALYSIS METHODOLOGY

This section describes the cumulative effect analysis methodology common to the evaluation of cumulative effects for all resource topics analyzed in Sections 4.1 through 4.17. Any approaches or assumptions for cumulative effects analysis that are specific to one resource area are described in the Methods and Assumptions section in that resource area section.

3.5.1 Definition of Cumulative Effects

Both NEPA regulations (42 United States Code [USC] 4321 et seq.) and the CEQA statute (CCR 15000 et seq.) require that environmental documents consider cumulative effects of a proposed action. NEPA regulations define a "cumulative impact" as an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions; cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (CEQ 2005). NEPA requires that the cumulative analysis assess the direct and indirect effects of the alternative on the affected environment, when added to the total sum of the past, present, and the reasonably foreseeable future actions (CEQ 2005).

The State CEQA Guidelines define a cumulative impact as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (14 CCR 15355). The State CEQA Guidelines require environmental documents evaluate whether a project's incremental effect is cumulatively considerable. Cumulatively considerable, as defined in the State CEQA Guideline Section 15355, means that the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

This document analyzes cumulative effects in compliance with the requirements of both NEPA and CEQA.

3.5.2 Cumulative Effect Approach

Under NEPA, agencies are encouraged to evaluate proposed actions in context with actions occurring in the same general location or which have relevant similarities (40 CFR 1502.4). The State CEQA Guidelines Section 15130 identify two basic methods for establishing the cumulative environment in which a project is considered: (1) the use of a list of past, present, and probable future projects; or (2) the use of adopted

projections from a general plan, other regional planning document, or a certified EIR for such a planning document.

In compliance with both NEPA and CEQA, this cumulative analysis uses the "list" approach to identify the cumulative setting. The effects of past and present projects on the environment are reflected by the existing conditions in the project area. A list of probable future projects is provided below. Probable future projects are those in the project vicinity that have the possibility of interacting with the proposed project to generate a cumulative effect (based on proximity and implementation schedule) and either:

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

This analysis considers reasonably foreseeable past, present, and future projects/actions as described below in Section 3.5.3, "Cumulative Setting." For resources where quantitative information is available, a quantitative analysis is provided; otherwise, a qualitative cumulative effect analysis is provided.

The significance criteria used in each resource section to determine the significance of an alternative's effects on the resource are also applied to the evaluation of cumulative effects. When considered in the context of other present and probable future projects, an alternative's contribution to cumulative effects for some resources could be significant, while the identified direct and indirect effects of the action alone are considered less than significant.

3.5.3 Cumulative Setting

3.5.3.1 GEOGRAPHIC SCOPE

The geographic area that could be affected by the project varies depending on the type of environmental resource being considered. When the effects of the project are considered in combination with those other past, present, and probable future projects to identify cumulative effects, the other projects that are considered may also vary depending on the type of environmental effects being assessed. Table 3-2 presents the general geographic areas associated with the different resources addressed in this analysis.

Table 3-2 Geographic Scope of Cumulative Impacts

Resource Issue	Geographic Area
Recreation	Regional (overall accessibility of recreational opportunities) and local (interactions with individual recreational activities)
Visual Resources	"Zone of Potential Visibility," approximately 6.9-mile radius around project site
Wilderness	Granite Chief Wilderness Area
Land Use	Truckee Ranger District
Socioeconomics and Environmental Justice	Eastern Placer County and Town of Truckee
Public Safety	Immediate project vicinity
Transportation and Circulation	Regional and local roadways where the project could contribute traffic (Traffic Study Area)

Table 3-2 Geographic Scope of Cumulative Impacts

Resource Issue	Geographic Area
Utilities	The groundwater aquifer of Squaw Valley and Alpine Meadows for water supply and local utility service areas for energy usage and solid waste generation
Noise	Immediate project vicinity where project-generated noise could be heard concurrently with noise from other sources and mobile source noise on Squaw Valley Road and Alpine Meadows Road
Air Quality	Mountain Counties Air Basin Attainment Area, Tahoe Basin Air Basin Attainment Area
Greenhouse Gas Emissions and Climate Change	Global/statewide
Vegetation	The Tahoe-Truckee Region encompassing the projects considered in Table 3-1 and generally expressed by the area shown in Exhibit 3-1.
Botany	Bear Creek Watershed, Squaw Creek HUC, portion of upper middle Truckee River HUC
Wildlife and Aquatics	Squaw Creek, Bear Creek, and Five Lakes watersheds, and a portion of the Truckee River watershed between Bear Creek and Squaw Creek.
Wetlands	Bear Creek Watershed, Squaw Creek HUC, portion of upper middle Truckee River HUC
Soils, Geology, and Seismicity	Immediate project vicinity
Hydrology and Water Quality	Bear Creek Watershed, Squaw Creek HUC, portion of upper middle Truckee River HUC the groundwater aquifer of Squaw Valley and Alpine Meadows for the water supply scope.

Notes: HUC = hydrologic unit code

3.5.3.2 PROJECT LIST

Table 3-3 provides the list of probable future projects that meet the requirements stated in Section 3.5.2, "Cumulative Effect Approach," above. Projects are listed that are in the project vicinity and that have the possibility of interacting with the alternatives to generate cumulative effects. This list of projects was utilized in the development and analysis of the cumulative settings and impacts for each resource. Past and current projects in the project vicinity were also considered as part of the cumulative setting, as they contribute to the existing conditions/baseline upon which the alternatives and each probable future project's environmental effects are compared, but are not listed in Table 3-3. The locations of cumulative projects listed in Table 3-3 relative to the project area are shown on Exhibit 3-1.

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

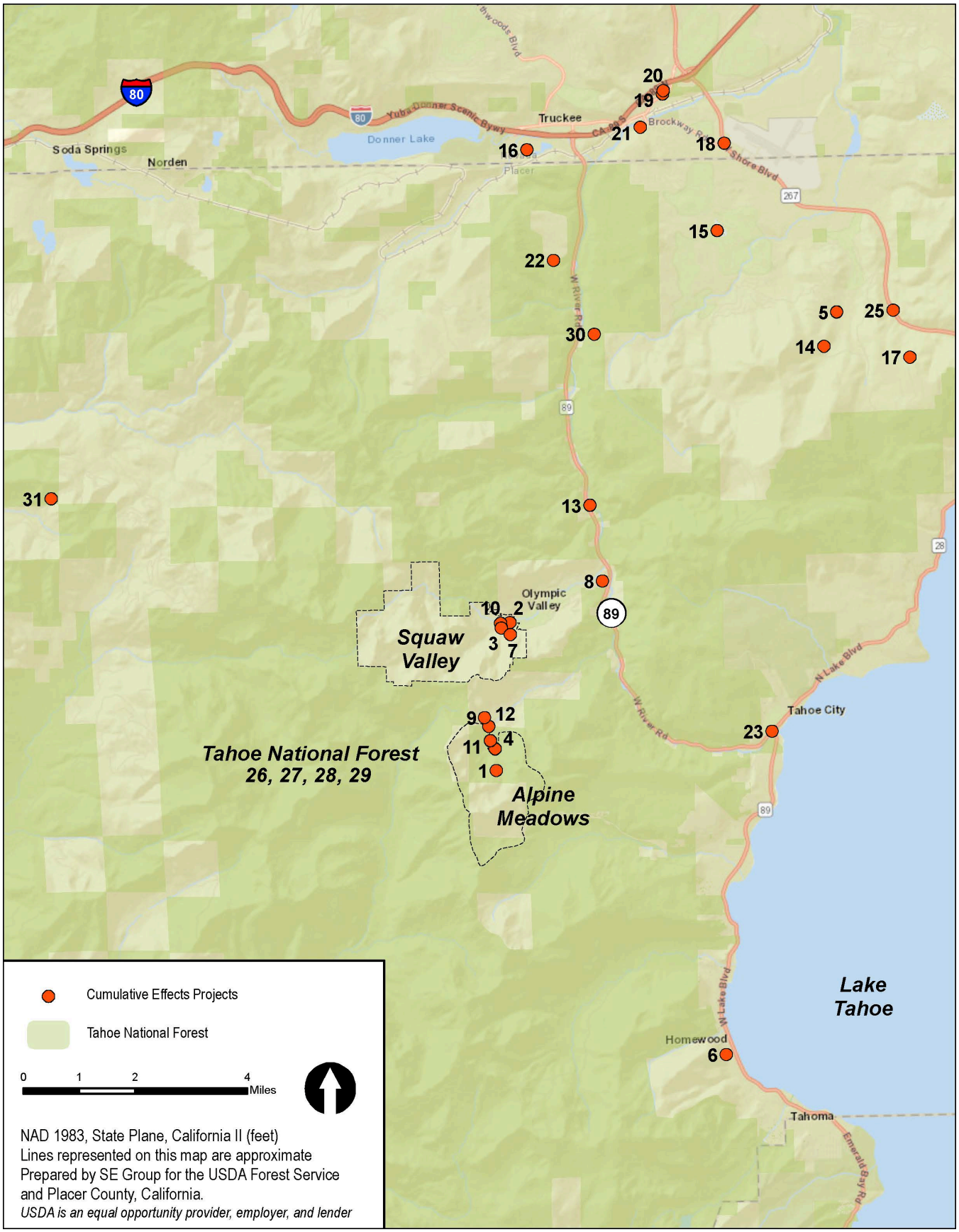

Exhibit 3-1 Cumulative Projects

Table 3-3 Cumulative Effects Projects

Map Label	Project	Approximate Straight Line Distance from Project Area	Project Description	Project Approval/ Implementation	Project Area (acres/length)
Ski Area Projects					
1	Alpine Meadows Master Development Plan	<1 mile	Overall Ski Area Master Plan outlining various improvements, including: ◢ Base area/guest service improvements ◢ Lift improvements (Hot Wheels replacement, Scott Chair replacement, new Rollers Chair) ◢ Snowmaking improvements ◢ Trail grading projects ◢ Miscellaneous other projects	Accepted: 2015	2,278 acres
2	Village at Squaw Valley Specific Plan	<1 mile	The Village at Squaw Valley Specific Plan (Specific Plan) establishes the guiding approach and land use goals for the comprehensive development and enhancement of approximately 94 acres of the previously developed Squaw Valley Village located at the western end of the Olympic Valley.	Approved: 2016 Implementation: Unknown	94 acres
3	Squaw Valley Red Dog Lift Replacement	<1 mile	Replace the existing Red Dog triple chairlift with a high-speed, detachable, 6-person chairlift. Project amended after approval to move the Red Dog base terminal to the east near the Red Wolf Lodge and further increase persons per hour (pph) lift capacity.	Approved: 2013 Implementation: Review of amended project is currently underway	2 acres
4	Alpine Meadows Hot Wheels Lift Replacement	<1 mile	Replace the Hot Wheels lift with a high-speed detachable quad chairlift.	Approved: 2012 Implementation: On hold	2 acres
5	Northstar Mountain Master Plan	6.5 miles	Mountain Master Plan for the existing ski resort area. Various additions and changes to ski lifts, snowmaking, trails, bridges, access, ropes course, bike trails, and campsites.	Final EIR released in June 2014 Approved by Placer County in 2017	3,170 acres
6	Homewood Mountain Resort Master Plan	8 miles	Redevelop mixed-uses at the North Base area, residential uses at the South Base area, a lodge at the Mid-Mountain Base area, and ski area.	Approved: 2011 Implementation: Initiate construction in 2017 Buildout by approximately 2024	1,200 acres
7	Timberline Twister	<1 mile	Installation of a bob-sled like, gravity fed ride to be located within the existing ski resort area between the Red Dog and the Far East chairlifts.	Application provided to Placer County in 2018	6 acres

Table 3-3 Cumulative Effects Projects

Map Label	Project	Approximate Straight Line Distance from Project Area	Project Description	Project Approval/ Implementation	Project Area (acres/length)
Planning and Development Projects					
8	Squaw Valley Olympic Museum and Winter Sports Heritage Center	2 miles	Proposed new 12,000-15,000 square foot two-story museum	Currently going through County Environmental Questionnaire for environmental determination purposes (March 2018)	1–2 acres (Squaw Valley Park)
9	White Wolf Development (aka Caldwell Property)	<1 mile	The applicant proposes to create a 38-lot subdivision on a 44-acre property situated one-half mile north of the Alpine Meadows Ski Resort in the Alpine Meadows area. The proposed project includes 38 single-family residential units (parcels .5 to 1.5 acres in size), a clubhouse/lodge, a chairlift, and seasonal recreational facilities including tennis courts and equestrian facilities.	A pre-development application was submitted in December 2015. A project application was provided to Placer County in 2016 and its status is currently incomplete.	44 acres
10	General Development in Olympic Valley	<1 mile	The 1983 Squaw Valley General Plan guides development and growth within the Squaw Valley area in a positive and progressive manner. While introducing some new concepts and approaches to solving long standing problems, this document retains the basic value judgements and overall goals of previous planning for Squaw Valley and Placer County. Placer County has estimated 569 new lodging/residential units and 80,500 square feet of commercial by 2039.	N/A	N/A
11	General Development in Alpine Meadows	<1 mile	The 1968 Alpine Meadows General Plan serves as a broad, long-range guide to community development, including; conservation, economic, housing, land use, public buildings, public services and facilities, recreation and other plan subjects.	N/A	N/A
12	Alpine Sierra Subdivision	<1 mile	Planned development to include single-family lots and commonly held parcels; 33 single-family residential units and 14 residential halfplex units.	Draft EIR released September 2017	45 acres
13	Truckee River Corridor Access Plan	3 miles	Continuous and coordinated system of preserved lands and habitat, with a connecting corridor of walking, in-line skating, equestrian, bicycle trails, and angling and boating access from Lake Tahoe to the Martis Valley	Application submitted Design and environmental review underway	N/A
14	Northstar Highlands Phase II	7.5 miles	Subdivision including 50 townhomes, 10 single family lots, and 386 condominiums for a total of 446 units; up to 147 non-residential and commercial condominiums and 4,000 square feet of commercial space	Various components are in different phases of approval and implementation	50 acres
15	Martis Camp	8 miles	A private golf and ski club community of upscale second homes; 663 lots (between 2.5 and 0.5 acres) on over 2,000 acres.	Opened in 2006. Partially built-out. Many homes and community facilities are in place, but there are also lots available	~2,000 acres

Table 3-3 Cumulative Effects Projects

Map Label	Project	Approximate Straight Line Distance from Project Area	Project Description	Project Approval/ Implementation	Project Area (acres/length)
16	Coldstream Specific Plan	8.5 miles	Planned community of 345 residential units, including affordable housing units and 30,000 square feet of commercial.	Approved: 2014 Implementation: Buildout is not complete.	179 acres
17	Martis Valley West Parcel	9 miles	Mixed residential uses (including single family, town homes, cabins, condos) and commercial development (including resort services, fitness center, family entertainment, and community center); 760 residential units; homeowner amenities, and approximately 34,500 square feet of commercial development	Approved: October 2016 Implementation: Unknown	1,052-acres
18	Joerger Ranch Specific Plan	9.5 miles	Mixed use planned community including industrial, office space, public facility, transportation, and apartment uses (318 dwelling units)	Approved: 2015 Implementation: Begin construction 2017	70 acres
19	Truckee Railyard Master Plan	10 miles	Mixed commercial and residential development: 570 residential units, 70,000 square feet of retail, 15,000 square feet of office space, 60-room hotel, movie theater, 20,000–square-foot grocery store, and 25,000-square-foot civic building.	Approved: 2009 Implementation: Construction has begun but Master Plan implementation is not complete	75 acres
20	Triumph Development Hotel and Residential Development	10 miles	Mixed use: 114 room hotel and 138 rental apartment units	IS/MND released Dec. 2016	10 acres
21	Truckee Springs Master Plan	10 miles	40 single-family residential units, or 80 multi-family residential units, or a combination of both	Application submitted in 2016	25 acres
Regional Projects					
22	Cabin Creek Biomass Facility Project	6.5 miles	Two-megawatt wood-to-energy facility that would utilize a gasification technology. Would support fuels reduction and thinning activities within and outside of the Lake Tahoe Basin. Fueled by forest-sourced material only.	Approved: 2013 Construction has not been initiated	
Transportation Projects					
23	SR 89/Fanny Bridge Improvement Project	5 miles	Construction of a new bridge over the Truckee River, repair or replacement of Fanny Bridge, and various other improvements to address traffic congestions problem around the intersection of SR 89, SR 28 and Fanny Bridge.	Approved: 2015 Initiate construction in 2017	
24	Lake Tahoe Passenger Ferry	5.5 miles	Year-round, cross-lake ferry service with a South Shore Ferry Terminal at the Ski Run Marina in South Lake Tahoe and a North Shore Ferry Terminal at the Grove Street Pier west of the Tahoe City Marina. The goals of this project are to improve mobility, connect communities, and enhance economic vitality.	NOP/NOI released in November 2013 Draft EIS/EIS/EIR on hold	~19-miles

Table 3-3 Cumulative Effects Projects

Map Label	Project	Approximate Straight Line Distance from Project Area	Project Description	Project Approval/ Implementation	Project Area (acres/length)
25	Caltrans' Highway Improvement Projects	9 miles	Planned Improvements (those included in a long-term plan that can be funded) and Programmed Improvements (those included in a near-term programming document that identifies funding amounts by year) in the 2012 Transportation Corridor Concept Report for SR 267 include: widening to four lanes between the Placer County line and Northstar Drive, rehabilitating pavement and widening shoulders between Placer County line and Brockway Summit, plant establishment and protection from Northstar Drive to SR 28, class II bike lane from Brockway Summit to SR 28	Anticipated construction between 2014 and 2025.	N/A
Forest Service Programmatic Projects					
26	TNF Forest Plan	N/A	The decision approved the Preferred Alternative in the Final EIS as the 1990 Land and Resource Management Plan. The Forest Plan protects and enhances the environmental, recreational, and wildlife benefits provided by the Tahoe while maintaining approximately the same level of livestock use and about a 10 percent reduction in timber harvest from that has occurred annually over the last 10 years.	Approved: 1990 Implementation: Ongoing	TNF
27	Sierra Nevada Forest Plan Amendment	N/A	The regional forester approved an amendment to all Forest Plans in the Sierra Nevada region related to vegetation management. This decision adopts an integrated strategy for vegetation management focused on reducing the risk of wildfire to communities in the urban-wildland interface while modifying fire behavior over the broader landscape.	Approved: 2004 Implementation: Ongoing	~1,300,000 acres
28	TNF Motorized Travel Management Plan	N/A	The Forest Service has approved a comprehensive motorized travel management plan for the TNF. The plan is designed to enhance management of National Forest System lands, sustain natural resource values through more effective management of motor vehicle use, and provide opportunities for motorized recreation experiences on National Forest System lands.	Approved: 2010 Implementation: Ongoing	TNF
29	TNF Over Snow Vehicle Use Designation	N/A	Designating over-snow vehicle (OSV) use on National Forest System roads and trails and in areas on National Forest System lands as allowed, restricted, or prohibited. Identifying where grooming for OSV use would be conducted	Under analysis Expected implementation: 2018	871,495 acres
Forest Service Site-Specific Projects					
930	Big Jack East Forest Restoration Project	5.5 miles	Treat approximately 1,700 acres in WUI Defense and Threat zone to improve defensibility, resiliency and meet WUI standards. In threat zone include heterogeneity treatments. Pile burning, under-burning as possible throughout.	Under analysis, Expected implementation: 2018	1,700 acres

Table 3-3 Cumulative Effects Projects

Map Label	Project	Approximate Straight Line Distance from Project Area	Project Description	Project Approval/ Implementation	Project Area (acres/length)
31	Onion Creek Fuelbreak Project	8 miles	Thinning and sanitation treatment to establish roadside fuelbreak along ~2.5 miles of road on ~155 acres. Project designed to establish WUI near private land at The Cedars and Serene Lakes	Decision 12/2016 Implementation: 2017—2019	155 acres
32	Tahoe West Project	Surrounding and Adjacent	Tahoe Basin proactive vegetation/wildlife projects. Developing proposal with the Truckee Ranger District and Lake Tahoe Basin Management Unit.	Preliminary planning beginning spring 2017	59,013 acres from Emerald Bay to Squaw Valley
33	Truckee River Tributaries Project	0.25 – 2 miles	Road maintenance and small-scale drainage improvements near project area. The Truckee River 2016 Tributaries Project (referred to as the TRT Project) areas are located in the Truckee Ranger District of the Tahoe National Forest in certain watersheds that empty into the Truckee River between Tahoe City and the Truckee, California.	Decisions February 2017 and 2019 Implementation 2018—2024	
34	Five Creeks Project	2 miles	Vegetation Management, watershed improvement and transportation management actions.	Preliminary planning beginning in 2019	
35	Alpine Stables Equestrian SUP	0.5 mile	Permit re-issuance to equestrian outfitter and guide who uses routes in the Alpine Meadows project area.	5-year SUP reauthorization anticipated in winter 2018	
36	Big Sugar Trail Enhancement Project	3 miles	Recreation trail management, including trail re-route, decommissioning, and new trail construction on American River Ranger District, TNF.	Developing Project	
37	French Meadows	5 miles	Developing plan for vegetation management. American River Ranger District, TNF	Decision and implementation anticipated 2018	
38	American Headwaters Project	5 miles	Land acquisition, including proposed addition to Granite Chief Wilderness	Developing Project	
39	Chipmunk Grazing Allotment	5 miles	American River Ranger District, TNF	Developing Project	
40	West Shore WUI Fuels Reduction	2 miles	The West Shore Wildland Urban Interface (WUI) Hazardous Fuels Reduction project proposes vegetation and fuels treatments to reduce stand densities, reduce fuel loading and continuity. The project is located on the West Shore of Lake Tahoe, from Emerald Bay in the south, extending to Burton Creek State Park in the north. Lake Tahoe Basin Management Unit.	Decision anticipated spring 2017 Implementation June 2017	
41	Urban Forest Defense Zone Fuels Reduction and Healthy Forest Project	Lake-wide within the Defense Zone portion of the Wildland Urban Interface	Programmatic treatments to address ongoing fuels and forest health needs on NFS urban forest parcels and within WUI Defense Zone. This EA will update and replace the current Urban Lots EA. Lake Tahoe Basin Management Unit.	Anticipated decision: fall 2017 Implementation 2020—2029	

Table 3-3 Cumulative Effects Projects

Map Label	Project	Approximate Straight Line Distance from Project Area	Project Description	Project Approval/ Implementation	Project Area (acres/length)
42	Integrated Management and Use of Trails, Roads, and Facilities	Multiple locations in the Lake Tahoe Basin	SUP-related EA for the Lake Tahoe Basin Management Unit, including Twin Crags Recreation Residence SUP, Fir Crags Recreation Residence SUP, 3 Outfitter Guide Fishing SUPs. SUP authorizations include: 1. Maintenance and management of trails, roads, and facilities 2. Authorization of outfitter/guide activities 3. Authorization of events 4. Reissuance of special use permits for uses of NFS lands.	Decision May 2017	

Notes: EA=Environmental Assessment; SR=State Route; SUP=Special Use Permit; TNF=Tahoe National Forest
Source: Compiled by SE Group in 2018

4 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter is divided into sections that address different environmental resource categories; each section provides an integrated discussion of the affected environment (including existing environmental and regulatory settings) and potential environmental consequences (including direct, indirect, and cumulative impacts, as well as mitigation measures) associated with implementation of the action alternatives. Growth-inducing impacts are discussed in Chapter 5, "Other Required NEPA and CEQA Analysis."

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4.1 RECREATION

This section includes a description of the existing recreation facilities and experience in the study area, descriptions of applicable recreation management policies, and an analysis of short- and long-term impacts on recreation resources associated with implementation of the project.

4.1.1 Affected Environment

4.1.1.1 ENVIRONMENTAL SETTING

Existing Ski Area Facilities and Experience

Squaw Valley Ski Area (Squaw Valley) initially opened to the public in 1949 and Alpine Meadows Ski Area (Alpine Meadows) in 1961. Since their inception, both resorts have developed and expanded to offer a high-quality skiing experience within the competitive Lake Tahoe market. Squaw Valley operates mostly on private land, with 195 acres located on National Forest System (NFS) lands managed through a Special Use Permit (SUP) administered by the Forest Service. Alpine Meadows is also located on a mix of private and public lands; the portion of Alpine Meadows on NFS lands is similarly managed through a SUP administered by the Forest Service. Between Squaw Valley and Alpine Meadows lies the privately owned Caldwell property, through which the proposed gondola would traverse to connect the two resorts. Squaw Valley currently offers approximately 3,600 acres of skiable terrain served by 29 lifts. Alpine Meadows offers approximately 2,400 acres of skiable terrain served by 13 lifts. Squaw Valley Ski Holdings (SVSH) purchased Alpine Meadows in 2011, and guests can now access both resorts through the purchase of a single lift ticket.

Visitation

Over the previous 10 winter seasons, Squaw Valley and Alpine Meadows have experienced significant variation in annual snowsports visitation. Total annual visits to both resorts have ranged from a low of 770,000 to a peak of 1.06 million with a 10-year mean of approximately 886,000 (SE Group and RRC Associates 2018). The two resorts combined capture approximately 24 percent of the total annual snowsports visits to the Tahoe Region each winter season (SE Group and RRC Associates 2018).

Annually, approximately 44 percent of snowsports visitors to the Pacific South Region[1] are day visitors, and 56 percent are destination and overnight visitors (SE Group and RRC Associates 2018). Many visitors reside in the region, including Reno, Truckee, Sacramento, and the San Francisco Bay Area. The number of active snowsports visits to Lake Tahoe area ski resorts is strongly correlated to annual snowfall. While variability in weather conditions will continue to affect visitation at Squaw Valley and Alpine Meadows, ski resorts that continually improve the quality of their infrastructure tend to maintain or improve market share compared with those that do not (SE Group and RRC Associates 2018).

Comfortable Carrying Capacity

The Comfortable Carrying Capacity (CCC) is a snow sports industry planning parameter used to determine the optimum level of daily utilization for a resort—one that facilitates a pleasant recreational experience without overburdening the resort's infrastructure. This is a planning figure only and does not represent a regulatory cap on visitation. CCC is used to ensure that capacities are balanced across the resort's facilities and are sufficient to meet anticipated demand. CCC is based on a combination of the uphill vertical lift supply, downhill vertical skiing demand, and the total amount of time spent in the lift line, time spent of the lift itself, and time spent on the downhill descent. The accurate calculation of a ski area's CCC is an

[1] This group includes Squaw Valley | Alpine Meadows, Heavenly Mountain Resort, Kirkwood Mountain Resort, Mammoth Mountain, and Northstar California.

important metric, whereby other related skier service facilities can be evaluated and planned based on the proper identification of the CCC.

- The CCC at Alpine Meadows calculated for the *Alpine Meadows Ski Area 2015 Master Plan* is approximately 5,570 guests per day (Tahoe National Forest 2015).

- A detailed calculation of CCC for Squaw Valley has not recently been undertaken but is estimated to be approximately 9,000 guests per day (SE Group and RRC Associates 2018).

A resort's CCC is an important planning criterion for the rest of the resort in that skier service facilities, guest service space, and other amenities are planned around the mountain's estimated capacity. In this way, a resort can maintain a baseline inventory of existing facilities and have a better understanding of how to make improvements to facilities to further enhance guest experience. A desired end result is a resort that is well-balanced in providing an array of services and experiences to satisfy guest expectations for a quality recreation experience.

Resort Balance

Currently, guest service space is adequate to meet current needs. On most weekdays and non-peak weekends, daily visitation at both resorts tends to fall within normal CCC and recreationists are comfortably accommodated by existing infrastructure. However, on peak weekends and during holiday periods visitation is often at or above CCC, resulting in longer lines at popular lifts and crowded guest service facilities due to an overall deficit of space and seating. In addition, lift closures during wind events or as a result of avalanche mitigation measures can reduce the consistent and timely opening of popular terrain further causing congested conditions.

Connectivity

As mentioned earlier, visitors have access to both Squaw Valley and Alpine Meadows with the purchase of a single lift ticket, which is a valuable amenity that greatly increases the amount of recreation opportunity available to visitors. Currently, visitors can either use their own form of transportation or utilize the inter-resort shuttle bus to get from one resort to the other. A five-season average of roundtrip ridership on the shuttle bus concluded that only about 2.7 percent of snowsports visitors utilized the shuttle bus, showing that guests do not presently find it convenient and/or effective to shuttle between the two resorts (SE Group and RRC Associates 2018). The *Tahoe National Forest Land and Resource Management Plan* (LRMP), discussed below, explicitly mentions the potential that exists to connect certain ski areas along the Sierra Nevada crest, which would provide improved dispersal and opportunities for skiers. While snowsports visitors have access to both Squaw Valley and Alpine Meadows with the purchase of a single lift ticket, connectivity between the two resorts is currently insufficient for visitors to fully utilize this amenity.

Snow Safety

The recreational experience for visitors of Alpine Meadows is largely dependent on snow safety conditions. Currently, ski patrollers rely on various tools and techniques to perform avalanche mitigation. Explosives used for avalanche mitigation include nitrogen gas-powered avalaunchers, 105-millimeter artillery rounds fired from a howitzer, and explosive hand-charges thrown by ski patrollers manually, all of which can be limiting and at times dangerous for patrollers. Avalaunchers are rarely fired during night-time or severe weather because wind and weather conditions can cause shot placements to be imprecise. Hand-charges must be thrown by hand into avalanche-prone terrain, requiring that ski patrollers be in high elevation areas near avalanche starting zones. These limitations and hazards often result in the untimely and inconsistent opening of popular terrain, which reduces the quality of visitors' recreational experiences. See Section 4.6, "Public Safety" for further discussion.

Existing Dispersed Recreation Experience

The area surrounding Squaw Valley and Alpine Meadows offers a variety of opportunities for dispersed recreation during summer and winter. Dispersed recreation users have access to the Granite Chief Wilderness (GCW), which is located just southwest of Squaw Valley and to the northwest of Alpine Meadows.

The GCW consists of both NFS and private lands; for the purposes of this document, all lands within the congressionally mapped wilderness boundary (public and private) are referred to as the "GCW," the NFS lands within the GCW are referred to as the "National Forest System-GCW," and the privately owned land included within the congressionally mapped wilderness boundary are referred to as "private lands within the congressionally mapped GCW." Only the National Forest System-GCW is managed as a federally protected wilderness area under as part of the National Wilderness Preservation System. See Section 4.3, "Wilderness," for a detailed discussion of the GCW and impacts that may occur to it as a result of the project. The National Forest System-GCW has a highly varied landscape of rugged granite cliffs and broad glaciated valleys, and visitors have many opportunities for wildlife viewing. During the summer months, recreationists hike and backpack through the area's alpine meadows. During the winter months, recreationists use the area for a remote backcountry skiing and snowboarding experience. The National Forest System-GCW receives considerably more visitation during the summer than during the winter.

One popular dispersed recreation resource in the study area is the Five Lakes Trail which provides access to the Five Lakes area of the National Forest System-GCW. The LRMP identifies this trail as one of the most popular day hikes on the Tahoe National Forest (TNF) (U.S. Forest Service 1990). The majority of use on the Five Lakes Trail occurs in the summer. Users depart from the trailhead on Alpine Meadows Road and traverse private lands located on the Caldwell property; the trail is managed under easement to the Forest Service for this portion. After approximately 1.5 miles hiking through the private lands, users enter the National Forest System-GCW. This roughly 5-mile round trip trail provides hikers with a nearly 1,000-foot climb towards a high ridge where visitors are able to explore and enjoy a series of pristine wilderness lakes. From higher elevations on the trail, users can see Lake Tahoe. Currently, the recreation experience is mostly primitive. However, users can see existing ski area infrastructure at the Alpine Meadows base area, and the top terminal of the KT-22 lift at Squaw Valley, and on the Caldwell property, where a partially constructed lift exists (referred to as "KT South"). Despite the relative proximity to ski area infrastructure, the recreation experience is mostly undisturbed and primitive.

The Five Lakes Trail also provides users an access connection to the Pacific Crest National Scenic Trail (PCT). The PCT is a 2,659-mile hiking trail between the Mexican border in southern California and the Canadian border in northern Washington. The overall recreation experience on the PCT is characterized by remoteness, scenery, and primitiveness. The PCT traverses the Sierra Nevada west of Squaw Valley and Alpine Meadows. In particular, the PCT currently passes near the Alpine Bowl and Summit Six lifts at Alpine Meadows and crosses under the Granite Chief lift at Squaw Valley. From the intersection of the Five Lakes Trail and the PCT, recreationists can travel south on the PCT towards Twin Peaks or north towards Tinkers Knob.

Parks

Squaw Valley Park, located on Squaw Valley Road near the intersection with State Route 89, is the only designated public park in proximity of the project site. The park is operated by the Placer County Facility Services Parks Division, which operates and maintains numerous local and community parks, trails, and some open space areas in unincorporated Placer County. Squaw Valley Park facilities include a soccer field, tot lot, pickle ball courts, restrooms, picnic areas, bike and hiking trails, and trail staging area (Placer County 2018). The park has no developed winter recreation focused facilities. Elsewhere in the Olympic Valley there are small playgrounds and tot-lots associated with private lodging and other facilities.

4.1.1.2 REGULATORY SETTING

Federal

Tahoe National Forest Land and Resource Management Plan and Sierra Nevada Forest Plan Amendment

The purpose of the LRMP is to direct the management of the TNF. Goals of the plan are to ensure the wise use and protection of TNF resources, fulfill legislative requirements, and address local, regional, and national issues. The TNF's outdoor recreation program is designed to provide various types of outdoor

recreation opportunities for residents and visitors to the TNF under the authority of the Resource Planning Act of 1974, the National Forest Management Act of 1976, the National Historic Preservation Act of 1966, and other relevant acts and Executive Orders. The program includes all practices necessary to administer outdoor recreational opportunities in a manner compatible with other resource values and with minimal environmental impact. In addition, the recreation program protects, manages, and develops trails and roads to scenic and cultural resources of the TNF.

The LRMP includes the following Forestwide goal for recreation:

> Provide a broad spectrum of dispersed and developed recreation opportunities in accordance with identified needs and demands.

The LRMP discusses the popularity of downhill skiing on the TNF and notes existing challenges of overcrowding (U.S. Forest Service 1990:3-9). It also mentions a "potential for interconnecting ski areas along the Sierra Nevada crest" that would "provide better dispersal and opportunities for skiers" (U.S. Forest Service 1990:III-4).

The Sierra Nevada Forest Plan Amendment Record of Decision Final Supplemental EIS (SNFPA) (U.S. Forest Service 2004) amended the LRMP in 2004. The LRMP and SNFPA, collectively referred to as the Forest Plan, established standards and guidelines related to recreation on the TNF. As part of the analysis conducted for this Final EIS/EIR, these standards and guidelines were applied and evaluated for consistency.

The study area on NFS lands is located within the Scott Management Area, which directs:[2]

> Development of private sector ski area maintenance, operation, and planning will be emphasized during the planning period. This may include development of bed space at the ski base facility. Project-level planning will coordinate increased capacities with off-site capabilities.

Specific language for the Scott Management Area identifies development and expansion of ski areas as being a central resource to be considered in future planning (U.S. Forest Service 1990:V-447). The Scott Management Area emphasizes the development of private sector ski area maintenance, operation and planning to include planning and coordination for further developing improved mass transportation and expanded facilities on- and off- site of this area (U.S. Forest Service 1990:V-447). Ski areas are encouraged to utilize mass transit to support further expansion in addition to developing overnight facilities to cut down on peak traffic flows.

The SNFPA does not include management direction specific to recreation projects. Applicable guidance for overstory vegetation removal is incorporated into this analysis.

Recreation Opportunity Spectrum

The *Recreation Opportunity Spectrum* (ROS) is a classification tool used by Forest Service managers to categorize recreation areas based on their size, distance from roads, and degree of development (U.S. Forest Service 1986). The ROS classifies NFS lands into six management class categories defined by setting and the recreation experiences allowed therein, including: urban, rural, roaded natural, semi-primitive motorized, semi-primitive non-motorized, and primitive. The ROS is used to determine existing and potential recreation activities and opportunities on NFS lands and provides a baseline against which future conditions and management actions can be prepared. Alpine Meadows is the only portion of the project site partially located on NFS lands. The ROS for the Alpine Meadows SUP area is classified as Roaded Natural (U.S. Forest Service 1986). The expected recreation experience for this classification is:

[2] A portion of the Alternative 2 alignment is located within the Granite Chief Management Area on private lands where Forest Service management does not apply (see Section 4.3, "Wilderness," for additional information). Additionally, portions of Alternatives 2, 3, and 4 are located within the Tinkers Management Area on private lands where Forest Service management does not apply.

> An area characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of other humans. Such evidences usually harmonize with the natural environment.
>
> Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design facilities.
>
> The recreation opportunity experience level provided would be characterized by the equal probability for experiencing affiliation with individuals and groups and for isolation from sights and sounds of humans. Opportunities for both motorized and non-motorized forms of recreation may be provided.

The ROS for the nearby National Forest System-GCW is classified as Primitive (U.S. Forest Service 1986). The expected recreation experience for this ROS classification is:

> An area characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized used within the area is not permitted.

Alpine Meadows Master Plan

The Alpine Meadows Master Plan, published in 2015, identifies existing and desired conditions of Alpine Meadows and proposes improvements that would occur on NFS lands within the SUP area. The Forest Service requires that any ski resort operated at least partially on NFS lands create a Master Development Plan (MDP) to articulate its long-term vision for use of public lands and to assist the Forest Service in anticipating future use of these lands.

The Alpine Meadows Master Plan explicitly mentions the Base-to-Base Gondola in its upgrade plan:

> Since Alpine Meadows and Squaw Valley are jointly owned, there is an interchangeable lift ticket and shuttle service between the two base areas. However, the variety and quantity of ski terrain that is available to skiers at both Alpine Meadows and Squaw Valley would be increased considerably if there was a lift connection between the two resorts.
>
> The intent of the planned Interconnect Gondola is to provide a direct lift connection between the Alpine Meadows and Squaw Valley base areas, allowing for skiers and non-skiers alike to easily travel between the two resorts. Skiers will also have the ability to use the gondola to access ski terrain at both resorts from mid-stations…
>
> As discussed below, this multi-stage gondola plan allows for maximum flexibility and functionality, allowing for skiers to use the lift in multiple ways and allowing non-skiers to ride it as well…

State

There are no state laws or regulations addressing recreation resources that are relevant to the analysis of the project.

Local

Placer County General Plan

The *Placer County General Plan* (Placer County 2013) serves as a general guide for future land use and development in Placer County. The plan does not call for specific action or encourage any specific strategy; however, it does provide framework and policy context within which to make such decisions. The following policies related to public recreation and facilities opportunities may be applicable to the project:

- **Policy 1.G.1.** The County will support the expansion of existing winter ski and snow play areas and development of new areas where circulation and transportation system capacity can accommodate such expansions or new uses and where environmental impacts can be adequately mitigated.

- **Policy 1.G.2.** The County shall strive to have new recreation areas located and designed to encourage and accommodate non-auto mobile access.

Squaw Valley General Plan and Land Use Ordinance

The purpose of the *Squaw Valley General Plan and Land Use Ordinance* (Placer County 2006) (SVGPLUO) is to help guide and direct current and future growth and development consistent within environmental, physical, social, and economic constrains. The plan's purpose is to provide a framework for expansion and development of Squaw Valley into a destination resort. The SVGPLUO seeks to increase visitor use and residential/lodging opportunities without degrading the unique characteristics and intrinsic value of the natural environment of Squaw Valley. This underlines the overall desire of this plan to maximize development potential while remaining consistent with good conservation and development practices. To support this balance of objectives, the SVGPLUO allows growth in Squaw Valley to reach a seasonal-peak, overnight residential population of about 11-12,000 and a maximum skier capacity of 17,500 people per day.

Alpine Meadows General Plan

The *Alpine Meadows General Plan* (Placer County 1968) provides an outline for comprehensive planning and development reflective of the distinct environment of the area. This plan recognized the long-term objectives of setting up guidelines to preserve and promote convenience, prosperity, beauty, health, safety, and decency for local and regional populations. Recreation, including downhill skiing, is recognized as a defining feature of Alpine Meadows and development of recreation is identified within plan goals:

- [M]aintain the open, natural, mountain-recreation character. All aspects of the vast, unique and outstanding physical beauty of the area must be consciously and continuously preserved.

- [C]reate a balanced selection of living environments and recreational outlets, sensitive to the terrain and undisturbed by trafficways, pollution, excessive slopes, scarring and other deleterious effects.

- The Bear Creek Valley area offers an excellent opportunity to preserve and develop an outstanding residential-recreational community oriented to a high mountain, year-round environment.

- The basic resource, location and attitude of the area indicates a seasonal sports and weekend vacation area, rather than a year-round permanent residence site.

- A continued growth and expansion of the Alpine Meadows and Powder Bowl ski areas can be expected as skiing becomes an ever more popular winter sports activity.

4.1.2 Analysis Methods

4.1.2.1 METHODS AND ASSUMPTIONS

This analysis uses quantitative metrics of visitation to analyze changes to the skiing experience at Squaw Valley and Alpine Meadows. The Forest Service ROS system provides a system for analyzing recreational opportunities by considering the qualitative values of access, remoteness, naturalness, facilities and site management, social encounters, visitor impacts, and visitor management. Geographic information systems (GIS) are used to determine proximity to dispersed recreation trails.

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 (CUP). 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, and their implementation would be ensured by the CUP's conditions of approval. All RPMs are considered roughly proportional and have an essential nexus to the impacts they reduce.

4.1.2.2 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 the skiing experience at Squaw Valley and Alpine Meadows and the dispersed recreation experience in the study area in both summer and winter seasons. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Quantitative analysis of existing and anticipated skier visitation, including discussion of existing guest service space and other amenities **(Impact 4.1-1)**
- Discussion of consistency with Forest Service ROS classifications **(Impact 4.1-3)**
- Qualitative analysis of existing and proposed guest experiences for winter recreation at Squaw and Alpine Meadows, including safety, connection/accessibility, and changes to hike-to ski terrain at Alpine Meadows **(Impact 4.1-1)**
- Discussion of the existing and proposed dispersed recreation experience on the Five Lakes Trail, PCT, and other nearby trails, during both summer and winter. Discussion of the anticipated length of the construction period, potential impacts such as noise and emissions from machinery (including helicopters), and potential limitations on trail use during construction or operation. Discussion of impacts resulting from operation of the gondola, including use conflicts, noise, privacy, and visual impacts **(Impact 4.1-1)**

CEQA Criteria

Based on the Placer County CEQA checklist, Appendix G of the State CEQA Guidelines, and recreation policies and standards in the *Placer County General Plan*, implementing any of the alternatives would result in a significant impact related to recreation if it would:

- increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated **(Impact 4.1-1)**; or

- include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment (**Impact 4.1-2**).

4.1.2.3 ISSUES NOT DISCUSSED FURTHER

All issues related to recreation are analyzed here.

4.1.3 Direct and Indirect Environmental Consequences

4.1.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.1-1 (Alt. 1): Recreation Experience, Access, and Visitation

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no change in use of recreational facilities that would contribute to substantial deterioration. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no change in use of recreational facilities, access, visitation, or the recreation experience.

NEPA Effects Conclusion
With no change to existing recreational facilities, access, visitation, or the recreation experience, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no change to existing recreational facilities, access, visitation, or the recreation experience, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.1-2 (Alt. 1): Adverse Effects Associated with New or Expanded Recreation Facilities

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no expansion to or change in recreational facilities that would adversely affect the environment. There would be **no effect** under CEQA. This impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA effects conclusion is provided.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no expansion to or change in recreational facilities that would adversely affect the environment.

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
With no expansion to or change in recreational facilities, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.1-3 (Alt. 1): Consistency with Land Use Plans

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new infrastructure or land use changes that would be inconsistent with a land use plan. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new infrastructure that would be inconsistent with a land use plan. The existing condition is consistent with all applicable plan guidance.

NEPA Effects Conclusion

With no new infrastructure or land use changes, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new infrastructure or land use changes, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.1.3.2 ALTERNATIVE 2

Impact 4.1-1 (Alt. 2): Recreation Experience, Access, and Visitation

Alternative 2 would result in increased use of recreational facilities at Alpine Meadows and Squaw Valley, but this is not expected to result in substantial physical deterioration of these ski facilities or other existing recreational facilities. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to recreational facilities, access, and visitation would be **beneficial** because implementation of Alternative 2 would generally improve facilities and access for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the two ski resorts, and effects on the recreational experience would be **beneficial** within ski area facilities but **adverse** for dispersed recreation occurring beyond the ski areas because of elevated noise levels and the presence of construction equipment during project construction as well as long-term changes to the visual characteristics of the scenery associated with project operation. In particular, users of the Five Lakes Trail would encounter gondola infrastructure in sections of the trail where none is currently visible. Implementation of RPMs MUL-7, and REC-1 through REC-4 would mitigate this effect. In addition, other RPMs related to visual resources, noise, and biological resources, identified in the corresponding sections of this EIS/EIR would further mitigate this effect. Under CEQA, and using the CEQA criteria, effects on recreational facilities would be **less than significant** because while Alternative 2 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, this would not lead to a substantial physical deterioration of any recreational facilities or accelerate the deterioration of any recreational facilities. In addition, RPMs MUL-7, and REC-1 through REC-4 would minimize potential adverse effects on existing dispersed recreation facilities during project construction by ensuring the completion of construction activities in a single construction season, requiring SVSH to coordinate with and notify the Forest Service and the public regarding construction activities, installing signage to inform the public about trail reroutes and/or temporary closures, and avoiding conflicts with planned events. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Ski Area Facilities and Recreation Experience

Alternative 2 would improve the recreational experience for visitors to Alpine Meadows and Squaw Valley. While Alternative 2 does not include any additional terrain, it would improve access to existing terrain at both ski areas by providing a direct and efficient means of transportation between the base areas. This improved access would increase the variety of terrain easily available to skiers at both ski areas.

Alternative 2 is estimated to result in a combined visitation increase of approximately 4 percent, or 36,856 snowsports visits over the initial five seasons of operation, per year (SE Group and RRC Associates 2018). As discussed in the skier visitation and use assessment (Appendix C), this increased visitation is not anticipated to adversely affect the guest experience or lead to substantial deterioration of any ski area facilities because existing guest service facilities at Alpine Meadows and Squaw Valley are sufficient to support this increase in use. Alternative 2 would not cause the maximum skier capacity of 17,500 people per day at Squaw Valley (described above) to be exceeded; this proprietary data has been reviewed and confirmed during the preparation of this Final EIS/EIR.

Under Alternative 2, skier unloading would be permitted at the Squaw Valley mid-station, which would increase access to existing terrain in the KT-22 area at Squaw Valley; as a result, this improved access could result in a minimal increase in skiers in this area. Due to its location, the gondola would be less prone to wind closures than the existing KT-22 lift and could therefore operate more consistently and improve access to existing terrain in this area when the KT-22 lift is not operable. This increase in use is not expected to result in a measurable change in usage at Squaw Valley.

Skier unloading would be permitted at the proposed Alpine Meadows mid-station. Skiable terrain from this mid-station is limited to the areas known as *the Buttress* and *Bernie's Bowl*, both of which could experience increased use as a result of implementation of Alternative 2 and the improved access that the Alpine Meadows mid-station would provide. Utilization of this terrain is presently limited because it is expert terrain and skiers can only access it by hiking/traversing from the Summit Express lift. *The Buttress* area has a south-facing aspect and skiing is available to the public only when snow and terrain conditions permit; without Gazex[3] facilities as a component of Alternative 2, avalanche hazard mitigation in *The Buttress* area would still be accomplished through the use of hand charges and avalaunchers. These avalanche mitigation methods are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan, meaning that the existing level of avalanche risk would not be changed. Offloading at the Alpine Meadows mid-station would be prohibited during times when *the Buttress* terrain is not accessible to guests and after April 15th as per RPM MUL-4 for protection of the Sierra Nevada yellow-legged frog.

Dispersed Recreation Experience

Alternative 2 would adversely affect the dispersed recreation experience on nearby trails and wilderness areas, including the Five Lakes Trail, the PCT, and the National Forest System-GCW.

The Five Lakes Trail crosses under that portion of the gondola alignment associated with Alternative 2 that is located on private lands (i.e., the Caldwell property). The Five Lakes Trail is managed by the TNF under an easement from the landowner (U.S. Forest Service 1990). Impacts to the recreational experience on the Five Lakes Trail would include both short-term direct impacts during construction, and long-term indirect impacts during operation.

During construction of the gondola (estimated to last approximately 6-8 months in one summer season), the Five Lakes Trail could be closed temporarily while towers are installed via helicopter, drilling and/or blasting activities are performed, or other hazardous construction-related activities are completed that could pose a risk to trail users. While no physical construction activities would be permitted within the National Forest System-GCW, 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 ATVs); this impact would be short-term and would be reduced upon completion of construction (see

[3] Gazex facilities were included as part of the original project proposal for all action alternatives and were subsequently eliminated from the project proposal after the release of the Draft EIS/EIR.

Section 4.9, "Noise," for additional details, including specific RPMs that would reduce or avoid construction noise disturbance). The presence of construction equipment would also result in temporary visual impacts (see Section 4.2, "Visual Resources," for additional details, including specific RPMs that would reduce or avoid visual impacts during construction). Construction access to the project site (including tower footings and the Alpine Meadows mid-station) would require a temporary access route through private lands. The construction access route under Alternative 2 would not cross the Five Lakes Trail but would be proximate, resulting in noise and visual impacts. ATVs may be used to transport construction crews, which in turn could affect scenic resources and increase noise levels during construction. No permanent roads would be created, and the temporary access route would be rehabilitated post-construction consistent with applicable RPMs (comprehensive list of RPMs included in Appendix B; in particular, see RPMs related to Biological Resources and Soils and Erosion as they relate to rehabilitation of disturbed sites).

Alternative 2 would change the visual characteristics of the scenery surrounding the Five Lakes Trail, resulting in a long-term impact to the recreation experience. Under Alternative 2, users of the Five Lakes Trail would pass beneath the gondola line to continue their hike to the Five Lakes in the National Forest System-GCW. Impacts to dispersed recreation would be more substantial as a result of the alignment associated with Alternative 2, as users would pass beneath the gondola line far along the Five Lakes Trail, in an area where the recreational experience is already very remote; with implementation of Alternative 3 or 4, users would pass beneath the gondola line earlier in their hike, in proximity to existing development and infrastructure, meaning that the new infrastructure associated with Alternative 3 or 4 would represent less of a contrast with the existing landscape than the infrastructure associated with Alternative 2. The Alpine Meadows and Squaw Valley mid-stations, as well as towers and lift cable, would be visible in the foreground along part of the Five Lakes Trail. The towers would be visible along the top of ridgeline to the west which could detract from the intrinsic scenic value of this location. Alternative 2 would affect scenic resources in this area and could take away from the experience of remoteness and primitiveness. Outside of the winter operating season, the gondola would not operate, and gondola cabins would be removed from the line, which would reduce the visible infrastructure. As discussed within the Affected Environment section above, users of the Five Lakes Trail presently pass by existing lift towers associated with the incomplete lift project located on the Caldwell property (KT South); however, with implementation of Alternative 2, users of the Five Lakes Trail would encounter gondola infrastructure in sections of the trail where none is currently visible. Based on the five visual simulations created to analyze the visual impacts that would occur along the Five Lakes Trail as a result of each alternative, users of the Five Lakes Trail would be able to see infrastructure from four views where no infrastructure is currently visible (Views 9, 10, 11, and 12); refer to Appendix D for visual simulations of Alternative 2 from these views. Gondola infrastructure would be particularly noticeable along the high ridgeline that separates that Caldwell property from the National Forest System-GCW, within Views 9 and 10.

Impacts to the dispersed recreation experience on the PCT would be less than those described above for the Five Lakes Trail. The PCT is approximately 0.5 mile from the gondola alignment associated with Alternative 2 at its closest point. Short-term direct impacts to the trail experience during construction are not anticipated because the trail is separated from the project site by topography and vegetation, which would screen noise and visual impacts. Long-term visual impacts on the trail would be negligible; the project could be visible from a section of trail approximately 2.5 miles north, near the Granite Chief lift at Squaw Valley, but vegetation would likely screen this view. The project could also be visible from the PCT near the Five Lakes and Alpine Meadows, but in areas where vegetation would likely screen the view. The PCT would not be closed at any point during the construction phase.

Recreational impacts are also possible for users of the National Forest System-GCW. Gondola infrastructure would be visible from certain locations within the National Forest System-GCW. No legislation pertaining to federally managed wilderness areas precludes development being visible from within these areas. However, experiential impacts are possible for users of the National Forest System-GCW as a result of Alternative 2. During the winter operating period, guests unloading at either the Alpine Meadows or Squaw Valley mid-stations could exit the ski area and gain access to the National Forest System-GCW without using the Five Lakes Trail, which could result in increased winter access to the National Forest System-GCW. 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 National Forest System-GCW by hiking. During these periods, the additional access provided by the gondola to hikers could increase the likelihood of visitor encounters within the National Forest System-GCW and therefore reduce opportunities for solitude or primitive and unconfined recreation. For some users, these effects could be considered a reduction in quality of the wilderness recreational experience (see Section 4.3, "Wilderness," for further discussion).

Ambient noise would be perceptible in close proximity to the gondola during operating hours of the gondola in the winter months. Noise impacts are discussed further in Section 4.9, "Noise."

Impacts to dispersed recreation would be reduced through the application of RPMs. As identified above, there are RPMs related to Scenic Resources, Noise, Biological Resources, and Soils and Erosion that would also minimize effects on the recreation experience. RPMs applicable to these resource areas are also identified in the following sections of this EIS/EIR: 4.2, "Visual Resources"; 4.9, "Noise"; 4.12, "Vegetation"; 4.13, "Botany"; and 4.16, "Soils, Geology, and Seismicity." As mentioned above, a comprehensive list of RPMs is included in Appendix B. As described in Chapter 2, "Description of Alternatives," operation of the gondola would be limited to only the winter season, minimizing conflicts with dispersed recreation during the summer months.[4] RPM MUL-7 confirms the completion of construction activities in a single construction season and minimizes the amount of time that project construction could conflict with dispersed recreation opportunities in the area. There are also RPMs specifically related to recreation resources that would assist in reducing or avoiding any adverse effects on the recreational experience. RPMs REC-1, REC-2, and REC-3, provide mechanisms for SVSH to coordinate with and notify the Forest Service and the public regarding construction activities, install signage to inform the public about trail reroutes and/or temporary closures, and avoid conflicts with planned events. RPM REC-4 requires signage to be posted at the Squaw Valley and Alpine Meadows base stations and mid-stations stating that walking or hiking trail access directly from the gondola (i.e., by exiting at a mid-station) is strictly prohibited, and that the applicant will not permit foot traffic to exit at either mid-station under Alternative 2. These RPMs would reduce the potential for user conflicts during construction and operation.

Deterioration of Existing Facilities

Because the gondola would operate only during the winter period, operation of the gondola would have no effect on use of parks or other recreational facilities in the summer. Project construction would occur during the summer months, and those seeking dispersed recreation experiences on the project site during construction could temporarily seek dispersed recreation experiences elsewhere, in places that are further from construction activities (during the single season construction period). However, a single season of diversion of some members of the public seeking dispersed recreation experiences elsewhere would not result in a sufficient increase in use of any one site or facility in another location, such that substantial physical deterioration of any such site or facility would occur or be accelerated. There are numerous opportunities for dispersed recreation in the area and region that could absorb members of the public avoiding the project site such that sites or facilities at any one location would not be deteriorated, and any diversion of individuals would be for only a single summer season.

There are no neighborhood or regional parks in the project area geared toward winter time use. Alternative 2 would not result in an increase in summer time use at Squaw Valley Park, or any other park, such that a substantial physical deterioration of any such facility would occur or be accelerated. For the reasons described above for ski area facilities and recreation experience, Alternative 2 would not result in increased use of existing winter time recreational facilities such that a substantial physical deterioration of any such facility would occur or be accelerated.

[4] For the purposes of this project, the winter/ski season is defined as the period when both Squaw Valley and Alpine Meadows are in operation for winter sports (based on past operations, Alpine Meadows, on average, closes on approximately April 16). The gondola connection between Alpine Meadows and Squaw Valley would not be operational beyond this date unless both resorts are open for the skiing and snowboarding public.

RPMs identified above that minimize or prevent conflicts between construction of Alternative 2 and existing dispersed recreation opportunities (RPMs MUL-7, and REC-1 through REC-4) would minimize the need for recreationists to seek these experiences elsewhere.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to recreational facilities, access, and visitation for skiers resulting from Alternative 2 would be **beneficial**, and effects on the recreational experience for skiers would be **beneficial** because implementation of Alternative 2 would generally improve the recreational experience for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the two ski resorts. While Alternative 2 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, it is not anticipated that this would lead to substantial deterioration of these ski facilities. Alternative 2 would generally improve the recreational experience for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the two ski resorts. There could be **adverse** effects on the dispersed recreational experience near the gondola alignment associated with Alternative 2 because of elevated noise levels and the presence of construction equipment during project construction as well as long-term changes to the visual characteristics of the scenery associated with project operation. In particular, users of the Five Lakes Trail would encounter gondola infrastructure in sections of the trail where none is currently visible. These effects would be mitigated through implementation of RPMs MUL-7 and REC-1 through REC-4.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects on recreational facilities would be **less than significant** because while Alternative 2 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, this would not lead to a substantial physical deterioration of any recreational facilities or accelerate the deterioration of any recreational facilities. RPMs MUL-7 and REC-1 through REC-4 would minimize potential adverse effects on existing dispersed recreation facilities during project construction by ensuring the completion of construction activities in a single construction season, requiring SVSH to coordinate with and notify the Forest Service and the public regarding construction activities, installing signage to inform the public about trail reroutes and/or temporary closures, and avoiding conflicts with planned events. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs MUL-7 and REC-1 through REC-4 as mitigation measures would reduce the effects related to recreational facilities, access, and visitation, but are not necessary to reduce a significant effect. Also, see Sections 4.2, 4.9, 4.12, 4.13, and 4.16, which list the specific RPMs that would reduce impacts to the dispersed recreation experience, and incorporate the RPMs as mitigation measures under CEQA.

Impact 4.1-2 (Alt. 2): Adverse Effects Associated with New or Expanded Recreation Facilities

Alternative 2 would not require the construction of new recreational facilities, or the expansion of existing facilities, that might have an adverse physical effect on the environment. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because existing recreational services and facilities at Alpine Meadows and Squaw Valley are sufficient to support the estimated increase in visitation resulting from construction and operation of a gondola. This impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA effects conclusion is provided.

Alternative 2 includes the construction and operation of a gondola. The gondola itself could be considered a recreational facility; refer to the analysis throughout this EIS/EIR regarding potential impacts to other environmental resources from Alternative 2. No other recreational facilities, or modification or expansion of existing facilities, are proposed as part of this alternative. As identified above in the discussion of Impact

4.1-1, existing recreational services and facilities at Alpine Meadows and Squaw Valley are sufficient to support the estimated increase in visitation resulting from construction and operation of a gondola.

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

Alternative 2 would not require the construction of new recreational facilities, or the expansion of existing facilities, that might have an adverse physical effect on the environment. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because existing recreational services and facilities at Alpine Meadows and Squaw Valley are sufficient to support the estimated increase in visitation resulting from construction and operation of a gondola. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.1-3 (Alt. 2): Consistency with Land Use Plans

Alternative 2 includes amendments to the Alpine Meadows SUP but would be consistent with Forest Service ROS classifications in addition to County and other local plans applicable to private lands that would be affected. Under NEPA, and considering the NEPA indicators, there would be **no effect**. Consistent with the similar analysis of land use plan consistency in Section 4.4, "Land Use," and the CEQA criteria identified there, this effect would be **less than significant**.

Forest Service policy requires that all ski areas operating on NFS lands under an SUP submit a Master Development Plan (MDP) for acceptance by the Forest Service. Consistent with this policy, Alpine Meadows submitted a 2015 MDP that has been accepted by the TNF. Alternative 2 is included in the 2015 MDP.

Alternative 2 would be consistent with all relevant policies provided in the LRMP, including Forest Service ROS classifications. Alternative 2 would serve to improve developed winter recreation opportunities in the Scott Management Area. The ROS classification for the Scott Management Area is Roaded Natural, as described above in the "Affected Environment" section. The existing Alpine Meadows SUP is consistent with the ROS classification, and thus the installation of additional ski area infrastructure would also be consistent. The National Forest System-GCW has an ROS classification of Primitive, as described above in the "Affected Environment" section. While some gondola infrastructure would likely be visible from limited locations within the National Forest System-GCW, Alternative 2 would not represent an inconsistency with this ROS classification. This is because Alternative 2 would cause no modification of the natural environment of the National Forest System-GCW; interaction between users of the National Forest System-GCW would remain very low; and the National Forest System-GCW would remain essentially free from human-induced restrictions and controls (and would also remain essentially free from evidence of these human-induced restrictions and controls).

The LRMP directs the Forest Service to "provide a variety of opportunities for developed and dispersed recreation experiences" (U.S. Forest Service 1990:V-5). In addition, the LRMP explicitly mentions the "potential for interconnecting ski areas along the Sierra Nevada Crest" to "provide better dispersal and opportunities for skiers" (U.S. Forest Service 1990:III-4). The Scott Management Area allows for development of additional winter sports facilities and support services as part of the desired future condition of the management area (U.S. Forest Service 1990:V-448).

Alternative 2 is in alignment with recreation management objectives in the *Placer County General Plan*. Specifically, Alternative 2 would improve the recreational offerings available in Placer County (Recreation Land Use Goal 1.G) and would promote terrain connectivity within existing ski areas while providing improved transportation options that will not substantially crowd or burden existing transportation resources

(Recreation Land Use Policy 1.G.1). Although the project is anticipated to require an amendment of the SVGPLUO, the amendment consists only of adding the gondola to the SVGPLUO map(s) of existing and new ski lifts. The SVGPLUO contains text indicating that new ski lifts would be limited to those shown on maps included in the SVGPLUO (i.e., Squaw Valley General Plan Map and the Future Potential Ski Lifts Map). These maps do not include the proposed gondola; therefore, a General Plan amendment would be required. The proposed amendment to the SVGPLUO is also addressed in Section 4.4, "Land Use."

In addition to the General Plan amendment to add the proposed gondola to the SVGPLUO map(s), a rezone would be required to change the existing zoning designation from Neighborhood Commercial to Open Space in the area where the Alpine Meadows base terminal would be located, as the Neighborhood Commercial zoning designation does not allow for the presence of ski lifts. In particular, the existing Open Space zone surrounding the base area would be modified slightly to encompass the proposed location of the Alpine Meadows base terminal. With these requested land use entitlements, the project would be consistent with Placer County zoning designations for the project site. The proposed rezone is also addressed in Section 4.4, "Land Use."

Alternative 2 would also be consistent with the overall goals of the SVGPLUO and *Alpine Meadows General Plan*.

NEPA Effects Conclusion

While Alternative 2 would amend the Alpine Meadows SUP, the project would be consistent with LRMP ROS classification standards and recreation management objectives in the LRMP. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to project consistency with land use plans under Alternative 2. There are no applicable RPMs that would reduce this impact.

CEQA Determination of Effects

While Alternative 2 would require an amendment to the SVGPLUO to add the gondola to the "Potential Future Ski Lifts" map and a rezone to accommodate the Alpine Meadows base terminal, it would be consistent with recreation management objectives in all County and local plans applicable to private lands. Consistent with the similar analysis of land use plan consistency in Section 4.4, "Land Use," and the CEQA criteria identified there, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.1.3.3 ALTERNATIVE 3

Impact 4.1-1 (Alt. 3): Recreation Experience, Access, and Visitation

Alternative 3 would result in increased use of recreational facilities at Alpine Meadows and Squaw Valley, but this is not expected to result in substantial physical deterioration of these ski facilities or other existing recreational facilities. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to recreational facilities, access, and visitation would be **beneficial** because implementation of Alternative 3 would generally improve facilities and access for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the two ski resorts, and effects on the recreational experience would be **beneficial** within ski area facilities but **minorly adverse** for dispersed recreation occurring beyond the ski areas because of elevated noise levels and the presence of construction equipment during project construction as well as long-term changes to the visual characteristics of the scenery associated with project operation. In particular, users of the Five Lakes Trail would encounter gondola infrastructure in sections of the trail where none is currently visible. Implementation of RPMs MUL-7, and REC1- through REC-4 would mitigate this effect. In addition, other RPMs related to visual resources, noise, and biological resources, identified in the corresponding sections of this EIS/EIR would further mitigate this effect. Under CEQA, and using the CEQA criteria, effects on recreational facilities would be **less**

than significant because while Alternative 3 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, this would not lead to a substantial physical deterioration of any recreational facilities or accelerate the deterioration of any recreational facilities. In addition, RPMs MUL-7, and REC-1 through REC-4 would minimize potential adverse effects on existing dispersed recreation facilities during project construction by ensuring the completion of construction activities in a single construction season, requiring SVSH to coordinate with and notify the Forest Service and the public regarding construction activities, installing signage to inform the public about trail reroutes and/or temporary closures, and avoiding conflicts with planned events. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Ski Area Facilities and Recreation Experience

Effects to ski area facilities and the recreation experience under Alternative 3 would be nearly the same as those described above for Alternative 2. The primary difference in these effects is that under Alternative 3, the Alpine Meadows mid-station would not be located immediately above *the Buttress* area, and instead would be located on the Caldwell property. As a result, *the Buttress* area would be accessible only off the existing Summit Express lift via a substantial hike/traverse, similar to the existing condition, so access to *the Buttress* area under Alternative 3 would not be improved in any way.

Dispersed Recreation Experience

The gondola alignment associated with Alternative 3 would result in long-term impacts to scenic resources. Effects related to dispersed recreation opportunities along the Five Lakes Trail would be less substantial under Alternative 3 than under Alternative 2 as the alignment of the gondola under Alternative 3 would descend from the Squaw Valley mid-station through Catch Valley instead of remaining high along the ridgeline adjacent to the National Forest System-GCW, meaning that the gondola would not be visible along the ridgeline. Under Alternative 3, users would pass beneath the gondola line closer to the trailhead than under Alternative 2, in closer proximity to existing development and infrastructure. New infrastructure under Alternative 3 would represent less of a contrast with the existing landscape than under Alternative 2, but more of a contrast than under Alternative 4. Under Alternative 3, users of the Five Lakes Trail would still encounter gondola infrastructure in sections of the trail where none is currently visible. Based on the five visual simulations created to analyze the visual impacts that would occur along the Five Lakes Trail as a result of each alternative, users of the Five Lakes Trail would be able to see infrastructure from three views where no infrastructure is currently visible under Alternative 3 (Views 9, 10, and 13), as opposed to four views under Alternative 2; refer to Appendix D for visual simulations of Alternative 3 from these views.

Under Alternative 3, impacts associated with increased likelihood of visitor encounters within the National Forest System-GCW would exist as described for Alternative 2 during the winter season, transitional seasons, and periods of inconsistent snow cover; however, any impacts would be lesser than those discussed above for Alternative 2, because gondola-users would only be able to disembark and enter the National Forest System-GCW from the Squaw Valley mid-station; the location of the Alpine Meadows mid-station associated with Alternative 3 would not provide additional access to the National Forest System-GCW.

Direct short-term noise impacts during construction would be similar to those described above for Alternative 2, as the gondola alignment would still cross the Five Lakes Trail. Noise effects from the daily operation of the gondola could be slightly greater because the gondola would be closer to the Five Lakes Trail trailhead. However, the noise effects would be minimized because the gondola's hours of operation would occur only when Alpine Meadows and Squaw Valley are open and only during the winter months (see Section 4.9, "Noise," for additional details).

Impacts to the PCT would be less than those described for Alternative 2 because the gondola alignment would be further removed and less visible from the PCT.

Deterioration of Existing Facilities

Effects associated with the deterioration of existing facilities under Alternative 3 would be nearly the same as those described above for Alternative 2.

The same RPMs identified above for Alternative 2 would apply to Alternative 3. These include RPMs related to Scenic Resources, Noise, Biological Resources, and Soils and Erosion, RPMs MUL-4 and MUL-7, and recreation specific RPMs REC-1 through REC-4.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to recreational facilities, access, and visitation for skiers resulting from Alternative 3 would be **beneficial**, and effects on the recreational experience for skiers would be **beneficial** because implementation of Alternative 3 would generally improve the recreational experience for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the two ski resorts. While Alternative 3 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, it is not anticipated that this would lead to substantial deterioration of these ski facilities. Alternative 3 would generally improve the recreational experience for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the ski areas. There would be **minorly adverse** effects on the dispersed recreational experience near the gondola alignment associated with Alternative 3 because of elevated noise levels and the presence of construction equipment during project construction as well as long-term changes to the visual characteristics of the scenery associated with project operation. In particular, users of the Five Lakes Trail would encounter gondola infrastructure in sections of the trail where none is currently visible. These effects would be mitigated through implementation of RPMs MUL-7 and REC-1 through REC-4. These effects would be slightly less than Alternative 2 for the PCT and slightly greater for the Five Lakes Trail.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects on recreational facilities would be **less than significant** because while Alternative 3 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, this would not lead to a substantial physical deterioration of any recreational facilities or accelerate the deterioration of any recreational facilities. RPMs MUL-7 and REC-1 through REC-4 would minimize potential adverse effects on existing dispersed recreation facilities during project construction by ensuring the completion of construction activities in a single construction season, requiring SVSH to coordinate with and notify the Forest Service and the public regarding construction activities, installing signage to inform the public about trail reroutes and/or temporary closures, and avoiding conflicts with planned events. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level. This impact does not differ materially from Alternative 2 as both alternatives would generate the same, or very similar, increases in skier visitation.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs MUL-7 and REC-1 through REC-4 as mitigation measures would reduce the effects related to recreational facilities, access, and visitation, but are not necessary to reduce a significant effect. Also, see Sections 4.2, 4.9, 4.12, 4.13, and 4.16, which list the specific RPMs that would reduce impacts to the dispersed recreation experience, and incorporate the RPMs as mitigation measures under CEQA.

Impact 4.1-2 (Alt. 3): Adverse Effects Associated with New or Expanded Recreation Facilities

Alternative 3 would not require the construction of new recreational facilities, or the expansion of existing facilities, that might have an adverse physical effect on the environment. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because existing recreational services and facilities at Alpine Meadows and Squaw Valley are sufficient to support the estimated increase in visitation resulting from construction and operation of a gondola. This impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA effects conclusion is provided.

Impacts related to the construction of new recreational facilities, or the expansion of existing facilities, under Alternative 3 would be nearly the same as those described for Alternative 2.

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

Alternative 3 would not require the construction of new recreational facilities, or the expansion of existing facilities, that might have an adverse physical effect on the environment. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because existing recreational services and facilities at Alpine Meadows and Squaw Valley are sufficient to support the estimated increase in visitation resulting from construction and operation of a gondola**.** There are no applicable RPMs that would reduce this impact. This impact does not differ from Alternative 2 as neither alternative includes the construction or expansion of recreation facilities.

Mitigation Measures

No mitigation measures are required.

Impact 4.1-3 (Alt. 3): Consistency with Land Use Plans

Alternative 3 includes amendments to the Alpine Meadows SUP, but it would be consistent with Forest Service ROS classifications in addition to County and other local plans applicable to private lands that would be affected. Under NEPA, and considering the NEPA indicators, there would be **no effect**. Consistent with the similar analysis of land use plan consistency in Section 4.4, "Land Use," and the CEQA criteria identified there, this effect would be **less than significant**.

Impacts related to land use plan consistency under Alternative 3 would be nearly the same as those described for Alternative 2.

NEPA Effects Conclusion

While Alternative 3 would amend the Alpine Meadows SUP, the project would be consistent with Forest Service ROS classifications and recreation management objectives in the LRMP. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to project consistency with land use plans under Alternative 3. There are no applicable RPMs that would reduce this impact. This impact under Alternative 3 does not differ from Alternative 2.

CEQA Determination of Effects

While Alternative 3 would require an amendment to the SVGPLUO to add the gondola to the "Potential Future Ski Lifts" map and a rezone to accommodate the Alpine Meadows base terminal, it would be consistent with recreation management objectives in all County and local plans applicable to private lands. Consistent with the similar analysis of land use plan consistency in Section 4.4, "Land Use," and the CEQA criteria identified there, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.1.3.4 ALTERNATIVE 4

Impact 4.1-1 (Alt. 4): Recreation Experience, Access, and Visitation

Alternative 4 would result in increased use of recreational facilities at Alpine Meadows and Squaw Valley, but this is not expected to result in substantial physical deterioration of these ski facilities or other existing recreational facilities. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to recreational facilities, access, and visitation would be **beneficial** because implementation of Alternative 4 would generally improve facilities and access for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the two ski resorts, and effects on the recreational experience would be **beneficial** within ski area facilities but **minorly adverse** for dispersed recreation occurring beyond the ski areas because of elevated noise levels and the presence of construction equipment during project construction as well as long-term changes to the visual characteristics of the scenery associated with project operation. In particular, users of the Five Lakes Trail would encounter gondola infrastructure in sections of the trail where none is currently visible. Implementation of RPMs MUL-7, and REC1- through REC-4 would mitigate this effect. In addition, other RPMs related to visual resources, noise, and biological resources, identified in the corresponding sections of this EIS/EIR would further mitigate this effect. Under CEQA, and using the CEQA criteria, effects on recreational facilities would be **less than significant** because while Alternative 4 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, this would not lead to a substantial physical deterioration of any recreational facilities or accelerate the deterioration of any recreational facilities. In addition, RPMs MUL-7, and REC-1 through REC-4 would minimize potential adverse effects on existing dispersed recreation facilities during project construction by ensuring the completion of construction activities in a single construction season, requiring SVSH to coordinate with and notify the Forest Service and the public regarding construction activities, installing signage to inform the public about trail reroutes and/or temporary closures, and avoiding conflicts with planned events. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Ski Area Facilities and Recreation Experience

Effects to ski area facilities and the recreation experience under Alternative 4 would be nearly the same as those described above for Alternative 2, and identical to those described above for Alternative 3. The primary difference in these effects is that under Alternative 4, the Alpine Meadows mid-station would not be located immediately above *the Buttress* area, and instead would be located on the Caldwell property. As a result, *the Buttress* area would be accessible only off the existing Summit Express lift via a substantial hike/traverse, similar to the existing condition, so access to *the Buttress* area under Alternative 4 would not be improved in any way.

Dispersed Recreation Experience

Effects related to dispersed recreation opportunities along the Five Lakes Trail would be different than described for Alternatives 2 and 3 because the alignment of the gondola for Alternative 4 would be located further east of the other action alternatives. Five Lakes Trail users would cross under the gondola line approximately 0.5 mile from the trailhead at Alpine Meadows Road. This crossing would be closer to existing development and infrastructure as compared with Alternatives 2 and 3; as a result, new infrastructure associated with Alternative 4 would represent less of a contrast with the existing landscape than the infrastructure associated with Alternative 2 or 3. Situating the gondola alignment closer to previously disturbed and inhabited areas would allow the Five Lakes Trail to retain a stronger sense of remote and pristine nature. Under Alternative 4, users of the Five Lakes Trail would still encounter gondola infrastructure in sections of the trail where none is currently visible. Based on the five visual simulations created to analyze the visual impacts that would occur along the Five Lakes Trail as a result of each alternative, users of the Five Lakes Trail would be able to see infrastructure from three views where no infrastructure is currently visible (Views 10, 11, and 13), which would be the same as Alternative 3 but less than the four views under Alternative 2; refer to Appendix D for visual simulations of Alternative 4 from these views.

Similar to Alternative 3, the gondola under Alternative 4 would be less visually intrusive from the National Forest System-GCW than under Alternative 2 because it would be located closer to the valley floor and not high on a ridgeline. Under Alternative 4, impacts associated with increased likelihood of visitor encounters within the National Forest System-GCW would be identical to those discussed above for Alternative 3; any impacts would be lesser than those discussed above for Alternative 2, because gondola-users would be able to disembark and enter the National Forest System-GCW only from the Squaw Valley mid-station and not from the Alpine Meadows mid-station.

Impacts to the PCT would be less than those described for Alternatives 2 and 3 because the gondola alignment would be further removed and less visible from the trail.

Noise effects from the daily operation of the gondola would be similar to Alternative 3 because the gondola would be closer to the Five Lakes Trail trailhead. However, the noise effects associated with the Alternative 4 alignment could be largely masked by the ambient noise of the base area and traffic sounds from Alpine Meadows Road.

Deterioration of Existing Facilities

Effects associated with the deterioration of existing facilities under Alternative 4 would be nearly the same as those described above for Alternative 2.

The same RPMs identified above for Alternative 2 would apply to Alternative 4. These include RPMs related to Scenic Resources, Noise, Biological Resources, and Soils and Erosion, RPMs MUL-4 and MUL-7, and recreation specific RPMs REC-1 through REC-4.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to recreational facilities, access, and visitation for skiers resulting from Alternative 4 would be **beneficial**, and effects on the recreational experience for skiers would be **beneficial** because implementation of Alternative 4 would generally improve the recreational experience for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the two ski resorts. While Alternative 4 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, it is not anticipated that this would lead to substantial deterioration of these ski facilities. Alternative 4 would generally improve the recreational experience for skiers at Squaw Valley and Alpine Meadows by increasing connectivity between the ski areas. There would be **minorly adverse** effects on the dispersed recreational experience near the gondola alignment associated with Alternative 4 because of elevated noise levels and the presence of construction equipment during project construction as well as long-term changes to the visual characteristics of the scenery associated with project operation. In particular, users of the Five Lakes Trail would encounter gondola infrastructure in sections of the trail where none is currently visible. These effects would be mitigated through implementation of RPMs MUL-7 and REC-1 through REC-4. These effects would be slightly less for the PCT and nearly the same for the Five Lakes Trail as compared with Alternative 3.

CEQA Determination of Effects

While Alternative 4 would potentially increase skier visitation to Squaw Valley and Alpine Meadows, this would not lead to a substantial physical deterioration of any recreational facilities or accelerate the deterioration of any recreational facilities. Under CEQA and using the CEQA criteria, effects on recreational facilities would be **less than significant.** RPMs MUL-7 and REC-1 through REC-4 would minimize potential adverse effects on existing dispersed recreation facilities during project construction by ensuring the completion of construction activities in a single construction season, requiring SVSH to coordinate with and notify the Forest Service and the public regarding construction activities, installing signage to inform the public about trail reroutes and/or temporary closures, and avoiding conflicts with planned events. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level. This impact does not differ materially from Alternative 2 as both alternatives would generate the same, or very similar, increases in skier visitation.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs MUL-7 and REC-1 through REC-4 as mitigation measures would reduce the effects related to recreational facilities, access, and visitation, but are not necessary to reduce a significant effect. Also, see Sections 4.2, 4.9, 4.12, 4.13, and 4.16, which list the specific RPMs that would reduce impacts to dispersed recreation experience, and incorporate the RPMs as mitigation measures under CEQA.

Impact 4.1-2 (Alt. 4): Adverse Effects Associated with New or Expanded Recreation Facilities

Alternative 4 would not require the construction of new recreational facilities, or the expansion of existing facilities, that might have an adverse physical effect on the environment. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because existing recreational services and facilities at Alpine Meadows and Squaw Valley are sufficient to support the estimated increase in visitation resulting from construction and operation of a gondola. This impact analysis is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA effects conclusion is provided.

Impacts related to the construction of new recreational facilities, or the expansion of existing facilities, under Alternative 4 would be nearly the same as those described for Alternative 2.

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

Alternative 4 would not require the construction of new recreational facilities, or the expansion of existing facilities, that might have an adverse physical effect on the environment. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because existing recreational services and facilities at Alpine Meadows and Squaw Valley are sufficient to support the estimated increase in visitation resulting from construction and operation of a gondola. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.1-3 (Alt. 4): Consistency with Land Use Plans

Alternative 4 includes amendments to the Alpine Meadows SUP, but it would be consistent with Forest Service ROS classifications in addition to County and other local plans applicable to private lands. Under NEPA, and considering the NEPA indicators, there would be **no effect**. Consistent with the similar analysis of land use plan consistency in Section 4.4, "Land Use," and the CEQA criteria identified there, this effect would be **less than significant**.

Impacts related to plan consistency under Alternative 4 would be nearly the same as those described for Alternative 2.

NEPA Effects Conclusion

While Alternative 4 would amend the Alpine Meadows SUP, the project would be consistent with Forest Service ROS classifications and recreation management objectives in the LRMP. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to project consistency with land use plans under Alternative 4. There are no applicable RPMs that would reduce this impact. This impact under Alternative 4 does not differ from Alternative 2.

CEQA Determination of Effects

While Alternative 4 would require an amendment to the SVGPLUO to add the gondola to the "Potential Future Ski Lifts" map and a rezone to accommodate the Alpine Meadows base terminal, it would be consistent with recreation management objectives in all County and local plans applicable to private lands. Consistent with the similar analysis of land use plan consistency in Section 4.4, "Land Use," and the CEQA criteria identified there, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact. This impact under Alternative 4 does not differ from Alternative 2.

Mitigation Measures

No mitigation measures are required.

4.1.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.1-1 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Addressing the action alternatives, for Impact 4.1-1, for all NEPA indicators other than the summertime dispersed recreation experience, effects are beneficial because of the improved recreational facilities and improved access for skiers between Squaw Valley and Alpine Meadows. For these indicators, there is no meaningful difference in effects across the three action alternatives. Addressing the summertime dispersed recreation experience, there would be an adverse effect under Alternative 2 and a minorly adverse effect under Alternatives 3 and 4; these adverse effects would be mitigated with RPMs. For all three action alternatives, users of the Five Lakes Trail would be able to see new infrastructure from locations where infrastructure is not currently visible; under Alternative 2, infrastructure would be visible in locations where none is currently visible from four views, as compared with three views for Alternatives 3 and 4. It is important to note that there are many locations along the Five Lakes Trail for which visual simulations were not created and therefore, potential visual impacts that would occur in these locations cannot be compared between alternatives. Further, under Alternative 2, users of the Five Lakes Trail would pass under the gondola line far along the Five Lakes Trail, in an area where the recreational experience is already very remote; with implementation of Alternative 3 or 4, users would pass beneath the gondola line earlier in their hike, in proximity to existing development and infrastructure, meaning that the new infrastructure associated with Alternative 3 or 4 would represent less of a contrast with the existing landscape than the infrastructure associated with Alternative 2. As the alignment for Alternative 4 is further from the PCT than the alignment for Alternative 3, which is further from the PCT than the alignment for Alternative 2, Alternative 4 would have the least impact on the PCT. Considering that Alternative 4 would have the least impact on both the PCT and the Five Lakes Trail, Alternative 4 would have the least impact on the dispersed recreation experience out of all the action alternatives.

For the CEQA criteria related to increased use of facilities potentially leading to deterioration of those facilities, the impact is less than significant for all three action alternatives and there is no difference in effects across the alternatives. There are applicable RPMs that would be equally effective at reducing potential effects under all three action alternatives; however, these RPMs would not be necessary to reduce a significant impact to a less-than-significant level.

For Impact 4.1-2, the impact is less than significant for all three action alternatives and there is no difference in effects across the action alternatives. The analysis provided for Impact 4.1-2 is specific to a CEQA criteria and is not responsive to a NEPA analytical indicator. No NEPA effects conclusion is provided.

For Impact 4.1-3, there is no effect when considering the NEPA indicator for all three action alternatives and there is no meaningful difference in effects across the action alternatives. This impact is less than significant

under CEQA for all three action alternatives and there is no meaningful difference in effects across the action alternatives.

Table 4.1-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.1-1: Recreation Experience, Access, and Visitation	Quantitative analysis of existing and proposed CCC and skier visitation, including discussion of existing guest service space and other amenities.	No effect	Beneficial effect under NEPA	Beneficial effect under NEPA Same as for Alternative 2	Beneficial effect under NEPA Same as for Alternatives 2 and 3
	Qualitative analysis of existing and proposed guest experiences for winter recreation at Squaw and Alpine Meadows, including safety, connection/accessibility, and changes to hike-to ski terrain at Alpine Meadows	No effect	Beneficial effect under NEPA	Beneficial effect under NEPA Same as for Alternative 2	Beneficial effect under NEPA Same as for Alternatives 2 and 3
	Discussion of the existing and proposed dispersed recreation experience on the Five Lakes Trail, PCT, and other nearby trails, during both summer and winter. Discussion of the anticipated length of the construction period, potential impacts such as noise and emissions from machinery (including helicopters), and potential limitations on trail use during construction or operation. Discussion of impacts resulting from operation of the gondola, including use conflicts, noise, privacy, and visual impacts	No effect	Adverse effect under NEPA	Minorly adverse effect under NEPA Less than under Alternative 2	Minorly adverse effect under NEPA Less than under Alternatives 2 and 3
	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	No effect	Less than significant under CEQA	Less than significant under CEQA Same as for Alternative 2	Less than significant under CEQA Same as for Alternatives 2 and 3
4.1-2: Adverse Effects Associated with New or Expanded Recreation Facilities	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment	No effect	Less than significant under CEQA	Less than significant under CEQA Same as for Alternative 2	Less than significant under CEQA Same as for Alternatives 2 and 3
4.1-3: Consistency with Land Use Plans	Discussion of consistency with Forest Service ROS classifications	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Same as for Alternative 2	No effect under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

4.1.4 Cumulative Effects

4.1.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope for this analysis of cumulative effects to recreation includes the ski area operating boundaries of Squaw Valley and Alpine Meadows and surrounding NFS and private lands (including the National Forest System-GCW).

Any present or reasonably foreseeable future projects within the spatial scope of this analysis that have the potential to create impacts to recreation as a resource are listed below. Potential impacts associated with these projects include altered quality of the recreational experience and altered recreational opportunities.

Project	Potential Impacts
Alpine Meadows Master Development Plan	Altered quality of the recreational experience
Squaw Valley Red Dog Lift Replacement	Altered quality of the recreational experience
Village at Squaw Valley Specific Plan	Altered quality of the recreational experience
Timberline Twister	Altered quality of the recreational experience; altered recreational opportunities
White Wolf Project	Altered quality of the recreational experience
Big Sugar Trail Enhancement Project	Altered quality of the recreational experience; altered recreational opportunities

4.1.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct and indirect impacts, and thus by definition no cumulative impacts to recreation.

Alternative 2

Considered cumulatively with planned ski area improvements at Squaw Valley and Alpine Meadows, Alternative 2 would contribute to an overall improvement in the skiing experience. The Alpine Meadows MDP includes base area/guest service improvements, lift improvements, snowmaking improvements, and trail grading projects. The Squaw Valley Red Dog Lift Replacement would replace the existing Red Dog triple lift with a high-speed, detachable, six-person lift. The Timberline Twister project includes a new alpine coaster at the Squaw Valley ski area between the Far East and Red Dog chairlifts. As described above, the proposed gondola would improve connectivity between the two ski areas and allow visitors to access both resorts on a single day more easily. Planned ski area improvements like those listed in the Alpine Meadows MDP and the Red Dog lift replacement at Squaw Valley, when considered cumulatively with Alternative 2, would further improve the recreational experience at the two resorts.

The proposed Alpine Meadows mid-station would provide access to the master planned Rollers lift (included in the Alpine Meadows MDP). The bottom terminal of the Rollers lift would be located near the Alpine Meadows mid-station (on private land) and it is anticipated that skiers could exit the gondola at the mid-station to access this future lift and the terrain it would serve. The proposed gondola, in combination with the Rollers lift, would result in increased use of the terrain below the top terminal of the Rollers Lift (Beaver and Estelle bowls). The increased use surrounding the Alpine Meadows mid-station and Rollers lift area would result in noise and visible infrastructure adjacent to the National Forest System-GCW, which are further evaluated in Sections 4.2, “Visual Resources”; 4.3, “Wilderness”; and 4.9, “Noise.”

The *Village at Squaw Valley Specific Plan* would add lodging capacity for overnight visitors at Squaw Valley within approximately 94 acres of the previously developed Squaw Valley Village located at the western end of the Olympic Valley. The additional lodging space could increase visitation at Squaw Valley, thereby increasing use of the terrain at both Squaw Valley and Alpine Meadows. If this additional lodging capacity resulted in an appreciable change to use at the two resorts, the quality of some users’ recreational

experiences could be reduced. Additional development of recreation infrastructure at Squaw Valley would include the Timberline Twister project, which would add a new year-round recreation amenity to the area.

Cumulative impacts to dispersed recreation could result from the White Wolf project. This project would include the construction of 38 residences, a private ski lift in addition to the existing private ski lift (i.e. "KT South") and other amenities. These additions would result in further development in proximity to the Five Lakes Trail, potentially reducing the recreational experience there. Noise and visual impacts during construction would result in temporary impacts to trail users. The increased visibility of development associated with operation of the White Wolf project, when combined with Alternative 2, would detract further from the recreational experience; however, the beginning section Five Lakes Trail is operated with an access easement on private lands and these private lands are allowed the right to develop. Additionally, the proposed private ski lift that would connect the Caldwell property to the Alpine Meadows mid-station could indirectly increase winter access to the National Forest System-GCW; this would increase chances of visitor encounters in the National Forest System-GCW and could thereby reduce opportunities for solitude or a primitive and unconfined recreation experience for some users of the National Forest System-GCW during the winter season. This change could also be experienced during transitional seasons or periods of inconsistent snow cover as well, because during relatively short periods, the gondola could be operational and the southern aspect slopes could be dry enough to provide for hiking access. However, RPM REC-4 requires that signage be posted at both the Squaw Valley and Alpine Meadows base stations stating that walking or hiking trail access directly from the gondola (i.e., by exiting at a mid-station) is strictly prohibited; thereby reducing the potential for this effect. Overall, this private ski lift is not expected to result in a change to the skiing experience or a meaningful increase in visitation at either resort, because the only residents and guests of the Caldwell property would have access to this private ski lift.

The Big Sugar Trail Enhancement includes improvements to dispersed recreation trails on the American River Ranger District. These projects are not directly adjacent to the Five Lakes Trail or other resources affected by Alternative 2, so no cumulative impacts are expected.

Alternatives 3 and 4

Cumulative impacts resulting from Alternatives 3 and 4 would be nearly the same as those discussed above for Alternative 2, with some exceptions identified below.

While the gondola alignments associated with Alternatives 3 and 4 are not identical, they are similar enough that cumulative impacts to the recreational experience associated with both of these alternatives would be nearly identical. Under Alternatives 3 and 4, there would be no gondola mid-station near the bottom terminal of the planned Rollers lift. Alternatives 3 and 4 would not provide access to the Rollers lift and would not introduce infrastructure and activity to this area adjacent to the National Forest System-GCW; therefore, there would not be cumulative effects to the skiing experience at Alpine Meadows. While there would be fewer cumulative impacts to the dispersed recreation experience associated with increased likelihood of visitor encounters in the National Forest System-GCW if the private lift connecting the Caldwell property to *the Buttress* area were not constructed, the construction of this lift is still possible. Under Alternatives 3 and 4, this private lift could be constructed to provide direct access to *the Buttress* area and other terrain beneath it exclusively for the use of residents and guests of the Caldwell property. This potential private lift could minimally increase visitation to the dispersed recreation areas for residents and guests of the Caldwell property by improving access to dispersed recreation areas. Similarly, the Rollers lift could be constructed even if Alternative 3 or 4 were selected, and skiers/snowboarders at Alpine Meadows would be able to access it from the existing Summit Express lift.

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4.2 VISUAL RESOURCES

This section includes definitions of visual resource management guidelines, a description of the existing visual condition in the project area, and an analysis of potential short- and long-term impacts associated with implementation of the action alternatives.

Much of the visual resource analysis that follows involves discussion of the project area's Visual Quality Objectives (VQOs); VQOs provide a tool for the Forest Service to define how a landscape will be managed, the level of acceptable modification permitted in the area, and under what circumstances modification may be allowed. VQOs direct visual resource management only on National Forest System (NFS) lands and are not applicable to portions of the project area that occur on private lands. Refer to Section 4.2.2.1 for a detailed description of VQOs and how they are incorporated into this analysis; if the reader is unfamiliar with VQOs and associated terminology, it is recommended to review this section first.

4.2.1 Affected Environment

4.2.1.1 ENVIRONMENTAL SETTING

Regional Characteristic Landscape

The Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows) are located in the eastern portion of the Sierra Nevada within the Tahoe National Forest (TNF) and unincorporated Placer County (see Exhibit 1-1 in Chapter 1, "Introduction"). Elevations in the TNF range from approximately 1,200 feet on the western edge of the forest to over 9,000 feet along the Sierra Nevada crest (U.S. Forest Service 1990). Lake Tahoe, an important scenic resource, is approximately 5 miles southeast of the ski areas along State Route (SR) 89, a scenic byway designated by the State of California. The region is generally characterized by high granite peaks, including alpine terrain, separated by forested lower elevations. Important natural features seen in the lower elevations include forests of pine trees, scattered scrub, and riparian vegetation communities that occupy the valley floor.

Project Area Characteristic Landscape

The existing conditions of the project area characteristic landscape are described below and are used as a basis of comparison for the viewpoint and viewshed analyses that follow (the viewpoint and viewshed analyses are described below in Section 4.2.2.1).

The project area for visual resources is defined as the project viewshed, which includes Squaw Valley and Alpine Meadows, nearby residential areas, roadways, dispersed recreation trails, and the National Forest System-Granite Chief Wilderness (GCW).

Squaw Valley and Alpine Meadows

The summit elevations of Squaw Valley and Alpine Meadows are approximately 9,050 feet and 8,640 feet, respectively. The topography and vegetation of the ski areas are composed of steep mountain slopes and basins at higher elevations, and valleys of conifer forests intersected by various commercial and residential developments at lower elevations in and around the ski areas. Ski area development, including ski runs, lifts, and other infrastructure, is highly apparent from within both ski areas and from surrounding NFS lands (see Exhibit 4.2-1). This type of development is particularly visible when viewed from the foreground distance zone; however, this type of development is also visible in the middleground and background distance zones (when not obstructed by existing vegetation or topography) (distance zones defined below, in Section 4.2.2.1). It is important to note the difference in visibility between ski runs and ski lift infrastructure such as towers, ropes, and terminals from the various distance zones. Ski runs are much more visible from the middleground and background distance zones than ski lift infrastructure because ski runs require the wholesale clearing of vegetation, which creates considerable contrast with the adjacent and undisturbed

natural landscapes. This contrast is particularly apparent during the winter when white snow-covered runs are surrounded by darker-colored trees and forest stands. Ski lift infrastructure is minimally visible from the middleground distance zone and is generally not noticeable from the background distance zone, because at these distances, installed infrastructure does not create substantial contrast with the surrounding and undisturbed landscape, and as a result is hardly discernable.

Exhibit 4.2-1 Highly Visible Ski Area Development (Existing Conditions), as Seen from Squaw Valley Base Area

The Caldwell Property and National Forest System-GCW

Between Squaw Valley and Alpine Meadows is a private parcel referred to as the Caldwell property, and to the west of the Caldwell property lies the National Forest System-GCW, a federally designated wilderness area that is managed by the Forest Service (refer to Exhibit 1-2 in Chapter 1, "Introduction," for location). The topography found within the Caldwell property and National Forest System-GCW is very similar to the topography found at Squaw Valley and Alpine Meadows; the landscape is characterized by steep, granite cliffs separated by heavily vegetated valleys (see Exhibit 4.2-2). The National Forest System-GCW is currently undeveloped and is particularly valued for its unrefined, scenic characteristics. No development associated with the project would occur on National Forest System-GCW land; however, portions of the project would be visible from these lands. The National Forest System-GCW offers excellent opportunities for backcountry skiing in the winter, but experiences much lighter use compared to the warmer months because of its remote location and the fact that the area is not immediately lift-served, but rather requires hiking to access. Additional information on the National Forest System-GCW can be found in Section 4.3, "Wilderness."

The Five Lakes Trail, which provides the public with access to the National Forest System-GCW via an access easement on the Caldwell property, is frequently used by recreationists for hiking and/or backpacking in the summer. The Five Lakes Trail is one of the most popular trails on the TNF. On the Five Lakes Trail, hikers ascend for about 1,200 feet over the span of less than 2 miles to access the National Forest System-GCW and enjoy expansive views of Alpine Meadows and the surrounding mountains along the way.

Exhibit 4.2-2 Looking Southwest onto Ridge That Separates Caldwell Property and National Forest System-GCW (Existing Conditions)

Viewpoint Locations

For this analysis, 16 viewpoint locations have been identified to provide a representative sampling of the views within the study area. These were selected from hundreds of viewpoints evaluated, as it would have been impractical to document visual impacts from every location in the viewshed. Selected viewpoints were chosen to provide vantage points from highly frequented or prominent public areas, visually sensitive vistas, and areas with a high frequency of viewers. Five of these (including one site along Alpine Meadows Road, two sites at the Alpine Meadows base terminal, and two sites along Squaw Valley Road) experience widely varying conditions between the winter and summer months. As a result, these five viewpoint locations were analyzed during both summer and winter conditions, which resulted in a total of 21 views being selected for detailed viewpoint analysis (i.e., five of the 16 viewpoints have both a summer view and a winter view provided from the same location).

Visual simulations of the project under each Alternative were then created for each of the 21 selected views (discussed in more detail below). The existing condition for each view is described here. Numeric viewpoint locations are presented in Exhibit 4.2-3. Existing condition photos for each of the views can be found in Appendix D.

Views 1 and 2 – Alpine Meadows Road (Winter and Summer, Facing West)

The Alpine Meadows Road viewpoint looks westward onto the ridge that separates the Caldwell property and the National Forest System-GCW (see Figures D-1a and D-2a). In the foreground, the only development that can be seen from this viewpoint is the road itself, and the power poles and power lines that run parallel to it. In the winter setting, most of the hills surrounding Alpine Meadows Road are covered in snow. In the summer, no snow is visible whatsoever from the Alpine Meadows Road viewpoint; viewers can see an undeveloped ridgeline and the sparsely vegetated hillside below it, and the road is visible as a grey linear feature that contrasts with the dark green of surrounding vegetation. Most of the viewers at this location would be driving or biking and would experience this view for only several seconds, depending on mode of travel.

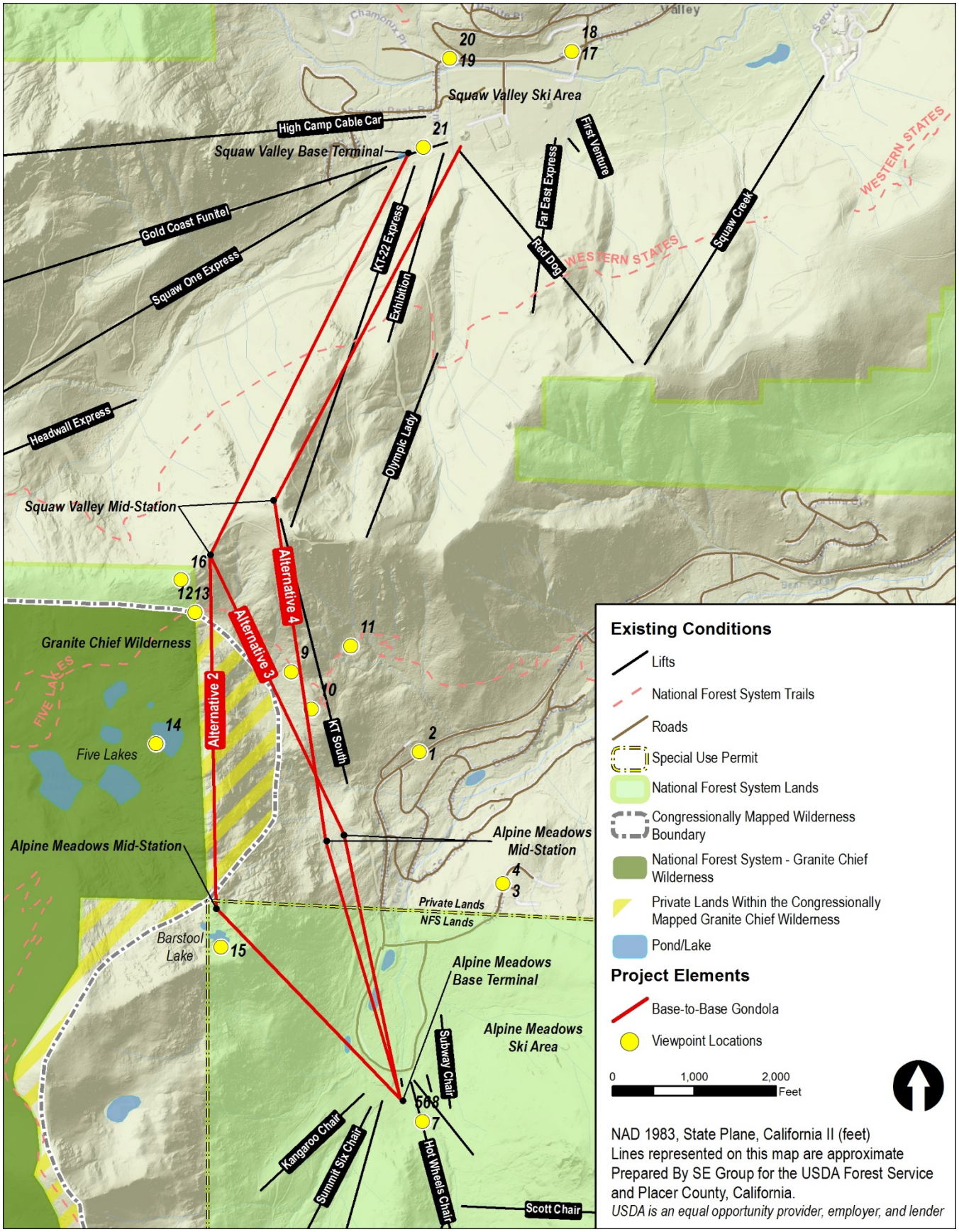


Exhibit 4.2-3 Viewpoint Locations

View 3 – Chalet Road (Summer, Facing West)
The Chalet Road (west) viewpoint looks westward onto the ridge that separates the Caldwell property and the National Forest System-GCW (see Figure D-3a). Viewers can see extensive tree cover in the foreground. In the middleground, viewers can see an undeveloped ridgeline and the sparsely vegetated hillside below it. The only development that can be seen from this viewpoint are some electrical lines in the foreground. Most of the viewers at this location would be driving or biking and would experience this view for only several seconds, depending on mode of travel.

View 4 – Chalet Road (Summer, Facing Northwest)
The Chalet Road (northwest) viewpoint looks onto the ridge that separates the Caldwell property and the National Forest System-GCW (see Figure D-4a). Viewers can see extensive tree cover in the foreground. In the middleground, viewers can see an undeveloped ridgeline and the sparsely vegetated hillside below it. Some power lines and associated infrastructure, along with a few residences situated along this road, can be seen in the foreground. Most of the viewers at this location would be driving or biking and would experience this view for only several seconds, depending on mode of travel.

View 5 – Alpine Meadows Base Terminal (Winter, Facing Northwest)
The Alpine Meadows base terminal (northwest) viewpoint looks onto the Alpine Meadows base area and the hillside behind it (see Figure D-5a). The terminals of the Summit Six, Kangaroo, and Roundhouse lifts, along with the main lodge and other base area infrastructure can be seen from this viewpoint in the foreground. In the middleground, viewers can see the beginning of the ridge that separates the National Forest System-GCW and the Caldwell property. In the winter, most of the base area and surrounding topography is covered in snow, and visible ski trails readily contrast with the surrounding winter vegetation. Most of the viewers at this location would be skiers, and duration of their view would range from several minutes for those getting on a chairlift, to potentially hours for those sitting at the lodge.

View 6 – Alpine Meadows Base Terminal (Summer, Facing Northwest)
The Alpine Meadows base terminal (northwest) viewpoint looks onto the Alpine Meadows base area and the hillside behind it (see Figure D-6a). The terminals of the Summit Six, Kangaroo, and Roundhouse lifts, along with the main lodge and other base area infrastructure can be seen from this viewpoint in the foreground. In the middleground, viewers can see the beginning of the ridge that separates the National Forest System-GCW and the Caldwell property. In the summer, the hills are heavily vegetated with exposed granite visible above. Most of the viewers at this location would be hikers or bikers, and duration of their view would range from several minutes for those heading uphill, to potentially hours for those sitting at the lodge.

View 7 – Alpine Meadows Base Terminal (Winter, Facing North)
The Alpine Meadows base terminal (north) viewpoint looks onto the Alpine Meadows base area and the topography to its north side (see Figure D-7a). The Meadow Chair, the main lodge, the parking lot, and other base area infrastructure can be seen from this viewpoint in the foreground. In the middleground, viewers can see the beginning of the ridge that separates the National Forest System-GCW and the Caldwell property. In the winter, most of the base area and surrounding topography are covered in snow, and visible ski trails readily contrast with the surrounding winter vegetation. Most of the viewers at this location would be skiers, and duration of their view would range from several minutes for those getting on a chairlift, to potentially hours for those sitting at the lodge.

View 8 – Alpine Meadows Base Terminal (Summer, Facing North)
The Alpine Meadows base terminal (north) viewpoint looks onto the Alpine Meadows base area and the topography to its north side (see Figure D-8a). The Meadow Chair, the main lodge, the parking lot, and other base area infrastructure can be seen from this viewpoint in the foreground. In the middleground, viewers can see the beginning of the ridge that separates the National Forest System-GCW and the Caldwell property. In the summer, the topography is heavily vegetated with exposed granite visible. Most of the viewers at this location would be hikers or bikers, and duration of their view would range from several minutes for those heading uphill, to potentially hours for those sitting at the lodge.

View 9 – Five Lakes Trail Switchback 1 (Summer, Facing North)
The Five Lakes Trail Switchback 1 viewpoint looks northwest onto the ridge that separates the Caldwell property and the National Forest System-GCW (see Figure D-9a). In the foreground is the Five Lakes Trail itself, a hillside with large trees and scattered vegetation, with exposed granite visible near the ridgeline above. A small powerline on the very top of the ridgeline is visible from this viewpoint. Most of the viewers at this location would be hikers heading into the National Forest System-GCW, and duration of their view would likely last several minutes, depending on hikers' ascent speed; these hikers generally have a high sensitivity toward the natural appearing and undeveloped landscape visible from this viewpoint.

View 10 – Five Lakes Trail Switchback 2 (Summer, Facing West)
The Five Lakes Trail Switchback 2 viewpoint looks west onto the ridge that separates the Caldwell property and the National Forest System-GCW (see Figure D-10a). In the foreground, viewers can see large trees and scattered vegetation on the lower parts of the hillside, and a considerable amount of exposed granite with some scattered vegetation further up, just below the ridgeline. No development whatsoever is visible from this viewpoint. Most of the viewers at this location would be hikers heading into the National Forest System-GCW, and duration of their view would likely last several minutes, depending on hikers' ascent speed; these hikers generally have a high sensitivity toward the natural appearing and undeveloped landscape visible from this viewpoint.

View 11 – Five Lakes Trail Water Break Hill (Summer, Facing Southwest)
The Five Lakes Trail Water Break Hill viewpoint looks southwest onto the ridge that separates the Caldwell property and the National Forest System-GCW (see Figure D-11a). In the foreground, viewers can see large trees, scattered vegetation, and some exposed granite visible along the ridge and all over the hillside. In the middleground, viewers can see *the Buttress* area at Alpine Meadows and several of the lift towers that are part of the incomplete and private chairlift on the Caldwell property. Most of the viewers at this location would be hikers heading into the National Forest System-GCW, and duration of their view would likely last several minutes, depending on hikers' ascent speed; these hikers generally have a high sensitivity toward the natural appearing and undeveloped landscape visible from this viewpoint.

View 12 – Five Lakes Trail Wilderness Boundary 1 (Summer, Facing South)
The Five Lakes Trail Wilderness Boundary 1 viewpoint looks south toward Alpine Meadows from the ridge that separates the Caldwell property and the National Forest System-GCW (see Figure D-12a). In the foreground, viewers can see large trees, scattered vegetation, and some exposed granite visible along this ridge and all over the hillside. No development whatsoever is visible from this viewpoint. Most of the viewers at this location would be hikers heading into the National Forest System-GCW, and duration of their view would likely last several minutes, depending on hikers' ascent speed; these hikers generally have a high sensitivity toward the natural appearing and undeveloped landscape visible from this viewpoint.

View 13 – Five Lakes Trail/Wilderness Boundary 2 (Summer, Facing East)
The Five Lakes Trail Wilderness Boundary 2 viewpoint looks east toward the Caldwell property from the ridge that separates the Caldwell property and the National Forest System-GCW (see Figure D-13a). In the foreground, viewers can see large pine trees, scattered vegetation, and some exposed granite visible all over the hillside. No development whatsoever is visible from this viewpoint. Most of the viewers at this location would be hikers heading into the National Forest System-GCW, and duration of their view would likely last several minutes, depending on hikers' ascent speed; these hikers generally have a high sensitivity toward the natural appearing and undeveloped landscape visible from this viewpoint.

View 14 – Five Lakes Granite Chief Wilderness (Summer, Facing East)
The Five Lakes Granite Chief Wilderness viewpoint looks east toward the Caldwell property and Squaw Valley (see Figure D-14a). In the foreground, viewers can see one of the Five Lakes, and large pine trees, scattered vegetation, and some exposed granite surrounding the lake. No development whatsoever is visible from this viewpoint. Most of the viewers at this location would be hikers in the National Forest System-GCW, and duration of their view would range from several minutes to several hours; these hikers generally have a high sensitivity toward the natural appearing and undeveloped landscape visible from this viewpoint.

View 15 – Barstool Lake (Summer, Facing Northeast)
The Barstool Lake viewpoint looks northeast from the top of the ridge that separates the Caldwell property and the National Forest System-GCW (see Figure D-15a). This viewpoint is located on NFS lands that are within the Alpine Meadows special use permit (SUP) boundary. In the foreground, viewers can see Barstool Lake, and large trees, scattered vegetation, and some exposed granite surrounding the lake. No development whatsoever is visible from this viewpoint. Most of the viewers at this location would be hikers within Alpine Meadows or who have just exited the National Forest System-GCW, and duration of their view would range from several minutes to several hours; these hikers generally have a high sensitivity toward the natural appearing and undeveloped landscape visible from this viewpoint.

View 16 – Squaw Saddle (Winter, Facing Southeast)
The Squaw Saddle viewpoint looks southeast from the saddle that separates the National Forest System-GCW and Squaw Valley (see Figure D-16a). Viewers can see large trees, scattered vegetation, and some exposed granite all over the hills in the foreground and middleground. In the background, viewers can see some parking and base area infrastructure for Alpine Meadows. Most of the viewers from this location would be skiers at Squaw Valley, and duration of their view would likely range from seconds to minutes, depending on how long viewers remain before skiing back down to the Squaw Valley base area; these skiers generally have a high sensitivity toward the natural appearing and undeveloped landscape visible from this viewpoint.

Views 17 and 18– Squaw Valley Road (Winter and Summer, Facing Southwest)
This Squaw Valley Road viewpoint looks southwest onto the base area of Squaw Valley (see Figures D-17a and D-18a). In the foreground, viewers can see various residences, powerlines, and Squaw Valley Road itself. In the middleground, viewers can see lifts extending out of the base area. In the winter, most of the valley is covered in snow with large trees visible throughout the hillsides. In the summer, the valley is characterized by large trees, scattered vegetation, and exposed granite in the upper reaches of the hillsides. Compared to winter, when snow-covered ski trails contrast with the surrounding green vegetation, ski trails in the summer comprise various shades of green that exhibit less contrast with the darker green of surrounding vegetation. Most of the viewers at this location would be driving or biking and would experience this view for only several seconds, depending on mode of travel.

Views 19 and 20 – Squaw Valley Road (Winter and Summer, Facing South by Southwest)
This Squaw Valley Road viewpoint looks south/southwest onto the base area of Squaw Valley (see Figures D-19a and D-20a). In the foreground, viewers can see various residences, powerlines, Squaw Valley Road itself, the parking lot. In the middleground, viewers can see chairlifts like KT-22 Express Exhibition Chair, and the Gold Coast Funitel extending out of the base area. In the winter, most of the valley is covered in snow with large trees visible throughout the hillsides. In the summer, scattered vegetation and exposed granite is visible all over the hillsides. Most of the viewers at this location would be driving or biking and would experience this view for only several seconds, depending on mode of travel.

View 21 – KT Sundeck/Condo Area (Summer)
The KT Sundeck/Condo Area viewpoint looks west from the base area of Squaw Valley (see Figure D-21a). In the foreground, viewers can see the area cleared and paved for the deck, powerlines, several lifts, large trees, scattered vegetation, and exposed granite higher up on the hillsides. Most of the viewers at this location would be guests at the Squaw Valley base area, and duration of their view would likely range from minutes to hours, depending on guests' activities.

4.2.1.2 REGULATORY SETTING

Federal

Built Environment Image Guide
The Built Environment Image Guide (BEIG) is a manual for the "thoughtful design and management" of the built environment contained within the National Forests (U.S. Forest Service 2001). The Forest Service defines the built environment as "the administrative and recreation buildings, landscape structures, site

furnishings, structures on roads and trails, and signs installed or operated by the Forest Service, its cooperators, and permittees" (U.S. Forest Service 2001). All relevant guidelines in the BEIG must be referenced and adhered to for any development occurring on NFS lands. The BEIG divides the U.S. into eight provinces and combines common elements from the ecological and cultural contexts over large geographical areas; the TNF is within the North Pacific Province. Site development, sustainability, and architectural character should conform to BEIG guidelines described for this Province. The architectural guidelines for this Province include siting, massing and scale, base, walls, windows and openings, roofs, structure, materials, color, sustainability and synthesis of structures with their settings. Refer to the BEIG for design guidelines relevant to the North Pacific Province (and those that are applicable to all provinces).

Tahoe National Forest Plan and Resource Management Plan and Sierra Nevada Forest Plan Amendment

The Tahoe National Forest Plan and Resource Management Plan (LRMP) (U.S. Forest Service 1990) directs management of the TNF. The Sierra Nevada Forest Plan Amendment Record of Decision Final Supplemental EIS (SNFPA) (U.S. Forest Service 2004) amended the LRMP in 2004. The LRMP and SNFPA, collectively referred to as the Forest Plan, established standards and guidelines related to visual resources. As part of the analysis conducted for this Final EIS/EIR, these standards and guidelines were applied and evaluated for consistency.

The Forest Plan subdivides the TNF into numerous management areas to provide management strategies that are well-tailored to specific areas. The project area for the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project lies within management area 086 – Scott (Scott Management Area). For the Scott Management Area, one of the provided policies under standards and guidelines directly relates to the established VQOs in the area:

> Visual Quality Objective – Partial retention [applies] for upslope facilities and ski runs. Modification [applies] for base facilities, campgrounds, [and within the developed sites]. The sites will, however, meet the partial retention VQO when viewed as middleground from travel routes and other occupancy sites. Partial retention [applies] for acres seen in the foreground from subdivisions.

The Forest Plan provides additional detail for the *Partial Retention* and *Modification* VQOs that is specific to the TNF (U.S. Forest Service 1990):

> Partial Retention: Duration of visual impact reduction in form, line, color, and texture to meet Partial Retention VQO should be accomplished as soon after project completion as possible or at a minimum within the first year.
>
> Modification: Duration of visual impact reduction in form, line, color, and texture should be accomplished in the first year or at a minimum should meet existing regional guidelines.

Full definitions of these applied VQOs are provided below, in Section 4.2.2.1.

State

California Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature in 1963 and is managed by the California Department of Transportation (Caltrans). The goal of this program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. A highway may be designated "scenic" depending on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view (Caltrans 2011).

The California Scenic Highway Program includes a list of highways eligible to become, or designated as, official scenic highways; and includes a process for designation of official state or county scenic highways. SR 89, which runs parallel to the Truckee River east of the project site, is an "Eligible" route under the

Scenic Highway Program (see Exhibit 1-2 in Chapter 1, "Introduction," for the land ownership breakdown of the project area) (Caltrans 2018).

Local

Placer County General Plan

The relevant goals and policies of the *Placer County General Plan* (Placer County 2013), with respect to visual resources, are listed below.

Visual and Scenic Resources

The overarching Goal 1.K for visual and scenic resources in the *Placer County General Plan* is to "protect the visual and scenic resources of Placer County as important quality-of-life amenities for County residents and a principal asset in the promotion of recreation and tourism" (Placer County 2013). The relevant policies intended to carry out this goal are listed below:

- **Policy 1.K.1.** The County shall require that new development in scenic areas (e.g., river canyons, lakes watersheds, scenic highway corridors, ridgelines and steep slopes) is planned and designed in a manner which employs design, construction, and maintenance techniques that:
  - avoids locating structures along ridgelines and steep slopes;
  - incorporates design and screening measures to minimize the visibility of structures and graded areas; and,
  - maintains the character and visual quality of the area.
- **Policy 1.K.2.** The County shall require that new development in scenic areas be designed to utilize natural landforms and vegetation for screening structures, access roads, building foundations, and cut and fill slopes.
- **Policy 1.K.3.** The County shall require that new development in rural areas incorporates landscaping that provides a transition between the vegetation in developed areas and adjacent open space or undeveloped areas.
- **Policy 1.K.4.** The County shall require that new development incorporates sound soil conservation practices and minimizes land alterations. Land alterations should comply with the following guidelines:
  - limit cuts and fills;
  - limit grading to the smallest practical area of land;
  - limit land exposure to the shortest practical amount of time;
  - replant graded areas to ensure establishment of plant cover before the next rainy season; and
  - create grading contours that blend with the natural contours on site or with contours on property immediately adjacent to the area of development; and,
  - provide and maintain site-specific construction Best Management Practices (BMPs).
- **Policy 1.K.5.** The County shall require that new roads, parking, and utilities be designed to minimize visual impacts. Unless limited by geological or engineering constraints, utilities should be installed underground and roadways and parking areas should be designed to fit the natural terrain.

- **Policy 1.K.6.** The County shall require that new development on hillsides employ design, construction, and maintenance techniques that:
  - ensure that development near or on portions of hillsides do not cause or worsen natural hazards such as erosion, sedimentation, fire, or water quality concerns;
  - include erosion and sediment control measures including temporary vegetation sufficient to stabilize disturbed areas;
  - minimize risk to life and property from slope failure, landslides, and flooding; and
  - maintain the character and visual quality of the hillside.

Scenic Routes

The project is in proximity to SR 89 and Squaw Valley Road, both of which were designated as scenic routes in the 1977 *Placer County General Plan Scenic Highway Element*. The goal for scenic routes in the *Placer County General Plan* is to "develop a system of scenic routes serving the needs of residents and visitors to Placer County and to preserve, enhance, and protect the scenic resources visible from these scenic routes" (Placer County 2013). The relevant policies intended to carry out this goal are listed below:

- **Policy 1.L.2**. The County shall use scenic routes to link major points of historical and cultural interest and recreational activity within the County.
- **Policy 1.L.3**. The County shall protect and enhance scenic corridors through such means as design review, sign control, undergrounding utilities, scenic setbacks, density limitations, planned unit developments, grading and tree removal standards, open space easements, and land conservation contracts.
- **Policy 1.L.8.** The County shall include aesthetic design considerations in road construction, reconstruction, or maintenance for all scenic routes under County jurisdiction.

Squaw Valley General Plan and Land Use Ordinance

The *Squaw Valley General Plan and Land Use Ordinance* (SVGPLUO) (Placer County 2006) is a combined community plan and implementing document that was adopted in 1983 and last amended in 2006. The policies, objectives, recommendations, and standards contained in the SVGPLUO are intended to guide the development of Squaw Valley during the life of the SVGPLUO.

Purposes, Principles, and Goals of the Squaw Valley General Plan and Land Use Ordinance

According to the SVGPLUO, the purpose of the plan is to "establish a planning framework to ensure that Squaw Valley is developed into a top quality, year-round, destination resort. The Plan area shall have the capacity to serve and house the optimum number of tourists, visitors, and residents set forth in this Plan without adversely impacting [sic] the unique aesthetic and environmental assets of Squaw Valley" (Placer County 2006).

The SVGPLUO notes that the visual characteristics of the plan area can be divided into two categories of equal importance: natural features and human-made features.

The natural features are primarily the mountain slopes, peaks, the meadow and adjoining area, and the water courses. The SVGPLUO states that the "mountainous slopes, particularly those visible from the commercial village, Squaw Valley Road, and the single-family home subdivision along the north side of Squaw Valley Road, must be carefully managed to preserve their general forested appearance. Development should not be visually dominant in any area outside the commercial core" (Placer County 2006). The analysis notes that transition zones between two distinct landforms or visual features are important to preserve; these transition zones include meadow edges where forested slopes meet the Valley floor, and the transition area between stream and upland zones.

The SVGPLUO incorporates the protections afforded to scenic routes in the *Placer County General Plan*, as described above under "Scenic Routes."

Height Restrictions

The SVGPLUO contains the following height restrictions for these land use districts pertaining to buildings (Placer County 2006):

- Section 137.10. The maximum permitted height of structures within the Low Density Residential, Forest Recreation and Conservation Preserve Land Use districts shall be 30 feet; measured as the vertical distance from the highest point of the structure (excluding chimneys) to the average of the highest and lowest points where the exterior walls touch the natural grade.

- Section 137.12. The maximum average height of a building within the HOR, EC, AC, and HC Land Use districts shall not exceed 35'. To encourage sloped roofs, the average height shall be measured at the mid-point between the eave and ridge. The height shall be measured from the average finished grade under the building and parking levels contained within a structure shall not be counted in calculating height. (Advisory Comment: The intent of this regulation is to encourage sloping roofs, normally with a pitch greater than 5:12, it is not intended to permit tall, flat-roofed structures with low portions of the building used to average the overall height. The design review process can result in lower height limits being established where the intent of this section is not being met).

- Section 220.16. There will be no specific height limitations in this [Village Commercial] district, but height limits shall be set for particular developments through the design review process where other developed or developable parcels are affected by a proposed building.

Alpine Meadows General Plan

The *Alpine Meadows General Plan* serves as a master plan for future growth at the ski area. It includes plans for conservation, economics, housing, land use, public buildings, public services and facilities, recreation, and other plans relating to future development of the area. General goals, objectives, and procedures of the *Alpine Meadows General Plan* that are relevant to visual resources in the project area include the following (Placer County 1968):

- Maintain the open, natural, mountain-recreation character. All aspects of the vast, unique and outstanding physical beauty of the area must be consciously and continuously preserved.

In addition to this general goal, the *Alpine Meadows General Plan* addresses visual character of the area under Section B – Specific Approaches, Principles and Standards:

> Appearance: The outward manifestation of a successful planning program can best be observed in the environment that is created… The appearance of the total area must be as thoughtfully considered as the relationship of land uses. Since the basic "reason" for the area is still largely dependent on residential values, appearance is vital. In fact, the continuing quality of the overall appearance may dictate the degree of continuing attraction and prosperity. Special attention should be given to "little things" like directional signs, litter cans, fences, dead trees and signs. Architectural controls, as administered through both the County and Home's Association, must be established and maintained.

While this language does not establish any concrete standards that must be adhered to and instead offers recommendations for maintaining the quality of visual resources at the ski resort, it makes clear that maintenance of the area's stunning visual character is a priority for the managers of Alpine Meadows.

4.2.2 Analysis Methods

4.2.2.1 METHODS AND ASSUMPTIONS

Visual Management System

Since the mid-1970s, the Forest Service has utilized the Visual Management System (VMS) to measure the inherent visual quality of NFS lands. The VMS helps Forest Service managers evaluate the degree of alteration of NFS lands for use in inventory and management (U.S. Forest Service 1974). The Scenery Management System (SMS) was published in 1995 and is the most recent Forest Service system for managing scenery resources. However, the LRMP, discussed above, was published in 1990, so it utilizes the VMS to measure and manage inherent visual quality. For this reason, the VMS is used for this scenery analysis instead of the SMS.

Existing visual quality and changes to this condition are measured and assessed through a number of indicators related to the characteristic landscape, distance zones, and viewer sensitivity levels. The VMS describes these indicators as follows (U.S. Forest Service 1974):

- The characteristic landscape is the naturally established landscape being viewed. It visually represents the basic vegetative patterns, landforms, rock formations, and water forms which are in view. Dominance elements (form, line, color, and texture) are the simplest visual recognition elements which make up the characteristics landscape; an observer sees landscapes in terms of form, line, color, and texture.

- Distance zones are divisions of a particular landscape being viewed. The three distance zones are:

  - Foreground: the limit of this zone is based upon distances at which details can be perceived. Individual leaves, flowers, twigs, bark texture, and other details are visible closest to the observer, and individual boughs of trees form texture. For this analysis, foreground is defined as the area within 0.5 mile of the observer.

  - Middleground: Texture in this zone is normally characterized by the masses of trees in stands of uniform tree cover. Individual tree forms are usually discernible only in very open or sparse stands. For this analysis, middleground is defined as the area between 0.5 and 4.3 miles of the observer. Use of the Snellen eye chart helped to determine that a viewer would not be able to recognize project components from a distance greater than 4.3 miles.[1]

  - Background: This zone extends from middleground to infinity. Texture in stands of uniform tree cover is generally very weak or nonexistent. In this distance zone, line, form, and texture are generally not discernable or recognizable to the viewer. For this analysis, background is defined as the area beyond 4.3 miles of the observer.

- Viewer sensitivity levels are incorporated into the VMS as a measure of a person's concern for the scenic quality of the landscape. Sensitivity is determined based on the type of use (a visitor driving on a road may have less sensitivity than a visitor recreating on a trail or water body), volume of use (higher numbers of users correspond to increased sensitivity), and duration of view (longer view durations correspond to increased sensitivity).

[1] The Snellen eye chart is a standardized method used to determine at what distance a person with 20/20 vision is no longer able to recognize a feature. At a distance of approximately 20 feet, a person with 20/20 vision can recognize a standard shape (the Snellen eye chart uses letters with specific proportions) with a height of 0.35 inch. Beyond 20 feet, the viewer would no longer be able to recognize the letter.

Visual Quality Objectives

VQOs, as defined in the VMS, are based on the physical characteristics of the land and the sensitivity of the landscape setting as viewed by humans (described above). VQOs define how the landscape will be managed, the level of acceptable modification permitted in the area, and under what circumstances modification may be allowed. VQOs range from *Preservation* (untouched environment) to *Maximum Modification* (major disturbance). VQOs guide management of visual resources only on NFS lands. Within the project area, portions of Alpine Meadows located on NFS lands are the only portions of the project area managed to be consistent with assigned VQOs. Squaw Valley and the Caldwell property are privately owned and are not managed to be consistent with any VQO, but rather are subject to the visual standards implemented by state and local jurisdictions (see below).

Variety class and sensitivity levels are two tools incorporated by the Forest Service to determine which VQO will be assigned to a certain area. Variety classes are obtained by classifying the landscape by degree of diversity to determine the most important landscapes from the standpoint of scenic quality; sensitivity levels are a measure of people's concern for the scenic quality of a certain landscape (U.S. Forest Service 1974). These factors contributed to the Forest Service's determination in the LRMP that Alpine Meadows is assigned VQOs of *Partial Retention* and *Modification* at the upslope facilities and base area, respectively. The VMS provides the following definitions for these VQOs (U.S. Forest Service 1974):

> Partial Retention: Management activities remain visually subordinate to the characteristic landscape when managed according to the partial retention visual quality objective. Activities may repeat form, line, color, or texture common to the characteristic landscape but changes in their qualities or size, amount, intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, or texture which are found infrequently or not at all in the characteristic landscape, but they should remain subordinate to the visual strength of the characteristic landscape.
>
> Modification: Under the modification visual quality objective management activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alteration must borrow from naturally established form, line, color, or texture so completely at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional parts of these activities such as structures, roads, slash, root wads, etc., must remain visually subordinate to the proposed composition.
>
> Activities which are predominately introduction of facilities such as buildings, signs, roads, etc., should borrow naturally established form, line, color and texture so completely and at such scale that its visual characteristics are compatible with the natural surroundings.

While the line and form of existing ski trails and installed infrastructure both contrast noticeably with natural landscape characteristics, they do not violate the *Partial Retention* VQO because they do not dominate the characteristic landscape and are therefore visually subordinate to it. A short-term negative impact on visual resources associated with the construction phase of a project may be permitted by the deciding Forest Service official.

A project or activity on NFS lands cannot create any permanent conflicts with applicable VQOs if it is to be consistent with relevant Forest Service management direction as it pertains to visual resources.

The analysis that follows utilizes the methodology put forward by the VMS to characterize visual impacts associated with the action alternatives (U.S. Forest Service 1974). Consistency of the alternatives with federal, state, and local regulations is discussed in Impact 4.2-1 under each alternative. Two primary methods are used in this analysis: viewshed analysis and viewpoint analysis.

Viewshed Analysis

A broad scale viewshed analysis of the regional visibility of the project was conducted as a means of analysis for the visual impacts that may occur outside of the immediate project area. The overall project "viewshed" is defined as the entire area from which the project could be potentially visible and may extend to surrounding mountain tops and adjacent valleys.

Geographic Information Systems were used to calculate the potential visibility of the project based on digital terrain data and project data. The analysis uses point data for towers based on current engineered tower locations and heights. The analysis used Digital Elevation Model data acquired from the TNF at 3.3-foot resolution based on LiDar[2]. For this "line of sight" assessment, all surrounding areas which were not specifically blocked by natural topography but had potential to have visibility were identified as being within the "Zone of Potential Visibility." This viewshed analysis provides a quantitative assessment of the visual impacts associated with the project through calculation of the acreage of the Zone of Potential Visibility associated with each action alternative.

The Zone of Potential Visibility was further refined for the project based on the maximum distance from which a person, with average vision, would be able to physically recognize the form and structure of the proposed lift infrastructure. The mean height of the proposed gondola towers (as designed at the time of analysis) is 53.74 feet. The relative proportions from the Snellen eye chart were extrapolated to determine the maximum distance from which a person with 20/20 vision could recognize an average-height lift tower for each alternative. Through this method it was determined that a viewer would not be able to recognize/identify project infrastructure at a distance greater than 6.9 miles. Therefore, the Zone of Potential Visibility was defined as a 6.9-mile buffer area from the alignment of each alternative. While the definition provided above for the background distance zone states that line, form, and texture of landscapes are generally not discernable or recognizable to the viewer beyond 4.3 miles, the upper range for potential visibility was increased due to the large mean height and mass of the proposed gondola towers, their cross-arms and sheave assemblies.[3] Exhibits 4.2-4, 4.2-5, and 4.2-6 represent the Zone of Potential Visibility associated with each action alternative.

This viewshed analysis accurately accounts for topographic features, but, does not incorporate potentially obscuring features such as vegetation or existing structures. Spatial data for these features, such as vegetation height, was not available at this scale and may vary greatly based on seasonality. It is expected that existing vegetative screening would have the effect of considerably reducing the overall potential visibility of the project. dependent upon the specific location and vantage of the viewer. Because it does not take into account potentially obscuring vegetation, the viewshed analysis is a conservative approximation of the Zone of Potential Visibility.

In Section 4.2.3, "Direct and Indirect Environmental Consequences," this viewshed analysis is addressed under "Other Regional Viewpoints."

[2] LiDar (Light Detection and Ranging) is a surveying method that measures distance to a target by illuminating that target with pulsed laser lights.

[3] The letters used in the Snellen eye chart have an overall width equal to their height, which contributes additional "mass" to the object in question. Because the towers would likely have a diameter of approximately 3.3 feet and the cross-arm would have similarly low mass, the mass of the structures would be relatively lower than the standard features used in the Snellen eye chart. It is therefore probable that the towers would cease to be recognizable by the average viewer from less than 6.9 miles. Thus, the Zone of Potential Visibility is a conservative estimation.

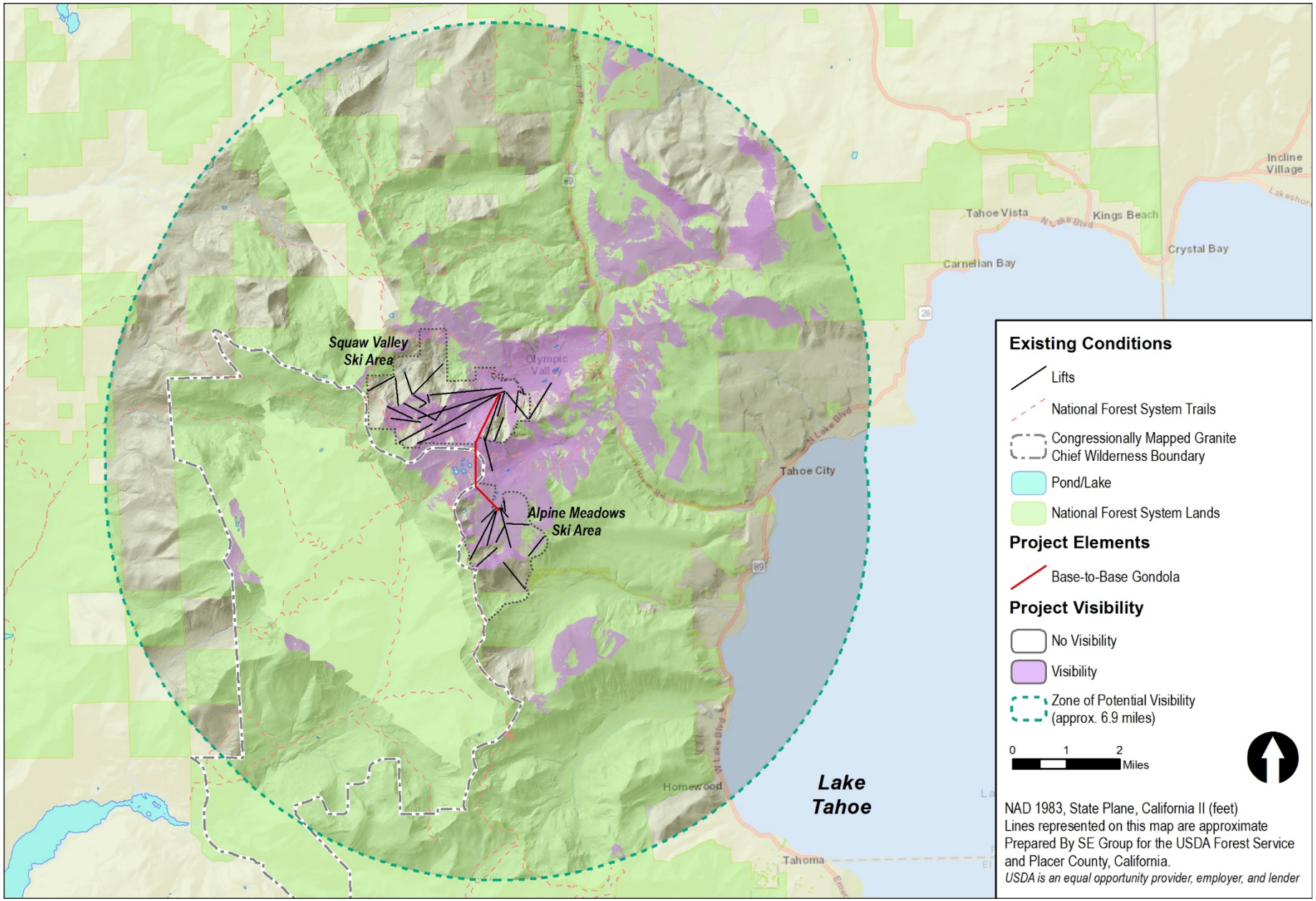


Exhibit 4.2-4 Viewshed Associated with Alternative 2

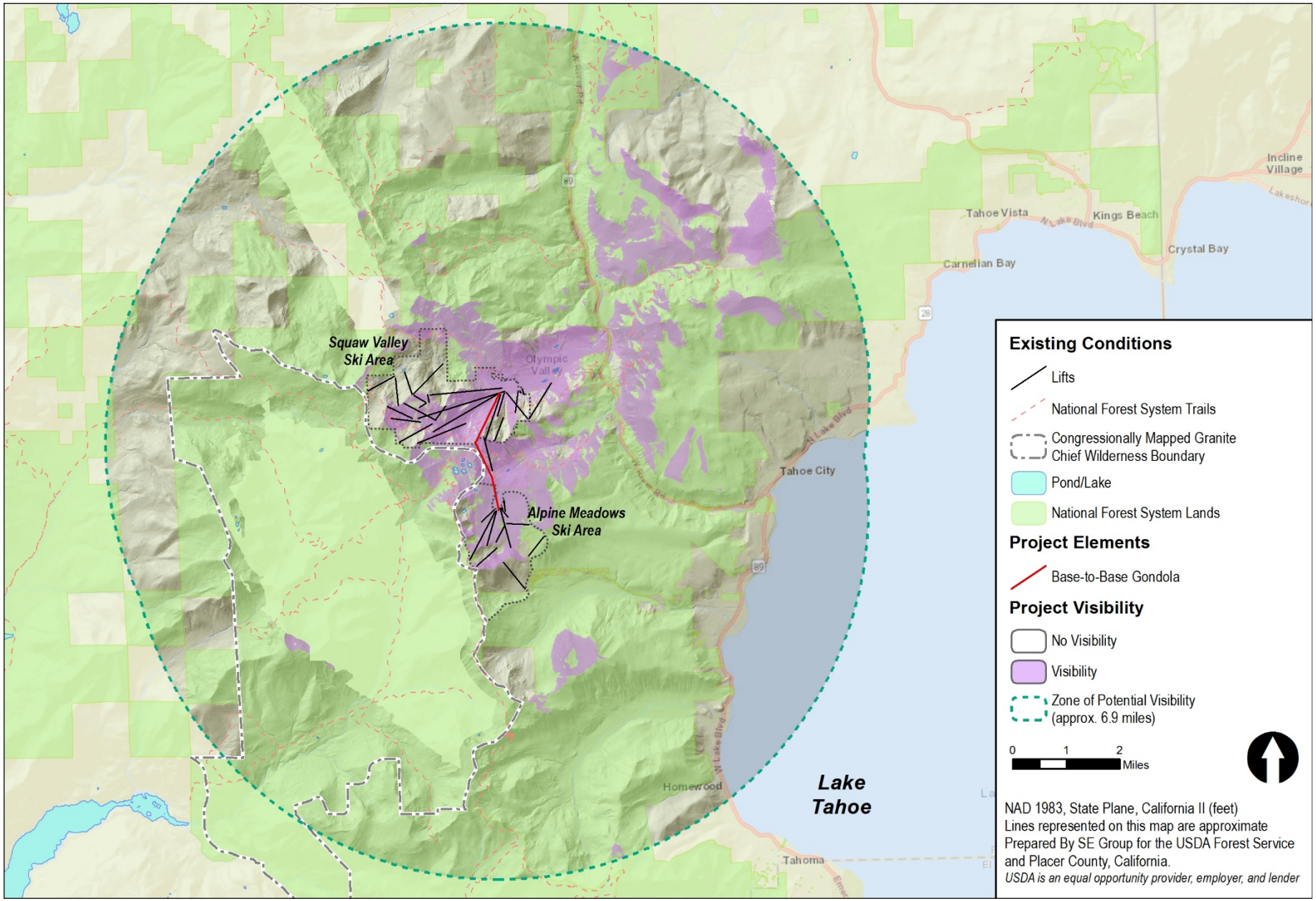


Exhibit 4.2-5 Viewshed Associated with Alternative 3

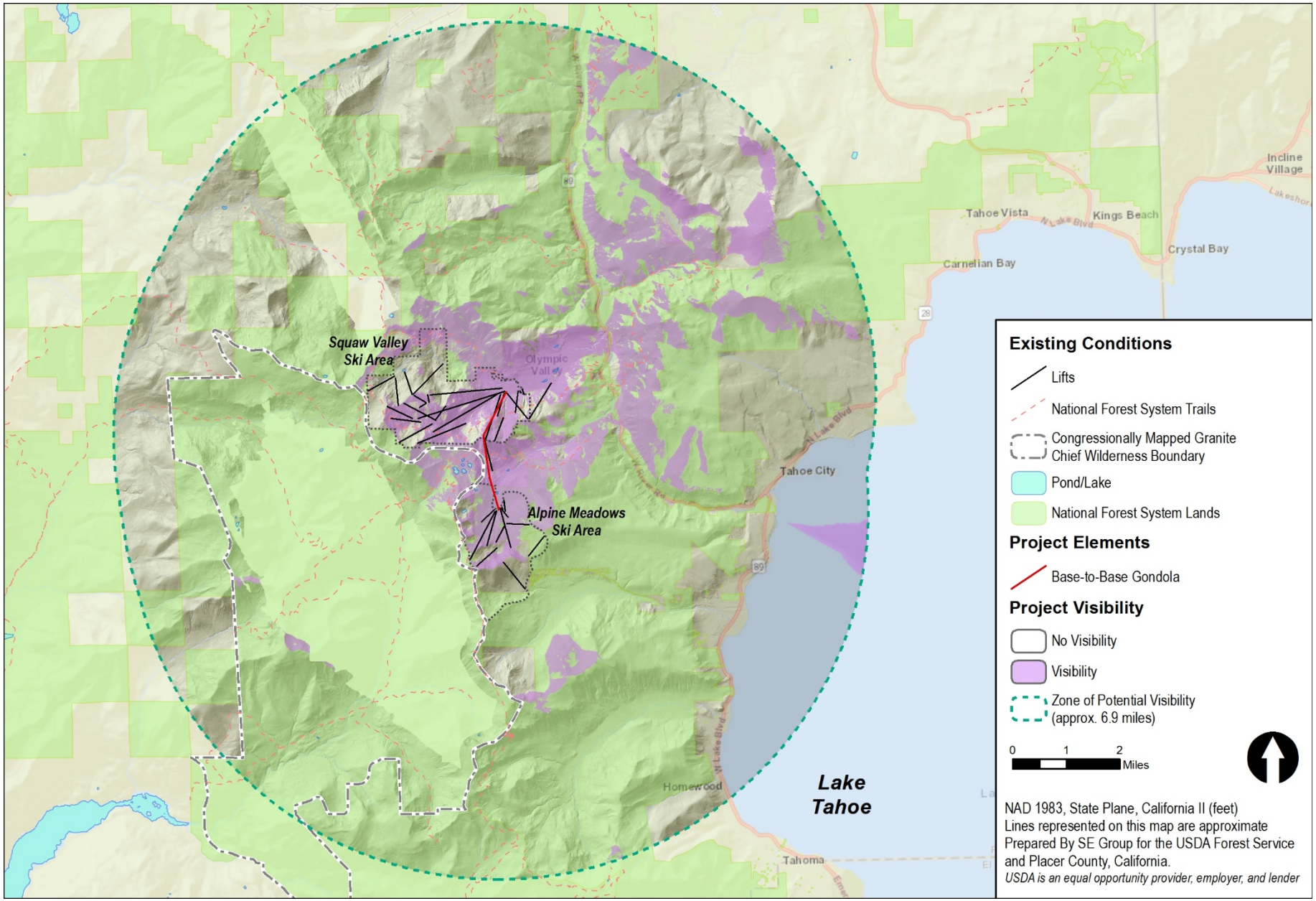


Exhibit 4.2-6 Viewshed Associated with Alternative 4

Viewpoint Analysis

In addition to the viewshed analysis of the Project's regional visibility, 16 viewpoints were selected for analysis of the foreground, middleground and background views (see discussion of viewpoint locations above in Section 4.2.1.1). This allowed for comparison of the existing condition at these locations with the condition expected to result from implementation of the action alternatives. The 16 viewpoints were identified to provide vantage points from highly frequented or prominent public areas, visually sensitive vistas, and areas with a high volume/frequency of viewers. Five of these viewpoints experience widely varying conditions between the winter and summer months, so existing conditions for these five viewpoint locations were analyzed during both winter and summer conditions. This resulted in a total of 21 views of existing conditions being selected for detailed viewpoint analysis. Exhibit 4.2-3, above, represents the locations of each of the 16 viewpoints (and the 21 views analyzed from these locations) within the study area.

Photo-simulations were prepared for each of the 21 selected views to illustrate the anticipated view under each action alternative. The photo-simulations were created by overlaying the latest project planning/design details onto Digital Elevation Models and rendering the anticipated changes to the view using several software programs (more detail on process of creating visual simulations below).

In addition to the 16 viewpoints selected for detailed analysis, hundreds of locations throughout the project area were visited and are photographically documented in the project file.

Effects Analysis Methodology

Visual Simulation Process

The objective of creating visual simulations is to provide an accurate representation of how the action alternatives are anticipated to appear if constructed. As described above, sixteen representative viewpoint locations around the project area were selected as locations that would accurately represent the overall visual impacts that may occur with implementation of any of the action alternatives. Viewpoint locations that generally experience a high viewing frequency or viewing duration were determined to be most representative. For example, five views along the Five Lakes Trail were analyzed because of its popularity; it is the most used trail on the Truckee Ranger District, it provides quick access to the National Forest System-GCW and provides the shortest access to the Pacific Crest Trail between the Barker pass and Donner Summit. These locations along the Five Lakes Trail are some of the locations from which the development could be visible and are also commonly used by relatively large numbers of people.

Local professional photographer Grant Kaye captured over 4,000 photographs of the project area from dozens of locations using GPS enabled equipment. All photos were taken with a focal length of 42mm to represent perspective of the human eye. Multiple photos were taken at each site to ensure that the best vantage points were captured. As five of the viewpoint locations would experience visual impacts in both the winter and summer, photographs were taken at these locations during both seasons.

The project design information used to create the visual simulations was provided by SE Group and Leitner Poma of America. SE Group provided information on specific alignments of each action alternative, clearing limits, terminal site plans and grading; Leitner Poma of America provided information on lift profiles, tower locations, tower heights, declination, number of gondola carries and their spacing, and rope sag between towers.

A 3D model was created for each alternative alignment using SketchUp and 3D Studio Max software, which incorporates the spatial information of each model and relates it to real world coordinates. A perspective image was then created by using the parameters of the photograph for each.

Ultimately, the 21 visual simulations created for each alternative allowed for a qualitative analysis of the visual changes that are anticipated to occur with implementation of any of the action alternatives. Visual simulations and existing conditions images are provided in Appendix D.

An online Story Map has been created to provide an opportunity for readers to examine the distribution of the selected viewpoints around the study area and the related views associated with each alternative. Follow this link to access the Story Map.[4]

All images in the Story Map are also contained within Appendix D; the Story Map simply provides an alternative method of viewing these images.

Analysis of Visual Simulations

Analysis of the visual simulations was then broken into three categories: consistency with federal, state, and local regulations; visual character; and night lighting and glare. These topics are addressed in the analysis provided for each alternative in Section 4.2.3.

Consistency with federal, state, and local regulations is a metric of analysis that discusses project components and ensures consistency with all relevant plans and policies, at various governmental levels.

Visual character is a broad metric of analysis and considers visual impacts on scenic vistas and scenic roads, along with general changes to visual quality caused by development; the viewpoint analysis contained in the visual character section is qualitative in nature, whereas the viewshed analysis component of the visual character section is quantitative. Analysis of impacts on visual character were further divided into the different types of landscapes through which the proposed gondola would pass; the landscapes chosen were "base areas," "ridgelines and sparsely vegetated hillsides," and "highly utilized roads." This approach was taken because potential visual impacts vary greatly depending on the type of landscape through which the Project would occur. For example, presence of gondola infrastructure would constitute a negligible change to scenery at the ski area base areas in comparison to the middle sections, which pass through previously undisturbed and natural-appearing landscapes. This methodology allowed for in-depth analysis of the wide spectrum of impacts on visual character that could potentially result from this development; analysis includes a statement of the anticipated visual character impacts' consistency or inconsistency with the area's established VQOs.

Night lighting and glare is a binary category of analysis. Analysis for this category simply includes discussion of whether lighting fixtures, for maintenance and emergencies, would be installed on infrastructure within the viewshed, and whether glare from installed infrastructure could possibly be present within the study area.[5]

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 included in the Mitigation Monitoring Reporting Program for the purposes of CEQA and imposed as conditions of approval of the Placer County conditional use permit (CUP). The text of all RPMs is provided in Appendix B. The potential effects of implementing the action alternatives are analyzed as follows: As it relates to NEPA, 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

[4] Hard copy readers can access the Story Map at the following URL: https://segroup.maps.arcgis.com/apps/MapJournal/index.html?appid=5f9a2e377678469e904afb35809cac27.

[5] For clarity, no lighting fixtures would be installed at either ski resort to provide for night-skiing beyond that which already exists on the Squaw Valley Mountain Run (which is not a part of this project). This component of the analysis refers exclusively to the potential installation of night lighting fixtures on gondola infrastructure, such as mid-stations, terminals, and cabins.

County mitigation monitoring and reporting program, and their implementation would be ensured by the CUP's conditions of approval. All RPMs are considered roughly proportional and have an essential nexus to the impacts they reduce.

4.2.2.2 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 visual resources. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Discussion of the existing visual quality of the project area by distance zone **(Impact 4.2-2)**. Include narrative discussion of:
  - Landscape features/variety/dominance elements (form, line, color, texture)
  - Viewer sensitivity levels
- Discussion of proposed changes to visual quality **(Impact 4.2-2)**. Include discussion of:
  - Changes to landscape dominance elements (form, line, color, texture) and degree of contrast that results from the presence of the project compared to the existing condition
  - View duration
  - Number of viewers (approximate)
- Discussion of potential visibility of the action alternatives (calculation of viewshed) **(Impact 4.2-2)**
- Compliance with Forest Plan standards and guidelines for visual resources within the SUP area and from established viewpoints by meeting Visual Quality Objectives **(Impact 4.2-1)**
- Compliance with the intent of the BEIG for all proposed structures on NFS lands. Structures should meet Forest Plan scenery guidelines for materials, colors and reflectivity **(Impact 4.2-1)**
- Compliance with *Squaw Valley General Plan* direction for visual resources **(Impact 4.2-1)**
- Discussion of existing and proposed views (approximated through photographic simulation and supported by topographic profiles) from identified viewpoints **(Impact 4.2-2)**
- Narrative discussion of existing views (including photographs) and potential changes to the view from viewpoints identified. Include quantitative analysis of visibility of the action alternatives, duration of view, number of viewers, and distance from project **(Impact 4.2-2)**
- Narrative discussion of existing and proposed views for users in the National Forest System-GCW and on nearby dispersed recreation trails (including the Five Lakes Trail) **(Impact 4.2-2)**

- Narrative discussion of potential visibility from other regional viewpoints without photographic simulation, including SR 89 (a scenic byway), Lake Tahoe, the Pacific Crest Trail, Martis Peak, and other ski areas (Northstar and Sugar Bowl) **(Impact 4.2-2)**

- Discussion of lighting and hours/season of operation as well as potential glare-related visibility **(Impact 4.2-3)**

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 visual resources if it would:

- have a substantial adverse effect on a scenic vista **(Impact 4.2-2)**;

- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway **(Impact 4.2-2)**;

- substantially degrade the existing visual character or quality of the site and its surroundings **(Impact 4.2-2)**; or

- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area **(Impact 4.2-3)**.

4.2.2.3 ISSUES NOT DISCUSSED FURTHER

All visual resource issues addressed in the analytical indicators and significance criteria are evaluated below.

4.2.3 Direct and Indirect Environmental Consequences

4.2.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.2-1 (Alt. 1): Consistency with Federal, State, and Local Regulations

With no new project-related construction or operations, inconsistencies between Alternative 1 and the federal, state, and local plans and guidance presented in Section 4.2.1.2 would not occur. There would be no effects on visual resources in the project area; therefore, Alternative 1 would be in compliance with relevant federal, state, and local plans and guidance. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction or installation and operation of new facilities, and there would be no alteration of visual character anywhere in the project area. Inconsistencies between Alternative 1 and the federal, state, and local plans and guidance presented in Section 4.2.1.2 would not occur.

NEPA Effects Conclusion

With no new project-related construction or operations, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new project-related construction or operations, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.2-2 (Alt. 1): Visual Character (General Impact on Visual Character)

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. The project would not be approved or constructed. Therefore, no alteration of visual character from anywhere in the project area would occur. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction or installation and operation of new facilities. Therefore, there would be no alteration of visual character from anywhere in the project area.

NEPA Effects Conclusion
With no alteration of visual character, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no alteration of visual character, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.2-3 (Alt. 1): Night Lighting and Glare

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. The project would not be approved or constructed. Therefore, no additional lighting installments would be visible during the night and no structures that could generate glare would be constructed. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no additional lighting installments that would be visible during the night or construction of structures that could generate glare.

NEPA Effects Conclusion
With no additional lighting installments, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no additional lighting installments, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.2.3.2 ALTERNATIVE 2

Impact 4.2-1 (Alt. 2): Consistency with Federal, State, and Local Regulations

Alternative 2 would result in the construction of a gondola. This new construction would result in alteration of the visual character within the project area. No inconsistencies between Alternative 2 and the federal and state plans and guidance presented in Section 4.2.1.2 would occur. One inconsistency between Alternative 2 and Policy 1.K.1 of the *Placer County General Plan* would occur. Policy 1.K.1 directs that new development in scenic areas is required to be designed in a manner that avoids locating structures along ridgelines and steep slopes. The gondola alignment associated with Alternative 2 would extend along the ridgeline separating the National Forest System-GCW and the Caldwell property, which would represent an inconsistency with Policy 1.K.1; however, this inconsistency would not constitute a significant impact under CEQA because Policy 1.K.1 was not adopted as a threshold of significance under CEQA. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, this impact would be **minorly adverse** because of the inconsistency between Alternative 2 and Policy 1.K.1 of the *Placer County General Plan*. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**.

Forest Plan

The gondola terminal at the Alpine Meadows base area and the Alpine Meadows mid-station are located on NFS lands; the Alpine Meadows base area and the Alpine Meadows upslope facilities have been assigned VQOs of *Modification* and *Partial Retention*, respectively. All other gondola terminals and mid-stations, which are generally the project components with the greatest potential for impacts on visual resources, are located on private lands, which have no VQO assigned to them. While Alternative 2 may be visible from viewpoints within the National Forest System-GCW, which has been assigned a VQO of *Preservation*, no project components would be located on these lands.

Installation of the proposed gondola would increase the developed nature of the landscape surrounding the alignment, including in areas that are currently primarily natural as well as areas that are already heavily developed. The *Partial Retention* VQO is applicable at the Alpine Meadows mid-station, and allows for the introduction of form, line, color, or texture which are not found at all in the characteristic landscape if these elements remain subordinate to the visual strength of the characteristic landscape. Chairlifts that resemble the proposed gondola are already present in this area. While Alternative 2 would constitute an incremental addition to the built environment in this area, the presence of gondola infrastructure would not dominate the characteristic landscape. Alternative 2 would be compliant with the *Partial Retention* VQO designated for upslope facilities at Alpine Meadows.

It is important to note that all visual impacts discussed below would be reduced in the summer for upslope portions of the project area when gondola cabins would be removed and placed in storage facilities at the Squaw Valley and Alpine Meadows base stations until the following winter. However, the storage facilities at the base stations would be very visible and the white gondola cabins would contrast greatly with the darker earth tones visible during the summer season; at the base areas, the visual impacts associated with the project would increase during the summer due to storage of the gondola cabins. During most of the gondola operating season, the white gondola cabins would be on the line, and at the same time, there would be sufficient snow cover in the surrounding landscape for the cabins to blend well with their background. However, during the transitional seasons (defined as the early and late ski seasons) and periods of inconsistent snow cover (which are possible during both the transitional seasons and mid-season), it is possible that Alpine Meadows would still be open for public skiing and snowboarding and the gondola would be operational, and that at the same time southern aspect slopes of the project area would be mostly dry. During these scenarios, the white gondola cabins would contrast more heavily with the exposed vegetation and dirt in the background, causing the visual impacts associated with gondola infrastructure to be greater. The visual simulations do not account for these potential scenarios. Refer to Section 4.1, “Recreation,” and Section 4.3, “Wilderness,” for information on how this phenomenon may impact those resources.

During most of the summer, only gondola terminals/mid-stations, towers, and wire-rope would remain visible in the upslope portions of the project area. Some cabins would need to be put on the line for limited periods during the summer (less than ten times during the summer for all cars placed on the line, and three to five days per month for a limited number of cars placed on the line) in order to perform maintenance. Storage of the gondola cabins would considerably reduce overall infrastructural mass and therefore visual impacts within the upslope portions of the gondola alignment, as many of the predominantly natural landscapes through which the gondola would pass are utilized primarily by recreationists in the summer. While recreational use of the natural landscapes in the upslope portions of project area is not uncommon in the winter, these areas experience considerably more use during the summer.

The proposed storage facility housing the gondola cabins during the summer at the base area of Alpine Meadows would be consistent with the VQO of *Modification*, as this VQO allows for management activities to visually dominate the original characteristic landscape. The VMS also directs that lands managed to be consistent with the *Modification* VQO must borrow from naturally established form, line, color, or texture so completely at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type; this facility would be designed to blend with the surrounding landscape, and implementation of applicable RPMs (SCE-1, SCE-2, and SCE-4, listed and described below), along with the design review and approval process, would preclude the possibility of any inconsistency with the *Modification* VQO. While all project components would be compliant with the established VQOs of *Partial Retention* and *Modification* on the NFS lands within the project area directed by the VMS, the relevant policies of the BEIG would additionally be applied to further reduce visual impacts.

The Forest Plan also establishes policies for management of federally designated wilderness areas within the TNF, like the National Forest System-GCW. While there are certain locations within the National Forest System-GCW from which gondola infrastructure would be visible under Alternative 2, there is no legislation or policy that precludes development from being visible to recreationists from within federal wilderness areas. (Refer to Section 4.3, "Wilderness," for more information.)

State

Alternative 2 would be compliant with the California Scenic Highway Program, as SR 89 is an eligible route for designation as an official scenic highway but is not yet officially designated. Therefore, the protections afforded by the California Scenic Highway Program do not apply to SR 89. However, even if SR 89 were designated as a scenic highway, Alternative 2 would have limited, if any visibility from this roadway due to distance and topographic and vegetative screening.

Local

The only policy in local planning documents that would represent an inconsistency with Alternative 2 is Policy 1.K.1. of the *Placer County General Plan*, which states that new development in scenic areas is required by Placer County to be designed in a manner that "avoids locating structures along ridgelines and steep slopes." Various gondola alignments that would connect the Alpine Meadows and Squaw Valley base areas without traversing the ridgeline separating the National Forest System-GCW and the Caldwell property are feasible. Two of these are provided by Alternatives 3 and 4. Although Alternative 2 would be inconsistent with Policy 1.K.1 to a certain degree, this inconsistency would not constitute a significant impact because Policy 1.K.1 was not adopted as a threshold of significance under CEQA.

By their very nature, gondolas and ski lifts must extend along steep slopes to achieve their purpose. Given that the gondola is intended to connect the two ski resorts, all three action alternatives must also cross over the ridgeline which separates the two valleys. As such, it would not be possible for the gondola to avoid slopes and ridgelines, but rather the design must rely on other means to screen and minimize the visible impacts of the infrastructure. More specifically, the design of each alignment takes advantage of existing topography and vegetation to shield views and also incorporates design standards through the application of RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3. While Alternative 2 would traverse a lengthy distance of the ridgeline separating the National Forest System-GCW and the Caldwell property, Alternatives 3 and 4 cross over the ridgeline in one discrete location before diving down into Catch Valley, thus limiting the visible impacts of the gondola infrastructure to a greater extent than under Alternative 2. With these

design measures in place, all three gondola alignments achieve consistency with the goals and policies of Policy 1.K.1.

Alternative 2 would not create any inconsistencies with the height restrictions established for buildings in Section 137 of the SVGPLUO. Section 137.10 states that the "maximum permitted height of structures within the Low Density Residential, Forest Recreation and Conservation Preserve Land Use districts shall be 30 feet; measured as the vertical distance from the highest point of the structure (excluding chimneys) to the average of the highest and lowest points where the exterior walls touch the natural grade." Section 137.12 states that the "maximum average height of a building within the HOR, EC, AC, and HC Land Use districts shall not exceed 35'." While certain components of the gondola on the Squaw Valley side (multiple towers and possible the Squaw Valley mid-station and base terminal) would be contained within the Forest Recreation district and would exceed this height restriction, neither the towers, mid-station, or terminal would include exterior walls touching the natural grade. Refer to the visual simulations contained in Appendix D for images that indicate that these structures would not be enclosed spaces with exterior walls on either side. Specific language in Section 137.10 and the mention of "buildings" in Section 137.12 indicate that these height restrictions would not apply to any of the proposed infrastructure associated with the gondola.

Applicable RPMs

RPMs increase the likelihood that Alternative 2 would be compliant with all policies established for both public and private lands within the project area. With implementation of applicable RPMs, including but not limited to those listed below, Alternative 2 would be compliant with the applicable VQOs of *Partial Retention* and *Modification* at Alpine Meadows, as well as relevant state regulations; however, RPMs would not entirely eliminate any potential inconsistency between the gondola alignment under Alternative 2 and Policy 1.K.1 of the *Placer County General Plan.*

RPMs SCE-1, SCE-2, and SCE-4 require that the design, scale, and color of installed infrastructure meet relevant VQOs, and that colors used blend well with the forest background. RPMs SCE-1, SCE-7, SCE-8, and REV-1, and REV-3 require review and approval of specific project-level details before implementation of any of the action alternatives. These include, but are not limited, to review of all physical improvements, pertinent topographical features that may affect magnitude of impacts, and areas designated for tree removal. Final project authorization would depend on evaluation of each relevant RPM for visual resources, and this process may identify additional direction intended to further reduce visual impacts and ensure consistency with all applicable federal, state, and local plans. The comprehensive RPM table in Appendix B contains specific details about each of these RPMs. As part of the BEIG review process, the proposed gondola design would require final construction authorization by the Forest Service prior to implementation for those portions of the project located on NFS lands. Project components located on private lands would be subject to relevant local permits, design reviews, and approvals.

NEPA Effects Conclusion

Installation of the proposed gondola would increase the developed nature of the landscape surrounding the alignment, including in areas that are currently primarily natural as well as areas that are already heavily developed. While Alternative 2 would constitute an incremental addition to the built environment in the upslope areas at Alpine Meadows, the presence of gondola infrastructure would not dominate the characteristic landscape in these areas and therefore would not constitute an inconsistency with the relevant VQO of *Partial Retention* there. The proposed storage facility housing the gondola cabins during the summer at the base area of Alpine Meadows would not constitute an inconsistency with the VQO of *Modification*, as this VQO allows for management activities to visually dominate the original characteristic landscape. This facility would be designed to blend with the surrounding landscape, and implementation of applicable RPMs, along with the design review and approval process, would ensure consistency with the BEIG and preclude the possibility of any inconsistency with the *Modification* VQO. However, one inconsistency between Alternative 2 and Policy 1.K.1 of the *Placer County General Plan* would occur because the gondola alignment associated with Alternative 2 would extend along the ridgeline separating the National Forest System-GCW and the Caldwell property. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, this impact would be **minorly adverse** because of the

inconsistency between Alternative 2 and Policy 1.K.1 of the *Placer County General Plan*. RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 would reduce effects related to project consistency with federal, state, and local regulations.

CEQA Determination of Effects

Installation of the proposed gondola would increase the developed nature of the landscape surrounding the alignment, including in areas that are currently primarily natural as well as areas that are already heavily developed. Alternative 2 would create an inconsistency with Policy 1.K.1 of the *Placer County General Plan* because the gondola alignment associated with Alternative 2 would extend along the ridgeline separating the National Forest System-GCW and the Caldwell property; however, this inconsistency would not constitute a significant impact under CEQA for Impact 4.2-1 (Alternative 2) because Policy 1.K.1 was not adopted as a threshold of significance under CEQA. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 would reduce effects related to project consistency with federal, state, and local regulations.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 as mitigation measures would reduce effects related to project consistency with federal, state, and local regulations.

Impact 4.2-2 (Alt. 2): Visual Character (General Impact on Visual Character)

Alternative 2 would result in the construction of a gondola. This new construction would result in degradation of the project area's visual character. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to visual character would be **adverse**. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would mitigate this effect. Under CEQA, and using the CEQA criteria, installation of the proposed gondola would have an adverse effect on visual character because it would create a contrast with currently visible landscapes within certain views and this impact would be **significant**. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would minimize this effect by promoting screening of project features and incorporating design elements that assist the project features in blending into the landscape. However, although implementation of these RPMs would reduce this impact, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect scenic vistas and visual quality in remote landscapes with high sensitivity levels.

Visual character of the various landscapes seen from each view would be altered from their natural state if any component of Alternative 2 is visible from that view. There are many factors that play a role in evaluating degradations to visual character, including but not limited to activity of the viewer, duration of the view, vegetative screening that may change over time, and perceived level of contrast with existing conditions created by the project; these variables were factored into analysis to the greatest extent practicable. Because Alternative 2 would occur in two phases (construction and operation) and would traverse several different types of landscapes, the analysis of impacts of visual character has been divided accordingly.

The construction phase has been analyzed in general terms, as this is a temporary effect, and impacts associated with construction could be felt from any place where construction is evident. All headers below the "Construction" header ("Base Area," "Ridgelines and Sparsely Vegetated Hillsides," "Highly Utilized Roads," and "Other Regional Viewpoints") refer to the operation phase of the project.

Physical settings, on the other hand, have been analyzed in terms that directly relate to each view for which visual simulations were created. The physical settings for this analysis, chosen as representative landscapes through which the gondola would pass, are: base areas, ridgelines and sparsely vegetated slopes, and heavily utilized roads. Analysis is also included for other regional viewpoints; a section titled "Other Regional Viewpoints" broadly addresses visual impacts that could occur to various locations within the viewshed for which visual simulations were not created. Each of the physical settings carries with it a unique range of

potential magnitudes of impacts on visual character. For example, visual character impacts associated with gondola infrastructure on an undeveloped ridgeline or forested hillside are very different from those impacts associated with gondola infrastructure within the base area, because the contrast that gondola infrastructure would create with the former would be much more noticeable than with the latter. Views used for visual simulations have been grouped into the physical setting that best describes them and analyzed as such. For clarity, these physical settings describe the viewpoint location itself, not the location of the gondola alignment, or location of proposed equipment. This allows for consistency of this approach for all action alternatives, as the views for which visual simulations were created are constants and the gondola alignments are not.

Construction *(presence of construction associated with installation of gondola infrastructure would contrast with current setting; all impacts would be temporary)*

Relevant Views: All. From all views, the construction phase would create considerable contrast with the currently visible landscape, over the short term (i.e., a single construction season as agreed to by the applicant and as required by RPM MUL-7). Areas where terminals or mid-stations would be installed would be temporarily fenced during construction, and construction equipment and crews would be evident. Disturbance required for gondola tower foundations will depend on the exact location of each tower; proper foundation construction may require either blasting, digging, grading and pouring of a concrete footer, or rock-drilling for towers located on granite outcroppings. Helicopters would be used for placement of gondola towers, transportation of personnel and equipment to the project area, and for some tree removal (refer to Chapter 2, Section 2.2.2.1 for additional information). Vegetation and soils disturbed by clearing and/or grading would be revegetated immediately after construction; however, these soils could appear lighter than surrounding sediments until revegetated, which could take several years. Similarly, impacts on exposed granite could occur as construction equipment travels along the construction access route; tracked and rubber-tired vehicles could chip, grind down, and/or discolor the exposed granite, which would be evident for many years. BMPs applied during the construction phrase would address this impact. Trees would be cleared from the gondola alignment and trees would continue to be removed as necessary for the life of the gondola to prevent obstruction of gondola system operations. Impacts on visual character associated with the construction phase would be temporary but would constitute an appreciable change to current settings in the short term. For the duration of construction impacts, temporary inconsistencies with relevant VQOs of *Partial Retention* and *Modification* at Alpine Meadows are possible because there would be a substantial degree of contrast between the existing and proposed visual character conditions in the short-term; if temporary inconsistencies with relevant VQOs occur, they would occur only during the construction phase and would be eliminated before operation of the gondola begins.

For the construction phase, types of viewers and duration of their view is hugely variable because all views are potentially relevant during this phase. Viewers may be hiking, biking, or driving, and duration of their view could range from seconds to hours depending on mode of travel and activity of viewer.

Base Area *(infrastructure of all kinds currently visible; no contrast in architectural character would occur with the exception of the gondola cabin storage facility)*

Relevant Views: 5, 6, 7, and 8 (Alpine Meadows Base Terminal), 21 (KT Sundeck/Condo Area). From the views listed above (see photo simulations in Appendix D), the presence of gondola infrastructure would not create a considerable contrast with the currently visible landscape and existing ski area infrastructure. Many of the potential viewers of Alternative 2 enter the project area from the Alpine Meadows or Squaw Valley base area; much of the potential visual impacts caused by Alternative 2 would be visible to these viewers while in this setting. From both base areas, development is very noticeable in the foreground; viewers can observe existing and proposed lift terminals and associated lift infrastructure (chairs, towers, wire-ropes), paved surfaces, and large buildings that contain restaurants, retail stores, room for general management activities, etc. However, it is important to note that the Squaw Valley base area is much more developed and has considerably more lodging, restaurant and retail space than the Alpine Meadows base area. While both base areas would be considered developed, each has its own architectural character; for example, Alpine Meadows has a more rural feel to it than Squaw Valley. For these reasons, gondola infrastructure that would

be visible at the Squaw Valley base area would constitute less of a change from existing conditions than additional infrastructure would at Alpine Meadows. In particular, the proposed storage facility housing the gondola cabins during the summer at the base area of Alpine Meadows would exhibit contrast with the existing condition and may visually dominate the original characteristic landscape; however, as part of the Design Review process required by the Forest Service and Placer County this facility would be designed to blend with the surrounding landscape as much as possible in accordance with the BEIG and the design review and approval process. It is important to note that as modeled in the visual simulations, the proposed gondola storage facility shows preliminary massing.

The Squaw Valley base terminal under Alternative 2 would be positioned adjacent to Cushing pond, meaning that some visual contrast with the existing condition would occur there. In particular, the Squaw Valley base terminal would be located to the east end of Cushing pond and would be raised above the ground so that the gondola loading platform elevation of the terminal would be at approximately the same elevation as the KT Sundeck. The KT Sundeck and gondola loading platform would be connected via an elevated bridge.

Most of the viewers at these locations, would be those participating in snow sports during the ski season, hikers or bikers during the non-ski season, and guests lodging at the Squaw Valley base area. Duration of views would range from several minutes for those heading uphill, to potentially hours for those sitting at the lodge.

Ridgelines and Sparsely Vegetated Hillsides *(currently undeveloped and natural-appearing; gondola infrastructure would contrast with current setting)*

Relevant Views: Views 9, 10, 11, 12, 13, 14, 15, and 16 (Five Lakes Trail Switchback 1, Five Lakes Trail Switchback 2, Five Lakes Trail Water Break Hill, Five Lakes Trail Wilderness Boundary 1 and 2, Five Lakes Granite Chief Wilderness, Barstool Lake, Squaw Saddle). From the views listed above (see photo simulations in Appendix D), the presence of gondola infrastructure would be particularly visible. Aside from within View 11, from which existing ski area development is currently visible, no development can currently be seen within Views 9–15, and presence of proposed gondola infrastructure, along the ridgelines and hillsides that are visible from these viewpoints, would stand out from the current landscape; the gondola's alignment under Alternative 2 across the ridgeline separating the National Forest System-GCW from the Caldwell property would make infrastructure especially prominent. Within View 11, gondola towers and one mid-station would be introduced to the landscape; however, existing lift towers ("KT South" on the private Caldwell property) and one Alpine Meadows lift terminal are already visible in the foreground and middleground, respectively. In contrast to View 11, within View 15, presence of the proposed Alpine Meadows mid-station would be particularly noticeable in the foreground, just beyond Barstool Lake, and would represent a considerable contrast with the existing condition; in its existing condition, View 15 appears very natural, and ski area infrastructure is only slightly evident, if at all. However, the dark green color of the Alpine Meadows mid-station and the screening trees between potential viewers and the mid-station would contribute to the structure remaining visually subordinate to the visible characteristic landscape. Many of the potential viewers of Alternative 2 would observe visual character impacts from various dispersed recreation trails that contain expansive views of ridgelines and sparsely vegetated hillsides; much of the potential visual impacts caused by Alternative 2 would be observed by these viewers. From these views, presence of gondola infrastructure would range from a minor to appreciable contrast to the current setting, depending on the form, line, color, and texture of the existing landscape. In areas where the existing landscape is mostly natural an undeveloped, gondola infrastructure would introduce form, line, color, and texture that do not currently exist and would contrast appreciably with the existing landscape. In areas where some development is already visible, like View 11, gondola infrastructure would not introduce new elements to the existing landscape and therefore would constitute only a minor contrast with it.

From View 16, the presence of proposed gondola infrastructure would partially change the currently visible landscape in the foreground. In the middleground of this view, viewers can see a parking lot, lift terminals, and a few buildings within the Alpine Meadows base area. While the topography in the foreground and middleground is not densely vegetated, there are scattered trees visible throughout, some of which would

have to be removed to create a path for the gondola. The presence of the proposed gondola, and associated infrastructure, would constitute a considerable change to the current nature of the landscape.

As depicted in View 14, Five Lakes Granite Chief Wilderness, presence of proposed gondola infrastructure would be partially visible just beyond the lake and would constitute a minor contrast with the undeveloped landscape that characterizes the current setting. During the summer period, only the gondola's wire rope would be visible within this view. During the winter, the wire-rope and gondola cabins would be visible. Throughout the year, this infrastructure would introduce form, line, color, and texture that are not presently visible within this view to this natural landscape.

Most of the viewers at these locations would be hikers heading into or within the National Forest System-GCW, and duration of their view would likely last several minutes, depending on hikers' ascent speed along the trail or breaks taken at scenic vistas; for Views 14 and 15, however, duration of hikers' view could potentially last several hours.

Each of the relevant views listed above provides an expansive perspective of a highly valued natural landscape, all of which could be considered scenic vistas. As a result, the above analysis under "ridgelines and sparsely vegetated hillsides" is intended to address the first of the CEQA criteria listed above in Section 4.2.2.2, which pertains to substantial adverse effects potentially occurring to scenic vistas.

Highly Utilized Roads *(currently developed; gondola infrastructure would be visible but would remain visually subordinate to the current setting)*

Relevant Views: 1 and 2 (Alpine Meadows Road), 3 (Chalet Road), 4 (Chalet Road – Northwest), 17 and 18 (Squaw Valley Road), 19 and 20 (Squaw Valley Road). From Views 17, 18, 19, and 20 (see photo simulations in Appendix D), the presence of gondola infrastructure would not create an appreciable contrast with the currently visible landscape. While the landscapes visible from these viewpoints do contain some densely forested hillsides, viewers can also see existing paved roads, homes, powerlines, and considerable base area infrastructure. As a result, the presence of the proposed gondola would not constitute an appreciable change to the current setting.

From Views 1, 2, 3, and 4 the presence of the proposed Alpine Meadows mid-station infrastructure would considerably change the currently visible landscape, as the observer would clearly see the mid-station infrastructure against the skyline, which would represent a high degree of contrast with the existing condition. However, the existing view does contain a mix of visible infrastructure such as overhead transmission lines and poles; therefore, the current view is not without interruption. Visibility of gondola infrastructure along the ridgeline would considerably change the existing landscape, as the gondola's alignment under Alternative 2 would be particularly prominent along the ridgeline separating the National Forest System-GCW and the Caldwell property. While infrastructure is already evident along Alpine Meadows Road, Chalet Road, and Squaw Valley Road, this existing infrastructure blends more easily with the surrounding landscape than the proposed gondola would high along this ridgeline.

Viewers who experience these views are likely to be driving or biking along the road, and therefore would experience these views for only several seconds (depending on mode of travel).

Other Regional Viewpoints (*various locations within the viewshed for which visual simulations were not created)*

As indicated by the viewshed analysis, the gondola alignment associated with Alternative 2 would be potentially visible from approximately 17.99 square miles within the surrounding area (refer to Exhibit 4.2-4 in Section 4.2.2.1 to see the viewshed map associated with Alternative 2). These locations include, but are not limited to, SR 89, the Pacific Crest Trail, Martis Peak, other ski areas around Lake Tahoe, and other locations within the TNF. Potential impacts on visual character from these locations could occur in the middleground or the background. Magnitude of these impacts would depend on the viewing distance from Alternative 2, vegetative screening, topography, etc.

The viewshed analysis indicates that Alternative 2 would not be visible from any parts of Lake Tahoe because of the distance between Lake Tahoe and the project area, and vegetative and topographical screening between the two. The viewshed analysis does indicate that Alternative 2 could be visible at certain locations along SR 89, specifically near the intersections of Alpine Meadows Road and Squaw Valley Road with SR 89. Although SR 89 is a corridor that experiences considerable traffic, drivers would often be moving between 45 and 55 mph and as a result, visibility of the proposed infrastructure would last for only a few seconds. In addition, Alternative 2 would be located 90 degrees to the side of drivers' viewpoints as they look ahead at the road. These factors contribute to the determination that visibility of Alternative 2 from SR 89 would be infrequent and very short in duration.

RPMs That Would Reduce Adverse Effects on Visual Character

Effects on visual character would be reduced through the application of RPMs that require a design review and approval process, and project implementation for those portions of the project located on NFS lands would require final construction authorization by the Forest Service. RPMs specifically intended to reduce impacts on scenic resources include RPMs SCE-1 through SCE-4, SCE-6, and SCE-7. Appendix B contains specific details about what each of these RPMs entails.

NEPA Effects Conclusion

Compared to the No Action Alternative, Alternative 2 would reduce the project area's visual character because it would result in visible infrastructure being built within 20 of the 21 views for which visual simulations were created. In particular, Alternative 2 would create a considerable visual contrast from ridgelines and sparsely vegetated hillsides during both the construction and operation phases. In these areas, viewers are likely to be hikers and their view of the alignment associated with Alternative 2 would likely last several minutes (or up to several hours), depending on hikers' ascent speed and whether or not they take rests on the trail. From the base areas, gondola cabin storage facilities would contrast with existing architectural character. Along Alpine Meadows Road and Chalet Road (where Views 1–4 are seen from) visibility of gondola infrastructure along the ridgeline that separates the National Forest System-GCW from the Caldwell property would introduce form, line, color, and texture that are not currently visible within the existing landscape. From other regional viewpoints, visibility of Alternative 2 is limited and would not constitute an appreciable change to existing conditions; in particular, the gondola infrastructure under Alternative 2 would not visible from any parts of Lake Tahoe. Overall, the gondola alignment associated with Alternative 2 is visible from many remote landscapes with high sensitivity levels, and in many of these locations, the presence of infrastructure would constitute an appreciable contrast from the existing conditions. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to visual character would be **adverse**. These effects would be mitigated through implementation of RPMs SCE-1 through SCE-4, SCE-6, and SCE-7.

CEQA Determination of Effects

Alternative 2 would have an adverse effect on visual character because it would result in visible infrastructure being built within 20 of the 21 views for which visual simulations were created. Specifically, Alternative 2 would have a substantial adverse effect on some of the scenic vistas identified as ridgelines and sparsely vegetated hillsides, and the existing visual quality of the site would be degraded within some of these views from the perspective of some observers. Infrastructure would be installed in certain sensitive and remote areas, and therefore, under CEQA, and using the CEQA criteria, this impact would be significant. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would minimize this effect by promoting screening of project features and incorporating design elements that assist project feature in blending into the landscape. However, although implementation of these RPMs would reduce this impact, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect scenic vistas and visual quality in remote landscapes with high sensitivity levels. Therefore, this impact would be **significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs

SCE-1 through SCE-4, SCE-6, and SCE-7 as mitigation measures would reduce effects related to visual character; however, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect scenic vistas and visual quality in remote landscapes with high sensitivity levels.

Significance after Mitigation

This significant impact results from infrastructure being installed in sensitive and remote areas. The alternative cannot be implemented without generating this effect. There is no feasible mitigation that would reduce the visibility of the project sufficiently to reduce this impact to a less-than-significant level. Therefore, this impact would be **significant and unavoidable**.

Impact 4.2-3 (Alt. 2): Night Lighting and Glare

Alternative 2 would result in the construction of a gondola. This new construction would result in the installation of night lighting fixtures at planned gondola terminals and operating buildings, and on gondola cabins for emergencies; however, these lights would be used only for maintenance and to prepare for daily operations, so they would rarely be activated during nighttime hours. Under Alternative 2, night lighting fixtures could potentially be visible within 12 views. Construction of a gondola could result in a limited amount of glare during certain times of day, depending on angle of the sun, amount of cloud cover, and position of the viewer. There would be **no effect** under NEPA. Under CEQA, and using the CEQA criteria, this impact would be **significant** before implementation of RPMs because night lighting fixtures could potentially be visible from certain views, and a limited amount of glare is possible. Implementation of RPMs SCE-5 and SCE-8, which limit night lighting and glare, would reduce this impact to a **less-than-significant** level.

Night Lighting

Under Alternative 2, night lighting fixtures could be visible at the gondola's terminals and operating buildings within Views 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, and 21. Night lighting fixtures associated with the Gondola would cause visual impacts on any locations from which they are visible during nighttime hours.

However, night lighting fixtures would be installed only at terminals, mid-stations, and operating buildings to allow for maintenance outside of normal operating hours, and to prepare for daily operations. The gondola would typically operate each day during the snow sports season from just before Alpine Meadows and Squaw Valley open until soon after closing (approximately 8:00 a.m. to 6:00 p.m.), so lighting fixtures would be activated only during a short period after sunset. Gondola cabins would have internal communications and emergency lights, but they would not be operable by the passengers and would be activated only during emergencies. Gondola towers would have no lighting.

Visibility of night lighting fixtures at base area terminals would not constitute a considerable change from current settings, as both base areas are already heavily developed and well lit. Visibility of night lighting fixtures at mid-station terminals would create a more substantial contrast with existing conditions, as these locations are currently undeveloped and are not artificially lit. Occasions when installed night lighting fixtures would be visible during nighttime hours would be very uncommon. None of these impacts would be present during summer months, as the gondola would operate only during winter months.

Glare

A limited amount of glare from installed infrastructure is possible during certain times of day (depending on angle of the sun, amount of cloud cover, position of viewer, etc.). However, proper implementation of applicable RPM SCE-5 (discussed below) would ensure that installed infrastructure would meet solar reflectivity standards and would minimize visual impacts associated with intense reflectivity from installed infrastructure; structures would be built with certain materials and given certain colors that minimize reflectivity. The Placer County Design Guidelines also include design requirements that minimize reflectivity and glare.

RPMs That Would Reduce Adverse Effects of Night Lighting and Glare

Effects associated with installation of night lighting fixtures and presence of glare would be reduced through the application of RPMs. RPM SCE-8 is specifically intended to reduce effects associated with installation of night lighting fixtures through an approval process with the Development Review Committee. The approval process includes confirmation that building lighting would be shielded and directed downward such that the bulb or ballast is not visible. RPM SCE-5 requires that installed infrastructure meet all applicable reflectivity guidelines, including covering, painting, staining, chemically treating, sandblasting, or otherwise treating materials to meet the solar reflectivity standards. Specifically, installed infrastructure must meet an average neutral value of 4.5 or less as measured on the Munsell neutral scale.

Appendix B contains a comprehensive list of all RPMs and related descriptions.

NEPA Effects Conclusion

Compared to the No Action Alternative, Alternative 2 would result in installation of night lighting fixtures at gondola terminals, mid-stations, and operating buildings for maintenance and to prepare for daily operations, and on gondola cabins to be used only during emergency situations. These night lighting fixtures could potentially be visible within 12 views. Lights installed on gondola terminals, mid-stations, and operating buildings would be visible only during nighttime hours if preparation for daily operations starts before sunrise, when operation occurs for a short period after sunset, or if nighttime maintenance is required. Lights installed on gondola cabins would be visible only during nighttime hours in the case of an emergency after dark. Glare would be minimized through application of RPM SCE-5. Proper implementation of RPM SCE-5 would ensure that installed infrastructure would meet solar reflectivity standards. Therefore, there would be **no effect**.

CEQA Determination of Effects

Alternative 2 would result in installation of night lighting fixtures at gondola terminals, mid-stations, and operating buildings for maintenance and to prepare for daily operations, and on gondola cabins to be used only during emergency situations. These night lighting fixtures could potentially be visible within 12 views. Lights installed on gondola terminals, mid-stations, and operating buildings would be visible only during nighttime hours if preparation for daily operations starts before sunrise, when operation occurs for a short period after sunset, or if nighttime maintenance is required. Lights installed on gondola cabins would be visible only during nighttime hours in the case of an emergency after dark. Under CEQA, and using the CEQA criteria, effects related to light and glare would be **significant** before implementation of RPMs because night lighting fixtures could potentially be visible, and a limited amount of glare is possible. However, RPMs SCE-5 and SCE-8 would limit night lighting and glare. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SCE-5 and SCE-8 as mitigation measures would reduce the potential for generation of excessive light and glare to a **less-than-significant** level.

4.2.3.3 ALTERNATIVE 3

Impact 4.2-1 (Alt. 3): Consistency with Federal, State, and Local Regulations

Alternative 3 would result in the construction of a gondola. This new construction would result in alteration of the visual character within the project area. No inconsistencies between Alternative 3 and the federal or state plans and guidance presented in Section 4.2.1.2 would occur. While Alternative 3 could be inconsistent with *Placer County General Plan* Policy 1.K.1 to a certain degree, the visible impacts of gondola infrastructure under Alternative 3 would be limited through the application of design measures (more specifically, Alternative 3 would cross over the ridgeline separating Squaw Valley and Alpine Meadows in one discrete location before diving down into Catch Valley). With these design measures in place, Alternative 3 would achieve consistency with the goals and policies of Policy 1.K.1. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect**. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 would reduce effects related to project consistency with federal, state, and local regulations, but are not necessary to reduce a significant effect.

Forest Plan

For the gondola alignment associated with Alternative 3, only the gondola terminal at the Alpine Meadows base area and five towers are located on NFS lands. This area has an assigned VQO of *Modification*. Under Alternative 3, the Alpine Meadows mid-station would be located on the Caldwell property; this mid-station would not be located within the Alpine Meadows SUP area, and therefore, the VQO of *Partial Retention* would not apply to this structure.

The gondola cabin storage facility at the Alpine Meadows base area would be very visible and the white gondola cabins would contrast greatly with the darker earth tones that are present in the summer season. While storage of the gondola cabins during the summer would considerably reduce overall infrastructural mass and therefore visual impacts along the upslope portions of the gondola, storage of the gondola cabins would increase visual impacts associated with the project at the base areas during the summer season. The proposed storage facility housing the gondola cabins during the summer at the base area of Alpine Meadows would not constitute an inconsistency with the VQO of *Modification*, as this VQO allows for management activities to visually dominate the original characteristic landscape. This facility would be designed to blend with the surrounding landscape, and implementation of applicable RPMs, along with the design review and approval process, would ensure consistency with the BEIG and preclude the possibility of any inconsistency with the *Modification* VQO. Refer to the "Applicable RPMs" header under Impact 4.2-1 (Alt. 2) for a list of these RPMs.

The Forest Plan also establishes policies for management of federally designated wilderness areas within the TNF, like the National Forest System-GCW. While there are certain locations within the National Forest System-GCW from which gondola infrastructure would be visible under Alternative 3, there is no legislation or policy that precludes development from being visible to recreationists from within federal wilderness areas. (Refer to Section 4.3, "Wilderness," for more information.)

State

Alternative 3 would be compliant with the California Scenic Highway Program, as SR 89 is an eligible route for designation as an official scenic highway but is not yet officially designated. Therefore, the protections afforded by the California Scenic Highway Program do not apply to SR 89. However, even if SR 89 were designated as a scenic highway, Alternative 3 would have limited, if any visibility from this roadway due to distance and topographic and vegetative screening.

Local

Alternative 3 could be inconsistent with *Placer County General Plan* Policy 1.K.1 to a certain degree. By their very nature, gondolas and ski lifts must extend along steep slopes to achieve their purpose. Given that the gondola is intended to connect the two ski resorts, all three action alternatives must also cross over the

ridgeline which separates the two valleys. As such, it would not be possible for the gondola to avoid slopes and ridgelines, but rather the design must rely on other means to screen and minimize the visible impacts of the infrastructure. More specifically, the design of each alignment would take advantage of existing topography and vegetation to shield views and would also incorporate design standards via RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3. While Alternative 2 (discussed above under Impact 4.2-1 [Alt. 2]) would traverse a lengthy distance of the ridgeline separating the National Forest System-GCW and the Caldwell property, Alternative 3 would cross over the ridgeline in one discrete location before diving down into Catch Valley, which would limit the visible impacts of the gondola infrastructure under Alternative 3 to a greater extent than under Alternative 2. With these design measures in place, Alternative 3 would achieve consistency with the goals and policies of Policy 1.K.1.

For the same reasons described above for Alternative 2, Alternative 3 would not create any inconsistencies with the height restrictions established in Section 137 of the SVGPLUO.

Applicable RPMs

RPMs listed under Impact 4.2-1 (Alt. 2) are also applicable to Alternative 3.

NEPA Effects Conclusion

Installation of the proposed gondola would increase the developed nature of the landscape surrounding these facilities, including in areas that are currently primarily natural as well as areas that are already heavily developed. While Alternative 3 would constitute an incremental addition to the built environment in the upslope areas at Alpine Meadows, the presence of gondola infrastructure would not dominate the characteristic landscape in these areas and therefore would not constitute an inconsistency with the relevant VQO of *Partial Retention* there. The proposed storage facility housing the gondola cabins during the summer at the base area of Alpine Meadows would not constitute an inconsistency with the VQO of *Modification*, as this VQO allows for management activities to visually dominate the original characteristic landscape. This facility would be designed to blend with the surrounding landscape, and implementation of applicable RPMs, along with the design review and approval process, would ensure consistency with the BEIG and preclude the possibility of any inconsistency with the *Modification* VQO. While Alternative 3 could be inconsistent with *Placer County General Plan* Policy 1.K.1 to a certain degree, the visible impacts of gondola infrastructure under Alternative 3 would be limited through the application of design measures (more specifically, Alternative 3 would cross over the ridgeline separating Squaw Valley and Alpine Meadows in one discrete location before diving down into Catch Valley). With these design measures in place, Alternative 3 would achieve consistency with the goals and policies of Policy 1.K.1. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to consistency with federal, state, and local regulations.

CEQA Determination of Effects

Installation of the proposed gondola would not create any inconsistencies with relevant state plans. While Alternative 3 could be inconsistent with Placer County General Plan Policy 1.K.1 to a certain degree, the visible impacts of gondola infrastructure under Alternative 3 would be limited through the application of design measures (more specifically, Alternative 3 would cross over the ridgeline separating Squaw Valley and Alpine Meadows in one discrete location before diving down into Catch Valley). With these design measures in place, Alternative 3 would achieve consistency with the goals and policies of Policy 1.K.1. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. Implementation of RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 would further reduce this impact, but these RPMs are not necessary to reduce a significant effect.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 as mitigation measures would reduce effects related to project consistency with federal, state, and local regulations, but are not necessary to reduce a significant effect.

Impact 4.2-2 (Alt. 3): Visual Character (General Impact on Visual Character)

Alternative 3 would result in the construction of a gondola. Degradation of the project area's visual character under Alternative 3 would be less than that associated with Alternative 2 due to differences in the proposed gondola alignments. While Alternative 2 would connect the Squaw Valley mid-station and the Alpine Meadows mid-station via the ridgeline that separates the National Forest System-GCW and the Caldwell property, Alternative 3 would run down Catch Valley just to the east of this ridgeline to connect the Squaw Valley mid-station with the Alpine Meadows mid-station. Because Alternative 3 would be located in a valley with steep topographical features on either side, its overall visibility would be reduced considerably, including from within the National Forest System-GCW. Although degradation of the project area's visual character under Alternative 3 would be less than that associated with Alternative 2, Alternative 3 would still result in degradation of the project area's visual character. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to visual character would be **minorly adverse**. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would mitigate this effect. Under CEQA, and using the CEQA criteria, installation of the proposed gondola would have an adverse effect on visual character because it would create a contrast with currently visible landscapes within certain views and this impact would be **significant**. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 would minimize this effect by promoting screening of project features and incorporating design elements that assist the project features in blending into the landscape. However, although implementation of these RPMs would reduce this impact, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect scenic vistas and visual quality in remote landscapes with high sensitivity levels.

See discussion of visual character for Alternative 2 for a detailed description of how this analysis is organized. Analysis for Alternative 3 is compared to Alternative 2 when possible and distinguished with additional detail when necessary.

Construction *(presence of construction associated with installation of gondola infrastructure would contrast with current setting; all impacts would be temporary)*

Relevant Views: All (excluding 3, 14 and 15). With the exception of Views 3, 14, and 15, visual impacts from the construction phase under Alternative 3 would be observed from all views. For Views 3, 14, and 15, the gondola alignment associated with Alternative 3 would not be visible due to shielding by trees or topography. For the remaining views, the types of impacts described above for Alternative 2 would be similar for Alternative 3, including the potential for temporary inconsistencies with the relevant VQOs of *Partial Retention* and *Modification* at Alpine Meadows, which are possible only during the construction phase.

For the construction phase, types of viewers and duration of their view is hugely variable because all views are potentially relevant during this phase. Viewers may be hiking, biking, or driving, and duration of their view could range from seconds to hours depending on mode of travel and activity of viewer.

Base Area *(infrastructure of all kinds currently visible; no contrast in architectural character would occur with the exception of the gondola cabin storage facility)*

Relevant Views: 5, 6, 7, and 8 (Alpine Meadows Base Terminal), 21 (KT Sundeck/Condo Area). Visual impacts from these viewpoints would be similar to those described above for Alternative 2; while the gondola terminal orientation differs slightly, the visual contrast that would be created by the gondola is very comparable (including for Cushing pond). As described above under Alternative 2, the proposed gondola storage facility would exhibit considerable contrast with the existing condition during the summer and may visually dominate the original characteristic landscape; however, this facility would be designed to blend with the surrounding landscape as much as possible in accordance with the BEIG and the design review and approval process.

Most of the viewers at these locations, would be those participating in snow sports during the ski season, hikers or bikers during the non-ski season, and guests lodging at the Squaw Valley base area. Duration of views would range from several minutes for those heading uphill, to potentially hours for those sitting at the lodge.

Ridgelines and Sparsely Vegetated Hillsides *(currently undeveloped and natural-appearing; gondola infrastructure would contrast with current setting)*

Relevant Views: 9, 10, 11, 12, 13, 14, 15, and 16 (Five Lakes Trail Switchback 1, Five Lakes Trail Switchback 2, Five Lakes Trail Water Break Hill, Five Lakes Trail Wilderness Boundary 1 and 2, Five Lakes Granite Chief Wilderness, Barstool Lake, Squaw Saddle). From Views 9–15, no development can currently be seen. The gondola alignment under Alternative 3 would be visible from Views 9–13. In Views 9-12, contrast between the existing and proposed conditions would be considerable, as the infrastructure would be very visible in the foreground of each view; in View 13, contrast between the existing and proposed conditions would be minor, as the infrastructure would be largely hidden by vegetation. From Views 14 and 15, topography is such that this alignment would not be visible; gondola infrastructure would be hidden on the opposite side of the ridgeline, and therefore, Alternative 3 would not constitute an appreciable change to current setting from Views 14 and 15. Topography from this view is such that the gondola alignment would not be visible if constructed. Visual impacts on View 16 would be less than those described above for Alternative 2; the alignment differs, and as a result, infrastructure would blend with surrounding vegetation and topography considerably.

The differences between Alternatives 2 and 3 in impacts on visual character within these views are considerable; under Alternative 3, the alignment of the gondola down Catch Valley would greatly reduce the visibility of gondola infrastructure from sensitive views like those seen from ridgelines and sparsely vegetated hillsides.

Most of the viewers at these locations would be hikers heading into or within the National Forest System-GCW, and duration of their view would likely last several minutes to hours, depending on hikers' ascent speed along the trail or breaks taken at scenic vistas.

Each of the relevant views listed above provides an expansive perspective of a highly valued natural landscape, which could be considered scenic vistas. As a result, the above analysis is intended to address the first of the CEQA criteria listed above in Section 4.2.2.2, which pertains to substantial adverse effects potentially occurring to scenic vistas.

Highly Utilized Roads *(currently developed; gondola infrastructure would be visible but would remain visually subordinate to the current setting)*

Relevant Views: 1 and 2 (Alpine Meadows Road), 3 (Chalet Road), 4 (Chalet Road – Northwest), 17 and 18 (Squaw Valley Road), 19 and 20 (Squaw Valley Road). Visual impacts from Views 1–3 would be different from those described above for Alternative 2. The gondola alignment within these views would be mostly screened by tall trees in the foreground, so infrastructure from these views would not be visible at all. The presence of a gondola would not constitute an appreciable change to the current setting and gondola infrastructure would remain visually subordinate to the characteristic landscape.

Visual impacts from Views 4 and 17–20 would be similar to those described above for Alternative 2; the alignment differs slightly, but the contrast that would be created by gondola infrastructure is comparable.

Viewers that experience these views are likely to be driving or biking along the road, and therefore would experience these views for only several seconds (depending on mode of travel).

Other Regional Viewpoints *(various locations within the viewshed for which visual simulations were not created)*

Visual impacts from these locations associated with Alternative 3 are less than those associated with Alternative 2; as indicated by the viewshed analysis, the gondola alignment associated with Alternative 3 would be potentially visible from approximately 16.04 square miles within the surrounding area (refer to Exhibit 4.2-5 for the viewshed map associated with Alternative 3). However, far less of the gondola infrastructure would be visible on high ridgelines because the gondola alignment associated with Alternative 3 runs down Catch Valley rather than along the ridgeline that separates the National Forest System-GCW from the Caldwell property. This is a considerable difference, in that the alignment of Alternative 2 along this ridgeline makes it easily visible from many locations within the viewshed for which viewpoint analysis was conducted. The alignment of Alternative 3 down Catch Valley allows for substantial topographical screening on either side of this alignment, greatly reducing the visibility of gondola infrastructure. The viewshed analysis indicates that Alternative 3 would not be visible from any parts of Lake Tahoe because of the distance between Lake Tahoe and the project area, and vegetative and topographical screening between the two. The viewshed analysis indicates that visibility of Alternative 3 for travelers on SR 89 are nearly the same as that discussed above for Alternative 2 (refer to Exhibit 4.2-5 for the locations along SR 89 that are within the viewshed).

RPMs That Would Reduce Adverse Effects on Visual Character
RPMs listed under Impact 4.2-2 (Alt. 2) are also applicable to Alternative 3.

NEPA Effects Conclusion
Installation of the proposed gondola under Alternative 3 would increase the developed nature of the landscape surrounding the alignment, including in areas that are currently primarily natural as well as areas that are already heavily developed. However, degradation of the project area's visual character within each of these different landscapes under Alternative 3 would be substantially less than that associated with Alternative 2 due to differences in the proposed gondola alignments. In particular, Alternative 3 would result in visible infrastructure being built within 15 of the 21 views for which visual simulations were created. The location of Alternative 3 in a valley with steep topographical features on either side would result in its overall visibility being greatly reduced, including from within the National Forest System-GCW. Under Alternative 3, installed gondola infrastructure would not be visible from any parts of Lake Tahoe. Although degradation of the project area's visual character under Alternative 3 would be less than that associated with Alternative 2, Alternative 3 would still result in the installation of infrastructure in certain sensitive and remote areas. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to visual character would be **minorly adverse**. These effects would be mitigated through implementation of RPMs SCE-1 through SCE-4, SCE-6, and SCE-7.

CEQA Determination of Effects
Alternative 3 would degrade the project area's existing visual character because it would result in visible infrastructure being built within 15 of the 21 views for which visual simulations were created. Specifically, Alternative 3 would have a substantial adverse effect on some of the scenic vistas identified as ridgelines and sparsely vegetated hillsides, and the existing visual character of the site would be degraded within some of these views from the perspective of some observers. However, degradations in visual character associated with Alternative 3 would be substantially less than that associated with Alternative 2 due to differences in the proposed gondola alignments. The location of Alternative 3 in a valley with steep topographical features on either side would result in its overall visibility being greatly reduced, including from within the National Forest System-GCW. Although degradation of the project area's visual character under Alternative 3 would be less than that associated with Alternative 2, Alternative 3 would still result in the installation of infrastructure in certain sensitive and remote areas, and therefore, under CEQA, and using the CEQA criteria, this impact would be significant. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would minimize this effect by promoting screening of project features and incorporating design elements that assist project feature in blending into the landscape. However, although implementation of these RPMs would reduce this impact, it would not reduce the impact to a less-than-significant level because project

features would remain visible and adversely affect visual quality in remote landscapes with high sensitivity levels. Therefore, this impact would be **significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 as mitigation measures would reduce effects related to visual character; however, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect scenic vistas and visual quality in remote landscapes with high sensitivity levels.

Significance after Mitigation

This significant impact results from infrastructure being installed in sensitive and remote areas. The alternative cannot be implemented without generating this effect. There is no feasible mitigation that would reduce the visibility of the project sufficiently to reduce this impact to a less-than-significant level. Therefore, this impact would be **significant and unavoidable**.

Impact 4.2-3 (Alt. 3): Night Lighting and Glare

Alternative 3 would result in the construction of a gondola. This new construction would result in installation of night lighting fixtures at gondola terminals, mid-stations, and operating buildings, and on gondola cabins for emergencies; however, these lights would be used only for maintenance, to prepare for daily operations, for short periods of operation after sunset, and emergencies, so they would rarely be activated during nighttime hours. Under Alternative 3, night lighting fixtures could potentially be visible within six fewer views than Alternative 2. Construction of a gondola could result in a limited amount of glare during certain times of day, depending on angle of the sun, amount of cloud cover, and position of the viewer; however, specific RPMs would be implemented to minimize glare. There would be **no effect** under NEPA. Under CEQA, and using the CEQA criteria, this impact would be **significant** before implementation of RPMs because night lighting fixtures could potentially be visible from certain views, and a limited amount of glare is possible. Implementation of RPMs SCE-5 and SCE-8, which limit night lighting and glare, would reduce this impact to a **less-than-significant** level.

Night Lighting

Under Alternative 3, night lighting fixtures could be visible at the gondola's terminals, mid-stations, and operating buildings within Views 4, 5, 6, 7, 8, and 9. Night lighting fixtures would cause visual impacts on any locations from which they are visible during nighttime hours.

Occasions when installed night lighting fixtures would be visible during nighttime hours would be uncommon. Although the placement of facilities differs somewhat under Alternative 3, the lighting types and hours of operation are the same as those for Alternative 2, so the effect is comparable.

Glare

A limited amount of glare from installed infrastructure is possible during certain times of day (depending on angle of the sun, amount of cloud cover, position of viewer, etc.). However, proper implementation of applicable RPM SCE-5 (discussed below) would ensure that installed infrastructure would meet solar reflectivity standards and would minimize visual impacts associated with intense reflectivity from installed infrastructure; structures would be built with certain materials and given certain colors that minimize reflectivity. The Placer County Design Guidelines also include design requirements that minimize reflectivity and glare.

RPMs That Would Reduce Adverse Effects of Night Lighting and Glare

RPMs listed under Impact 4.2-3 (Alt. 2) are also applicable to Alternative 3.

NEPA Effects Conclusion

Alternative 3 would result in installation of night lighting fixtures that could potentially be visible within six fewer views than Alternative 2. These night lighting fixtures would be installed at gondola terminals, mid-stations, and operating buildings for maintenance and to prepare for daily operations, and on gondola cabins to be used only during emergency situations. Lights installed on gondola terminals, mid-stations, and operating buildings would be visible only during nighttime hours if preparation for daily operations starts before sunrise, when operation occurs for a short period after sunset, or if nighttime maintenance is required. Lights installed on gondola cabins would be visible only during nighttime hours in the case of an emergency after dark. Glare would be minimized through application of RPM SCE-5. Proper implementation of RPM SCE-5 would ensure that installed infrastructure would meet solar reflectivity standards. Therefore, there would be **no effect.**

CEQA Determination of Effects

Alternative 3 would result in installation of night lighting fixtures that could potentially be visible within six fewer views than Alternative 2. These night lighting fixtures would be installed at gondola terminals, mid-stations, and operating buildings for maintenance and to prepare for daily operations, and on gondola cabins to be used only during emergency situations. Lights installed on gondola terminals, mid-stations, and operating buildings would be visible only during nighttime hours if preparation for daily operations starts before sunrise, when operation occurs for a short period after sunset, or if nighttime maintenance is required. Lights installed on gondola cabins would be visible only during nighttime hours in the case of an emergency after dark. Under CEQA, and using the CEQA criteria, effects related to light and glare would be **significant** before implementation of RPMs because night lighting fixtures could potentially be visible, and a limited amount of glare is possible. However, RPMs SCE-5 and SCE-8 would limit night lighting and glare. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SCE-5 and SCE-8 as mitigation measures would reduce the potential for generation of excessive light and glare to a **less-than-significant** level.

4.2.3.4 ALTERNATIVE 4

Impact 4.2-1 (Alt. 4): Consistency with Federal, State, and Local Regulations

Alternative 4 would result in the construction of a gondola. This new construction would result in alteration of the visual character within the project area. No inconsistencies between Alternative 4 and the federal or state plans and guidance presented in Section 4.2.1.2 would occur. While Alternative 4 could be inconsistent with *Placer County General Plan* Policy 1.K.1 to a certain degree, the visible impacts of gondola infrastructure under Alternative 4 would be limited through the application of design measures (more specifically, Alternative 4 would cross over the ridgeline separating Squaw Valley and Alpine Meadows in one discrete location before diving down into Catch Valley). With these design measures in place, Alternative 4 would achieve consistency with the goals and policies of Policy 1.K.1. Under NEPA, and considering the NEPA indicators, there would be **no effect**. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 would reduce effects related to project consistency with federal, state, and local regulations, but are not necessary to reduce a significant effect.

Forest Plan

For the gondola alignment associated with Alternative 4, only the gondola terminal at the Alpine Meadows base area is located on NFS lands, which has an assigned VQO of *Modification*. Under Alternative 4, the Alpine Meadows mid-station would be located on the Caldwell property; while the Alpine Meadows mid-station under Alternative 4 is in a slightly different location on the Caldwell property than it would be under

Alternative 3, it still would not be located within the Alpine Meadows SUP area, and therefore, the VQO of *Partial Retention* would not apply to this structure.

Just as with Alternatives 2 and 3, the proposed storage facility housing the gondola cabins during the summer at the base area of Alpine Meadows would not constitute an inconsistency with the VQO of *Modification*, as this VQO allows for management activities to visually dominate the original characteristic landscape. This facility would be designed to blend with the surrounding landscape, and implementation of applicable RPMs, along with the design review and approval process, would ensure consistency with the BEIG and preclude the possibility of any inconsistency with the *Modification* VQO.

The Forest Plan also establishes policies for management of federally designated wilderness areas within the TNF, like the National Forest System-GCW. While there are certain locations within the National Forest System-GCW from which gondola infrastructure would be visible under Alternative 4, there is no legislation or policy that precludes development from being visible to recreationists from within federal wilderness areas. (Refer to Section 4.3, "Wilderness," for more information.)

State

Alternative 4 would be compliant with the California Scenic Highway Program, as SR 89 is an eligible route for designation as an official scenic highway but is not yet officially designated. Therefore, the protections afforded by the California Scenic Highway Program do not apply to SR 89. However, even if SR 89 were designated as a scenic highway, Alternative 4 would have limited, if any visibility from this roadway due to distance and topographic and vegetative screening.

Local

Alternative 4 could be inconsistent with *Placer County General Plan* Policy 1.K.1 to a certain degree. By their very nature, gondolas and ski lifts must extend along steep slopes to achieve their purpose. Given that the gondola is intended to connect the two ski resorts, all three action alternatives must also cross over the ridgeline which separates the two valleys. As such, it would not be possible for the gondola to avoid slopes and ridgelines, but rather the design must rely on other means to screen and minimize the visible impacts of the infrastructure. More specifically, the design of each alignment would take advantage of existing topography and vegetation to shield views and would also incorporate design standards via RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3. While Alternative 2 (discussed above under Impact 4.2-1 [Alt. 2]) would traverse a lengthy distance of the ridgeline separating the National Forest System-GCW and the Caldwell property, Alternative 4 would cross over the ridgeline in one discrete location before diving down into Catch Valley, which would limit the visible impacts of the gondola infrastructure associated with Alternative 4 to a greater extent than under Alternative 2. With these design measures in place, Alternative 4 would achieve consistency with the goals and policies of Policy 1.K.1.

For the same reasons described above for Alternative 2, Alternative 4 would not create any inconsistencies with the height restrictions established in Section 137 of the SVGPLUO.

Applicable RPMs

RPMs listed under Impact 4.2-1 (Alt. 2) are also applicable to Alternative 4.

NEPA Effects Conclusion

Installation of the proposed gondola would increase the developed nature of the landscape surrounding these facilities, including in areas that are currently primarily natural as well as areas that are already heavily developed. While Alternative 4 could constitute an incremental addition to the built environment in the upslope areas at Alpine Meadows, the presence of gondola infrastructure would not dominate the characteristic landscape in these areas and therefore would not constitute an inconsistency with the relevant VQO of *Partial Retention* there. The proposed storage facility housing the gondola cabins during the summer at the base area of Alpine Meadows would not constitute an inconsistency with the VQO of *Modification*, as this VQO allows for management activities to visually dominate the original characteristic landscape. This facility would be designed to blend with the surrounding landscape, and implementation of applicable RPMs, along with the design review and approval process, would ensure consistency with the

BEIG and preclude the possibility of any inconsistency with the *Modification* VQO. While Alternative 4 would be inconsistent with *Placer County General Plan* Policy 1.K.1 to a certain degree, the visible impacts of gondola infrastructure under Alternative 4 would be limited through the application of design measures (more specifically, Alternative 4 would cross over the ridgeline separating Squaw Valley and Alpine Meadows in one discrete location before diving down into Catch Valley). With these design measures in place, Alternative 4 would achieve consistency with the goals and policies of Policy 1.K.1. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to consistency with federal, state, and local regulations.

CEQA Determination of Effects

Installation of the proposed gondola would not create any inconsistencies with relevant state plans. While Alternative 4 could be inconsistent with *Placer County General Plan* Policy 1.K.1 to a certain degree, the visible impacts of gondola infrastructure under Alternative 4 would be limited through the application of design measures (more specifically, Alternative 4 would cross over the ridgeline separating Squaw Valley and Alpine Meadows in one discrete location before diving down into Catch Valley). With these design measures in place, Alternative 4 would achieve consistency with the goals and policies of Policy 1.K.1. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. Implementation of RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 would further reduce this impact, but these RPMs are not necessary to reduce a significant effect.

Mitigation Measures

No mitigation measures are required. All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3 as mitigation measures would reduce effects related to project consistency with federal, state, and local regulations, but are not necessary to reduce a significant effect.

Impact 4.2-2 (Alt. 4): Visual Character (General Impact on Visual Character)

Alternative 4 would result in the construction of a gondola, which would increase the developed nature of the landscape surrounding the alignment, including in areas that are currently primarily natural as well as areas that are already heavily developed. Degradation of the project area's visual character under Alternative 4, as seen from the viewpoint analysis, would be less than that associated with Alternative 2 due to differences in the proposed gondola alignments; the location of Alternative 4 in a valley with steep topographical features on either side would result in its overall visibility being greatly reduced, including from within the National Forest System-GCW. However, degradation of the project area's visual character under Alternative 4, as seen from the viewshed analysis, would be greater than that associated with Alternative 2 or 3 because the gondola alignment associated with Alternative 4 would be visible from a small section of Lake Tahoe. Alternative 4 would result in the installation of infrastructure in certain sensitive and remote areas, which would degrade the project area's visual character. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to visual character would be **minorly adverse**. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would mitigate this effect. Under CEQA, and using the CEQA criteria, installation of the proposed gondola would have an adverse effect on visual character because it would create a contrast with currently visible landscapes within certain views and this impact would be **significant**. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would minimize this effect by promoting screening of project features and incorporating design elements that assist the project features in blending into the landscape. However, although implementation of these RPMs would reduce this impact, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect scenic vistas and visual quality in remote landscapes with high sensitivity levels.

See discussion of visual character for Alternative 2 for a detailed description of how this analysis is organized. Analysis for Alternative 4 is compared to Alternative 2 when possible and distinguished with additional detail when necessary.

Construction *(presence of construction associated with installation of gondola infrastructure would contrast with current setting; all impacts would be temporary)*

Relevant Views: All. With the exception of Views 3, 9, 14, 15, and 21, visual impacts associated with the construction phase would be visible from all locations. From Views 3, 9, 14, 15, and 21, the gondola alignment would not be visible due to shielding by trees or topography. For all other views, the types of impacts described above for Alternative 2 would be nearly the same for Alternative 4, including the potential for temporary inconsistencies with the relevant VQO of *Partial Retention*, for the duration of the construction phase.

For the construction phase, types of viewers and duration of their view is hugely variable because all views are potentially relevant during this phase. Viewers may be hiking, biking, or driving, and duration of their view could range from seconds to hours depending on mode of travel and activity of viewer.

Base Area *(infrastructure of all kinds currently visible; no contrast in architectural character would occur with the exception of the gondola cabin storage facility)*

Views: 5, 6, 7, and 8 (Alpine Meadows Base Terminal), 21 (KT Sundeck/Condo Area). Apart from View 21, visual impacts from these locations would be nearly the same as those described above for Alternative 2 and Alternative 3; gondola terminal orientation differs slightly, but the contrast that would be created by gondola infrastructure is comparable. The gondola alignment for Alternative 4 is such that the terminal at Squaw Valley by the KT Sundeck/Condo Area would not be visible within View 21.

As described above under Alternative 2, the proposed gondola storage facility would exhibit considerable contrast with the existing condition during the summer and may visually dominate the original characteristic landscape; however, this facility would be designed to blend with the surrounding landscape as much as possible in accordance with the BEIG and the design review and approval process.

Most of the viewers at these locations, would be those participating in snow sports during the ski season, hikers or bikers during the non-ski season, and guests lodging at the Squaw Valley base area. Duration of views would range from several minutes for those heading uphill, to potentially hours for those sitting at the lodge.

Ridgelines and Sparsely Vegetated Hillsides *(currently undeveloped and natural-appearing; gondola infrastructure would contrast with current setting)*

Relevant Views: 9, 10, 11, 12, 13, 14, 15, and 16 (Five Lakes Trail Switchback 1, Five Lakes Trail Switchback 2, Five Lakes Trail Water Break Hill, Five Lakes Trail Wilderness Boundary 1 and 2, Five Lakes Granite Chief Wilderness, Barstool Lake, Squaw Saddle). Apart from within View 9, visual impacts from these locations would be nearly the same as those described above for Alternative 3; the gondola alignment under Alternative 4 would be visible within Views 10–13 and would create a considerable contrast from the currently visible landscapes in those locations. Within Views 11 and 13, gondola infrastructure would be evident but contrast would be minimal enough such that infrastructure would largely blend into the surrounding landscape; within View 12, the gondola would be largely screen by vegetation but short sections of the wire-rope would be visible. Views 14 and 15, topography is such that this alignment would not be visible; gondola infrastructure would be hidden on the opposite side of the ridge, and therefore, Alternative 4 would not constitute an appreciable change to current setting within Views 14 and 15. Gondola infrastructure would remain visually subordinate to the characteristic landscape.

Visual impacts on View 16 would be less than those described above for Alternative 2 or 3; the alignment differs, and as a result, infrastructure would blend with the surrounding vegetation and topography considerably. Most of the viewers at these locations would be hikers heading into or within the National Forest System-GCW, and duration of their view would likely last several minutes to hours, depending on hikers' ascent speed along the trail or breaks taken at scenic vistas.

Each of the relevant views listed above provides an expansive perspective of a highly valued natural landscape, which could be considered scenic vistas. As a result, the above analysis is intended to address the first of the CEQA criteria listed above in Section 4.2.2.2, which pertains to substantial adverse effects potentially occurring to scenic vistas.

Highly Utilized Roads *(currently developed; gondola infrastructure would be visible but would not contrast heavily with current setting)*

Relevant Views: 1 and 2 (Alpine Meadows Road), 3 (Chalet Road), 4 (Chalet Road – Northwest), 17 and 18 (Squaw Valley Road), 19 and 20 (Squaw Valley Road). Visual impacts from these views would be nearly the same as those described above for Alternative 3; the alignment differs slightly, but the contrast that would be created by gondola infrastructure is comparable. The gondola alignment within View 3 would still be mostly screened by tall trees in the foreground, so gondola infrastructure from this viewpoint would not be visible at all.

Viewers who experience these views are likely to be driving or biking along the road, and therefore would experience these views for only several seconds (depending on mode of travel).

Other Regional Viewpoints *(various locations within the viewshed for which visual simulations were not created)*

Visual impacts from these locations are greater for Alternative 4 than they are for Alternative 2 or 3; as indicated by the viewshed analysis, the gondola alignment associated with Alternative 4 would be potentially visible from approximately 19.05 square miles within the surrounding area (refer to Exhibit 4.2-6 for the viewshed map associated with Alternative 4). In addition, the viewshed analysis indicates that Alternative 4 has potential for visibility from a small section of the surface of Lake Tahoe, just to the east of Tahoe City. However, as described above, the viewshed analysis does not take into account vegetative screening and existing vegetation could greatly reduce the actual visibility of Alternative 4 facilities from this location. Exhibit 4.2-7 was created to further investigate this possibility. Contrary to the viewshed analysis estimate conducted for Alternative 4, which indicated that infrastructure under Alternative 4 could be visible from a small section of the surface of Lake Tahoe, Exhibit 4.2-7 shows that vegetative screening would fully obscure gondola infrastructure for viewers within this small section of Lake Tahoe. This conclusion shows that vegetative screening would greatly reduce visibility of gondola infrastructure from locations within the Zone of Potential Visibility (as approximated for the viewshed analysis conducted for each alternative) and underscores the conservative nature of the viewshed analysis. The viewshed analysis indicates that visibility of Alternative 4 for travelers on SR 89 is nearly the same as that discussed above for Alternative 2.

RPMs That Would Reduce Adverse Effects on Visual Character
RPMs listed under Impact 4.2-2 (Alt. 2) are also applicable to Alternative 4.

NEPA Effects Conclusion
Installation of the proposed gondola under Alternative 4 would increase the developed nature of the landscape surrounding the alignment, including in areas that are currently primarily natural as well as areas that are already heavily developed. Degradation of the project area's visual character under Alternative 4, as seen from the viewpoint analysis, would be less than that associated with Alternative 2 due to differences in the proposed gondola alignments; the location of Alternative 4 in a valley with steep topographical features on either side would result in its overall visibility being greatly reduced, including from within the National Forest System-GCW. In particular, Alternative 4 would result in visible infrastructure being built within 15 of the 21 views for which visual simulations were created. The viewshed analysis indicates that the gondola alignment under Alternative 4 would be visible from a small section of Lake Tahoe; however, vegetative screening would entirely obscure gondola infrastructure from this location (see Exhibit 4.2-7, above). Alternative 4 would result in the installation of infrastructure in certain sensitive and remote areas, which would degrade the project area's visual character. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to visual character would be **minorly adverse**. These effects would be mitigated through implementation of RPMs SCE-1 through SCE-4, SCE-6, and SCE-7.

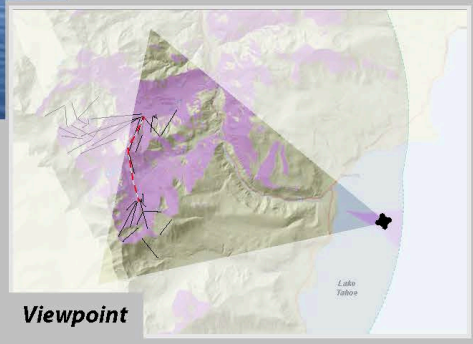
SQUAW VALLEY ALPINE MEADOWS

VIEW FROM LAKE TAHOE ALTERNATIVE 4

EXISTING AND PROPOSED INFRASTRUCTURE

B2B GONDOLA EIS

This viewpoint depicts potential visibility of proposed infrastructure under Alternative 4. The viewpoint was identified based on a viewshed analysis performed for all Alternatives. According to the viewshed analysis, purple areas on the inset map below depict areas with potential for visibility of Alternative 4 infrastructure from Lake Tahoe. No other Action Alternatives have potential for visibility from Lake Tahoe.



Viewpoint Details

Viewpoint elevation = 6,233'

Photograph taken by Grant Kaye using a Canon EOS 5D Mark III camera on 02/09/2018 at 1:01 pm, with a 42mm focal length to emulate the human eye.

Prepared By:
SE GROUP
March 2017

Exhibit 4.2-7 View of Alternative 4 from Lake Tahoe

CEQA Determination of Effects

Alternative 4 would degrade the project area's existing visual character because it would result in visible infrastructure being built within 15 of the 21 views for which visual simulations were created. Specifically, Alternative 4 would have a substantial adverse effect on some of the scenic vistas identified as ridgelines and sparsely vegetated hillsides, and the existing visual character of the site would be degraded within some of these views from the perspective of some observers. However, degradations in visual character associated with Alternative 4 would be substantially less than that associated with Alternative 2 due to differences in the proposed gondola alignments; degradation of visual character under Alternative 4 is very comparable to Alternative 3. The location of Alternative 4 in a valley with steep topographical features on either side would result in its overall visibility being greatly reduced, including from within the National Forest System-GCW. Although degradation of the project area's visual character under Alternative 4 would be less than that associated with Alternative 2, Alternative 4 would still result in the installation of infrastructure in certain sensitive and remote areas, and therefore, under CEQA, and using the CEQA criteria, this impact would be significant. RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 would minimize this effect by promoting screening of project features and incorporating design elements that assist project feature in blending into the landscape. However, although implementation of these RPMs would reduce this impact, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect visual quality in remote landscapes with high sensitivity levels. Therefore, this impact would be **significant.**

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SCE-1 through SCE-4, SCE-6, and SCE-7 as mitigation measures would reduce effects related to visual character; however, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect scenic vistas and visual quality in remote landscapes with high sensitivity levels.

Significance after Mitigation

This significant impact results from infrastructure being installed in sensitive and remote areas. The alternative cannot be implemented without generating this effect. There is no feasible mitigation that would reduce the visibility of the project sufficiently to reduce this impact to a less-than-significant level. Therefore, this impact would be **significant and unavoidable**.

Impact 4.2-3 (Alt. 4): Night Lighting and Glare

Alternative 4 would result in the construction of a gondola. This new construction would result in installation of night lighting fixtures at gondola terminals and operating buildings, and on gondola cabins for emergencies; however, these lights would be used only for maintenance and to prepare for daily operations, and emergencies are uncommon, so they would rarely be activated during nighttime hours. Under Alternative 4, night lighting fixtures could potentially be visible within eight fewer views than Alternative 2, and 2 fewer than Alternative 3. Construction of a gondola could result in a limited amount of glare during certain times of day, depending on angle of the sun, amount of cloud cover, and position of the viewer; however, specific RPMs would be implemented to minimize glare. There would be **no effect** under NEPA. Under CEQA, and using the CEQA criteria, this impact would be **significant** before implementation of RPMs because night lighting fixtures could potentially be visible from certain views, and a limited amount of glare is possible. Implementation of RPMs SCE-5 and SCE-8, which limit night lighting and glare, would reduce this impact to a **less-than-significant** level.

Night Lighting

Under Alternative 4, night lighting fixtures could be visible at the gondola's terminals and operating buildings within Views 5, 6, 7, and 8. Night lighting fixtures would cause visual impacts on any locations from which they are visible during nighttime hours.

Occasions when installed night lighting fixtures would be visible during nighttime hours are very uncommon, for the same reasons described above for Alternative 2. Although the placement of facilities differs somewhat under Alternative 4, the lighting types and hours of operation are the same as those for Alternative 2, so the effect is comparable.

Glare

A limited amount of glare from installed infrastructure is possible during certain times of day (depending on angle of the sun, amount of cloud cover, position of viewer, etc.). However, proper implementation of applicable RPM SCE-5 (discussed below) would ensure that installed infrastructure would meet solar reflectivity standards and would minimize visual impacts associated with intense reflectivity from installed infrastructure; structures would be built with certain materials and given certain colors that minimize reflectivity. The Placer County Design Guidelines also include design requirements that minimize reflectivity and glare.

RPMs That Would Reduce Adverse Effects of Night Lighting and Glare

RPMs listed under Impact 4.2-3 (Alt. 2) are also applicable to Alternative 4.

NEPA Effects Conclusion

Alternative 4 would result in installation of night lighting fixtures that could potentially be visible within eight fewer views than Alternative 2, and 2 fewer than Alternative 3. These night lighting fixtures would be installed at gondola terminals, mid-stations, and operating buildings for maintenance and to prepare for daily operations, and on gondola cabins to be used only during emergency situations. Lights installed on gondola terminals, mid-stations, and operating buildings would be visible only during nighttime hours if preparation for daily operations starts before sunrise, when operation occurs for a short period after sunset, or if nighttime maintenance is required. Lights installed on gondola cabins would be visible only during nighttime hours in the case of an emergency after dark. Glare would be minimized through application of RPM SCE-5. Proper implementation of RPM SCE-5 would ensure that installed infrastructure would meet solar reflectivity standards. Therefore, there would be **no effect.**

CEQA Determination of Effects

Alternative 4 would result in installation of night lighting fixtures that could potentially be visible within eight fewer views than Alternative 2 and two fewer than Alternative 3. These night lighting fixtures would be installed at gondola terminals, mid-stations, and operating buildings for maintenance and to prepare for daily operations, and on gondola cabins to be used only during emergency situations. Lights installed on gondola terminals, mid-stations, and operating buildings would be visible only during nighttime hours if preparation for daily operations starts before sunrise, when operation occurs for a short period after sunset, or if nighttime maintenance is required. Lights installed on gondola cabins would be visible only during nighttime hours in the case of an emergency after dark. Under CEQA, and using the CEQA criteria, effects related to light and glare would be **significant** before implementation of RPMs because night lighting fixtures could potentially be visible, and a limited amount of glare is possible. However, RPMs SCE-5 and SCE-8 would limit night lighting and glare. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SCE-5 and SCE-8 as mitigation measures would reduce the potential for generation of excessive light and glare to a **less-than-significant** level.

4.2.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.2-1 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

With regard to Impact 4.2-1, all action alternatives could be inconsistent with Policy 1.K.1 of the *Placer County General Plan* to a certain degree. By their very nature, gondolas and ski lifts must extend along steep slopes to achieve their purpose. Given that the gondola is intended to connect the two ski resorts, all three action alternatives must also cross over the ridgeline which separates the two valleys. As such, it is not possible for the gondola to avoid slopes and ridgelines, but rather the design must rely on other means to screen and minimize the visible impacts of the infrastructure. More specifically, the design of each alignment takes advantage of existing topography and vegetation to shield views as well as incorporates design standards via RPMs SCE-1, SCE-2, SCE-4, SCE-7, SCE-8, REV-1, and REV-3. While the Alternative 2 gondola alignment would traverse a lengthy distance of the ridgeline separating the National Forest System-GCW and the Caldwell property, Alternatives 3 and 4 would each cross over the ridgeline in one discrete location before diving down into Catch Valley, thus limiting the visible impacts of the gondola infrastructure associated with Alternatives 3 and 4 to a greater extent than under Alternative 2. With these design measures in place, all three gondola alignments would achieve consistency with the goals and policies of Policy 1.K.1 of the *Placer County General Plan*.

With regard to Impact 4.2-2, all action alternatives would increase the developed nature of the landscape surrounding the gondola alignment, resulting in adverse effects to visual character; however, these adverse effects to visual character are not identical across action alternatives. Alternative 2 would have the greatest impact, followed by Alternative 4 and finally Alternative 3.

Alternative 2 would result in adverse effects to visual character because its gondola alignment would traverse the ridgeline separating the National Forest System-GCW from the Caldwell property. The viewpoint analysis indicates that gondola infrastructure would be particularly evident high on this ridgeline from Alpine Meadows Road and the Alpine Meadows base area and would exhibit considerable contrast on this side of the alignment. The prominence of gondola infrastructure along this ridgeline would mean that proposed conditions under Alternative 2 would have the most substantial negative impact on visual character out of all the action alternatives. The infrastructure that would be built near the Squaw Valley base area would contrast less with existing developed nature of that area, like with Alternative 3 or 4. For Alternative 2, the viewshed analysis indicates that gondola infrastructure would be potentially visible from approximately 17.99 square miles within the surrounding area.

Alternative 3 would result in minorly adverse effects to visual character. These effects are lesser than those associated with Alternative 2 because under Alternative 3, the gondola alignment would run through Catch Valley, meaning that natural topography would screen the gondola from many locations. Impacts on visual character associated with Alternative 3 are comparable to those associated with Alternative 2 near the Squaw Valley base area, as proposed infrastructure is comparable to existing infrastructure on the Squaw Valley side, which would not vary appreciably between action alternatives. For Alternative 3, the viewshed analysis indicates that gondola infrastructure would be potentially visible from approximately 16.04 square miles within the surrounding area.

Alternative 4 would result in minorly adverse effects to visual character. These effects are lesser than those associated with Alternative 2 but greater than those associated with Alternative 3. This is because under Alternative 4, the gondola alignment would run closer to the floor of Catch Valley, meaning that natural topography would screen the gondola from many locations, but would not traverse Catch Valley via the lowest alignment possible like with Alternative 3. Impacts on visual character associated with Alternative 4 are comparable to those of Alternatives 2 and 3 near the Squaw Valley base area, as proposed infrastructure is comparable to existing infrastructure on the Squaw Valley side, which would not vary appreciably between

action alternatives. For Alternative 4, the viewshed analysis indicates that gondola infrastructure would be potentially visible from approximately 19.05 square miles within the surrounding area.

For all action alternatives, there are no meaningful differences in effect for Impact 4.2-3. None of the action alternatives would cause inconsistencies with any lighting or reflectivity standards and guidelines.

Table 4.2-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.2-1: Consistency with Federal, State, and Local Regulations	Compliance with Forest Plan VQOs; Compliance with the intent of the BEIG; and Compliance with Local General Plan direction and policy for visual resources	No effect	Minorly adverse under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Less than under Alternative 2	No effect under NEPA; less than significant under CEQA Less than under Alternative 2 and same as for Alternative 3
4.2-2: Visual Character	Determination of the visibility of contrast between action alternatives and existing condition and visual evidence of dominance of actions to the characteristic landscape	No effect	Adverse under NEPA; significant and unavoidable under CEQA	Minorly adverse under NEPA; significant and unavoidable under CEQA Less than under Alternative 2	Minorly adverse under NEPA; significant and unavoidable under CEQA Less than under Alternative 2 and similar to Alternative 3
4.2-3: Night Lighting and Glare	Compliance with all lighting and reflectivity standards and guidelines	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3

4.2.4 Cumulative Effects

4.2.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope for this cumulative effects analysis of visual resources includes reasonably foreseeable future projects that would occur within the viewshed of the project area.

Any present or reasonably foreseeable future projects within the viewshed of the project area that have the potential to reduce the project area's visual quality are listed below. Potential impacts associated with these projects include changes to landscape dominance elements (form, line, color, texture), degree of contrast that results from the presence of the project compared to the existing condition, inconsistencies with relevant federal, state, and local plans, and general reductions in natural-appearing landscape of the project area.

The following is a list of present and reasonably foreseeable future projects that could reduce the visual quality of the project area.

Project	Potential Impacts
General Development in Olympic Valley	Additional development added to the existing landscape dominance elements found in the Olympic Valley. Development would entail construction of a large residential complex along Squaw Valley Road, and new recreation infrastructure at Squaw Valley (e.g., Timberline Twister). Overall, these visual impacts would not constitute a considerable change to existing conditions as the Olympic Valley is already heavily developed.
General Development in Alpine Meadows	Additional development added to the existing landscape dominance elements found in the Alpine Meadows base area. Overall, these visual impacts would not constitute a considerable change to existing conditions as the Alpine Meadows base area is already developed.
White Wolf project	Changes to the existing landscape dominance elements found on the Caldwell property; degree of contrast that would result from presence of these homes compared to the existing condition; general reductions in natural-appearing landscape of the project area. Overall, these visual impacts would constitute a considerable change to existing conditions on the Caldwell property, as the only development currently existing there is associated with the property owner's permanent residence. An additional 38 homes constructed on this site would reduce the visual quality of the natural-appearing landscape as it currently exists.
Alpine Sierra Subdivision	Additional residential development added to the existing landscape dominance elements found at Alpine Meadows. New residences would increase the development nature of the existing landscape; however, these visual impacts would not constitute a considerable change to existing conditions on the whole as Alpine Meadows has already experienced substantial residential development.

4.2.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Under Alternative 1 – No Action Alternative, there would be no new development within or near the project area, and therefore, no reduction in the visual quality of the project area. There would be no contribution to the cumulative effects on visual resources from past, present, and reasonably foreseeable future projects.

Alternatives 2

Under Alternative 2, the gondola would be constructed on a mix of NFS and private lands. The visual impacts associated with Alternative 2, when combined with the past, present, and reasonably foreseeable projects listed above, would have varied impacts on the project area. Visual impacts associated with Alternative 2, when combined with General Development in Olympic Valley and Alpine Meadows, would not lead to a substantial cumulative impact. While the developed nature of the project area would increase with implementation of these projects, Squaw Valley and Alpine Meadows have already experienced considerable

ski area development. Additional general development and development of recreation infrastructure at these base areas, in combination with Alternative 2, would not constitute an appreciable change to the currently existing conditions at either ski resort. Visual impacts associated with Alternative 2, when combined with the White Wolf project, could lead to an adverse cumulative impact. The White Wolf project is not a connected action to Alternative 2 and is instead considered here as an additive action; implementation of the White Wolf project does not depend on implementation of Alternative 2, and implementation of Alternative 2 does not depend on implementation of the White Wolf project. The White Wolf project could be visible from certain locations within the National Forest System-GCW, which, in combination with installation of the gondola, would further reduce the visual character of some of the scenic vistas from within the National Forest System-GCW.

Under Alternative 2, the proposed Alpine Meadows mid-station would provide access to the master planned, but as yet unpermitted, Rollers lift (see the Alpine Meadows MDP). The Rollers lift is considered cumulatively as a component of General Development in Alpine Meadows. The bottom terminal of the Rollers lift would be located near the Alpine Meadows mid-station (on private land). It is anticipated that skiers would be able to exit the gondola at this mid-station and access the potential Rollers lift, and the terrain it would serve. The proposed gondola, in combination with the Rollers lift, would increase the developed nature of the landscape in the area to the south and west of the Alpine Meadows mid-station under Alternative 2. Installation of the Rollers lift would also increase the amount of infrastructure visible from within Alpine Meadows and potentially from the National Forest System-GCW.

Visual impacts would be long term, as the gondola would be a permanent structure. Infrastructure installed in more remote parts of the study area would constitute an appreciable change to current settings in those areas, whereas infrastructure installed within already-developed areas of Squaw Valley and Alpine Meadows would not constitute an appreciable change to existing conditions. Visual impacts would be minor within certain landscapes, like the base areas and along highly utilized roads, because these areas have already experienced considerable development and the addition of a gondola would not appreciably change the existing conditions. Within landscapes like ridgelines and sparsely vegetated hillsides, visual impacts would be adverse, because the existing conditions within these landscapes are mostly undisturbed and natural, so the addition of a gondola would constitute an appreciable change to these landscapes. Impacts would vary from local to regionwide, depending on the distances of viewers within the project's viewshed.

Alternatives 3 and 4

Under Alternatives 3 and 4, cumulative effects on visual resources would be similar to those described above under Alternative 2, including for those cumulative effects associated with potential installation of the Rollers lift. The main difference between Alternatives 3 and 4 and Alternative 2 is the difference in the proposed gondola alignments. The gondola alignments associated with Alternatives 3 and 4 would cause less degradation to the project area's visual character. Under Alternatives 3 and 4, the gondola would not traverse the ridgeline that separates the National Forest System-GCW and the Caldwell property, and instead would run down Catch Valley, which would provide considerable topographical screening on either side of the gondola infrastructure. It is important to note that under Alternatives 3 and 4, the Alpine Meadows mid-station would not be in close proximity to the potential Rollers lift, meaning that the gondola would not enable improved access to the terrain that would be serviced by the Rollers lift. Visual impacts associated with Alternatives 3 and 4, when combined with General Development in Olympic Valley and Alpine Meadows, would lead to an unsubstantial cumulative impact because Squaw Valley and Alpine Meadows have already experienced considerable ski area development. Similarly, when visual impacts associated with Alternatives 3 and 4 are combined with the White Wolf project, there would be unsubstantial cumulative impacts because of the reduced degradation to visual character, described above. Overall, these impacts would be long term, minor to adverse, and local to regionwide for the same reasons described above for Alternative 2.

4.3 WILDERNESS

This section includes discussion of potential impacts of the proposed Base-to-Base Gondola project on the National Forest System-Granite Chief Wilderness (GCW), which is adjacent to the project area (i.e., the area generally encompassed by all three action alternatives). No construction, and therefore no direct effects, would occur on National Forest System (NFS) lands within the GCW. However, indirect impacts on its wilderness character and wilderness users could occur, as described below. This section additionally assesses impacts associated with a portion of privately owned land that was included within the area mapped by Congress as part of the GCW within the 1984 California Wilderness Act.

For clarity, this section references the NFS lands within the GCW as "National Forest System-GCW" and refers to the privately owned land included within the congressionally mapped wilderness boundary as "private lands within the congressionally mapped GCW." In accordance with the Wilderness Act of 1964, federally-managed Wilderness areas, like the National Forest System-GCW, are defined as follows:

> (c) A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Analysis of wilderness impacts as provided below is not necessary to satisfy the requirements of CEQA because wilderness areas are federally designated. Analysis therefore falls under the scope of NEPA, not CEQA. However, Section 4.2, "Visual Resources," incorporates wilderness values and relevant policies into the impact analysis for both NEPA and CEQA, and Section 4.4, "Land Use," contains an evaluation of consistency with Forest Service policies related to wilderness for both NEPA and CEQA.

4.3.1 Affected Environment

4.3.1.1 ENVIRONMENTAL SETTING

Geography of the Area

The Base-to-Base Gondola is proposed in an area with complex property ownership and designations. The Squaw Valley resort is operated almost entirely on privately owned land. One hundred and ninety-five acres of NFS lands are permitted for use to Squaw Valley, LLC as part of Squaw Valley Ski Area. The majority of Alpine Meadows resort is located on NFS land and is operated under a Special Use Permit (SUP) with the Tahoe National Forest. Between them is the Caldwell property, a private parcel through which the proposed gondola must traverse for the two resorts to be connected. The GCW lies further to the west, and between, the two resorts and is directly west, and adjacent to, the Caldwell property.

The GCW is a wilderness area that consists of approximately 25,256 acres of land, 25,079 of which are managed as part of the National Wilderness Preservation System (NWPS) (U.S. Forest Service 2012); the other 177 acres are privately owned (including the Caldwell property and other scattered parcels). The 1990 *Tahoe National Forest Land and Resource Management Plan* (LRMP) provides the following description of the GCW in its discussion of roadless areas within the TNF:

> The Granite Chief Wilderness has a varied, highly scenic landscape of forest, meadows, and glacially exposed granite rock. The Wilderness [GCW] is adjacent to the [north]western watershed boundary of Lake Tahoe and includes Five Lakes Creek and the headwaters of the … Middle Fork of the American River. The major attractions of this area are its high, rugged, granite cliffs and broad glaciated valleys. Portions of a State [of California] game refuge extend into the area, and the abundance of game and non-game animals attracts large numbers of visitors. (U.S. Forest Service 1990a:3-77)

The LRMP describes the GCW in greater detail in its summary of Management Area 080 – Granite Chief:

> It [the GCW] extends along the western slope of the Sierra Nevada from Granite Chief Peak to Barker Peak. A small acreage lying east of Twin Peaks is within the Lake Tahoe Basin Management Unit. Elevations range from 5,000 to 9,000 feet. The area includes the heavily used Five Lakes Basin, which is conveniently accessible for day use. There is one other wilderness lake fishery. Most recreation use [of the National Forest System-GCW] occurs adjacent to drainages such as Five Lakes Creek, Picayune Creek, Middle Fork American River, and along the Pacific Crest National Scenic Trail (PCT). The terrain varies from extremely rugged at the upper elevations and along canyon walls to fairly gentle along the valley bottoms. The vegetative cover is sparse on the steep, rocky slopes. Mixed conifer old growth timber is predominant in the valleys. There are 1,507 acres of wetlands. There are 18,705 acres of unsuitable productive timber land. (U.S. Forest Service 1990b:V-417)

Exhibit 4.3-1 depicts private and public land designations within the project vicinity, the National Forest System-GCW, and the private lands within the congressionally mapped GCW. Although the congressionally mapped GCW does overlap with 54.6 acres of the privately owned Caldwell property, the land use management direction and restrictions imposed by the federal Wilderness Act of 1964 apply only to, and have meaning only upon, federal lands. In other words, the land use restrictions of the Wilderness Act of 1964 do not apply to private parcels, including the Caldwell property. Similar to instances where private inholding parcels are surrounded by NFS lands designated and managed as part of the NWPS, the extension of a wilderness boundary onto adjacent private lands does not provide for protection or management of those private lands as wilderness. The Wilderness Act of 1964 explicitly addresses this issue to ensure continued and adequate access and use for private landowners whose land might eventually lie within a congressionally mapped wilderness area.

Each of the project gondola alignments under the action alternatives would be located on private lands owned by Squaw Valley Ski Holdings (SVSH), the Caldwell property, and NFS lands within the Alpine Meadows Ski Area SUP boundary. The gondola alignment associated with Alternative 2 would traverse a portion of the Caldwell property within the congressionally mapped GCW. This tract of land is not afforded the same land use management direction or restrictions that apply to federal lands within congressionally mapped wilderness areas, and development is legally permissible there. In fact, 1,040 feet of a low standard native surface unimproved road runs through a section of these private lands within the congressionally mapped GCW and is frequently used by the property owner; this road occupies approximately 0.25 acre of the 54.6 acres of the Caldwell property that overlap with the congressionally mapped GCW, and the road varies in width from 5 to 20 feet. The gondola alignments for Alternatives 3 and 4 would be located entirely outside both the National Forest System-GCW and private lands within the congressionally mapped GCW. None of the alternatives involve construction on National Forest System-GCW lands. See Chapter 2, “Description of the Alternatives,” for detailed descriptions of each alternative.

Although no construction would occur on National Forest System-GCW lands, the project has been evaluated for indirect impacts on National Forest System-GCW lands managed by the Forest Service. Analysis also includes the introduction of development to the private lands within the congressionally mapped GCW.

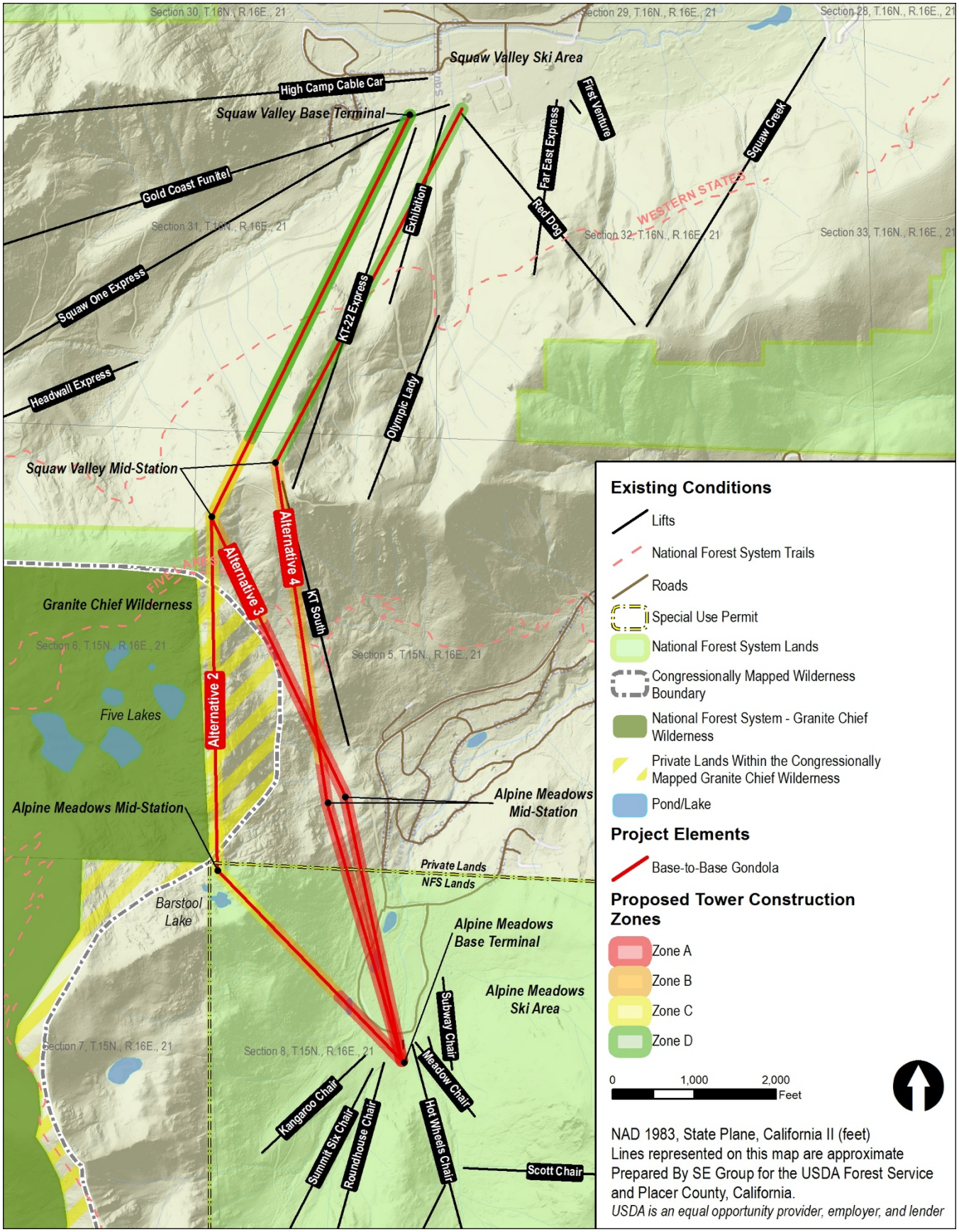


Exhibit 4.3-1 Tower Construction Overview

Use of the Area

The project area for the Base-to-Base Gondola consists of privately owned land and NFS lands within the Alpine Meadows SUP boundary. Both ski areas offer classic resort-style skiing and riding experiences, with base areas that provide the necessary amenities to facilitate a high-quality guest experience, although the majority of these amenities are concentrated at the Squaw Valley base area. The privately owned Caldwell property, which separates the two ski resorts, is currently developed with a single family residence, outbuildings and an incomplete, private ski lift (referred to as "KT South") for the property owner. The property owner has submitted an application to Placer County to develop a 38-home private residential community on the property, known as the White Wolf Subdivision (this project is included in the list of "cumulative effects projects" provided in Table 3-3 of Section 3.5, "Cumulative Effects Analysis Methodology").

As described above, the land directly west of the project area is the National Forest System-GCW. Wilderness land use restrictions and management are imposed on these lands, but certain low-impact recreational activities are permitted, like hiking and backpacking.

The National Forest System-GCW is served by a trail system that is used by hikers and equestrians for recreation. Limited commercial activity occurs there, in the form of guided outdoor activity managed by local outfitters under permit from the TNF. One outfitter guide, which has been authorized priority use, packs visitors into the area during summer. Most traffic enters the area from the east side via the Five Lakes Trail, where access is easier, and a considerable recreation visitor population base exists; user pressure from the west is comparatively light. The Five Lakes Trail is managed by the Forest Service via an easement with the owner of the Caldwell property. The PCT creates some north-south through traffic as it traverses the National Forest System-GCW. Although some recreationists use the National Forest System-GCW during winter for a remote backcountry skiing or riding experience, the vast majority of the recreational use there occurs during summer.

Wilderness Characteristics

The GCW meets the criteria for federal designation as a wilderness area and displays the following wilderness characteristics (U.S. Forest Service 2008):

- **Untrammeled**, which means that wilderness is "essentially unhindered and free from the actions of modern human control and manipulation. This quality is degraded by modern human activities or actions that control or manipulate the components or processes of ecological systems inside the wilderness."

- **Natural**, which means that "wilderness ecological systems are substantially free from the effects of modern civilization. This quality is degraded by intended or unintended effects of modern people on the ecological systems inside the wilderness since the area was designated."

- **Undeveloped**, which means that "wilderness is an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, where man himself is a visitor who does not remain, and with the imprint of man's work substantially unnoticeable. This quality is degraded by the presence of structures, installations, habitations, and by the use of motor vehicles, motorized equipment, or mechanical transport that increases people's ability to occupy or modify the environment."

- **Has outstanding opportunities for solitude or a primitive and unconfined type of recreation**, which means that wilderness offers an opportunity for people that "is not directly about visitor experiences per se. This quality is degraded by settings that reduce these opportunities, such as visitor encounters, signs of modern civilizations, recreation facilities, and management restrictions on visitor behavior."

Although the Wilderness Act of 1964 provided a definition for "wilderness," it did not establish any wilderness characteristics. The terms defined above were not established until decades after the Wilderness Act of 1964 went into effect, when the Forest Service determined that more in-depth criteria were needed to

conceptualize what it means for certain lands to be better managed as "wilderness." These characteristics are meant to be necessary qualifiers for any federal lands within a congressionally mapped wilderness area, and they are fully applicable as a basis of analysis for the National Forest System-GCW; however, it is important to note that these wilderness characteristics are not necessarily achieved in totality by all federal lands within congressionally mapped wilderness areas.

Direct and indirect environmental consequences under each of the alternatives for this project are analyzed for their potential to affect these wilderness characteristics.

4.3.1.2 REGULATORY SETTING

Federal

Wilderness Act of 1964

The purpose of the Wilderness Act of 1964 is to preserve and protect the natural condition of certain federal lands in the face of competing demands for use of those lands. The Wilderness Act of 1964 accomplishes this by adding certain federal lands to the NWPS. Far-reaching land use restrictions are imposed on federal lands included in the NWPS. These protections are afforded only to federal lands within congressionally mapped wilderness areas. Under the Wilderness Act of 1964, the restrictions that apply on these lands include (16 United States Code 1131–1136):

- no commercial enterprises;
- no permanent roads;
- no temporary roads;
- no use of motor vehicles, motorized equipment, or motorboats;
- no landing of aircraft;
- no other form of mechanical transport; and
- no structure or installation.

These restrictions do not apply to private lands within congressionally mapped wilderness areas such as the Caldwell property. In situations where private inholdings are surrounded by wilderness, private rights remain, and the land does not fall under wilderness management or restrictions. The owner of that land is allowed rights to ensure adequate access and use of the land. The federal government can acquire private inholdings within the perimeter of a wilderness area only with concurrence from the owner or if the acquisition is specifically authorized by Congress (16 United States Code 1131–1136). The California Wilderness Act of 1984, discussed below, explicitly addresses this issue.

The Wilderness Act of 1964 itself does not explicitly prohibit the establishment of buffer zones around wilderness areas; however, many subsequent wilderness bills do. The first explicit mention of the prohibition of buffer zones around wilderness areas came in a 1980 public law (Public Law 96-550, Section 105), which states:

> Congress does not intend that the designation of wilderness areas… lead to the creation of protective perimeters or buffer zones around each wilderness area. The fact that non-wilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area.

California Wilderness Act of 1984

The California Wilderness Act of 1984 is a federal law that authorized adding approximately 1,793,890 acres of specific, federally owned lands in California, including about 25,000 acres of the TNF, to the NWPS (Public Law 98-425). As of November 27, 2017, the total acreage of federally owned wilderness areas within the state of California was 5,098,963 acres (Wilderness Connect 2017).

Wilderness areas designated by this act include numerous private inholdings within their congressionally mapped boundaries, including some within the GCW such as a portion of the Caldwell property.

Tahoe National Forest Land and Resource Management Plan and Resource Management Plan and Sierra Nevada Forest Plan Amendment

The LRMP directs land management of the TNF (U.S. Forest Service 1990b). The Sierra Nevada Forest Plan Amendment Record of Decision Final Supplemental EIS (SNFPA) (U.S. Forest Service 2004) amended the LRMP in 2004. The LRMP and SNFPA, collectively referred to as the Forest Plan, established standards and guidelines related to wilderness on the TNF. As part of the analysis conducted for this Final EIS/EIR, these standards and guidelines were applied and evaluated for consistency.

The LRMP aims to "ensure the wise use and protection of TNF resources, fulfill legislative requirements, and address local, Regional, and National issues" (U.S. Forest Service 1990b). It accomplishes these goals with a number of strategies, including:

- identifying both short- and long-term management objectives,
- determining land management objectives based on what specific areas are most suited for,
- providing for multiple uses in an environmentally sound manner,
- establishing monitoring and evaluation programs to ensure that LRMP direction is being followed, and
- meeting the requirements of the National Forest Management Act and the Pacific Southwest Regional Guide.

Each of the resources analyzed in the LRMP has a specific management direction established for it. The management direction provided for wilderness areas located in the TNF has two simple priorities (U.S. Forest Service 1990b):

- manage the GCW to preserve the wilderness character of its living and nonliving components and to provide for compatible human use and enjoyment, and
- provide quality wilderness experiences for the public.

The Forest Plan subdivides the TNF into numerous management areas, each with a specific management prescription. "Management prescription" refers to the "management area emphasis, management area standards and guidelines, and available management practices" that are specific to a particular area (U.S. Forest Service 1990b). The GCW is in Management Area 080 and is directed by Management Prescription 1 – Wilderness.

Resource management emphasis for Management Area 080 mostly centers on adhering to the land use restrictions established in the Wilderness Act of 1964. Additionally, part of this section suggests "[acquisition of] private inholdings as the opportunities arise" (U.S. Forest Service 1990b).

Management area standards for this management area include a Recreation Opportunity Spectrum (ROS) designation of *primitive* (discussed below), and a Visual Quality Objective of *preservation*.

State

There are no state laws or regulations addressing federal wilderness areas that are relevant to the analysis of the project.

Local

Placer County General Plan

The *Placer County General Plan* (Placer County 2013) does not contain any provisions or policies that pertain specifically to federal wilderness areas.

Squaw Valley General Plan and Land Use Ordinance

The *Squaw Valley General Plan and Land Use Ordinance* does not contain any provisions or policies that pertain specifically to federal wilderness areas.

Alpine Meadows General Plan

The *Alpine Meadows General Plan* does not contain any provisions or policies that pertain specifically to federal wilderness areas.

4.3.1 Analysis Methods

4.3.1.1 METHODS AND ASSUMPTIONS

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 (CUP). 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.

Subjectivity of Wilderness Experience

Although the wilderness characteristics detailed above offer well-defined standards for analyzing impacts on the wilderness experience of users in the National Forest System-GCW, wilderness experience is intrinsically subjective and intangible. Wilderness experience impacts considered substantial to one individual may be considered trivial to another. This is important to note because the analysis of direct and indirect environmental consequences that follows is limited by the subjective nature of the wilderness experience.

Recreation Opportunity Spectrum

The ROS is a tool used by Forest Service managers to classify different outdoor experiences on NFS lands. The ROS class applied to a particular parcel of NFS land is dependent on the features of that specific parcel. Wherever an ROS class is to be applied, three settings are inventoried: physical setting, social setting, and managerial setting. Certain attributes are analyzed under each setting, and these attributes help Forest Service managers determine which ROS class should be applied to the specific area being managed. The six classes of the ROS are:

- Primitive,
- Semi-Primitive Non-Motorized,
- Semi-Primitive Motorized,
- Roaded Natural-Appearing,
- Rural, and
- Urban.

The ROS class designated for the GCW is *primitive*, which means that the GCW must maintain several pristine qualities to be compliant with the ROS. (The ROS class was designated for the entire GCW, not just the National Forest System-GCW, although the ROS does not apply on private lands.) A few of these are dominance of unmodified and natural-appearing settings, and the absence of roads. To follow Forest Service

management direction, the Base-to-Base Gondola cannot alter these qualities or the overall ROS class designation of *primitive* for the GCW.

4.3.1.2 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 wilderness resources. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Discussion of impacts of the alternatives on the wilderness character and characteristics of the National Forest System-GCW. Discuss particularly visual impacts, impacts of increased use, construction activity (helicopters and other machinery), gondola operations, avalanche control, and increased noise on the wilderness experience and values **(Impacts 4.3-1, 4.3-2, 4.3-3, 4.3-4)**

- Discussion of the private lands with congressional designation, the applicability of Forest Service management **(Impact 4.3-5)**

CEQA Criteria

Impacts on wilderness are not addressed in the Placer County CEQA checklist, Appendix G of the State CEQA Guidelines, or the *Placer County General Plan*. In addition, as stated previously, wilderness areas are federally designated. For these reasons, the following analysis does not address CEQA. However, as stated above, Section 4.2, "Visual Resources," incorporates wilderness values and relevant policies into the impact analysis for both NEPA and CEQA, and Section 4.4, "Land Use," contains an evaluation of consistency with Forest Service policies related to wilderness for both NEPA and CEQA.

4.3.1.3 ISSUES NOT DISCUSSED FURTHER

All issues related to wilderness are analyzed here.

4.3.2 Direct and Indirect Environmental Consequences

Impacts on local wilderness resources for each alternative have been analyzed based on four qualities of wilderness that are called out in the Wilderness Act of 1964 and further described by the Forest Service (U.S. Forest Service 2008). These qualities are "untrammeled," "undeveloped," "natural," and "opportunities for solitude or primitive and unconfined recreation."

4.3.2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.3-1 (Alt. 1): Effects on Untrammeled Wilderness

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and therefore no alteration of untrammeled wilderness character. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not authorize construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation or operation of new facilities. No modern human control or manipulation would be introduced to the National Forest System-GCW, so there would be no alteration of its untrammeled wilderness character.

NEPA Effects Conclusion
With no alteration of the National Forest System-GCW's untrammeled wilderness character, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-2 (Alt. 1): Effects on Undeveloped Wilderness

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and therefore no alteration of undeveloped wilderness character. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, no permanent improvements or human habitation would be introduced to the National Forest System-GCW, so there would be no alteration of its undeveloped wilderness character.

NEPA Effects Conclusion
With no alteration of the National Forest System-GCW's undeveloped wilderness character, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-3 (Alt. 1): Effects on Natural Wilderness

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and therefore no alteration of natural wilderness character. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, none of the effects of modern civilization would be introduced to the National Forest System-GCW's ecological systems, so there would be no alteration of its natural wilderness character.

NEPA Effects Conclusion
With no alteration of the National Forest System-GCW's natural wilderness character, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-4 (Alt. 1): Effects on Opportunities for Solitude or Primitive and Unconfined Recreation

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and therefore no reduction in opportunities for solitude or primitive and unconfined recreation. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, there would be no reduction in opportunities for solitude or primitive and unconfined recreation.

NEPA Effects Conclusion
With no reduction in opportunities for solitude or primitive and unconfined recreation in the National Forest System-GCW, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-5 (Alt. 1): Effects on Potential Wilderness Characteristics on Private Lands within the Congressionally Mapped Granite Chief Wilderness

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and therefore no development would be introduced to private lands within the congressionally mapped GCW. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, no development would be introduced to private lands within the congressionally mapped GCW.

NEPA Effects Conclusion
With no new development introduced to private lands within the congressionally mapped GCW, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.3.2.2 ALTERNATIVE 2

Impact 4.3-1 (Alt. 2): Effects on Untrammeled Wilderness

Alternative 2 would not introduce any human control or manipulation to National Forest System-GCW lands. The untrammeled quality of these lands would not be reduced. There would be **no effect** under NEPA.

Alternative 2 would not involve any construction or operational activity within the National Forest System-GCW. All construction-related activity and equipment, along with subsequent operation and maintenance of the gondola after its completion, would be precluded within the National Forest System-GCW. Therefore, Alternative 2 would not introduce any human control or manipulation on National Forest System-GCW lands, so the untrammeled quality of these lands would not be reduced.

NEPA Effects Conclusion
Like the No Action Alternative, Alternative 2 would have **no effect** on the untrammeled quality of National Forest System-GCW lands.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-2 (Alt. 2): Effects on Undeveloped Wilderness

Alternative 2 would not introduce any development or permanent improvement to National Forest System-GCW lands. The undeveloped quality of these lands would not be reduced. There would be **no effect** under NEPA.

Alternative 2 would not involve installation of any infrastructure within the National Forest System-GCW. All infrastructure required to facilitate operation of a gondola would be installed outside the National Forest System-GCW. Therefore, Alternative 2 would not introduce any permanent improvements or human habitation to the National Forest System-GCW, so the undeveloped quality of these lands would not be reduced.

NEPA Effects Conclusion

Like the No Action Alternative, Alternative 2 would have **no effect** on the undeveloped quality of National Forest System-GCW lands.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-3 (Alt. 2): Effects on Natural Wilderness

While Alternative 2 would not result in the construction or operation of any infrastructure within the National Forest System-GCW, some of the effects of modern civilization would be introduced to these lands. In accordance with Section 4.14, "Wildlife and Aquatics," implementation of Alternative 2 would result in direct and indirect effects to occupied Sierra Nevada yellow-legged frog (SNYLF) habitat and to unutilized potential habitat (not occupied) within designated critical habitat and would temporarily modify or remove primary constituent elements. Although direct habitat disturbance would not occur within the National Forest System-GCW, the wilderness ecological processes occurring within the National Forest System-GCW would be altered to some degree, meaning that the natural quality of these lands would be reduced. This effect would be **minorly adverse** under NEPA.

Alternative 2 would not result in the construction or operation of any infrastructure within the National Forest System-GCW, nor would it involve any modification of management strategies within those lands. However, Alternative 2 would result in effects (direct or indirect) of modern people on the ecological systems existing within the National Forest System-GCW, in accordance with Section 4.14, "Wildlife and Aquatics," which states, "Implementation of Alternative 2 would result in direct and indirect effects to occupied SNYLF habitat and to habitat with unutilized potential (not occupied) within designated critical habitat and would temporarily modify or remove primary constituent elements: non-breeding aquatic habitat and upland habitat for SNYLF." Although none of the SNYLF habitat, including designated critical habitat, within the National Forest System-GCW would be directly disturbed by project facilities, the ecological processes occurring within the National Forest System-GCW would be altered to some degree by implementation of Alternative 2, and may cease to be substantially free from the effects of modern civilization. For this reason, the natural quality of these lands would be reduced.

NEPA Effects Conclusion

Alternative 2 would have a **minorly adverse** effect on the natural quality of the National Forest System-GCW because the ecological processes occurring within those lands would be altered by implementation of Alternative 2, and may cease to be substantially free from the effects of modern civilization.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-4 (Alt. 2): Effects on Opportunities for Solitude or Primitive and Unconfined Recreation

Alternative 2 would result in the construction of gondola infrastructure that would be visible from certain locations within the National Forest System-GCW. The construction phase would also generate noise that would audible from certain locations within the National Forest System-GCW. Depending on the perception of individual users, this development could negatively affect the sense of solitude and reduce opportunities for primitive and unconfined recreation for these users. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to opportunities for solitude or primitive and unconfined recreation would be **adverse.** Implementation of RPMs SCE-1 and SCE-2 would mitigate these effects.

Alternative 2 would not introduce any human-made structures, construction activities, or management restrictions on visitor behavior to National Forest System-GCW lands. However, construction of the gondola would cause temporary visual impacts on persons within the National Forest System-GCW. These impacts include visibility of helicopters, machinery, and work crews, and audible construction activities, such as rock drilling, blasting, and use of helicopters. Additionally, operation of the gondola may create visual impacts for users of the National Forest System-GCW as cabins (summer only moving of cabins for system maintenance), towers, and wire-rope would be visible from Views 14 and 16, Five Lakes Granite Chief Wilderness and Squaw Saddle, respectively (see Section 4.2, "Visual Resources," for more information).

Although considerable development can already be seen from View 16 (refer to Appendix D for images of the existing conditions and visual simulations for each view) in the distance at the base area of Alpine Meadows, visibility of additional structures could negatively affect the sense of solitude and reduce opportunities for primitive and unconfined recreation for users of the National Forest System-GCW along the boundary with the project area. In addition, the Squaw Valley and Alpine Meadows mid-stations would improve access to the National Forest System-GCW during the winter, transitional seasons, and periods of inconsistent snow cover.[1] This is because gondola-users would have the potential to disembark at the mid-stations and enter the National Forest System-GCW. This impact would be minimal during the winter as the National Forest System-GCW experiences limited use for backcountry skiing and snowboarding as compared to the summer. However, during the transitional seasons and periods of inconsistent snow cover, it is possible that Alpine Meadows would still be open for public skiing and snowboarding and the gondola would be operational, and that at the same time southern aspect slopes would be dry enough for hikers to use the National Forest System-GCW for day-trips or backpacking. During these parts of the year when the gondola would continue to operate, and southern aspect slopes would be dry enough for hiking at the same time, the Squaw Valley and Alpine Meadows mid-stations would provide additional access points to the National Forest System-GCW. This improved access could increase the likelihood of visitor encounters within the National Forest System-GCW, thereby reducing opportunities for solitude and primitive and unconfined recreation.

Although the impacts related to construction would persist only during the construction phase, visual impacts associated with operation of the gondola would extend throughout each winter, and associated infrastructure would be visible from within the National Forest System-GCW year-round. Gondola cabins would be placed in storage and would not be on the line during summer (except for occasional moving of cabins as part of system maintenance), but towers and wire-rope would still be visible year-round from Views 14 and 16).

At its closest point under this alignment, the gondola would be approximately 75 feet from the National Forest System-GCW. Depending on the perception of individual users, opportunities for solitude or primitive and unconfined recreation from within the National Forest System-GCW could be reduced in the short term

[1] Transitional seasons are defined as the early and late ski seasons, when both winter and summer recreational activities are viable. Inconsistent snow cover is commonly found during the transitional seasons, when ski areas are open for the skiing/snowboarding public and at the same time, the southern aspect slopes are mostly dry or not entirely covered with snow; for example, the northern aspect slopes at both Squaw Valley and Alpine Meadows may have snow cover suitable for skiing/snowboarding, while the southern aspect slopes are dry enough to provide for hiking/backpacking. While periods of inconsistent snow cover are more likely during the early and late season, they may also occur mid-season.

as a result of construction and in the long term because gondola infrastructure would be visible from certain viewpoint locations within the National Forest System-GCW.

Potential impacts to opportunities for solitude or primitive and unconfined recreation from within the National Forest System-GCW would be reduced through the application of RPMs. RPM SCE-1 requires review and approval by the Forest Service of facilities, features, and design plans before any development of above ground structures can occur, which would ensure consistency of Alternative 2 with all relevant plans and policies. RPM SCE-2 requires that structure design, scale, location, orientation, and color of materials meet the Visual Quality Objectives of the project area to reduce potential visual contrast. Both RPMs would reduce the visual effect of the gondola on adjacent portions of the National Forest System-GCW. Appendix B provides a full list of applicable RPMs for this project.

NEPA Effects Conclusion

Alternative 2 would cause temporary audio and visual impacts on users of the National Forest System-GCW during the construction phase. In addition, visual impacts associated with continued operation of the gondola are possible in the long term. These potential impacts on opportunities for solitude or primitive and unconfined recreation depend on the perception of the development to individual users of the National Forest System-GCW. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to opportunities for solitude or primitive and unconfined recreation would be **adverse.** These effects would be mitigated through implementation of RPMs SCE-1 and SCE-2.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-5 (Alt. 2): Effects on Potential Wilderness Characteristics on Private Lands within the Congressionally Mapped Granite Chief Wilderness

Alternative 2 would introduce development to private lands within the congressionally mapped GCW. There would be an **adverse** effect under NEPA.

Direct impacts from Alternative 2 would occur on private lands within the congressionally mapped GCW. This development on private lands would be legally permissible because land use management direction and restrictions contained in the Wilderness Act of 1964 apply only to NFS lands and cannot be enforced on private lands even if the private lands lie within the congressionally mapped wilderness boundary.

In their existing condition, these private lands within the congressionally mapped GCW largely retain their undeveloped, natural character, with the exception of a short segment of low standard, native surface road. If Alternative 2 were to be approved by the Forest Service and the County, and the gondola were constructed through the private lands within the congressionally mapped GCW, the gondola's presence would reduce the untrammeled, undeveloped, and natural qualities of the area, and there would potentially be fewer opportunities for solitude or primitive and unconfined recreation.

NEPA Effects Conclusion

Alternative 2 would introduce development inconsistent with potential wilderness characteristics to private lands within the congressionally mapped GCW. There would be an **adverse** effect under NEPA.

Mitigation Measures

No mitigation measures are required.

4.3.2.3 ALTERNATIVE 3

Impact 4.3-1 (Alt. 3): Effects on Untrammeled Wilderness

Alternative 3 would not introduce any human control or manipulation to National Forest System-GCW lands. The untrammeled quality of these lands would not be reduced. There would be **no effect** under NEPA.

For the same reasons described above for Impact 4.3-1 (Alt. 2) the untrammeled quality of National Forest System-GCW lands would not be reduced by implementation of Alternative 3.

NEPA Effects Conclusion
Like Alternative 2, Alternative 3 would have **no effect** on the untrammeled quality of National Forest System-GCW lands.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-2 (Alt. 3): Effects on Undeveloped Wilderness

Alternative 3 would not introduce any development or permanent improvement to National Forest System-GCW lands. The undeveloped quality of these lands would not be reduced. There would be **no effect** under NEPA.

For the same reasons described above for Impact 4.3-2 (Alt. 2) the undeveloped quality of National Forest System-GCW lands would not be reduced by implementation of Alternative 3.

NEPA Effects Conclusion
Like Alternative 2, Alternative 3 would have **no effect** on the undeveloped quality of National Forest System-GCW lands.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-3 (Alt. 3): Effects on Natural Wilderness

While Alternative 3 would not result in the construction or operation of any infrastructure within the National Forest System-GCW, some of the effects of modern civilization would be introduced to these lands. In accordance with Section 4.14, "Wildlife and Aquatics," implementation of Alternative 3 would result in direct and indirect effects to occupied SNYLF habitat and to unutilized potential habitat (not occupied) within designated critical habitat and would temporarily modify or remove primary constituent elements. Although direct habitat disturbance would not occur within the National Forest System-GCW, the wilderness ecological processes occurring within the National Forest System-GCW would be altered to some degree, meaning that the natural quality of these lands would be reduced. This effect would be **minorly adverse** under NEPA. Effects to the natural quality of the National Forest System-GCW under Alternative 3 would be less adverse than under Alternative 2 because the gondola alignment under Alternative 3 would be further from the National Forest System-GCW than under Alternative 2.

Alternative 3 would not result in the construction or operation of any infrastructure within the National Forest System-GCW, nor would it involve any modification of management strategies within those lands. However, Alternative 3 would result in effects (direct or indirect) of modern people on the ecological systems existing within the National Forest System-GCW, in accordance with Section 4.14, "Wildlife and Aquatics," which states, "Implementation of Alternative 3 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." Although none of the SNYLF habitat, including designated critical habitat, within the National Forest System-GCW would be directly disturbed by project facilities, the ecological processes occurring within the National Forest System-GCW would be altered to some degree by implementation of Alternative 3, and may cease to be substantially free from the effects of modern civilization. For this reason, the natural quality of these lands would be reduced. Effects to the natural quality of the National Forest System-GCW under Alternative 3 would be less adverse than under Alternative 2 because the gondola alignment under Alternative 3 would be further from the National Forest System-GCW than under Alternative 2.

NEPA Effects Conclusion

Alternative 3 would have a **minorly adverse** effect on the natural quality of the National Forest System-GCW because the ecological processes occurring within those lands would be altered by implementation of Alternative 3, and may cease to be substantially free from the effects of modern civilization.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-4 (Alt. 3): Effects on Opportunities for Solitude or Primitive and Unconfined Recreation

Alternative 3 would result in the construction of gondola infrastructure that would be visible from certain locations within the National Forest System-GCW. The construction phase would also generate noise that would audible for certain locations within the National Forest System-GCW. Depending on the perception of individual users, this development could negatively affect the sense of solitude and reduce opportunities for primitive and unconfined recreation for these users. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to opportunities for solitude or primitive and unconfined recreation would be **minorly adverse** (slightly less adverse than Alternative 2). Implementation of RPMs SCE-1 and SCE-2 would mitigate these effects.

Alternative 3 would result in the construction of gondola infrastructure that would be visible from certain locations within the National Forest System-GCW. Under Alternative 3, the impacts would be similar to those previously described for Alternative 2 but lesser in magnitude because of topographical differences and the fact that the alignment for Alternative 3 would be further removed from the National Forest System-GCW. At its closest point under this alignment, the gondola would be approximately 450 feet from the National Forest System-GCW. For further clarity on the spatial differences between the gondola alignments for Alternative 3 and Alternative 2, refer to Section 4.2, "Visual Resources," along with visual simulations 14 and 16, found in Appendix D.

Compared with Alternative 2, Alternative 3 would result in less of a visitation increase to the National Forest System-GCW, as the location of the Alpine Meadows mid-station is such that gondola-users would not be able to disembark and enter the National Forest System-GCW from there. Gondola-users would only be able to disembark and enter the National Forest System-GCW from the Squaw Valley mid-station, so there would be less of an improvement in access to the National Forest System-GCW associated with Alternative 3 as compared with Alternative 2.

As described for Impact 4.3-4 (Alt. 2) above, RPMs SCE-1 and SCE-2 would reduce potential impacts to opportunities for solitude or primitive and unconfined recreation from within the National Forest System-GCW by reducing the visibility of the gondola from the National Forest System-GCW.

NEPA Effects Conclusion

Alternative 3 would cause temporary audio and visual impacts on the National Forest System-GCW during the construction phase. In addition, visual impacts associated with continued operation of the gondola are possible in the long term. These potential impacts on opportunities for solitude or primitive and unconfined recreation would be less than those associated with Alternative 2 topography and the fact that the alignment

for Alternative 3 would be further removed from the National Forest System-GCW. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to opportunities for solitude or primitive and unconfined recreation would be **minorly adverse.** These effects would be mitigated through implementation of RPMs SCE-1 and SCE-2.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-5 (Alt. 3): Effects on Potential Wilderness Characteristics on Private Lands within the Congressionally Mapped Granite Chief Wilderness

Alternative 3 would not introduce any development to private lands within the congressionally mapped GCW. There would be **no effect** under NEPA.

Under Alternative 3, no development would be introduced to private lands within the congressionally mapped GCW.

NEPA Effects Conclusion

Alternative 3 would not introduce any development to private lands within the congressionally mapped GCW. There would be **no effect** under NEPA.

Mitigation Measures

No mitigation measures are required.

4.3.2.4 ALTERNATIVE 4

Impact 4.3-1 (Alt. 4): Effects on Untrammeled Wilderness

Alternative 4 would not introduce any human control or manipulation to National Forest System-GCW lands. The untrammeled quality of these lands would not be reduced. There would be **no effect** under NEPA.

For the same reasons described above for Impact 4.3-1 (Alt. 2) the untrammeled quality of National Forest System-GCW lands would not be reduced by implementation of Alternative 4.

NEPA Effects Conclusion

Like Alternative 3, Alternative 4 would have **no effect** on the untrammeled quality of National Forest System-GCW lands.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-2 (Alt. 4): Effects on Undeveloped Wilderness

Alternative 4 would not introduce any development or permanent improvement to National Forest System-GCW lands. The undeveloped quality of these lands would not be reduced. There would be **no effect** under NEPA.

For the same reasons described above for Impact 4.3-2 (Alt. 2) the undeveloped quality of National Forest System-GCW lands would not be reduced by implementation of Alternative 4.

NEPA Effects Conclusion

Like Alternative 3, Alternative 4 would have **no effect** on the undeveloped quality of National Forest System-GCW lands.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-3 (Alt. 4): Effects on Natural Wilderness

While Alternative 4 would not result in the construction or operation of any infrastructure within the National Forest System-GCW, some of the effects of modern civilization would be introduced to these lands. In accordance with Section 4.14, "Wildlife and Aquatics," implementation of Alternative 4 would result in direct and indirect effects to occupied SNYLF habitat and to unutilized potential habitat (not occupied) within designated critical habitat and would temporarily modify or remove primary constituent elements. Although direct habitat disturbance would not occur within the National Forest System-GCW, the wilderness ecological processes occurring within the National Forest System-GCW would be altered to some degree, meaning that the natural quality of these lands would be reduced. This effect would be **minorly adverse** under NEPA. Effects to the natural quality of the National Forest System-GCW under Alternative 4 would be less adverse than under Alternative 2 or 3 because the gondola alignment under Alternative 4 would be further from the National Forest System-GCW than under Alternative 2 or 3.

Alternative 4 would not result in the construction or operation of any infrastructure within the National Forest System-GCW, nor would it involve any modification of management strategies within those lands. However, Alternative 4 would result in effects (direct or indirect) of modern people on the ecological systems existing within the National Forest System-GCW, in accordance with Section 4.14, "Wildlife and Aquatics," which states, "Implementation of Alternative 4 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." Although none of the SNYLF habitat, including designated critical habitat, within the National Forest System-GCW would be directly disturbed by project facilities, the ecological processes occurring within the National Forest System-GCW would be altered to some degree by implementation of Alternative 4, and may cease to be substantially free from the effects of modern civilization. For this reason, the natural quality of these lands would be reduced. Effects to the natural quality of the National Forest System-GCW under Alternative 4 would be less adverse than under Alternative 2 or 3 because the gondola alignment under Alternative 4 would be further from the National Forest System-GCW than under Alternative 2 or 3.

NEPA Effects Conclusion

Alternative 4 would have a **minorly adverse** effect on the natural quality of the National Forest System-GCW because the ecological processes occurring within those lands would be altered by implementation of Alternative 4, and may cease to be substantially free from the effects of modern civilization.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-4 (Alt. 4): Effects on Opportunities for Solitude or Primitive and Unconfined Recreation

Alternative 4 would result in the construction of gondola infrastructure that would be visible from certain locations within the National Forest System-GCW. The construction phase would also generate noise that would audible for certain locations within the National Forest System-GCW. Depending on the perception of individual users, this development could negatively affect the sense of solitude and reduce opportunities for primitive and unconfined recreation for these users. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to opportunities for solitude or primitive and

unconfined recreation would be **minorly adverse** (slightly less adverse than Alternatives 2 and 3). Implementation of RPMs SCE-1 and SCE-2 would mitigate these effects.

Alternative 4 would result in the construction of gondola infrastructure that would be visible from certain locations within the National Forest System-GCW. Under Alternative 4, these impacts would be similar to those previously described for Alternative 2 and Alternative 3 but lesser in magnitude compared to both alternatives. The lesser impact is the result of topographical differences and the fact that the alignment for Alternative 4 would be the furthest removed from the National Forest System-GCW of all the action alternative alignments. At its closest point, under this alignment, the gondola would be approximately 1,100 feet from the National Forest System-GCW. For further clarity on the spatial differences between the gondola alignments for Alternative 4 and Alternative 2, refer to Section 4.2, "Visual Resources," along with visual simulations 14 and 16, found in Appendix D.

The increase in visitation to the National Forest System-GCW associated with Alternative 4 would be identical to that described above for Alternative 3.

As described for Impact 4.3-4 (Alt. 2) above, RPMs SCE-1 and SCE-2 would reduce potential impacts to opportunities for solitude or primitive and unconfined recreation from within the National Forest System-GCW by reducing the visibility of the gondola from the National Forest System-GCW.

NEPA Effects Conclusion

Alternative 4 would cause temporary audio and visual impacts on the National Forest System-GCW during the construction phase. In addition, visual impacts associated with continued operation of the gondola are possible in the long term. These potential impacts on opportunities for solitude or primitive and unconfined recreation would be less than those associated with Alternative 2 or Alternative 3 because of topographical differences and the fact that the alignment for Alternative 4 would be the furthest removed from the National Forest System-GCW of all the action alternative alignments. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to opportunities for solitude or primitive and unconfined recreation would be **minorly adverse**. These effects would be mitigated through implementation of RPMs SCE-1 and SCE-2.

Mitigation Measures

No mitigation measures are required.

Impact 4.3-5 (Alt. 4): Effects on Potential Wilderness Characteristics on Private Lands within the Congressionally Mapped Granite Chief Wilderness

Alternative 4 would not introduce any development to private lands within the congressionally mapped GCW. There would be **no effect** under NEPA.

Under Alternative 4, no development would be introduced to private lands within the congressionally mapped GCW.

NEPA Effects Conclusion

Alternative 4 would not introduce any development to private lands within the congressionally mapped GCW. There would be **no effect** under NEPA.

Mitigation Measures

No mitigation measures are required.

4.3.2.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.3-1 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

For Alternative 1 – No Action Alternative, there would be no effect for all NEPA indicators.

Addressing the action alternatives, for Impacts 4.3-1 and 4.3-2, there would be no effect for all NEPA indicators, as none of the action alternatives would introduce any human control or manipulation, or development or permanent improvement, to the National Forest System-GCW. There is no meaningful difference in effects across the three action alternatives for both of these impacts.

For Impact 4.3-3, there would be a minorly adverse impact for all action alternatives. While none of the action alternatives would result in the construction or operation of any infrastructure within the National Forest System-GCW (or any modification of management strategies within those lands), the action alternatives would result in the direct or indirect effects of modern people on the ecological systems existing within the National Forest System-GCW. The ecological processes occurring within the National Forest System-GCW would be altered to some degree by implementation of the action alternatives, and may cease to be substantially free from the effects of modern civilization. For this reason, the natural quality of these lands would be reduced, and there would be a minorly adverse effect under NEPA. With regard to the magnitude of effects to the natural quality of the National Forest System-GCW under each action alternative, Alternative 2 would be more adverse than Alternative 3, which would be more adverse than Alternative 4.

For Impact 4.3-4, there would be an adverse effect for Alternative 2 and a minorly adverse effect for Alternatives 3 and 4. These effects would be minimized with implementation of applicable RPMs. Under Alternative 2, the gondola would be located high on the Squaw Valley saddle and approximately 75 feet from the National Forest System-GCW at its closest point, considerably increasing its visibility; gondola-users would be able to enter the National Forest System-GCW from both the Squaw Valley mid-station and the Alpine Meadows mid-station during the winter, transitional seasons, and periods of inconsistent snow cover. In contrast, under Alternative 3, the gondola would be aligned through Catch Valley and approximately 450 feet from the National Forest System-GCW at its closest point, such that natural topography would reduce its visibility from within the National Forest System-GCW as compared to Alternative 2; gondola-users would only be able to enter the National Forest System-GCW from the Squaw Valley mid-station during the winter, transitional seasons, and periods of inconsistent snow cover. Alternative 4 would be located approximately 1,100 feet from the National Forest System-GCW at its closest point, and natural topography would reduce its visibility from within the National Forest System-GCW as compared to Alternative 2; gondola-users would only be able to enter the National Forest System-GCW from the Squaw Valley mid-station during the winter, transitional seasons, and periods of inconsistent snow cover.

For Impact 4.3-5, there would be an adverse effect for Alternative 2 and no effect for Alternatives 3 and 4. Alternative 2 would introduce development to private lands within the congressionally mapped GCW, while Alternatives 3 and 4 would not.

Table 4.3-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.3-1: Effects on Untrammeled Wilderness	Discussion of impacts of the alternatives on the wilderness character and characteristics of the National Forest System-GCW. Discuss particularly visual impacts, impacts of increased use, construction activity (helicopters and other machinery), gondola operations, avalanche control, and increased noise on the wilderness experience and values	No effect	No effect	No effect Same as for Alternative 2	No effect Same as for Alternatives 2 and 3
4.3-2: Effects on	Discussion of impacts of the alternatives on the wilderness character and characteristics of the National Forest System-	No effect	No effect	No effect Same as for	No effect Same as for

Table 4.3-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Undeveloped Wilderness	GCW. Discuss particularly visual impacts, impacts of increased use, construction activity (helicopters and other machinery), gondola operations, avalanche control, and increased noise on the wilderness experience and values			Alternative 2	Alternatives 2 and 3
4.3-3: Effects on Natural Wilderness	Discussion of impacts of the alternatives on the wilderness character and characteristics of the National Forest System-GCW. Discuss particularly visual impacts, impacts of increased use, construction activity (helicopters and other machinery), gondola operations, avalanche control, and increased noise on the wilderness experience and values	No effect	Minorly adverse	Minorly adverse Less than under Alternative 2	Minorly adverse Less than under Alternative 2 or 3
4.3-4: Effects on Opportunities for Solitude or Primitive and Unconfined Recreation	Discussion of impacts of the alternatives on the wilderness character and characteristics of the National Forest System-GCW. Discuss particularly visual impacts, impacts of increased use, construction activity (helicopters and other machinery), gondola operations, avalanche control, and increased noise on the wilderness experience and values	No effect	Adverse	Minorly adverse Less than under Alternative 2	Minorly adverse Less than under Alternatives 2 and 3
4.3-5: Effects on Potential Wilderness Characteristics on Private Lands within the Congressionally Designated Granite Chief Wilderness	Discussion of the private lands with congressional designation, the applicability of Forest Service management	No effect	Adverse	No effect Less than under Alternative 2	No effect Less than under Alternative 2 and same as Alternative 3

4.3.3 Cumulative Effects

4.3.3.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope for this cumulative effects analysis of wilderness includes the ski area operating boundaries of Squaw Valley and Alpine Meadows and surrounding NFS and private lands (including the GCW).

Any present or reasonably foreseeable future projects in the vicinity of the National Forest System-GCW that have the potential to create impacts to its wilderness characteristics are listed below. Potential impacts associated with these projects to the National Forest System-GCW include substantial increases in use, visual impacts for users caused by construction or operation of the gondola, and regulatory changes that alter management direction.

The following is a list of present and reasonably foreseeable future projects that could affect wilderness characteristics within the congressionally mapped GCW.

Project	Potential impacts
Caldwell property (White Wolf) development	Increased use; audio and visual impacts from construction
General development in Olympic Valley	Increased use; audio and visual impacts from construction
General development in Alpine Meadows	Increased use; audio and visual impacts from construction
Alpine Sierra subdivision	Audio/visual impacts from construction
Tahoe National Forest Land and Resource Management Plan	Regulatory changes
Sierra Nevada Forest Plan Amendment	Regulatory changes

4.3.3.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct and indirect impacts and thus by definition no cumulative impacts to wilderness characteristics or values.

Alternative 2

The only reasonably foreseeable project listed in the table above with the potential to interact with effects related to development in the congressionally mapped GCW is the Caldwell property (i.e., White Wolf) development. The Caldwell property development is not a connected action to Alternative 2 and is instead considered here as an additive action; implementation of the Caldwell property development does not depend on implementation of Alternative 2, and implementation of Alternative 2 does not depend on implementation of the Caldwell property development. Because the gondola would provide additional access points to the National Forest System-GCW via the Squaw Valley and Alpine Meadows mid-stations, cumulative effects associated with the Caldwell property development are possible. These cumulative effects would result from the construction of a private lift for residents of the new homes on the Caldwell property, which is proposed to allow residents and guests of the Caldwell property access to the Alpine Meadows mid-station and the greater gondola line. If Alternative 2 is selected and the private lift is built, the National Forest System-GCW could experience a marginal increase in visitation via this private lift, which would result in the increased likelihood of visitor encounters and a slight reduction in opportunities for solitude or primitive and unconfined recreation. Construction and operation of this private lift would also introduce development inconsistent with potential wilderness characteristics to private lands within the congressionally mapped GCW, resulting in a cumulative adverse effect to these private lands within the congressionally mapped GCW.

Additionally, visibility of the Caldwell property development from within the National Forest System-GCW could reduce opportunities for solitude or primitive and unconfined recreation; however, cumulative reductions in the untrammeled, undeveloped, and natural qualities of the National Forest System-GCW associated with visibility of the Caldwell property development would not occur. Alternative 2 on its own has the potential to result in a reduction to opportunities for solitude or primitive and unconfined recreation, which is characterized as an adverse effect. When added to this adverse effect, the effects associated with the Caldwell property development discussed above (the potential for increased likelihood of visitor encounters and visual impacts for users of the National Forest System-GCW) would result in a cumulative adverse effect to opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW.

Under Alternative 2, the proposed Alpine Meadows mid-station would provide access to the master planned, and as yet unpermitted, Rollers lift (included in the Alpine Meadows Master Development Plan), which is considered cumulatively here as a component of general development in Alpine Meadows. The bottom terminal of the Rollers lift would be located near the Alpine Meadows mid-station (on private land), and it is anticipated that skiers would be able to exit the gondola at this mid-station to access the potential Rollers lift and the terrain it would serve. The proposed gondola, in combination with the Rollers lift, could cause cumulative impacts to the natural wilderness characteristic and reduce opportunities for solitude or primitive and unconfined recreation. The natural wilderness characteristic would be affected if construction and operation of the potential Rollers lift alter the ecological systems within the National Forest System-GCW. Opportunities for solitude or primitive and unconfined recreation would be reduced if the potential Rollers lift is visible from within the National Forest System-GCW and experiential impacts to visitors of the National Forest System-GCW result; however, visitation to the National Forest System-GCW would not increase as a result of installation of the potential Rollers lift because it would not improve access to the National Forest System-GCW.

It is also possible that the Alpine Sierra subdivision, which is currently under environmental review and (if approved and implemented) would result in the construction of additional residential units in the Alpine Meadows area, would bring more people to the project area that may use the Five Lakes Trail and National Forest System-GCW. Approval and implementation of the Alpine Sierra subdivision may increase visitation to the Five Lakes Trail and National Forest System-GCW, but this increased visitation would not be anticipated to be substantial enough to result in a cumulative adverse effect to opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW.

Cumulative effects to the natural wilderness characteristic resulting from effects to SNYLF or SNYLF critical habitat would not be substantial. Given the small amount of critical habitat affected by Alternative 2, the requirement to offset these effects, 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.

Alternative 3

Cumulative effects associated with this alternative would be similar to those described above for Alternative 2. Under Alternative 3, construction of the gondola would result in the presence of the Alpine Meadows mid-station on the Caldwell property, eliminating the use of a private lift that would connect the Caldwell property to the gondola. However, the National Forest System-GCW could still experience a marginal increase in visitation because residents and guests of the White Wolf project could load onto the gondola via the Alpine Meadows mid-station, travel to the Squaw Valley mid-station, and enter the National Forest System-GCW there. This could result in the increased likelihood of visitor encounters and a slight reduction in opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW.

Additionally, visibility of the White Wolf development from within the National Forest System-GCW could reduce opportunities for solitude or primitive and unconfined recreation, as discussed above under Alternative 2.

Alternative 3 on its own has the potential to result in a reduction to opportunities for solitude or primitive and unconfined recreation, which is characterized as an adverse effect. When added to this adverse effect, the effects associated with the Caldwell property development discussed above (the potential for increased likelihood of visitor encounters and visual impacts for users of the National Forest System-GCW) would result in a cumulative adverse effect to opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW.

Under Alternative 3, cumulative impacts associated with the potential Rollers lift would be lesser in magnitude than those described above for Alternative 2 because the Alpine Meadows mid-station under Alternative 3 would not be in proximity to the potential Rollers lift, as it would be under Alternative 2. As a result, gondola passengers under Alternative 3 would not be able to disembark at the Alpine Meadows mid-

station and directly access the Rollers lift or the terrain beneath it, meaning that any potential increase in skier traffic within the terrain serviced by the Rollers lift would be considerably less under Alternative 3 than under Alternative 2.

It is also possible that the Alpine Sierra subdivision, which is currently under environmental review and (if approved and implemented) would result in the construction of additional residential units in the Alpine Meadows area, would bring more people to the project area that may use the Five Lakes Trail and National Forest System-GCW. Approval and implementation of the Alpine Sierra subdivision may increase visitation to the Five Lakes Trail and National Forest System-GCW, but this increased visitation would not be anticipated to be substantial enough to result in a cumulative adverse effect to opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW.

Cumulative effects to the natural wilderness characteristic resulting from effects to SNYLF or SNYLF critical habitat would not be substantial. Given the small amount of critical habitat affected by Alternative 3, the requirement to offset these effects, and the fact that reasonably foreseeable future projects would be required to implement similar measures to comply with existing laws and regulations, Alternative 3 would not make a considerable contribution to any cumulative effect related to SNYLF. In addition, Alternative 3 would not result in the construction of the Alpine Meadows mid-station in the vicinity of a known SNYLF occurrence (Barstool Lake), and therefore would make less of a contribution to overall cumulative effects than Alternative 2.

Alternative 4

Cumulative effects associated with Alternative 4 are nearly the same as those described above for Alternative 3, except that there would be less of an increase in likelihood of visitor encounters within the National Forest System-GCW, because the Squaw Valley mid-station under Alternative 4 would be further removed from the National Forest System-GCW (i.e. approximately 950 feet further east than under Alternative 2 or 3). Therefore, reductions in opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW would be lesser than those described above for Alternative 2 or 3. Visibility of the Caldwell property development from within the National Forest System-GCW would still be possible under Alternative 4.

Alternative 4 on its own has the potential to result in a reduction to opportunities for solitude or primitive and unconfined recreation, which is characterized as an adverse effect. When added to this adverse effect, the effects associated with the Caldwell property development discussed above (the potential for an increased likelihood of visitor encounters and visual impacts for users of the National Forest System-GCW) would result in a cumulative adverse effect to opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW.

Under Alternative 4, cumulative impacts associated with the potential Rollers lift would be nearly identical to those described above for Alternative 3. More specifically, under Alternative 4, cumulative impacts associated with the potential Rollers lift would be lesser in magnitude than those described above for Alternative 2 because the Alpine Meadows mid-station under Alternative 4 would not be in proximity to the potential Rollers lift, as it would be under Alternative 2. As a result, gondola passengers under Alternative 4 would not be able to disembark at the Alpine Meadows mid-station and directly access the Rollers lift or the terrain beneath it, meaning that any potential increase in skier traffic within the terrain serviced by the Rollers lift would be considerably less under Alternative 4 than under Alternative 2.

It is also possible that the Alpine Sierra subdivision, which is currently under environmental review and (if approved and implemented) would result in the construction of additional residential units in the Alpine Meadows area, would bring more people to the project area that may use the Five Lakes Trail and National Forest System-GCW. Approval and implementation of the Alpine Sierra subdivision may increase visitation to the Five Lakes Trail and National Forest System-GCW, but this increased visitation would not be anticipated to be substantial enough to result in a cumulative adverse effect to opportunities for solitude or primitive and unconfined recreation within the National Forest System-GCW.

Cumulative effects to the natural wilderness characteristic resulting from effects to SNYLF or SNYLF critical habitat would not be substantial. Given the small amount of critical habitat affected by Alternative 4, the requirement to offset these effects, and the fact that reasonably foreseeable future projects would be required to implement similar measures to comply with existing laws and regulations, Alternative 4 would not make a considerable contribution to any cumulative effect related to SNYLF. In addition, Alternative 4 would not result in the construction of the Alpine Meadows mid-station in the vicinity of a known SNYLF occurrence (Barstool Lake), and therefore would make less of a contribution to overall cumulative effects than Alternative 2.

4.4 LAND USE

This section includes a description of the existing land use practices on the project site, descriptions of relevant land use management policies, and an analysis of potential short- and long-term impacts on land use on the project site associated with implementation of any of the alternatives.

4.4.1 Affected Environment

4.4.1.1 ENVIRONMENTAL SETTING

Geography of the Area

The Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows) are located in Placer County, California, northwest of Lake Tahoe (see Exhibit 1-1 in Chapter 1, "Introduction") on both privately- and publicly-owned land. Between Squaw Valley and Alpine Meadows is a large parcel of private land called the Caldwell property. The potential alignments for the proposed gondola would pass through this property to connect the base areas of the two resorts (see Exhibit 1-2 in Chapter 1, "Introduction"). West of the two resorts and the Caldwell property is the Granite Chief Wilderness (GCW).[1]

Existing Land Ownership and Uses

The project site is located on a mix of public and private lands. The private land consists of the Squaw Valley Ski Resort, owned by Squaw Valley Ski Holdings (SVSH) and the Caldwell property. Alpine Meadows is located on a mix of private and public lands and has been issued a special use permit for the skiing/resort operations that occur on the National Forest System (NFS) lands within its operational boundary. The GCW land within public NFS ownership (which lies west of the project site) is also managed by the Forest Service, but no development associated with the proposed project would occur within this area.

Squaw Valley and Alpine Meadows

Since the inception of Squaw Valley and Alpine Meadows, both resorts have offered exceptional recreational opportunities. SVSH purchased Squaw Valley in 2010 and Alpine Meadows in 2011. Currently, a lift ticket purchased at either resort provides access to both, but users who want to take advantage of this amenity must drive from one resort to the other or use the resort-provided shuttle service between resorts. The drive time between the ski resorts, with light traffic, is estimated at approximately 16 minutes (SE Group and RRC Associates 2018).

Caldwell Property

The Caldwell property encompasses a section of land, approximately 640 acres, and is largely undeveloped. The Five Lakes Trail, a dispersed recreation trail that provides access to the National Forest System-GCW, runs through the Caldwell property; the Five Lakes Trail is managed by the Forest Service via an easement with the landowner. The property includes both relatively minor sloped areas and rugged, steep terrain. It has a private home, auxiliary structures and lift towers (referred to as "KT South") extending to the top of the property. Although lift ropes have never been installed on KT South and the lift has never been operational, KT South was initially intended to connect the Caldwell property to the top of KT-22 at Squaw Valley. A gondola connection between Squaw Valley and Alpine Meadows necessitates the construction of gondola infrastructure on the Caldwell property. In 2015, the landowner and SVSH (owner of both ski resorts) came to an agreement to allow access through the Caldwell property, which progressed plans for the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project to the proposal stage (the subject of this document).

[1] An important distinction is drawn throughout this document between the public and private lands within the GCW. For clarity regarding this distinction, refer to the "Granite Chief Wilderness" section below and to Section 4.3, "Wilderness."

In 2017, the Caldwell property landowner submitted an application to Placer County for a proposed 38-home private residential community, including an additional private chair lift and associated amenities on the property.

Granite Chief Wilderness

The GCW is a designated wilderness area that consists of approximately 25,256 acres of land, 25,079 of which are federal lands managed as part of the National Wilderness Preservation System (NWPS) (U.S. Forest Service 2012); the other 177 acres are privately owned. The Wilderness Act of 1964 allows for the establishment and protection of wilderness areas through the NWPS, and the California Wilderness Act of 1984 designated certain new lands within the state of California that were to be managed as such, including the GCW.

When Congress enacted the California Wilderness Act of 1984, it mapped a boundary for the GCW that overlaps with a portion of the privately owned Caldwell property. Although this portion of the Caldwell property is technically within the GCW, as mapped by Congress, the land use management direction and restrictions imposed by the act apply only to, and have meaning only upon, federal lands; the extension of a wilderness boundary as mapped onto adjacent private lands does not provide for protection or management of those private lands as wilderness. For clarity regarding this distinction, this document refers to all lands (public and private) within the congressional map as the "GCW," the NFS lands within the GCW as "National Forest System-GCW," and the privately owned land of the Caldwell property within the congressionally mapped wilderness boundary as "private lands within the congressionally mapped GCW." Section 4.3, "Wilderness," provides in-depth information on these distinctions.

The National Forest System-GCW is a mostly natural wilderness area that allows for both day hiking and overnight camping. Far-reaching land use restrictions are imposed within the National Forest System-GCW to preserve its unrefined wilderness characteristics in the face of competing demands for use of those lands. Implementing the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project would not affect current land use practices, or management, in the National Forest System-GCW because no development would occur within or upon this area.

4.4.1.2 REGULATORY SETTING

Federal

Tahoe National Forest Land and Resource Management Plan and Resource Management Plan and Sierra Nevada Forest Plan Amendment

The stated purpose of the *Tahoe National Forest Land and Resource Management Plan* (LRMP) is to "direct the management of the Tahoe National Forest (TNF) for the next 10 to 15 years. Its goals are to ensure the wise use and protection of TNF resources, fulfill legislative requirements, and address local, regional, and National issues" (U.S. Forest Service 1990). Regarding land use planning in the TNF, the LRMP focuses on coordinating federal policy with state and local policies for efficient management and on minimizing conflicts associated with the urban/rural wildland interface.

The Sierra Nevada Forest Plan Amendment Record of Decision Final Supplemental EIS (SNFPA) (U.S. Forest Service 2004) amended the LRMP in 2004. The LRMP and SNFPA, collectively referred to as the Forest Plan, established standards and guidelines related to land use on the TNF. As part of the analysis conducted for this Final EIS/EIR, these standards and guidelines were applied and evaluated for consistency.

Urban/Rural Wildland Interface

The urban/rural wildland interface is the transitional land between unoccupied land and human development, and it is a considerable issue on the TNF because approximately one-third of the land within the general boundaries of the TNF is privately owned (U.S. Forest Service 1990). Private parcels within congressionally designated National Forest boundaries are commonly referred to as "inholdings." The Caldwell property is among these private inholdings within the TNF as are portions of the Alpine Meadows

and Squaw Valley resorts. The Forest Service has no jurisdiction over land use development on private inholdings. A key LRMP land use goal is to manage NFS lands in urban/rural wildland interface situations with a commitment to work with private landowners and other agency neighbors to resolve possible conflicts while continuing to provide a wide range of multiple use goods and services (U.S. Forest Service 1990).

Management Area 086 – Scott

The TNF is divided into 109 management areas, each with its own resource management emphasis and standards and guidelines that direct Forest Service management of the lands contained within it. Squaw Valley is located on private land and is therefore not a part of any designated management areas; however, Alpine Meadows is partially located on NFS lands and is directed by the rules and regulations established for Management Area 086 – Scott (Scott Management Area) (refer to Exhibit 4.4-1 for a map of various management areas within the project area). The resource management emphasis makes clear that although ski area development is expected within the Scott Management Area, development will remain subordinate to the overall natural landscape (U.S. Forest Service 1990):

> Development of private sector ski area maintenance, operation, and planning will be emphasized during the planning period.... The desired future condition will resemble the unit's existing condition, roaded-natural appearing, except where ski expansion is approved. In those areas where base facilities are approved, there will be a shift from roaded-natural appearing to rural classification as development occurs. New base facilities will be rural in character. Upslope ski runs, and facilities should be subordinate to the overall landscape....[2]

The resource management emphasis and other rules and regulations established for the Scott Management Area direct the land uses allowed in that portion of the TNF.

State

There are no state laws or regulations containing land use policies or provisions that are relevant to the analysis for the project.

Local

Placer County General Plan

The *Placer County General Plan* (Placer County 2013) provides an overall framework for the development of the County and protection of its natural and cultural resources. A total of 23 community plans have been adopted under the *Placer County General Plan* to provide a more detailed focus on specific geographic areas within the unincorporated County. Two of them—the *Squaw Valley General Plan and Land Use Ordinance* (SVGPLUO) and *Alpine Meadows General Plan*—are relevant to the project and are discussed below. The goals and policies included within the community plans supplement, but do not supersede, the goals and policies contained within the General Plan.

The Land Use Element of the *Placer County General Plan* contains the following policies that may be applicable to the action alternatives (Placer County 2013):

General Land Use

- **Policy 1.A.1.** The County will promote the efficient use of land and natural resources.

- **Policy 1.A.2.** The County shall permit only low-intensity forms of development in areas with sensitive environmental resources or where natural or human-caused hazards are likely to pose a significant threat to health, safety, or property.

[2] The "roaded-natural appearing" and "rural" classifications refer to Recreation Opportunity Spectrum classifications, which direct which recreational activities are allowed on certain tracts of NFS lands. For a detailed explanation of these classifications, refer to Section 4.1, "Recreation."

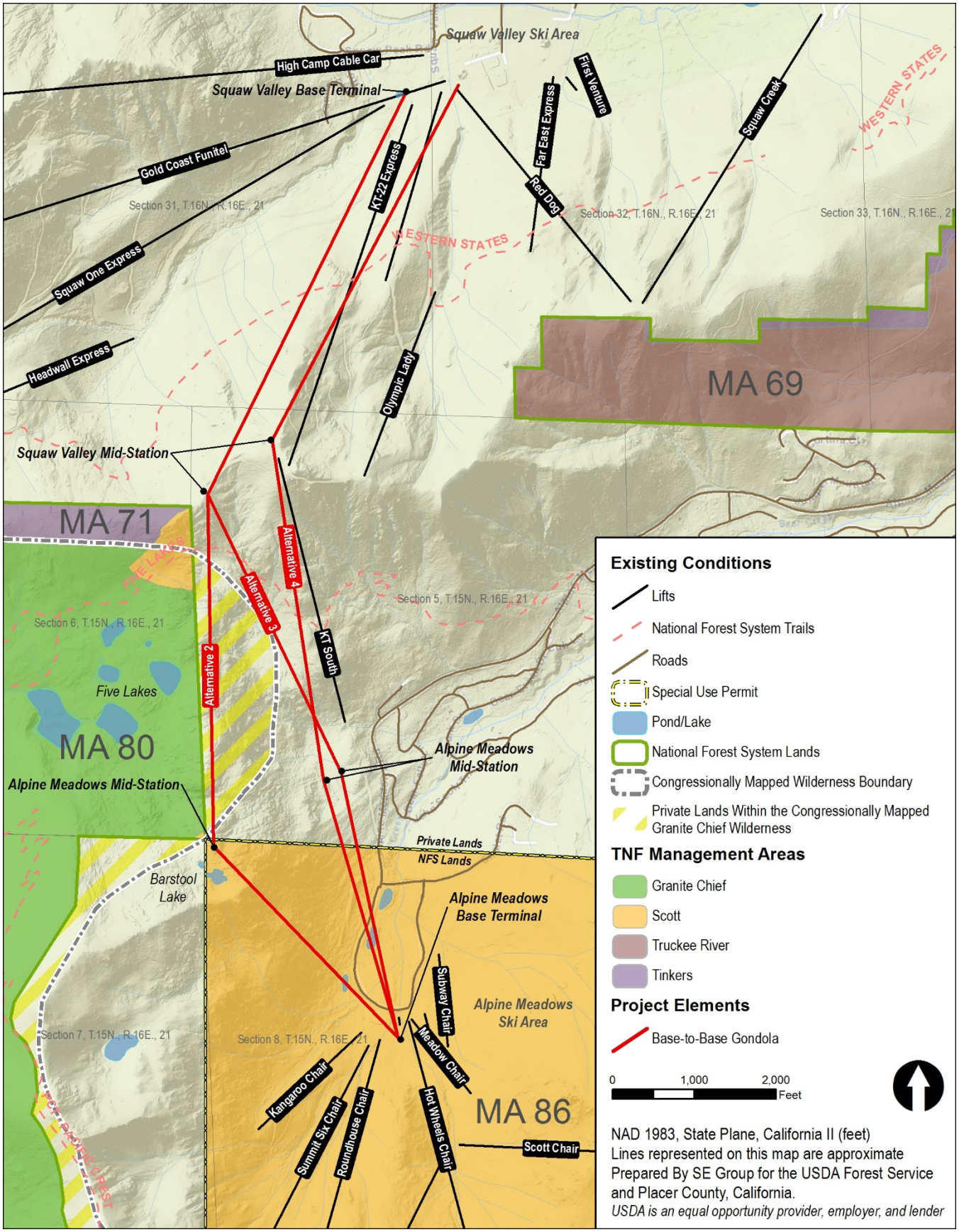


Exhibit 4.4-1 Forest Plan Management Areas in the Project Area, including Management Area 086 – Scott (Scott Management Area)

Recreation Land Use

- **Policy 1.G.1.** The County will support the expansion of existing winter ski and snow play areas and development of new areas where circulation and transportation system capacity can accommodate such expansions or new uses and where environmental impacts can be adequately mitigated.

- **Policy 1.G.2.** The County shall strive to have new recreation areas located and designed to encourage and accommodate non-auto mobile access.

Open Space, Habitat, and Wildlife Resources

- **Policy 1.I.1.** The County shall require that significant natural, open space, and cultural resources be identified in advance of development and incorporated into site-specific development project design. The Planned Residential Developments (PDs) and the Commercial Planned Development (CPD) provisions of the Zoning Ordinance can be used to allow flexibility for this integration with valuable site features.

- **Policy 1.I.2.** The County shall require that development be planned and designed to avoid areas rich in wildlife or of a fragile ecological nature (e.g., areas of rare or endangered plant species, riparian areas). Alternatively, where avoidance is infeasible or where equal or greater ecological benefits can be obtained through off-site mitigation, the County shall allow project proponents to contribute to off-site mitigation efforts in lieu of on-site mitigation.

Placer County Zoning Ordinance

The *Placer County Zoning Ordinance*, Chapter 17 of the *Placer County Code*, was adopted by the County Board of Supervisors in July 1995 (Edition #1) and revised in 2011. The Zoning Ordinance, which is consistent with the *Placer County General Plan* and applicable community plans, regulates the use of land, buildings, and structures and establishes minimum regulations and standards for the development of land in Placer County. Placer County zoning designations for the portion of the project site within Squaw Valley are regulated by the SVGPLUO, and those for the portion of the site within Alpine Meadows are regulated by the Alpine Meadows General Plan and *Placer County Zoning Ordinance* where appropriate (see description of *Alpine Meadows General Plan* below).

Squaw Valley General Plan and Land Use Ordinance

Placer County combined the *Squaw Valley General Plan* with the implementing ordinance, the land use ordinance, and approved the two documents together. Thus, Placer County considers these two documents to be interrelated and references them together as the SVGPLUO (Placer County 2006:1). The SVGPLUO establishes policies specific to Squaw Valley that build on the general policies found in the *Placer County General Plan* and *Placer County Zoning Ordinance*. It is the primary document governing land use development in Squaw Valley. The Placer County Board of Supervisors approved the SVGPLUO on August 30, 1983. Placer County incorporated the SVGPLUO into the *Placer County Code* and refers to it as a community plan. (See *Placer County Code* Chapter 17, Appendix A; *Placer County Code*, Section 17.02.030.) Under *Placer County Code* Section 17.02.030, the regulatory provisions of the SVGPLUO apply to development in Squaw Valley unless the document explicitly defers to the *Placer County Code* or is silent regarding land use matters otherwise governed by the *Placer County Code*. In these cases, the relevant provisions of the *Placer County General Plan* or *Placer County Code* apply.

The SVGPLUO is the community plan for the approximately 4,700-acre Squaw Valley. Future development in Squaw Valley is required under the SVGPLUO to comply with the following guidelines (Placer County 2006):

- Both the quality and quantity of development must be planned to conserve, protect, and enhance the aesthetic, ecological, and environmental assets of Squaw Valley.

- Future development in Squaw Valley should occur only where public facilities and services, including transportation, can be efficiently provided.

- Intense utilization of already disturbed areas shall be promoted and preferred to fringe development or non-contiguous development of previously undisturbed areas.

- Decisions regarding future development should be based upon sound social, economic, and environmental practices.

- In planning for the future growth and development of Squaw Valley, an optimum balance of activities and facilities, which recognizes the strengths, weaknesses, and inter-relationships of various segments of the Truckee-Squaw Valley and Tahoe area economies should be encouraged.

The following development goals from the SVGPLUO have been considered for purposes of evaluating the action alternatives (Placer County 2006):

- cluster development should be encouraged to reduce the amount of land disturbed;

- development should be designed to minimize damage to existing vegetation and to ensure that all disturbed areas are revegetated and restored to their natural state;

- development should occur in either previously disturbed areas or areas of good tree coverage. Meadows, stream environment zones, steep terrain, and transition zones where vegetation changes should remain free of development; and

- encourage development of a destination resort.

The land use and zoning designations for the Squaw Valley portion of the project site are Forest Recreation (FR) (Placer County 2006). See Exhibits 4.4-2 and 4.4-3, respectively, for maps of the existing land use and zoning designations on the project site. The Forest Recreation designation for both land use and zoning is defined as follows (Placer County 2006):

> The intent of this district is to retain the general character of the forest environment while at the same time permitting active recreational development (SVGPLUO, Section 250). With few exceptions, lands in this district are considered too remote, too steep, or contain serious development constraints which would prohibit development of commercial or residential land uses. It is the further intent of this district to establish areas wherein public or private recreation facilities, either commercial in nature or publicly funded, can be developed to meet the year-round recreation needs of the residents and visitors in Squaw Valley.
>
> Permitted uses include forest stations and look outs, grazing, growing and harvesting of timber and other forest products, outdoor amphitheater, picnic areas, public and private playgrounds and parks, riding and hiking trails, stables and corrals, ski lifts and ski trails, structures and uses required for the operation of a public utility or performance of a governmental function, tennis courts, and helicopter skiing.

The SVGPLUO also states that proposed ski lifts must be shown on the General Plan Map (Future Potential Ski Lifts Map) to be considered (Placer County 2006):

> New ski lifts shall be limited to those shown on the General Plan Map [Future Potential Ski Lifts Map]. Further, these new ski lifts can be developed only when parking, circulation and transit can adequately accommodate the increased capacity thus made available.

Proposed ski lifts that are not currently shown on the Future Potential Ski Lifts Map require a General Plan Amendment to include the proposed ski lift as a potential development on this map.

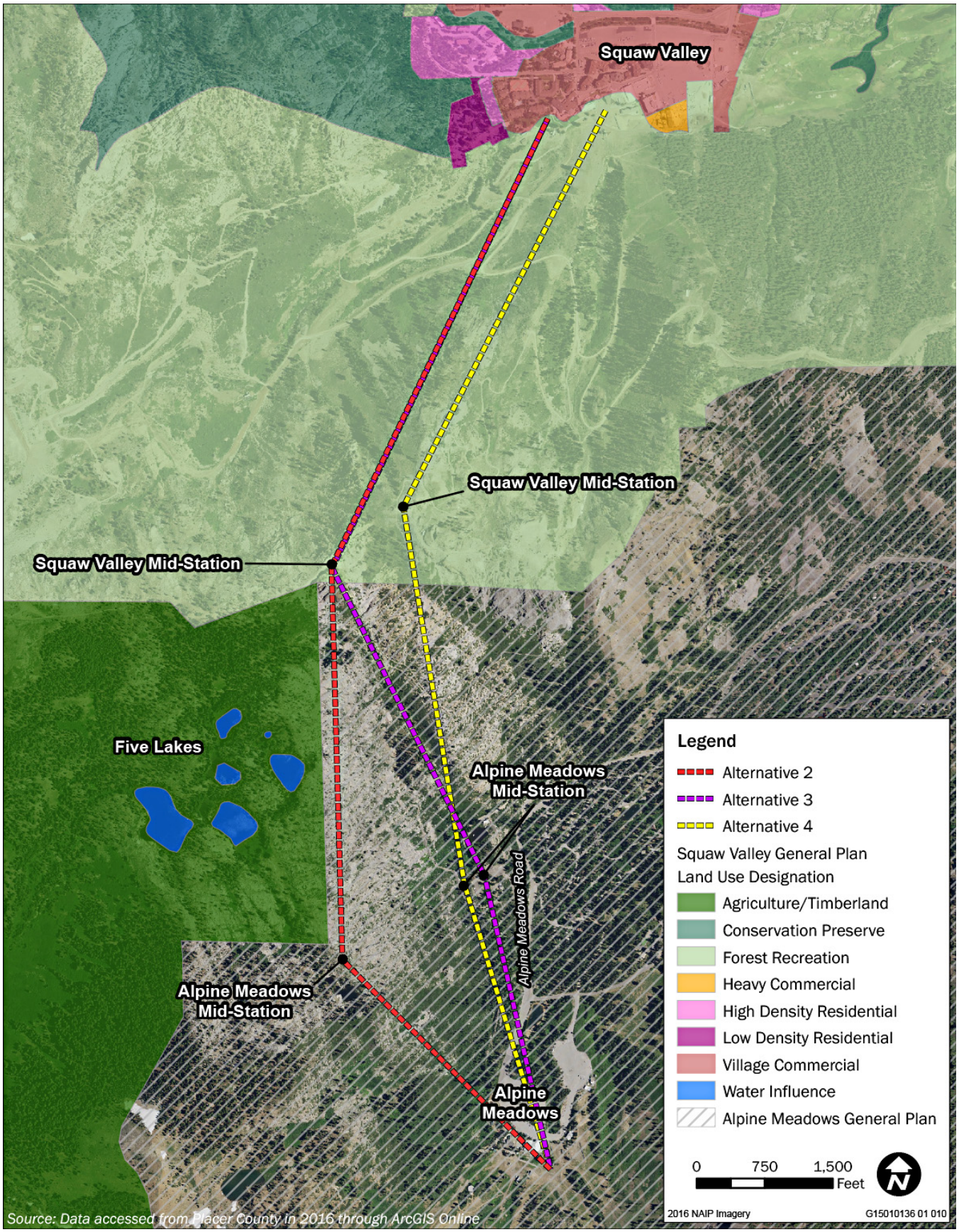


Exhibit 4.4-2 Existing Local Land Use Designations

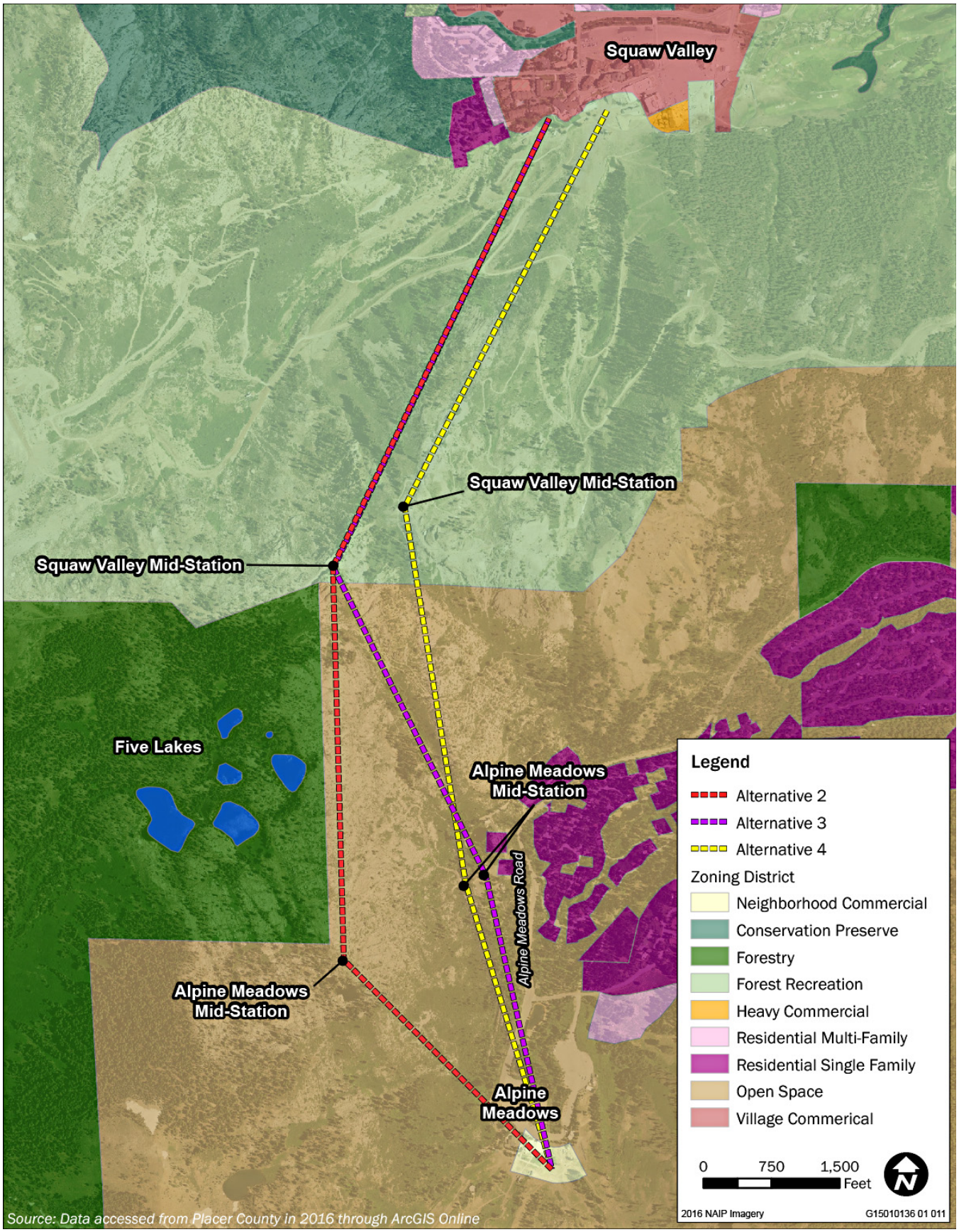


Exhibit 4.4-3 Existing Local Zoning Designations

Alpine Meadows General Plan

The Alpine Meadows General Plan was approved by the Placer County Board of Supervisors on May 1, 1968. It establishes policies specific to Alpine Meadows that build on the general policies found in the *Placer County General Plan* and *Placer County Zoning Ordinance*, similar to the SVGPLUO. California planning law dictates that all land use decisions be consistent with the adopted general plans of the implementing jurisdiction; accordingly, the Alpine Meadows General Plan is the primary existing document governing land use development in Alpine Meadows, and it includes additional goals and policies that further refine the goals and policies of the *Placer County General Plan*.

The Alpine Meadows General Plan is the community plan for the approximately 2,278-acre Alpine Meadows ski area, which comprises 1,407 acres of NFS lands, 444 acres of private land, and 427 acres of state lands. The following basic goals, objectives, and procedures outlined in the Alpine Meadows General Plan are intended to guide future development in Alpine Meadows (Placer County 1968:2):

- Maintain the open, natural, mountain-recreation character. All aspects of the vast, unique, and outstanding physical beauty of the area must be consciously and continuously preserved.
- Establish a comprehensive development program for the entire valley in order to ensure a balanced and integrated plan for orderly growth.
- Establish and protect various land uses in relation to the estimated need of future populations and economies.
- Plan and develop the area to both permanent and visitor requirements, providing ample opportunity for interests and outlets during all seasons.
- Create a balanced selection of living environments and recreational outlets, sensitive to the terrain and undisturbed by trafficways, pollution, excessive slopes, scarring, and other deleterious effects.
- Provide a functional street pattern of efficient location and improvement with minimum disturbance and cost commensurate with present and future needs with emphasis on pedestrian movement.
- Make an energetic and extreme effort to create and maintain a distinct and individual identity for Alpine Meadows. To this end, the esthetic appeal of the area must be accentuated, a certain cultural and social atmosphere encouraged, and a strict design principle and control exercised.

The land use designations for the Alpine Meadows portion of the project site include open space and commercial (Placer County 1968).[3] The zoning designations for the Alpine Meadows portion of the site are Open Space (O) and Neighborhood Commercial (C1-D) (Placer County 1968) (Exhibit 4.4-3). The Open Space (O) designation is defined as follows (Placer County 1968):

> The purpose of this district is to protect important open space lands within Placer County by limiting allowable land uses to low intensity agricultural and public recreational uses, with structural development being restricted to accessory structures necessary to support the primary allowed uses, and critical public facilities.

The Neighborhood Commercial zoning designation is defined as follows (Placer County 1968):

> This district is intended to provide areas for small-scale, day-to-day convenience shopping and services for residents of the immediate neighborhood, which encourages pedestrian and bicycle access, and which is planned and designed to be compatible with surrounding residential areas.

[3] Land use designations for Alpine Meadows are not available in GIS format and thus are not included in Exhibit 4.4-1. For a map of land use designations applicable to the Alpine Meadows, refer to the Alpine Meadows General Plan.

The Alpine Meadows base area is managed according to the Neighborhood Commercial zoning designation, which does not allow for ski lifts. This Neighborhood Commercial zone is surrounded by the Open Space zoning designation, which does allow for ski lifts. A rezone is being included as a component of the project to address this potential zoning inconsistency.

4.4.2 Analysis Methods

4.4.2.1 METHODS AND ASSUMPTIONS

Evaluation of potential land use impacts is based on a review of documents pertaining to the project site, including the *Placer County General Plan*, SVGPLUO, and *Alpine Meadows General Plan*. In determining the level of significance, this analysis assumes that the action alternatives would comply with relevant federal, state, and local ordinances and regulations, including the policies presented above for the Forest Plan, *Placer County General Plan*, SVGPLUO, and *Alpine Meadows General Plan*.

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 (CUP). 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. There are no RPMs relevant to the analysis of effects on land use, and no further discussion of RPMs is included in this section.

4.4.2.2 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 create inconsistencies with land planning documents, including the *Tahoe National Forest Plan* and Squaw Valley and Alpine Meadows General Plans. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Identification of project inconsistencies with direction and policy contained in the *Tahoe National Forest Plan*, *Alpine Meadows General Plan Land Use Ordinance*, *Squaw Valley General Plan Land Use Ordinance*, and *Placer County General Plan* (including employee housing requirements) **(Impact 4.4-1)**
- Discussion of potential impacts on adjacent private landowners **(Impact 4.4-1)**

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 land use if it would:

- physically divide an established community **(Section 4.4.2.3, "Issues Not Discussed Further")**;

- conflict with General Plan/community plan/specific plan designations or zoning or plan policies adopted for the purpose of avoiding or mitigating an environmental effect (**Impact 4.4-1**);
- conflict with any applicable habitat conservation plan or natural community conservation plan or other County policies, plans, or regulations adopted for the purposes of avoiding or mitigating environmental effects (**Section 4.4.2.3, "Issues Not Discussed Further"**);
- result in the development of incompatible uses and/or the creation of land use conflicts (**Impact 4.4-1**);
- affect agricultural or timber resources or operations (i.e., impacts on soils or farmlands and timber harvest plans or impacts from incompatible land uses) (**Section 4.4.2.3, "Issues Not Discussed Further"**);
- disrupt or divide the physical arrangement of an established community (including a low-income or minority community) (**Impact 4.4-1**);
- result in a substantial alteration of the present or planned land use of an area (**Impact 4.4-1**); or
- cause economic or social changes that would result in significant adverse physical changes to the environment, such as urban decay or deterioration (**Section 4.4.2.3, "Issues Not Discussed Further"**).

4.4.2.3 ISSUES NOT DISCUSSED FURTHER

As discussed in the initial study prepared for the Gondola Project (Appendix A), the project site is located within and between Squaw Valley and Alpine Meadows. No facilities would be located between homes or other development. Development of any of the action alternatives would not physically divide any existing communities. The proposed gondola would be available to the public (with the purchase of a lift ticket or season pass), including the neighboring residents, and would provide improved connectivity between the two existing ski areas and surrounding communities. Implementing any of the action alternatives would not result in any road closures and would not otherwise create barriers preventing access to other currently accessible parts of the project site. These issues are not discussed further in this Final EIS/EIR.

As discussed in Sections 4.12 through 4.15, the project site is not located in an area with an adopted habitat conservation plan or natural community conservation plan; therefore, implementation of any of the action alternatives would not conflict with such plans. This issue is not discussed further in this section.

4.4.3 Direct and Indirect Environmental Consequences

4.4.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.4-1 (Alt. 1): Consistency with Relevant Federal and Local Rules and Regulations

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and no changes to land use practices on the project site. Therefore, it would not create any conflicts between land use practices and relevant planning documents. There would be **no effect** 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 proposed gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation or operation of new facilities. Therefore, there would be no changes to land use practices on the project site, which would preclude the possibility of conflicts between land use practices and relevant planning documents.

NEPA Effects Conclusion
With no changes to land use practices, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no changes to land use practices, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.4.3.2 ALTERNATIVE 2

Impact 4.4-1 (Alt. 2): Consistency with Relevant Federal and Local Rules and Regulations

With the Forest Service Special Use Permit (SUP) amendment as well as Placer County's General Plan amendment (described in detail below), rezone, and CUP, Alternative 2 would result in the construction of a gondola. A General Plan amendment to the SVGPLUO is necessary to add the Base-to-Base Gondola to the Future Potential Ski Lifts Map and a rezone is necessary to change the existing zoning designation from Neighborhood Commercial to Open Space in the area where the Alpine Meadows base terminal would be located. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation measures, there would be an **adverse** effect related to consistency with relevant rules and regulations because a General Plan amendment and rezone would be necessary. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, absent RPMs and/or mitigation measures, there would be a **significant** effect related to consistency with relevant rules and regulations because a General Plan amendment and rezone would be necessary. If the General Plan amendment and the rezone are approved by the Board of Supervisors, these potential conflicts with the SVGPLUO and *Placer County Zoning Ordinance* would be eliminated; there would be **no effect** under NEPA, and a **less-than-significant** effect under CEQA. Furthermore, Alternative 2 would not lead to any physical land use conflicts regardless of whether or not the above entitlements are approved.

Proposed Land Uses
The proposed land uses for the project site are not expected to change overall land uses under Alternative 2. Squaw Valley and Alpine Meadows would continue to be used by guests for the recreation opportunities that exist at both resorts. The developments that these ski resorts have planned mostly involve improving recreation opportunities and offering more of the demanded amenities for guests; Alternative 2 is an example of this type of development. The applicant's goal is to improve the recreation opportunities at Squaw Valley and Alpine Meadows by improving access between the two resorts. The gondola ride would last approximately 16 minutes and would allow skiers and riders to access the other resort without using a vehicle. Implementation of this project would not constitute an appreciable change to the current land use policies in place at the two resorts.

The uses of the National Forest System-GCW would not be altered by Alternative 2 because no development is proposed within the National Forest System-GCW. The strict regulations imposed in the National Forest System-GCW would continue to dictate the land uses allowable there. However, Alternative 2 would result in the construction of a gondola on private lands within the congressionally mapped GCW. This development would be legally permissible as the land use management direction and restrictions imposed by the Wilderness Act of 1964 apply only to, and have meaning only upon, federal lands; the extension of a wilderness boundary as mapped onto adjacent private lands does not provide for protection or management of those private lands as wilderness. Refer to Section 4.3, "Wilderness," for more information on this topic.

No substantial changes would be made to the land uses on the Caldwell property because the property would not be included as additional terrain for either of the ski resorts. However, the gondola would operate upon this land, and maintenance of the lift equipment would be required on occasion. As previously stated, lift towers currently exist on the Caldwell property as part of the incomplete KT South, so the presence of

gondola infrastructure (towers) and maintenance of this infrastructure would not constitute an appreciable change to the current setting.

Consistency with Relevant Plans, Policies, and Zoning

The analyses presented below describe the project's overall consistency with the policy framework of the Forest Plan, *Placer County General Plan*, SVGPLUO, and *Alpine Meadows General Plan*. Specific policies of these planning documents are discussed in further detail in the relevant resource chapters of this Final EIS/EIR, and Alternative 2's consistency with those policies is also analyzed therein. Similarly, project consistency with other County ordinances (e.g., the Noise Ordinance and Tree Ordinance) is discussed in relevant resource sections of this Final EIS/EIR. With regard to the SVGPLUO and the *Placer County Zoning Ordinance*, a General Plan amendment and small rezone would be required; if these entitlements are approved, Alternative 2 would be consistent with all relevant plans, policies, and zoning. The rezone and General Plan amendment are discussed in more detail below.

Consistency with Forest Plan

None of the components of Alternative 2 would conflict with the Forest Plan. The focus of the Forest Plan as it pertains to land use planning and management on the TNF is avoiding issues associated with the urban/rural wildland interface (defined above in Section 4.4.1.2). The area with the highest potential to have an urban/rural wildland interface issue is located near the border of the National Forest System-GCW and the Caldwell property, where the infrastructure closest to the National Forest System-GCW would be installed. The lift towers that currently exist on the Caldwell property (discussed in more detail above) have already introduced a semblance of ski area infrastructure to the area. Although installation of the gondola would add to this urban element, it would not constitute the addition of an urban element that would create a new urban/rural wildland interface issue. More importantly, the Caldwell property is privately owned and therefore not managed according to the policies and provisions contained in the Forest Plan.

Alternative 2 would not create any conflicts with the management direction provided for Management Area 086 – Scott, which directs that the area will experience ski area development and at the same time maintain its mostly natural character. It would be consistent with this directive because the project must comply with the project site's relevant Visual Quality Objective of *Partial Retention*. The *Partial Retention* Visual Quality Objective directs that "management activities must remain visually subordinate to the characteristic landscape" (see Section 4.2, "Visual Resources," for more information).

The Forest Plan directs that no impacts may occur on the National Forest System-GCW because it is protected as part of the NWPS in accordance with the Wilderness Act of 1964 (see Section 4.3, "Wilderness," for more information). No impacts associated with Alternative 2 would occur within the National Forest System-GCW because no development would occur there. All development that would occur within the congressionally mapped GCW would be located on private land; therefore, Alternative 2 would create no conflicts with the land use direction provided by the Forest Plan.

Consistency with Placer County General Plan and SVGPLUO

A General Plan amendment is proposed to the SVGPLUO to add the Base-to-Base Gondola as a proposed ski lift to the Future Potential Ski Lift Map, because the SVGPLUO requires that new ski lifts be limited to those shown on this map. Ski lift facilities (including the proposed gondola) are allowed uses in the project site's zoning districts with a CUP, which is being requested from the County as part of this project. The SVGPLUO contains text indicating that the number of new ski lifts would be limited to those shown on maps included in the SVGPLUO (i.e., the Future Potential Ski Lifts Map). These maps do not include the proposed gondola; therefore, a General Plan amendment is required as part of the project. The General Plan amendment must be requested and acted upon by the Board of Supervisors for Alternative 2 to be implemented.

The *Placer County General Plan* encourages the expansion of existing ski areas where the transportation and circulation system can accommodate such expansions, and the creation of new recreation areas that encourage nonautomobile access (see Policies 1.G.1 and 1.G.2). Similarly, the SVGPLUO states that "[f]uture development in Squaw Valley should occur only where public facilities and services, including transportation, can be efficiently provided." The project would be consistent with these policies because it includes the

following objective: "reduce visitor and Resort Shuttle System travel on roadways between the resorts" (refer to Section 1.3, "Purpose and Need and Project Objectives"). Moreover, the project itself would provide a new form of nonautomobile access between the resorts. Section 4.7, "Transportation and Circulation," provides an analysis of the project's potential effects on (and benefits to) the surrounding transportation system, including roadways, bicycle/pedestrian facilities, and transit facilities/services.

The *Placer County General Plan* encourages the efficient use of land and natural resources and permits only low-intensity forms of development in areas with sensitive environmental resources (see Policies 1.A.1 and 1.A.2). Similarly, the SVGPLUO states that "[b]oth the quality and quantity of development must be planned to conserve, protect, and enhance the aesthetic, ecological, and environmental assets of Squaw Valley," and that "[i]ntense utilization of already disturbed areas shall be promoted and preferred to fringe development or non-contiguous development of previously undisturbed areas." The project site extends from the base of Alpine Meadows to the base of Squaw Valley, on land primarily used for ski facilities. It would be compatible with existing adjacent land uses because it would be designed to enhance the visitor experience at Squaw Valley and Alpine Meadows and augment avalanche mitigation methods in Alpine Meadows near *the Buttress* area. No facilities would be located between homes or other development or in an established community. Project development would be of low intensity because it would involve primarily an aerial ropeway system. Ground disturbance would be limited to the towers, mid-stations, and terminals (a total of approximately 4.1 acres) connecting the ropeway system. Alternative 2 would, therefore, be consistent with these policies.

Policies of the *Placer County General Plan* and SVGPLUO restrict development in areas with slopes exceeding 25 percent. Much of the project site is steep, with slopes exceeding 80 percent in some areas, whereas other areas, such as the Squaw Valley and Alpine Meadows base areas, where the terminals would be located, are nearly flat. However, as noted above, development in this area would be limited in terms of disturbance footprint and would be consistent with the existing use of the area for ski facilities. Further, project foundations and structures would be designed based on site-specific geotechnical conditions and in accordance with the seismic standards of the California Building Code, as described further in Section 4.16, "Soils, Geology, and Seismicity," which provides an analysis of the project's potential impacts pertaining to geologic, seismic, and soil conditions, including slope stability and avalanche hazards. Therefore, Alternative 2 would be consistent with these policies.

The project would not create any conflicts with employee housing requirements established by the *Placer County General Plan* Policy C-2, in the Housing Element, which states that full-time equivalent employee (FTEE) housing equal to 50 percent of the housing demand generated by a development project shall be provided. Because implementation of any of the action alternatives would generate 10 new employment positions (two full-time, year-round employment positions and eight full-time, seasonal positions) or six FTEEs, housing would need to be provided for 50 percent of the FTEEs or three employees (refer to Section 4.5, "Socioeconomics and Environmental Justice," for analysis supporting the conclusion that six FTEEs would be generated by the project). RPM REV-4 requires the applicant to either provide on-site housing or dedicate land for needed units and/or secure units elsewhere. If it can be demonstrated to the County that these mechanisms are infeasible, the applicant may pay an in-lieu fee.

Consistency with Alpine Meadows General Plan

The *Alpine Meadows General Plan* encourages the maintenance of the open, natural, mountain-recreation character and the preservation of the area's outstanding physical beauty. Both permanent residents and visitors are to be accommodated in the planning and development of the area, as well as the living (or natural) environment and recreational outlets. Alternative 2 would be consistent with these policies for the reasons described above, under "Consistency with Placer County General Plan and SVGPLUO." For example, the project would be located on land primarily used for ski facilities and would be compatible with existing adjacent land uses. No facilities would be located between homes or other development or in an established community. Project development would be of low intensity, with limited ground disturbance (approximately 4.2 acres in total). The project's potential environmental effects are evaluated throughout this Final EIS/EIR, and mitigation measures are recommended where appropriate. Additionally, the project identifies RPMs to

reduce potential adverse effects and ensure consistency with potential permits and approvals (see Chapter 2, "Description of Alternatives").

Consistency with Placer County Zoning Ordinance

A rezone would be required to change the existing zoning designation from Neighborhood Commercial to Open Space in the area where the Alpine Meadows base terminal would be located, as the Neighborhood Commercial zoning designation does not allow for the presence of ski lifts. In particular, the existing Open Space zone surrounding the base area would be modified slightly to encompass the proposed location of the Alpine Meadows base terminal. This rezone would be in addition to the General Plan amendment required to add the proposed Base-to-Base Gondola to the Future Potential Ski Lifts Map associated with the SVGPLUO, discussed above. With Board of Supervisor approval of these requested land use entitlements, the project would be consistent with Placer County zoning designations for the project site.

NEPA Effects Conclusion

Alternative 2 would require a Forest Service SUP amendment as well as a General Plan amendment, rezone, and CUP. If these entitlements are approved, Alternative 2 would be consistent with all anticipated land uses and policies included in the Forest Plan, *Placer County General Plan*, SVGPLUO, *Alpine Meadows General Plan*, and *Placer County Zoning Ordinance*. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be an **adverse** effect because Alternative 2 would conflict with the current SVGPLUO and zoning designations; however, if the entitlements described above are approved, there would be **no effect** related to land use consistency because conflicts with the overall intent of relevant plans, policies, or zoning would be eliminated. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Alternative 2 would require a General Plan amendment to the SVGPLUO to add the proposed Base-to-Base Gondola to the Potential Future Ski Lifts map, a rezone to change the existing zoning designation from Neighborhood Commercial to Open Space in the area where the Alpine Meadows base terminal would be located, and the grant of a CUP. If these entitlements are approved, Alternative 2 would be consistent with the overall anticipated land uses and policies included in the Forest Plan, *Placer County General Plan*, SVGPLUO, *Alpine Meadows General Plan*, and *Placer County Zoning Ordinance*. Under CEQA, and using the CEQA criteria, this effect would be **significant** because Alternative 2 would conflict with the current SVGPLUO and zoning designations; however, if the entitlements described above are approved, there would be a **less-than-significant** effect related to land use consistency because conflicts with the overall intent of relevant plans, policies, or zoning would be eliminated. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.4.3.3 ALTERNATIVE 3

Impact 4.4-1 (Alt. 3): Consistency with Relevant Federal and Local Rules and Regulations

With the Forest Service SUP amendment as well as Placer County's General Plan amendment, rezone and CUP, Alternative 3 would result in the construction of a gondola. This development would involve the same project components and land uses as Alternative 2, with the primary difference being the modified location of the Alpine Meadows mid-station and associated alteration in the gondola alignment. With this modified alignment, the gondola would not be constructed within any part of the private lands within the congressionally mapped GCW. A General Plan amendment to the SVGPLUO is necessary to add the Base-to-Base Gondola to the Future Potential Ski Lifts Map and a rezone is necessary to change the existing zoning designation from Neighborhood Commercial to Open Space in the area where the Alpine Meadows base terminal would be located. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation measures, there would be an **adverse** effect related to consistency with relevant rules and regulations because a General Plan amendment and rezone would be necessary. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, there would be a **significant** effect related to consistency with relevant rules and regulations because a General Plan amendment and rezone would be necessary. There are no applicable RPMs that would reduce this impact. If the General Plan amendment and the rezone are approved by the Board of Supervisors, these potential conflicts with the SVGPLUO and *Placer County Zoning Ordinance* would be eliminated; there would be **no effect** under NEPA, and a **less-than-significant** effect under CEQA. Alternative 3 would not lead to any physical land use conflicts regardless of whether or not the above entitlements are approved.

The effects on land uses under Alternative 3 would be the same as those described above for Alternative 2 because the project components and land uses would be the same. The primary difference between these alternatives is the modified location of the Alpine Meadows mid-station and associated alteration in the gondola alignment. Under Alternative 3, the Alpine Meadows mid-station and associated gondola alignment would be located on portions of the Caldwell property that are entirely outside of the congressionally mapped GCW. This is discussed further in Section 4.3, "Wilderness." For the same reasons described above for Alternative 2, Alternative 3 would not create any conflicts with the land uses policies of any relevant planning documents following approval of the Forest Service SUP amendment as well as a General Plan amendment, rezone, and CUP.

NEPA Effects Conclusion

Alternative 3 would require a Forest Service SUP amendment as well as a General Plan amendment, rezone and CUP. If these entitlements are approved, Alternative 3 would be consistent with all anticipated land uses and policies included in the Forest Plan, *Placer County General Plan*, SVGPLUO, *Alpine Meadows General Plan*, and *Placer County Zoning Ordinance*. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be an **adverse** effect because Alternative 3 would conflict with the current SVGPLUO and *Placer County Zoning Ordinance*; however, if the entitlements described above are approved, there would be **no effect** related to land use consistency because conflicts with the overall intent of relevant plans, policies, or zoning would be eliminated. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Alternative 3 would require a General Plan amendment to the SVGPLUO to add the proposed Base-to-Base Gondola to the Future Potential Ski Lifts Map, a rezone to change the existing zoning designation from Neighborhood Commercial to Open Space in the area where the Alpine Meadows base terminal would be located, and the grant of a CUP. If these entitlements are approved, Alternative 3 would be consistent with the overall anticipated land uses and policies included in the Forest Plan, *Placer County General Plan*, SVGPLUO, *Alpine Meadows General Plan*, and *Placer County Zoning Ordinance*. Under CEQA, and using the CEQA criteria, this effect would be **significant** because implementation of Alternative 3 would conflict with the current SVGPLUO and *Placer County Zoning Ordinance*; however, if the entitlements described above are approved, there would be a **less-than-significant** effect related to land use consistency because conflicts with

the overall intent of relevant plans, policies, or zoning would be eliminated. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.4.3.4 ALTERNATIVE 4

Impact 4.4-1 (Alt. 4): Consistency with Relevant Federal and Local Rules and Regulations

With the Forest Service SUP amendment as well as Placer County's General Plan amendment, rezone and CUP, Alternative 4 would result in the construction of a gondola. This development would involve the same project components and land uses as Alternatives 2 and 3, with the primary difference being the modified location of the Alpine Meadows mid-station and associated alteration in the gondola alignment. With this modified alignment, the gondola would not be constructed within any part of the private lands within the congressionally mapped GCW. A General Plan amendment to the SVGPLUO is necessary to add the Base-to-Base Gondola to the Future Potential Ski Lifts Map and a rezone is necessary to change the existing zoning designation from Neighborhood Commercial to Open Space in the area where the Alpine Meadows base terminal would be located. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation measures, there would be an **adverse** effect related to consistency with relevant rules and regulations because a General Plan amendment and rezone would be necessary. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, there would be a **significant** effect related to consistency with relevant rules and regulations because a General Plan amendment and rezone would be necessary. There are no applicable RPMs that would reduce this impact. If the General Plan amendment and the rezone are approved by the Board of Supervisors, these potential conflicts with the SVGPLUO and *Placer County Zoning Ordinance* would be eliminated; there would be **no effect** under NEPA, and a **less-than-significant** effect under CEQA. Alternative 4 would not lead to any physical land use conflicts regardless of whether or not the above entitlements are approved.

The effects on land uses under Alternative 4 would be the same as those described above for Alternative 2 because the project components and land uses would be the same. The primary difference between these alternatives is the modified location of the Alpine Meadows mid-station and associated alteration in the gondola alignment. Under Alternative 4, the Alpine Meadows mid-station and associated gondola alignment would be located on portions of the Caldwell property that are entirely outside of the congressionally mapped GCW. This is discussed further in Section 4.3, "Wilderness." For the same reasons described above for Alternative 2, Alternative 4 would not create any conflicts with the land uses policies of any relevant planning documents following approval of the Forest Service SUP amendment as well as a General Plan amendment, rezone, and CUP.

NEPA Effects Conclusion

Alternative 4 would require a Forest Service SUP amendment as well as a General Plan amendment, rezone and CUP. If these entitlements are approved, Alternative 4 would be consistent with all anticipated land uses and policies included in the Forest Plan, *Placer County General Plan*, SVGPLUO, *Alpine Meadows General Plan*, and *Placer County Zoning Ordinance*. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be an **adverse** effect because Alternative 4 would conflict with the current SVGPLUO and *Placer County Zoning Ordinance*; however, if the entitlements described above are approved, there would be **no effect** related to land use consistency because conflicts with the overall intent of relevant plans, policies, or zoning would be eliminated. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Alternative 4 would require a General Plan amendment to the SVGPLUO to add the proposed Base-to-Base Gondola to the Future Potential Ski Lifts Map, a rezone to change the existing zoning designation from Neighborhood Commercial to Open Space in the area where the Alpine Meadows base terminal would be

located, and the grant of a CUP. If these entitlements are approved, Alternative 4 would be consistent with the overall anticipated land uses and policies included in the Forest Plan, *Placer County General Plan*, SVGPLUO, *Alpine Meadows General Plan*, and *Placer County Zoning Ordinance*. Under CEQA, and using the CEQA criteria, this effect would be **significant** because implementation of Alternative 4 would conflict with the current SVGPLUO and *Placer County Zoning Ordinance*; however, if the entitlements described above are approved, there would be a **less-than-significant** effect related to land use consistency because conflicts with the overall intent of relevant plans, policies, or zoning would be eliminated. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.4.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.4-1 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

For Alternative 1 – No Action Alternative, there would be no effect for all NEPA indicators and CEQA criteria.

Addressing the action alternatives, for Impact 4.4-1, there would be no effect for all NEPA indicators and a less-than-significant effect for all CEQA criteria. These determinations would only result following the approval of the Forest Service SUP amendment, as well as Placer County's General Plan amendment, rezone, and CUP. With these entitlements, all actions alternatives would be consistent with anticipated land uses and policies included in the Forest Plan, *Placer County General Plan*, SVGPLUO, *Alpine Meadows General Plan*, and *Placer County Zoning Ordinance*. While the proposed gondola alignment would differ under each action alternative, there is no meaningful difference in effects to land use between the action alternatives.

Table 4.4-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.4-1: Consistency with Relevant Federal and Local Rules and Regulations	Identification of project inconsistencies with direction and policy contained in the *Tahoe National Forest Plan*, *Alpine Meadows General Plan Land Use Ordinance*, *Squaw Valley General Plan Land Use Ordinance*, and *Placer County General Plan* (including employee housing requirements); discussion of potential impacts on adjacent private landowners	No effect	With General Plan amendment and rezone, no effect under NEPA and less than significant under CEQA	With General Plan amendment and rezone, no effect under NEPA and less than significant under CEQA Same as for Alternative 2	With General Plan amendment and rezone, no effect under NEPA and less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with General Plan/community plan/specific plan designations or zoning or plan policies adopted for the purpose of avoiding or mitigating an environmental effect; result in the development of incompatible uses and/or the creation of land use conflicts; disrupt or divide the physical arrangement of an established community (including a low-income or minority community); result in a substantial alteration of the present or planned land use of an area	No effect	With General Plan amendment and rezone, no effect under NEPA and less than significant under CEQA	With General Plan amendment and rezone, no effect under NEPA and less than significant under CEQA Same as for Alternative 2	With General Plan amendment and rezone, no effect under NEPA and less than significant under CEQA Same as for Alternatives 2 and 3

4.4.4 Cumulative Effects

4.4.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope for this cumulative effects analysis of land use includes the extent of the Alpine Meadows and Squaw Valley developed ski areas and public and private lands immediately adjacent to the ski areas.

Any present or reasonably foreseeable future projects in the vicinity of the project site that have the potential to create adverse impacts on existing land use practices are listed below.

Project	Potential Impacts
White Wolf project	Obstructions to the Five Lakes Trail
	Development on private lands within the congressionally mapped GCW
Alpine Sierra Subdivision	Increased residential development within project area

4.4.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

The No Action Alternative would result in a continuation of existing conditions at the project site. Therefore, there would be no direct and indirect impacts and thus by definition no cumulative impacts on land use practices in the project area.

Alternative 2

Under Alternative 2, there would be no cumulative effects under NEPA and less-than-significant cumulative effects under CEQA to the land use practices of the project area. The only reasonably foreseeable future action with the potential to result in cumulative effects in the project area is the White Wolf project. The White Wolf project would be additive to Alternative 2 and is in no way connected; implementation of the alternative is not dependent on the White Wolf project, and the White Wolf project is not dependent on implementation of Alternative 2.

The White Wolf project would change the residential land use on the Caldwell property from one to 38 residences, associated amenities and outbuildings, and an additional private ski lift. Although the White Wolf project proposes the development of 38 homes on the property, the residential land use of the Caldwell property would continue. The project would not contribute to this land use change and therefore has no cumulative effect under NEPA and a less-than-significant cumulative effect under CEQA.

The White Wolf project could result in development (homes, associated onsite improvements and a private lift) on the private lands within the congressionally mapped GCW as well as on the remainder of the Caldwell property outside of the congressionally mapped GCW. Alternative 2 would not contribute to this effect and therefore would result in no effect under NEPA and a less-than-significant effect under CEQA with regard to land use practices in the project area when considered cumulatively with the White Wolf project.

Alternatives 3 and 4

The contribution of Alternative 3 or Alternative 4 to the cumulative effects that could occur on land use as a result of the White Wolf project would have no effect under NEPA and a less-than-significant effect under CEQA. The primary difference between Alternative 2 and Alternatives 3 and 4 is the location of the Alpine Meadows mid-station and associated alteration in the gondola alignment. Under Alternative 3 or 4, the Alpine Meadows mid-station would provide lift access for residents of the homes that would be built with implementation of the White Wolf project. With the exception of this difference, the cumulative effects associated with Alternatives 3 and 4 would be nearly the same as those discussed above for Alternative 2.

4.5 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Implementation of the alternatives has the potential to affect not only the physical environment but also the social and economic (socioeconomic) environment. A correlation exists between public use of private and National Forest System lands within the project area and the economies and societies of adjacent communities. This correlation encompasses many factors, such as population, employment, town/Placer County (County) tax revenue, tourism, and visitor spending, that are assessed and disclosed herein. The area of economic effect, or analysis area, for the action alternatives is defined as Placer County, California.

The analysis of socioeconomics and environmental justice provided below is not necessary to satisfy the requirements of CEQA because CEQA does not address these issues. The analysis, therefore, falls under the scope of NEPA, not CEQA. However, the potential for the action alternatives to affect economic growth is addressed in Chapter 5, "Other Required NEPA and CEQA Analysis," in the evaluation of growth-inducing impacts provided in Section 5.2.3. As described in Section 1.7.2, "Resources/Issues Dismissed from Further Documentation in This EIS/EIR," the action alternatives would not have an adverse effect on population and housing; therefore, these issues are not evaluated further in this EIS/EIR.

4.5.1 Affected Environment

4.5.1.1 ENVIRONMENTAL SETTING

Placer County Demographics

Population

Placer County has seen considerable population growth over the past 10 years and was ranked second among all California counties in the rate of population growth from January 2003 to January 2013 based on California Department of Finance estimates. Placer County's population grew 26 percent in the 2003–2013 period, making it the fastest-growing county in the Sacramento region and exceeding average growth rates of the Bay Area and California as a whole (Center for Strategic Economic Research 2013). This baseline growth has produced changes in the County's demographic composition and has naturally led to increases in housing units to support the population increases (Center for Strategic Economic Research 2013). Table 4.5-1 discloses historic and projected population data.

Table 4.5-1 Population in Placer County, 2003–2023

	2003	2008	2013	2018	2023
Placer County	283,703	333,805	357,463	389,883	420,187

Source: Center for Strategic Economic Research 2013

Race

Approximately 84 percent of Placer County's population is white, Hispanic, or Latino. Another 3 percent of the population identifies as "some other race," which are most often persons of Hispanic or Latino origin (U.S. Census Bureau 2016a). The racial breakdown of Placer County is provided in Table 4.5-2.

Table 4.5-2 Race in Placer County, 2015

Race	Population	Percent
White (including Hispanic or Latino)	306,371	84%
Black or African American	5,183	1%
American Indian and Alaska Native	1,982	0.5%
Asian	24,468	7%
Native Hawaiian and other Pacific Islander	525	0.1%
Some other race	10,690	3%
Two or more races	17,061	5%
Total	**366,280**	**100%**

Source: U.S. Census Bureau 2016a

Placer County Economy

Economic Sectors and Tourism

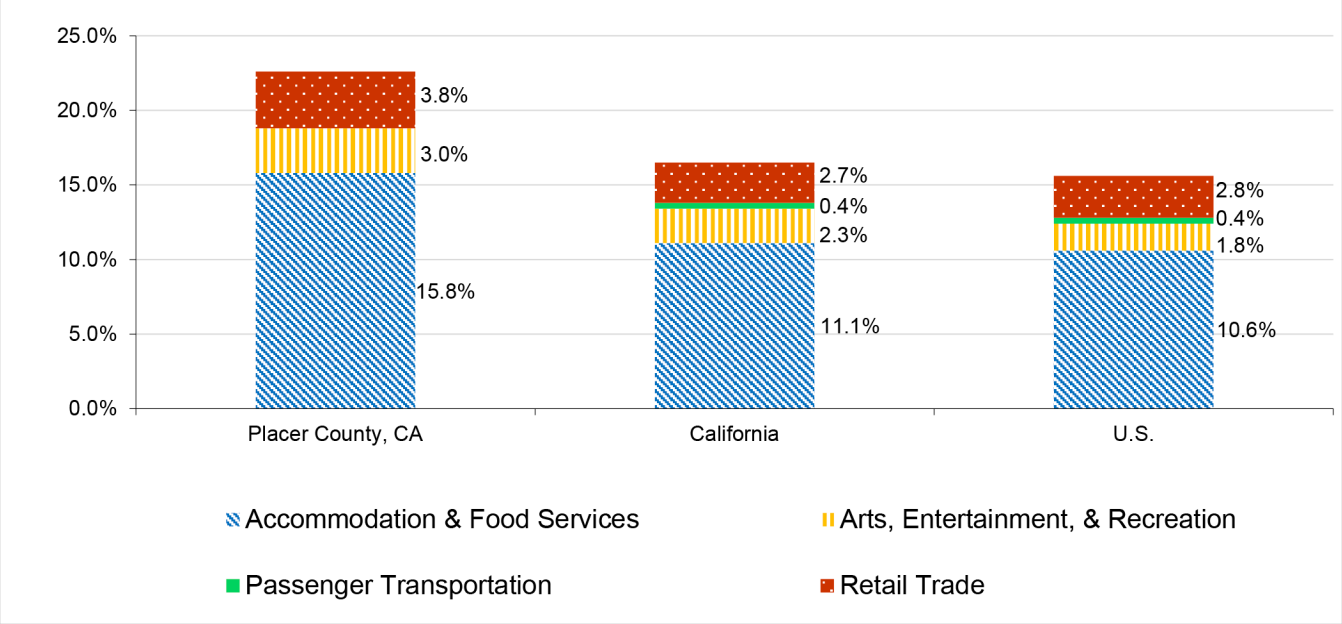
Placer County has a relatively diverse economy with approximately 144,700 wage and salary jobs and an average salary per worker of $58,484 in 2014 (Caltrans 2015). During 2014, the largest employment gains were observed in education and healthcare (+1,200 jobs), leisure and hospitality (+710 jobs), professional and business services (+590 jobs), and construction (+500 jobs). The only major sectors with declines were financial activities (-160 jobs) and information (-150 jobs). By 2020, employment growth is expected to be greatest in leisure and hospitality (+5,300 jobs), professional and business services (+3,300 jobs), education and healthcare (+3,200 jobs), and wholesale and retail trade (+2,400 jobs). Combined, these sectors are expected to account for 69 percent of net job creation in the County (Caltrans 2015).

Travel and tourism is an important economic component of Placer County, making up approximately 23 percent of all private employment in the County (Exhibit 4.5-1) (U.S. Census Bureau 2016b). In this context, travel and tourism consists of sectors that provide goods and services to visitors to the local economy, as well as to the local population.[1] For the purposes of this analysis, these sectors include retail trade, passenger transportation, arts, entertainment and recreation, and accommodation and food services. For comparison purposes, travel and tourism account for approximately 16 percent of total employment nationally and approximately 17 percent in California (Exhibit 4.5-1) (U.S. Census Bureau 2016b). It should also be noted that the percentage of employment related to travel and tourism in Placer County is likely higher than reported because second-home construction and other tourism-related activities are not included in this calculation.

Employment Status

As of February 2017, Placer County had an unemployment rate (not seasonally adjusted) of 4.3 percent, ranked among the lowest in the state at 13 out of 58 counties (U.S. Bureau of Labor Statistics 2017). Between 2015 and 2020, employment growth is expected to average 2.6 percent per year—one of the highest rates in the state—and as stated above, this growth is expected to be greatest in the leisure and hospitality sector (+5,300 jobs by 2020) (Caltrans 2015).

[1] Without additional research, such as surveys, it is unknown what proportion of the jobs in these sectors is attributable to expenditures by visitors, including business and pleasure travelers, and what proportion is attributable to local residents. Some researchers refer to these sectors as "tourism-sensitive." They could also be called "travel- and tourism-potential sectors" because they have the potential of being influenced by expenditures by nonlocals. In this report, they are referred to as "travel and tourism."



Source: U.S. Census Bureau 2016b

Exhibit 4.5-1 Percent of Total Private Employment in Industries that Include Travel and Tourism, 2014

Income and Poverty

Household income and the proportion of the population below the poverty level are important measures of the ability of households and individuals to achieve economic security. In 2015, Placer County had a higher median household income ($73,948) and a lower percentage of the population below the poverty level (8.9 percent) than both the State of California and the United States as a whole (U.S. Census Bureau 2016a). These figures are based on total personal income, from both labor (e.g., wages) and nonlabor (e.g., investment income) sources. These figures are presented in Table 4.5-3.

Table 4.5-3 Placer County Median Household Income and Percentage of Population below the Poverty Level

Geographic Area	Median Household Income, including Benefits	Percentage of Population below the Poverty Level
United States	$53,889	15.5
California	$61,818	16.3
Placer County	$73,948	8.9

Source: U.S. Census Bureau 2016a

Alpine Meadows and Squaw Valley Economy

A substantial body of prior research regarding ski area operations makes clear that by drawing nonlocal visitation to an area, resorts such as Alpine Meadows Ski Area (Alpine Meadows) and Squaw Valley Ski Area (Squaw Valley) can generate economic activity in the form of employment and visitor sales. These benefits accrue to both the resort and local businesses that benefit from spending by visitors. Perhaps just as important, the direct dollars spent at resort areas and local businesses have a secondary (multiplier) impact, creating additional sales and jobs within the local and regional economy as dollars are spent by visitors are "respent" by local residents.

Visitor Spending

Specific, quantitative analysis of visitor spending at Squaw Valley and Alpine Meadows is beyond the scope of this analysis. However, an analysis of the economic impact of Lake Tahoe ski areas was completed in 2014 by Patrick Tierney—chairman and professor of the Recreation, Parks and Tourism Department at San Francisco State University—for the tourism organization Ski Lake Tahoe. The analysis, titled *Ski Lake Tahoe*

Regional Economic Impact and Projections Study, found that visitor spending at the nine largest ski resorts in the Tahoe area contributed $564 million to the local economy during the 2013–2014 winter season (San Francisco State University 2014). That analysis is based on a total of 2.72 million annual snowsports visits. According to the *Squaw Valley | Alpine Meadows Base-to-Base Gondola Visitation and Use Assessment* completed for this EIS/EIR, average annual snowsports visitation to Alpine Meadows and Squaw Valley over the previous 10 seasons was approximately 885,000 visits (SE Group and RRC Associates 2018). If the economic impact and annual snowsports visits are proportionally distributed among the resorts, the economic impact of Alpine Meadows and Squaw Valley is approximately $183 million annually. Although this figure cannot be considered precise, it does provide a reasonable, order-of-magnitude estimate of the economic impact of baseline visitor spending at Alpine Meadows and Squaw Valley.

Employment

In this analysis, existing and prospective new jobs are discussed as "employment positions" or "full-time-equivalent employees" (FTEEs). An employment position may be a year-round or seasonal job and either full-time or part-time, whereas one FTEE provides sufficient work to keep one person employed full-time for 1 year. In seasonal industries, such as ski areas, one FTEE may represent several part time and/or seasonal employment positions.

As is true for most mountain resorts, Alpine Meadows and Squaw Valley both employ more workers in winter than in summer. Alpine Meadows provides approximately 688 employment positions (or 284 FTEEs) in winter and approximately 37 full-time, year-round employment positions (or 37 FTEEs). No summer seasonal employees are employed at Alpine Meadows. Squaw Valley provides approximately 2,262 employment positions (or 1,022 FTEEs) in winter and approximately 633 employment positions (or 424 FTEEs) in summer, including full-time, year-round positions (Spenst, pers. comm., 2017). These are direct resort jobs (i.e., employees of Alpine Meadows and Squaw Valley) and are created each year in response to visitation at the resorts. Tables 4.5-4 and 4.5-5 summarize the existing employment at Alpine Meadows and Squaw Valley.

Table 4.5-4 Alpine Meadows and Squaw Valley Baseline Employment

Employment Type	Full-Time Positions		Part-Time Positions		Full-Time-Equivalents	
	Alpine Meadows	Squaw Valley	Alpine Meadows	Squaw Valley	Alpine Meadows	Squaw Valley
Year-round employment	37	291	0	0	37	291
Winter seasonal employment	446	953	242	1,018	284	731
Summer seasonal employment	0	189	0	153	0	133

Source: Spenst, pers. comm., 2017

Table 4.5-5 Alpine Meadows and Squaw Valley Baseline Employment by Season

Resort	Winter Positions	Winter Full-Time-Equivalents	Summer Positions	Summer Full-Time-Equivalents
Alpine Meadows	725	321	37	37
Squaw Valley	2,262	1,022	633	424

Source: Spenst, pers. comm., 2017

Town/County Tax Revenue

The aforementioned San Francisco State University economic impact study found that the nine largest ski resorts in the Tahoe area generated $33 million in tax revenue for state and local governments in response to visitor spending at the resorts (San Francisco State University 2014). If the tax revenues and annual skier visits are proportionally distributed among the resorts, Alpine Meadows and Squaw Valley generate approximately $11 million in state and local government tax revenues annually. Again, although this figure cannot be considered precise, it does provide a reasonable, order-of-magnitude estimate of the tax revenue impact of baseline visitor spending at Alpine Meadows and Squaw Valley.

4.5.1.2 REGULATORY SETTING

Federal

Executive Order 12898

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (EPA 2018). Executive Order 12898 (EO 12898) relates to environmental justice and requires, in brief, that each federal agency will make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

The Council on Environmental Quality provides the following definitions to guide compliance with environmental justice requirements in NEPA (Council on Environmental Quality 1997):

- "Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis."

- "Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect."

No existing minority populations were identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Likewise, no low-income populations were identified in the affected area. Therefore, inconsistencies between the project and EO 12898 would not occur.

State

Socioeconomics

CEQA requires analysis of a proposed project's potential impacts on population growth and housing supply, but social and economic changes are not considered environmental impacts in and of themselves under CEQA unless they contribute to a significant adverse physical change in the environment. CEQA also permits discussion of social and economic changes that would result from a change in the physical environment and could in turn lead to additional (secondary or indirect) effects in the physical environment (State CEQA Guidelines Section 15064[f]). However, neither of these issues directly relates to the federal requirement to address socioeconomics.

Environmental Justice

California does not require environmental justice analysis in documents prepared for CEQA compliance.

Local

There are no local laws, regulations, or policies directly relevant to the federal requirement for an evaluation of socioeconomics and environmental justice.

4.5.2 Analysis Methods

4.5.2.1 METHODS AND ASSUMPTIONS

Economic impacts typically are defined at three levels:

- *Direct*—employment and sales created as a direct impact of a business. On- and off-site construction jobs, resort-based jobs, and nonresort jobs generated by visitor expenditures are included in this category.
- *Indirect*—employment and sales created by industry-to-industry spending. For instance, increased food and beverage spending at Squaw Valley and Alpine Meadows would result in the purchase of more supplies from food vendors. This revenue would allow the food vendors to create more employment. These are indirect jobs.
- *Induced*—employment created by increased household spending. The additional jobs and income created by direct and indirect spending would allow consumers to increase their spending on goods and services. This spending would allow businesses to create more jobs. These are induced jobs.

These definitions will be employed in the following effects analysis as a tool to distinguish between different types of impacts.

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 (CUP). 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.

4.5.2.2 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 potentially alter certain socioeconomic characteristics of Placer County or the communities of Alpine Meadows and Olympic Valley, California. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Qualitative analysis of potential effects to socioeconomic indicators in Placer County, including: population, employment (part-time seasonal employment vs. full-time equivalents), Town/County tax revenue, tourism and visitor spending **(Section 4.5.1, "Affected Environment," and Impacts 4.5-1, 4.5-2, 4.5-3)**
- Disclosure of compliance with EO 12898, Environmental Justice **(Sections 4.5.1.2, "Regulatory Setting")**

CEQA Criteria

CEQA does not require the analysis of effects related to socioeconomics and environmental justice, and neither the State CEQA Guidelines Appendix G checklist nor the Placer County Initial Study checklist includes questions/thresholds directly related to these issues. However, the land use section of the Placer County checklist does include questions related to issues similar to those considered in analyses of socioeconomics and environmental justice. See the discussion of land use in Section 4.4. Also, as stated previously, the potential for the action alternatives to affect economic growth is addressed in Chapter 5, "Other Required NEPA and CEQA Analysis," in the evaluation of growth-inducing impacts provided in Section 5.2.3.

4.5.2.3 ISSUES NOT DISCUSSED FURTHER

While each of the action alternatives would generate economic activity in the form of increased visitor spending, employment and tax revenues, the overall socioeconomic trends in Placer County (population growth, racial diversity, a travel and tourism-based economy, income and poverty levels, and environmental justice) are expected to remain within their current trends under each alternative.

Population

According to population growth projections, Placer County's baseline resident population will grow to 420,187 year-round residents by 2023. This growth represents an 8-percent increase over the 2018 projection. Although workers may relocate to Placer County to fill the new employment positions created under the selected alternative, this population projection already accounts for the amount of job creation that would be experienced under any of the action alternatives. Thus, population growth resulting from implementing any of the action alternatives is expected to have a negligible effect on the baseline population trend. This issue is not discussed further in this Draft EIS/EIR.

Race

Racial diversity is limited in Placer County, with approximately 84 percent of the Placer County population identifying as white (demographic cohort, including Hispanic and Latino). None of the action alternatives are anticipated to measurably affect the racial breakdown of the County. This issue is not discussed further in this Draft EIS/EIR.

Economy

Historically, travel and tourism has been an important component of the Placer County economy. Currently, at least 23 percent of all employment in Placer County is related to travel and tourism operations. None of the action alternatives are anticipated to affect this overall economic condition. Alpine Meadows and Squaw Valley are expected to remain important economic drivers in Placer County for the foreseeable future under each alternative. This issue is not discussed further in this Draft EIS/EIR.

Income and Poverty

Measures of individual prosperity are closely related to the overall economic condition in a local economy. Compared with both the State of California and the United States as a whole, Placer County has a relatively high median household income ($73,948) and low percentage of population below the poverty level (8.9 percent). These conditions are expected to remain under each alternative. As a result, travel and tourism is expected to remain an important economic driver in Placer County under each alternative, and for this reason the nature of employment opportunities and compensation is also expected to remain consistent with the projected trend. This issue is not discussed further in this Draft EIS/EIR.

Environmental Justice

No changes or modifications would be approved under any alternative that would directly or indirectly affect minority or low-income populations in Placer County. The baseline conditions presented in Section 4.5.1, "Affected Environment," are expected to continue under each alternative. There are no minority or low-income populations in the vicinity of the project site, and no minority or low-income populations would be

disproportionately affected by environmental effects resulting from the action alternatives. This issue is not discussed further in this Draft EIS/EIR.

4.5.3 Direct and Indirect Environmental Consequences

4.5.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.5-1 (Alt. 1): Visitor Spending Impacts

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no improvements to the resort; therefore, the current trend in visitation and resultant visitor spending is expected to be unchanged. There would be **no effect** under NEPA.

Under Alternative 1 –No Action Alternative, the Tahoe National Forest (TNF) and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, the current trend in visitation and resultant visitor spending is expected to be unchanged.

NEPA Effects Conclusion
With the current trend in visitation and resultant visitor spending unchanged, there would be **no effect** related to this issue.

Mitigation Measures
No mitigation measures are required.

Impact 4.5-2 (Alt. 1): Employment Impacts

Alternative 1 –No Action Alternative would result in a continuation of existing conditions. There would be no improvements to the resorts; therefore, no new employment positions would be created at the resorts. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, no new employment positions would be created at the resorts.

NEPA Effects Conclusion
With no new employment positions being created, there would be **no effect** related to this issue.

Mitigation Measures
No mitigation measures are required.

Impact 4.5-3 (Alt. 1): Town/County Tax Revenue Impacts

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no improvements to the resorts; therefore, the current trend in visitor spending and resultant town/County tax revenue is expected to be unchanged. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing

conditions, with no new construction and no installation and operation of new facilities. Therefore, the current trend in visitor spending and resultant town/County tax revenue is expected to be unchanged.

NEPA Effects Conclusion

With the current trend in visitor spending and resultant town/County tax revenue unchanged, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.5.3.2 ALTERNATIVE 2

Impact 4.5-1 (Alt. 2): Visitor Spending Impacts

Modest increases in snowsports visitation resulting from Alternative 2 would create slight increases in visitor spending. The increase in visitor spending would generate economic activity within the local economy, but not to a degree that would appreciably affect the overall socioeconomic conditions of Squaw Valley, Alpine Meadows, or the greater Lake Tahoe region. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly beneficial** direct and indirect effects related to visitor spending. There are no applicable RPMs that would mitigate this effect.

As detailed in the *Squaw Valley | Alpine Meadows Base-to-Base Gondola Visitation and Use Assessment*, (refer to Appendix C) improved access between the two resorts, fluctuation in the total number of participants, and the potential for marketing interest resulting from the Alternative 2 could generate a modest increase in snowsports visitation to Squaw Valley and Alpine Meadows (SE Group and RRC Associates 2018). By the fifth year after implementation, the cumulative number of increased visits associated with Alternative 2 is expected to total roughly 36,856. Applying the findings of the San Francisco State University economic impact study referenced above to the increased visits, cumulative indirect visitor spending over the initial 5 years of winter operation would be approximately $7.6 million (an increase of roughly 1.4 percent in the first year of operation, with an average of less than 1 percent per annum over the initial five seasons).

Although this additional visitation would generate additional visitor spending, the increase in visitation and associated visitor spending would be marginal given the scale of overall snowsports visitation at Squaw Valley and Alpine Meadows and in the greater Lake Tahoe region. This is particularly true given the fact that the anticipated increase in visitation resulting from Alternative 2 is within the existing range of variability for total annual snowsports visitation at Squaw Valley and Alpine Meadows resulting from factors such as variations in annual snowfall, national/regional demographic trends, and the competitive marketplace (SE Group and RRC Associates 2018). Any visitor spending impacts would positively affect the local Placer County economy by creating additional sales and economic activity within the local business sector.

NEPA Effects Conclusion

Alternative 2 would generate slight increases in visitor spending. These increases would be marginal compared to overall visitor spending at Squaw Valley and Alpine Meadows and in the greater Lake Tahoe region. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly beneficial** direct and indirect effects related to visitor spending. There are no applicable RPMs that would mitigate this effect.

Mitigation Measures

No mitigation measures are required.

Impact 4.5-2 (Alt. 2): Employment Impacts

Alternative 2 would directly create 10 new employment positions (six FTEEs) at Squaw Valley and Alpine Meadows. Modest snowsports visitation increases resulting from Alternative 2 would create modest increases in indirect employment in other local businesses. In addition, construction of project components would generate short-term job opportunities and economic activity in the construction industry in the year that construction occurs. The increase in employment would generate economic activity within the local economy, but not to a degree that would appreciably affect the overall socioeconomic conditions of Squaw Valley, Alpine Meadows, or the greater Lake Tahoe region. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly beneficial** direct and indirect effects related to visitor spending. There are no applicable RPMs that would mitigate this effect.

Squaw Valley and Alpine Meadows would add two new full-time, year-round employment positions and eight full-time, seasonal positions to operate the proposed gondola under Alternative 2. These would be considered direct employment impacts from the project and translate to six FTEEs.

Modest indirect employment growth is also expected outside Squaw Valley and Alpine Meadows as a result of Alternative 2. As detailed in the *Squaw Valley | Alpine Meadows Base-to-Base Gondola Visitation and Use Assessment*, improved access between the two resorts, fluctuation in the total number of participants, and the potential for marketing interest resulting from Alternative 2 could generate a modest increase in annual snowsports visitation to Squaw Valley and Alpine Meadows (SE Group and RRC Associates 2018). This increased visitation would generate new economic activity in local businesses, which would support modest employment increases in the region. In addition, construction of project components would generate short-term job opportunities and economic activity in the construction industry in the year that construction occurs. Any employment impacts would positively affect the local Placer County economy by creating additional jobs and economic activity in local businesses.

NEPA Effects Conclusions

Alternative 2 would generate slight increases in employment positions in the Placer County economy. These increases would be marginal compared to overall employment at Alpine Meadows and Squaw Valley or within the greater Lake Tahoe region. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly beneficial** direct and indirect effects related to employment. There are no applicable RPMs that would mitigate this effect. There are no applicable RPMs that would mitigate this effect.

Mitigation Measures

No mitigation measures are required.

Impact 4.5-3 (Alt. 2): Town/County Tax Revenue Impacts

Modest snowsports visitation increases resulting from Alternative 2 would create modest increases in town/County tax revenues in the local economy. The increase in town/County tax revenue would generate economic activity that would increase town/County tax revenues further, but not to a degree that would appreciably affect the overall socioeconomic conditions of the local economy. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly beneficial** direct and indirect effects related to town/County tax revenue. There are no applicable RPMs that would mitigate this effect.

As detailed in the *Squaw Valley | Alpine Meadows Base-to-Base Gondola Visitation and Use Assessment*, improved access between the two resorts, fluctuation in the total number of participants, and the potential for marketing interest resulting from Alternative 2 could generate a modest increase in annual snowsports visitation to Squaw Valley and Alpine Meadows (SE Group and RRC Associates 2018). This increased visitation would create new economic activity in local businesses, which would support modest town/County tax revenue increases in the region. Any town/County tax revenue impacts would positively affect local governments by creating additional tax revenues and economic activity in the local economy.

NEPA Effects Conclusion

Alternative 2 would generate modest increases in town/County tax revenues for local governments. These increases would be minimal compared to overall revenues for these governments. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly beneficial** direct and indirect effects related to employment. There are no applicable RPMs that would mitigate this effect.

Mitigation Measures

No mitigation measures are required.

4.5.3.3 ALTERNATIVE 3

The anticipated socioeconomic impacts associated with Alternative 3 related to visitor spending, employment, and town/County tax revenue would be identical to those discussed above for Alternative 2.

4.5.3.4 ALTERNATIVE 4

The anticipated socioeconomic impacts associated with Alternative 4 related to visitor spending, employment, and town/County tax revenue are identical to those discussed above for Alternative 2.

4.5.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.5-6 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

For Alternative 1 – No Action Alternative, there would be no effect for all NEPA indicators.

Under the action alternatives, for Impacts 4.5-1, 4.5-2, and 4.5-3, there would be a minorly beneficial effect for all NEPA indicators. Although each of the action alternatives would generate modest positive effects associated with visitor spending, employment, and town/County tax revenues, the changes that would occur would not appreciably affect the overall socioeconomic conditions of Squaw Valley, Alpine Meadows, or the greater Lake Tahoe region. There is no meaningful difference in effects across the three action alternatives for each of these effects.

Table 4.5-6 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.5-1: Visitor Spending Impacts	Qualitative analysis of potential effects to socioeconomic indicators in Placer County, including: population, employment (part-time seasonal employment vs. full-time equivalents), Town/County tax revenue, tourism and visitor spending	No effect	Minorly beneficial	Minorly beneficial Same as for Alternative 2	Minorly beneficial Same as for Alternatives 2 and 3
4.5-2: Employment Impacts	Qualitative analysis of potential effects to socioeconomic indicators in Placer County, including: population, employment (part-time seasonal employment vs. full-time equivalents), Town/County tax revenue, tourism and visitor spending	No effect	Minorly beneficial	Minorly beneficial Same as for Alternative 2	Minorly beneficial Same as for Alternatives 2 and 3
4.5-3: Town/County Tax Revenue Impacts	Qualitative analysis of potential effects to socioeconomic indicators in Placer County, including: population, employment (part-time seasonal employment vs. full-time equivalents), Town/County tax revenue, tourism and visitor spending	No effect	Minorly beneficial	Minorly beneficial Same as for Alternative 2	Minorly beneficial Same as for Alternatives 2 and 3

4.5.4 Cumulative Effects

4.5.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Draft EIS/EIR. The spatial scope for the cumulative analysis is Placer County, the same as the area of economic effect used to evaluate the action alternatives.

Forest Service decisions within the Squaw Valley and Alpine Meadows special use permit areas, as well as the approval of private land development by Placer County, have contributed to economic growth trends within Placer County over the past several decades. As previously detailed in the "Affected Environment" section, travel and tourism is an important economic component of Placer County, and Squaw Valley and Alpine Meadows are an important part of this industry. Squaw Valley and Alpine Meadows attract both visitors and employees. As these resorts develop, they will hire more employees and attract new visitors, incrementally adding to the economic and social impacts on the region. As noted, the estimation of economic impacts is related to visitation because expenditures by visitors generate industry sales, generate tax revenues, and support new jobs. No major increases in winter visitation are expected under Alternatives 1, 2, 3, or 4. Rather, modest increases in annual snowsports visitation are expected under each action alternative. Although positive economic impacts would be associated with slightly increased visitation under each action alternative, they would be minor in the context of Placer County, and no quantifiable cumulative effects are expected.

Project	Potential Impacts
Caldwell property (White Wolf) development	Increased property values of the new residences on the Caldwell property, potentially leading to higher property taxes.
General Development in Olympic Valley	Additional development added to Olympic Valley would entail construction of a large residential complex along Squaw Valley Road, and new recreation infrastructure at Squaw Valley (e.g., Timberline Twister). This development could lead to increased visitor spending, additional employment opportunities, and increased tax revenue within Olympic Valley.
General Development in Alpine Meadows	Additional development added to Alpine Meadows would potentially result in additional housing, public buildings, and public services and facilities. This development could lead to increased visitor spending, additional employment opportunities, and increased tax revenue within Alpine Meadows.

4.5.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Under Alternative 1, there would be no improvements to the resorts; therefore, the current trend in visitation and the resultant economic impacts of visitor spending, employment, and town/County tax revenues are expected to be unchanged. As a result, no cumulative socioeconomic impacts would occur.

Alternative 2

Modest increases in snowsports visitation under Alternative 2 are expected to create slight increases in visitor spending, employment, and town/County tax revenues. These increases would have a positive impact

on the local economy. In consideration of past, present, and reasonably foreseeable future projects, Alternative 2 would minimally and incrementally contribute to the overall trend of economic growth in Placer County described in the "Affected Environment" section, which encompasses growth in the local economy more broadly and in the travel and tourism sector in particular. This socioeconomic effect would be minorly beneficial.

Alternatives 3 and 4

Modest increases in snowsports visitation under Alternative 3 or 4 are expected to create slight increases in visitor spending, employment, and town/County tax revenues. These increases would have a positive impact on the local economy.

Differing slightly from Alternative 2, the configuration of the proposed base-to-base gondola under Alternative 3 or 4 would position a gondola mid-station within the existing and proposed residential development on the Caldwell property. Under either of these alternatives, this mid-station would provide lift-served access to and from the Caldwell property and residence(s). Providing lift access to residential development typically leads to higher property values and corresponding higher property taxes.

In consideration of past, present, and reasonably foreseeable future projects, Alternative 3 or 4 would minimally and incrementally contribute to the overall trend of economic growth in Placer County described in the "Affected Environment" section, which encompasses growth in the local economy more broadly and in the travel and tourism sector in particular. This socioeconomic effect would be minorly beneficial.

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4.6 PUBLIC SAFETY

This section includes discussion of existing public safety considerations at Squaw Valley ski area (Squaw Valley) and Alpine Meadows ski area (Alpine Meadows) as they pertain to avalanche risk and avalanche hazard mitigation protocols, as well as potential changes that could occur as a result of the project. The existing and proposed public safety measures are discussed in detail as they pertain to use of this area by the public and management of the area and facilities by ski area personnel.

CEQA criteria related to hazards and hazardous materials are not addressed in this section (see further explanation below in Section 4.6.2.3, "Issues Not Discussed Further") because project impacts were determined to be less than significant in the Initial Study (Appendix A).

4.6.1 Affected Environment

4.6.1.1 ENVIRONMENTAL SETTING

Existing Avalanche Risk

Avalanche risk is an inherent component of the recreation experience at both Squaw Valley and Alpine Meadows (as well as many other ski areas worldwide). While mountain operations and snow safety personnel actively work to mitigate avalanche risk and improve snow safety conditions for skiers and snowboarders, some degree of avalanche risk is always present. Mountain operations personnel open terrain for public use only when avalanche risk is anticipated to be at an acceptable level.

Existing Avalanche Hazard Mitigation Protocol

Mountain operations personnel at both Squaw Valley and Alpine Meadows use various avalanche hazard mitigation techniques and procedures to reduce avalanche risk and improve snow safety conditions for the recreating public. While avalanche hazard mitigation protocol at the two resorts is very similar, differences between protocols at Squaw Valley and Alpine Meadows will be distinguished where appropriate in this discussion.

Both Squaw Valley and Alpine Meadows already have extensive avalanche hazard mitigation plans in place, which identify appropriate avalanche hazard mitigation protocols for the terrain at each ski resort and are executed throughout the winter season as snow and weather conditions mandate. These plans involve the continuing evaluation of snow/snowpack conditions, the release of tension within the snowpack, and the purposeful triggering of managed avalanche releases before the subject terrain is opened for use by the public. At Squaw Valley, mountain operations personnel use hand-charges, Avalaunchers, and Gazex facilities for avalanche hazard mitigation. At Alpine Meadows, mountain operations personnel use hand-charges, Avalaunchers, Gazex facilities, and 105-millimeter (mm) howitzer artillery. Each of these avalanche risk reduction methods is described below.

Hand-Charges

Hand-charges are small explosives that are thrown/placed manually by ski patrollers into avalanche starting zones; they contain approximately 2 pounds of explosive materials and are detonated via blasting cap by fuse and pull-wire igniter. Hand-charges are used by mountain operations personnel at both Squaw Valley and Alpine Meadows. Ski patrollers ensure that they are well out of the avalanche zones and that the zone is clear of public before the explosive charge is armed and placed.

Compared to other remote avalanche hazard mitigation techniques, there are considerable safety issues associated with the use/placement of hand-charges. To reach hand-routes, ski patrollers must frequently access avalanche-prone terrain carrying packs of explosives. In addition to the hazards that are inherent

with transportation of explosives, ski patrollers are required to work in the vicinity of avalanche starting zones to manually throw hand-charges onto avalanche-prone terrain.

Avalauncher

The Avalauncher is a compressed-nitrogen cannon that fires a projectile delivering an explosive round into avalanche-prone terrain to trigger avalanches; the trajectory of the explosive projectile is changed by altering the firing angle and pressure of the nitrogen within the cannon. The Avalauncher is used by mountain operations personnel at both Squaw Valley and Alpine Meadows.

Compared to hand-charges, the Avalauncher is advantageous for snow safety personnel because it is fired remotely; ski patrollers do not need to be in close proximity to avalanche starting zones when performing avalanche hazard mitigation with the Avalauncher. However, the Avalauncher has a relatively limited range and is susceptible to imprecise shot placement during periods of heavy winds.

105-mm Howitzer

The 105-mm howitzer is a military-grade artillery piece that fires an explosive round into avalanche-prone terrain to release snowpack tension and/or purposefully trigger avalanches. Alpine Meadows must coordinate with the United States military, working in conjunction with the Forest Service, to purchase this artillery for avalanche hazard mitigation. Because of the velocity of the projectile, inaccuracy due to heavy winds is less likely with the 105-mm howitzer than with the Avalauncher. Alpine Meadows currently has 31 planned shot placements throughout the ski resort which are targeted for avalanche hazard mitigation with the 105-mm howitzer. Some of these shot placements are dedicated to protecting the Alpine Meadows parking area, which lies in an avalanche path.

However, there are certain disadvantages associated with use of the 105-mm howitzer. Because of the strength/velocity of this artillery, charges can penetrate the snowpack, hitting rock, which can fragment rock and create the risk of shrapnel for people and built structures in the vicinity. Because of this shrapnel component, people and built structures must be at least 600 meters away from the shot placement before the 105-mm howitzer can be fired. In addition, ammunition for the howitzer is costly and growing increasingly difficult to obtain in comparison to hand-charges and Avalauncher rounds.

Gazex

Gazex facilities consist of three components: exploders, shelters, and a high-density polyethylene (HDPE) pipe. Exploders utilize cached propane and oxygen gas to ignite a controlled volume explosion within the Gazex tube, which creates a concussive blast above the snow surface within avalanche-prone terrain. Shelters remotely house the propane and oxygen tanks necessary for these explosions, and the HDPE pipe connects the shelters with the exploders.

Gazex facilities are becoming more popular at ski resorts around the world because they allow for remote firing of concussive blasts; explosions are triggered by radio, GSM (cellular phone technology), or cable. Remote detonation eliminates ski patrollers' exposure to the inherently dangerous situations that can be encountered when they perform avalanche hazard mitigation with hand-charges. In addition, Gazex facilities can be remotely detonated during the night and during inclement weather cycles; this is because targeted terrain does not need to be visible as with Avalaunchers and the 105-mm howitzer, and because wind and precipitation have less effect on the efficacy of Gazex blasts.

It is important to note that after publication of the Draft EIS/EIR, installation of Gazex facilities for avalanche mitigation was removed as a component of this project by the proponent, SVSH. Gazex facilities are discussed under this sub-header because some Gazex facilities currently exist at both Squaw Valley and Alpine Meadows and are therefore part of the environmental setting for this analysis.

Recent Upgrades

As of the 2017/2018 ski season, an Astar 350 B3 helicopter is on standby in the Squaw Valley parking lot for a portion of the season, to be used for avalanche hazard mitigation at both Squaw Valley and Alpine Meadows after major snow cycles.

4.6.1.2 REGULATORY SETTING

Federal

Ski area safety is generally administered and monitored by the Forest Service via the ski area's SUP area, and its annually prepared and submitted Winter Operations Plan, Avalanche Hazard Mitigation Plan, and Lift Operations/Evacuation Plan. Construction and operation of lifts and avalanche hazard mitigation protocol are directed by the American National Standard for Passenger Ropeways (ANSI B.77.1 – 2017) and the Avalanche Artillery Users of North America Committee Standards (AAUNAC), respectively.

ANSI B.77.1 – 2017

The American National Standards Institute, Inc. (ANSI) created the ANSI B.77.1 – 2017 to provide safety standards for the construction and operation of aerial tramways, aerial lifts, surface lifts, tows and conveyors. Consensus on the standards contained within the ANSI B.77.1 – 2017 is established when, in the judgement of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Some of the detailed standards contained within the ANSI B.77.1 – 2017 are directly applicable to the project, specifically those contained with Sections 3.1 – Design and Installation, 3.2 – Electrical Design and Installation, and 3.3 – Operation and Maintenance. The Forest Service has adopted the standards contained within the ANSI B.77.1 – 2017.

Avalanche Artillery Users of North America Committee Standards

The purchase, storage and use of explosive materials is strictly monitored by several federal agencies including the Forest Service and the Bureau of Alcohol, Tobacco and Firearms. The military weapons program at Alpine Meadows is specifically overseen by the Forest Service and the US Military in conjunction with the AAUNAC standards. Similar to with the ANSI B.77.1 – 2017, the Forest Service has adopted these standards established by the AAUNAC and ski resorts must abide by them in order to legally carry out avalanche hazard mitigation with artillery like the 105-mm Howitzer.

State

CAL/OSHA Title 8 Sections 3150-3191

The Division of Occupational Safety and Health, also known as Cal/OSHA, sets and enforces standards to protect and improve the health and safety of passengers on tramways. Within Subchapter 6.1, Passenger Tramway Safety Orders, there are several regulations that are relevant to the analysis of the project. Many of these require compliance with various regulations from ANSI B77.1, discussed under the "Federal" heading above. Section 3156 establishes regulations for tramway evacuation procedures:

(b) The plan for the evacuation of passengers from each aerial passenger tramway shall be documented (written) and also include:

(1) Proposed time of the first evacuation drill of each operating season;

(2) Estimate of time necessary for total evacuation during dark and moderately severe conditions (snowing and windy);

(3) Procedures for evacuation under unusual or unique conditions which may exist or may be expected to develop;

(4) An estimate of the elapsed time of when the evacuation will start following a shut down;

(5) The method to be used to communicate with the trapped passengers, the frequency of such communication, and how soon after a shut down such communication will start;

(6) Procedures for controlling evacuated persons until they are released.

Section 3157 classifies the different types of passenger tramways. Based on the classifications provided within Section 3157, the Base-to-Base Gondola would be a detachable grip lift, which is classified as part of the aerial lift category:

> (2) Aerial Lift – A tramway on which passengers are transported in gondolas or on chairs that circulate around terminals without reversing the travel path.
>
> (A) Detachable Grip Lift – A detachable grip lift is an aerial lift on which carriers alternately attach to and detach from a moving haul rope. The tramway system may be mono-cable or bi-cable.

Sections 3162 – 3164, Design and Installation, Electrical Design and Installation, and Operation and Maintenance, reference various regulations contained within the ANSI B77.1 – 2017 to provide specific direction for the construction and operation of detachable grip aerial lifts. Specifically, sections 3.1, 3.2 and 3.3 of the ANSI B77.1 – 2017 are referenced in Sections 3162 – 3164 of CAL/OSHA to provide detailed standards for each of these categories; to review the detailed text contained within these sections of the ANSI B77.1 – 2017, please refer to the project file.

Local

Placer County Code

Within Placer County Code, Article 9.28 – Skier Responsibility, is Subsection 9.28.030 – Assumption of risk, which states (Placer County 2017):

> Any individual or group of individuals who engage in the sport of skiing of any type, including but not limited to alpine and Nordic, or any similar activity within the boundaries of a ski area including entry for the purpose of observing any skiing or similar activity, shall assume and accept the inherent risks of such activities insofar as the risks are reasonably obvious, foreseeable or necessary to the activities. Skiers who ski in any area not designated for skiing within the ski area control boundary, or who ski outside of a posted area boundary, assume the risks thereof. [Prior code Section 12.132]

Skiers and snowboarders within the boundaries of Squaw Valley and Alpine Meadows assume the inherent risks, as described above in Section 4.6.1.1, along with any other reasonably obvious, foreseeable or necessary risks associated with being within the boundaries of these ski resorts.

Placer County General Plan

The *Placer County General Plan* (Placer County 2013) provides an overall framework for the development of Placer County (County) and protection of its natural and cultural resources. A total of 23 community plans have been adopted under the *Placer County General Plan* to provide a more detailed focus on specific geographic areas within the unincorporated County, of which the *Squaw Valley General Plan and Land Use Ordinance* (SVGPLUO) and *Alpine Meadows General Plan* are two (discussed below). The goals and policies included within the community plans supplement, but do not supersede the goals and policies contained within the General Plan.

Section 8 of the *Placer County General Plan* is centered around health and safety within Placer County. Sections 8.A and 8.H of the Health and Safety section focus on seismic and geological hazards and on avalanche hazards, respectively. Two policies from Sections 8.A and 8.H are specifically relevant to the project (Placer County 2013):

- **Policy 8.A.1**. The County shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e. groundshaking, landslides, liquefaction, critically expansive soils, avalanche).

- **Policy 8.H.2**. The County shall require new development in areas of avalanche hazard to be sited, designed, and constructed to minimize avalanche hazards.

Placer County Avalanche Management Ordinance

Article 12.40 of the Placer County Code addresses Avalanche Management Areas and establishes the Placer County Avalanche Management Ordinance. The article describes Placer County's Potential Avalanche Hazard Area (PAHA) as those areas where, after investigation and study, the county finds that an avalanche potential exists because of steepness of slope, exposure, snow pack composition, wind, temperature, rate of snowfall, and other interacting factors. PAHA zones are established to identify those areas with avalanche potential and include areas where the annual probability of avalanche occurrence is greater than one in 100 based on the results of approved studies, or where avalanche damage is documented.

Placer County limits construction in PAHAs and will not issue a building permit for construction in a PAHA without certifying that the structure will be safe under the anticipated snow loads and conditions of an avalanche or if the property owner posts a notice in a prominent location that the property is located within a PAHA zone. A deed restriction must be recorded on the property that ensures the posting of the notice.

Squaw Valley General Plan and Land Use Ordinance

The SVGPLUO is a Community Plan document that establishes policies specific to Squaw Valley that build on the general policies found in the *Placer County General Plan* and Placer County Zoning Ordinance. The Placer County Board of Supervisors approved the SVGPLUO on August 30, 1983.

The SVGPLUO does not establish any specific policies that are directly related to the promotion of public safety at Squaw Valley; however, the SVGPLUO does declare that the promotion of health and safety is among the plan's basic goals (Placer County 2006):

> The Land Use Ordinance and the policies contained herein are intended to preserve and promote the health, safety, and general welfare of the community.

In addition, the SVGPLUO lists "avalanche hazard" as one of the primary factors that must be addressed as these hazards pertain to various types of development in the area.

Alpine Meadows General Plan

The *Alpine Meadows General Plan* is a community plan document that establishes policies specific to Alpine Meadows that build on the general policies found in the *Placer County General Plan* and Placer County Zoning Ordinance, similar to the SVGPLUO. The Placer County Board of Supervisors approved the *Alpine Meadows General Plan* on May 1, 1968.

Similar to the SVGPLUO, the *Alpine Meadows General Plan* does not establish any specific policies that are directly related to the promotion of public safety, but it does declare the promotion of health and safety is among the plan's basic goals (Placer County 1968):

> The planning goals for the Alpine Meadows area have been developed within the sphere of long association with, and knowledge of, the area's problems and potentialities, and are based upon the recognition that the general, long-term objectives of this area must be the greatest attainable convenience, prosperity, beauty, health, safety, and decency for the present and future inhabitants of this area, and the areas directly related to it.

The Alpine Meadows General Plan also lists "areas of avalanche potential" as one of the principal physical factors of concern in the area.

4.6.2 Analysis Methods

4.6.2.1 METHODS AND ASSUMPTIONS

The analysis that follows assumes that avalanche risk is an inherent component of the recreation experience at most ski resorts. Snow safety personnel deploy a variety of methods and tools to release tension and instabilities within the snowpack, so that they can deem the terrain to be at an acceptable risk level for recreational use by guests.

The analysis that follows in Section 4.6.3 is divided into two categories: Impact 4.6-1, Health and Safety, and Impact 4.6-2, Operations Efficiency. Impact 4.6-1 includes discussion of potential changes to avalanche risk and potential health and safety hazards associated with construction, operation, and maintenance of project components. Impact 4.6-2 includes discussion of potential changes to avalanche hazard mitigation protocol for mountain operations personnel at Alpine Meadows and proposed gondola evacuation protocol.

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 (CUP). 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 effects prior to implementation of RPMs has been determined. The analysis then determines whether the RPMs would reduce significant impacts to a less-than-significant level. If significant impacts would remain after implementation of relevant RPMs, mitigation measures are applied as practicable 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 represent an essential nexus to the effects that they reduce.

4.6.2.2 EFFECTS ANALYSIS 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 effect 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 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 potentially affect public safety by changing avalanche hazard mitigation protocols in the study area and introducing hazardous materials. The following analytical indicators will be used to inform the Forest Service's determination of impacts:

- Description of the existing level of avalanche risk and avalanche hazard mitigation protocols in the study area based on existing data **(Impacts 4.6-1 and 4.6-2)**
- Description of changes to the level of avalanche risk and avalanche hazard mitigation protocols (including development of an Avalanche Hazard Mitigation Plan) under the proposed project **(Impacts 4.6-1 and 4.6-2)**

- Discussion of potential changes to avalanche risk resulting from climate change **(Impact 4.6-1)**

- Description of hazards associated with construction, operation, and maintenance of project infrastructure, including introduction of hazardous materials and fuels during construction and operation of the gondola. Discuss particularly risks to skiers and hikers in the project area and risks related to fire, vandalism, and avalanche/slope failures on infrastructure **(Impact 4.6-1)**

- Disclosure of proposed gondola evacuation protocol and potential changes in demand on emergency service providers **(Impact 4.6-1)**

CEQA Criteria

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

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or acutely hazardous materials **(Impact 4.6-1 and Section 4.6.2.3, "Issues Not Discussed Further")**;

- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment **(Impact 4.6-1 and Section 4.6.2.3, "Issues Not Discussed Further")**;

- emit hazardous emissions, substances, or waste within one-quarter mile of an existing or proposed school **(Section 4.6.2.3, "Issues Not Discussed Further")**;

- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment **(Section 4.6.2.3, "Issues Not Discussed Further")**;

- result in a safety hazard for people residing or working in the project area, where the project is located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport **(Section 4.6.2.3, "Issues Not Discussed Further")**;

- result in a safety hazard for people residing or working in the project area, where the project is located within the vicinity of a private airstrip **(Section 4.6.2.3, "Issues Not Discussed Further")**;

- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan **(Section 4.6.2.3, "Issues Not Discussed Further");**

- expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands **(Impact 4.6-1 and Section 4.6.2.3, "Issues Not Discussed Further")**;

- create any health hazard or potential health hazard **(Impact 4.6-1 and Section 4.6.2.3, "Issues Not Discussed Further")**; and

- expose people to existing sources of potential health hazards **(Impact 4.6-1 and Section 4.6.2.3, "Issues Not Discussed Further")**.

4.6.2.3 ISSUES NOT DISCUSSED FURTHER

Hazardous materials (e.g., paints, solvents, glues, and cements) would be stored, used, and transported in varying amounts during construction and long-term operation of the project. Petroleum hydrocarbon products such as gasoline, diesel, and lubricants would be used in heavy equipment and construction

vehicles. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol and the California Department of Transportation. The project applicant, contractors, and others would be required to use, store, and transport hazardous materials in accordance with local, state, and federal regulations, including the California Occupational Health and Safety Administration and the California Department of Toxic Substances Control requirements and manufacturer's instructions, during project construction and operation. Facilities that would use hazardous materials on-site would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Because the project would be required to implement and comply with existing hazardous material regulations, impacts related to the creation of significant hazards to the public or environment through the routine transport, use, and disposal of hazardous materials would be unlikely, and the risk of hazard to the public from reasonably foreseeable or accidental releases of hazardous materials would be minimal. Therefore, the Initial Study prepared for the project (Appendix A) determined that these impacts would be less than significant, and these issues are not evaluated further in this EIS/EIR.

There are no existing or proposed schools located within 0.25 mile of the project. The nearest schools to the project area are Creekside Charter School (1916 Chamonix Place) and Squaw Valley Preparatory (1901 Chamonix Place). Both are slightly over 0.25 mile from the nearest project feature, the Squaw Valley base terminal. Squaw Valley Academy (235 Squaw Valley Road) is located approximately 1.8 miles to the east of the proposed Squaw Valley base terminal. No handling of hazardous materials would occur within 0.25 mile of an existing or proposed school. Therefore, no impact would occur, and this issue is not evaluated further in this EIS/EIR.

Squaw Valley and Alpine Meadows are identified by the U.S. Environmental Protection Agency as small generators of hazardous waste. Past operations in the project area could have resulted in elevated concentrations of hazardous constituents, such as petroleum hydrocarbons, in the project vicinity. The Phase I Environmental Site Assessment prepared for the project found that Alpine Meadows was included in several databases listing hazardous waste and substance sites for having underground and aboveground storage tanks and one reported incident of a leaking underground storage tank in 1995. This site underwent remediation and verification monitoring and was closed by the Regional Water Quality Control Board Lahontan Region in 2010 (Holdrege & Kull 2015). During construction activities, construction workers could come in contact with and be exposed to hazards materials present in on-site soils and groundwater. However, all past sources of contamination have been remediated and no longer pose a threat to people or the environment. The Initial Study prepared for the project (Appendix A) determined that this impact would be less than significant, and this issue is not evaluated further in this EIS/EIR.

The nearest public airports include Homewood Seaplane Base (located 8 miles southeast of the project area), the Truckee-Tahoe Airport (located 9.5 miles northeast of the project area), and the Lake Tahoe Airport (located 24.5 miles southeast of the project area). The project area is not located within an airport land use plan or within the vicinity of a private airstrip. Therefore, the project would not create safety hazards for people living or working in the project area as a result of being in close proximity to an airport or airstrip. No impact would occur, and this issue is not evaluated further in this EIS/EIR.

There are adopted emergency evacuation plans for the project vicinity. The project would generate some traffic during construction, but it would be temporary, is expected to be minimal, and would not involve road or lane closures. Therefore, construction activity would not impede emergency response in the project area or implementation of evacuation plans. The project may generate an increase in skier visitation at Squaw Valley and Alpine Meadows; however, on a day-to-day basis, any increases would not be sufficient to substantially interfere with implementation of an emergency response or evacuation plan. Emergency response and evacuation plans are designed to address peak occupancy conditions, and peak occupancy is limited by parking availability, mountain capacity, and other factors. The project would not alter maximum occupancy/use in the project area. When the proposed gondola is operational during the winter months, it could provide an additional mechanism to move people out of Squaw Valley or Alpine Meadows if only one ski area needed to be evacuated. During the summer months, the proposed gondola would not be in operation and would not affect potential emergency response or evacuation. The Initial Study (Appendix A) determined that the project

would not interfere with an adopted emergency response plan or evacuation plan. As a result, this impact would be less than significant, and this issue is not evaluated further in this EIS/EIR.

Although much of the project area is designated as a very high fire hazard severity zone, the project would not result in the placement of housing and other structures that would contain substantial numbers of people in a wildland area. Therefore, impacts associated with wildfire risk would be less than significant and this issue is not evaluated further in this EIS/EIR.

The following analysis discusses the health and safety and/or operations efficiency implications of the construction phase, potential emergency gondola evacuations, and alterations to existing avalanche hazard mitigation protocol.

4.6.3 Direct and Indirect Environmental Consequences

4.6.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.6-1 (Alt. 1): Health and Safety

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and no change in the existing state of health and safety within the project area. There would be **no effect** under either NEPA or CEQA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no change in the existing state of health and safety within the project area.

NEPA Effects Conclusion
With no change in the existing state of health and safety within the project area, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no change in the existing state of health and safety within the project area, there would be **no effect** related to this issue.

Mitigation Measures
No mitigation measures are required.

Impact 4.6-2 (Alt. 1): Operations Efficiency

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and no change in operations efficiency within the project area. There would be **no effect** under NEPA. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criterion. No CEQA determination of effect is provided.

Under Alternative 1 – No Action Alternative, the Tahoe National Forest (TNF) and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no change to existing avalanche hazard mitigation operations or operations efficiency within the project area.

NEPA Effects Conclusion
With no change in operations efficiency, there would be **no effect** related to this issue.

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

Mitigation Measures
No mitigation measures are required.

4.6.3.2 ALTERNATIVE 2

Impact 4.6-1 (Alt. 2): Health and Safety

Alternative 2 would have no effect on health and safety within the project area for either snow safety personnel or the public because the efficacy of existing avalanche hazard mitigation protocols would not be reduced. Avalanche hazard mitigation activities would continue to be implemented using existing techniques (including the use of hand-charges and avalaunchers) in slide-prone terrain until an acceptable level of risk is achieved. These procedures presently occur within *the Buttress* area and would continue with implementation of Alternative 2, although 7 existing 105-mm howitzer shot placements would be eliminated as options for avalanche hazard mitigation within this area, which is described in more detail below. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would **no effect** to health and safety as the Alpine Meadows Ski Patrol would continue to deploy all necessary efforts to ensure avalanche hazard within the skiing terrain has been mitigated to an acceptable level or the terrain would remain closed to skiing. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because Alternative 2 would not create or expose people to an existing health or safety hazard. In addition, RPMs HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 would require detailed construction plans, enforce regulations related to the storage of hazardous wastes and CAL FIRE regulations, and regulate the qualifications of personnel conducting blasting. With implementation of these RPMs, any potential impacts to health and safety would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Avalanche Risk
As described above in Section 4.6.2.1, avalanche risk is an inherent component of the recreation experience at most ski resorts. Snow safety personnel deploy a variety of methods to conduct avalanche hazard mitigation until they can deem the terrain to be at an acceptable risk level for recreational use by guests. While avalanche risk would remain an inherent component of the recreation experience at Alpine Meadows, Alternative 2 would not increase the level of avalanche risk present at Alpine Meadows or Squaw Valley in any way. Under Alternative 2, there are 7 existing 105-mm howitzer shot placements within *the Buttress* area where fragmentation (resulting from impact of artillery shots) would potentially strike proposed gondola infrastructure, thereby creating a safety and operational issue; as such, implementation of Alternative 2 would require the elimination of these 7 existing 105-mm howitzer shot placements as an option for avalanche hazard mitigation within *the Buttress* area. With these 7 105-mm howitzer shot placements eliminated, an equal level of avalanche hazard mitigation would still be accomplished through the use of hand charges and avalaunchers. These methods are already authorized under the current Forest Service Ski Area Permit and the Alpine Meadows Operating Plan and the existing level of avalanche risk would remain unchanged. It is important to note that avalanche hazard mitigation within *the Buttress* area is currently, and primarily, conducted through the use of hand charges and avalauncher rounds with the 105-mm howitzer only being employed occasionally.

It is anticipated that climate change would result in a general increase in weather variability, and warmer average temperatures year-round. Layers of rain on top of light layers of snow destabilize snowpack and increase incidence of avalanches; as a result, warmer temperatures may increase avalanche risk as rain-on-

snow events become more common during the winter season. However, increase in weather variability and temperature as a result of climate change are unpredictable and, therefore, cannot be used as a basis of analysis to determine a measurable effect on avalanche risk within the project area.

Avalanches and/or slope failures are not expected to substantially affect gondola infrastructure because towers and mid-stations would be strategically located to avoid avalanche runout zones. Much of the gondola alignment associated with Alternative 2 in particular would be located along the ridgeline separating the National Forest System-GCW and the Caldwell property, and as a result would be well-removed from any avalanches expected to run down Catch Valley (Catch Valley is on the western side of the Caldwell property).

Overall, Alternative 2 would not alter the level of avalanche risk for the public or mountain operations personnel at Alpine Meadows and Squaw Valley. Avalanche risk is invariably present at ski resorts and this factor would remain. Mountain operations personnel operate with this understanding and do not open susceptible terrain until avalanche risk is deemed to be at an acceptable level for public use.

Hazards Associated with Construction, Operation, and Maintenance

This analysis is centered around construction of the gondola and the gondola evacuation protocol.

During the construction phase, potential hazards would be associated with the presence of fuels for construction machinery and the use of explosives for blasting (where installation of gondola towers may necessitate). Fuels for construction machinery would be safely managed in accordance with applicable RPMs; for example, RPMs HAZ-2 and WQ-1 would require the development of plans related to fire prevention and release of potentially hazardous materials to area waterways. RPM HAZ-8 would require that potentially hazardous materials are stored in compliance with applicable regulations, and RPM HAZ-6 would require that work stop in areas where potentially hazardous materials are encountered in the construction process. RPMs HAZ-4, HAZ-9, and HAZ-10 would reduce fire hazards. In accordance with RPM NOI-4, explosives that may be required for blasting would only be operated by State licensed contractors. These RPMs would address any hazards associated with presence of fuels for construction machinery and/or the use of explosives for blasting.

The specifics of the gondola emergency evacuation protocol would be identified/documented with the creation of a lift evacuation plan specific to the proposed gondola. Gondola evacuation protocol would entail two groups of rescue personnel; one group connected to the gondola wire-rope, moving from cabin-to-cabin to safely lower gondola-users to the ground, and the other group working to transport gondola-users from the ground safely to the nearest base area. An emergency requiring the evacuation of gondola-users would involve many variables that would be specifically addressed in the gondola evacuation plan. For example, some gondola-users, like those travelling from one base area to the other to dine or shop and with no intention of skiing or snowboarding, may lack appropriate winter clothing and would need to be kept warm in transit to the nearest base areas. Of all the action alternatives, Alternative 2 would likely present the most complicated evacuation protocol, as the gondola alignment associated with Alternative 2 would be located high on the ridgeline separating the National Forest System-GCW and the Caldwell property; the topography of this area would make evacuation more difficult under Alternative 2 than under Alternative 3 or 4. Alternative 2 would not specifically change demand on emergency service providers.

NEPA Effects Conclusion

Under Alternative 2 there would be no effect to health and safety as the Alpine Meadows Ski Patrol would continue to deploy all necessary efforts to ensure avalanche hazard within the *Buttress* skiing terrain has been mitigated to an acceptable level or the terrain would remain closed to skiing. These procedures presently occur within *the Buttress* area and would continue with implementation of Alternative 2. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would **no effect** to health and safety as the efficacy of existing avalanche hazard mitigation would not be reduced.

CEQA Determination of Effects

Alternative 2 would not create a significant health or safety effect for the reasons described above. As described above in Section 4.6.2.3, “Issues Not Discussed Further,” most of the CEQA criteria related to

hazards and hazardous materials are not addressed in this section because project impacts were determined to be less than significant in the Initial Study (Appendix A). Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because Alternative 2 would not create or expose people to an existing health or safety hazard. In addition, RPMs HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 would require detailed construction plans, enforce regulations related to the storage of hazardous wastes and CAL FIRE regulations, and regulate the qualifications of personnel conducting blasting. With implementation of these RPMs, any potential impacts to health and safety would be reduced, although these RPMs are not necessary to reduce a significant impact 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 HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 as mitigation measures would decrease risks associated with fire risk and blasting during construction, but are not necessary to reduce a significant effect.

Impact 4.6-2 (Alt. 2): Operations Efficiency

Alternative 2 would have some effect on operations efficiency for avalanche hazard mitigation conducted at Alpine Meadows. In particular, seven 105-mm howitzer shot placements within *the Buttress* area (where fragmentation resulting from impact of artillery shots would potentially strike proposed gondola infrastructure) would be eliminated. However, avalanche hazard mitigation under Alternative 2 would still effectively be accomplished through the use of hand charges and avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. While avalanche hazard mitigation could still effectively be accomplished with hand charges and avalaunchers, ski patrollers would lose one form of redundancy with which to perform avalanche hazard mitigation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to operations efficiency would be **minorly adverse**. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criterion. No CEQA determination of effect is provided.

There are seven existing 105-mm howitzer shot placements within *the Buttress* area where fragmentation resulting from the impact of artillery shots could potentially damage proposed gondola infrastructure, thereby creating potential health and safety and operational issues. To ensure that no damage from fragmentation would be possible, implementation of Alternative 2 would require the elimination of these 7 existing 105-mm howitzer shot placements as options for avalanche hazard mitigation within *the Buttress* area. With these 7 105-mm howitzer shot placements eliminated, avalanche hazard mitigation under Alternative 2 would still effectively be accomplished through the use of hand charges and avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. While avalanche hazard mitigation could still effectively be accomplished with hand charges and avalaunchers, ski patrollers would lose one existing form of redundancy with which to perform avalanche hazard mitigation, which would have a minorly adverse effect on the operations efficiency of avalanche hazard mitigation at Alpine Meadows. It is important to note that avalanche hazard mitigation within *the Buttress* area is currently conducted primarily through the use of hand charges and avalauncher rounds with the 105-mm howitzer only being employed occasionally.

Gondola evacuation protocol under Alternative 2 would be more difficult to conduct than under Alternative 3 or 4. This is because the gondola alignment associated with Alternative 2 would run high along the ridgeline on the west edge of the Caldwell property, meaning that accessing the gondola line, in the event of a necessary evacuation, would be more difficult for rescue teams than if the gondola were located through Catch Valley. The applicant will be required to prepare an Emergency Preparedness and Evacuation Plan (EPEP) consistent with Government Code Section 65302(g) (protection from unreasonable risks associated with the effects of seismic, geologic or flooding events or wildland fires, etc.) and in furtherance of the Placer Operational Area Eastside Emergency Access Evacuation Plan. The EPEP would provide guidance and procedures for Squaw Valley Ski Holdings (SVSH) staff in the unlikely event of an emergency requiring evacuation. Refer to RPM HAZ-11 in Appendix B.

NEPA Effects Conclusion

Alternative 2 would have a minorly adverse effect on operations efficiency for avalanche hazard mitigation conducted at Alpine Meadows. In particular, seven 105-mm howitzer shot placements within *the Buttress* area would be eliminated. However, avalanche hazard mitigation under Alternative 2 would still effectively be accomplished through the use of hand charges and avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. While avalanche hazard mitigation could still effectively be accomplished with hand charges and avalaunchers, ski patrollers would lose one form of redundancy with which to perform avalanche hazard mitigation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to operations efficiency would be **minorly adverse**. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

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

Mitigation Measures

No mitigation measures are required.

4.6.3.3 ALTERNATIVE 3

Impact 4.6-1 (Alt. 3): Health and Safety

Alternative 3 would have no effect on health and safety within the project area for either snow safety personnel or the public because the efficacy of existing avalanche hazard mitigation protocol would not be reduced. Avalanche hazard mitigation activities would continue to be carried out with existing techniques (including the use of hand-charges and avalaunchers) in slide-prone terrain until an acceptable level of risk is achieved. These procedures presently occur within *the Buttress* area and would continue with implementation of Alternative 2, although 2 existing 105-mm howitzer shot placements would be eliminated as options for avalanche hazard mitigation within this area, which is described in more detail below. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would **no effect** to health and safety as the efficacy of existing avalanche hazard mitigation would not be reduced. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because Alternative 3 would not create or expose people to an existing health or safety hazard. In addition, RPMs HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 would require detailed construction plans, enforce regulations related to the storage of hazardous wastes and CAL FIRE regulations, and regulate the qualifications of personnel conducting blasting. With implementation of these RPMs, any potential impacts to health and safety would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Avalanche Risk

While avalanche risk would remain an inherent component of the recreation experience at Alpine Meadows, Alternative 3 would not increase the level of avalanche risk present at Alpine Meadows or Squaw Valley in any way. This analysis is similar to the analysis provided under this header for Alternative 2, except for the number of 105-mm howitzer shot placements that would be eliminated as options for avalanche hazard mitigation. More specifically, under Alternative 3, 2 existing 105-mm howitzer shot placements within *the Buttress* area would be removed as options for avalanche hazard mitigation for the same reasons described under Alternative 2 (meaning that under Alternative 3, five fewer 105-mm howitzer shot placements would be eliminated than under Alternative 2). Even with this change, avalanche hazard mitigation would still be effectively accomplished within *the Buttress* area using existing technologies, as stated under this header for Alternative 2.

Hazards Associated with Construction, Operation, and Maintenance

Avalanche hazard mitigation activities would continue within slide-prone terrain until an acceptable level of risk is achieved. Under Alternative 3, the gondola alignment would run down Catch Valley. As a result, this

gondola alignment could be more susceptible to damage by avalanche and slope failures on infrastructure than under Alternative 2 because it would be at the base of the valley and, therefore, near the path of potential avalanche runout zones. However, gondola infrastructure would be strategically engineered to avoid these avalanche runout zones as much as possible. In addition, like other ski area facilities at Squaw Valley and Alpine Meadows, the gondola would not operate if there was significant avalanche risk until appropriate avalanche hazard mitigation actions had been implemented. As a result, this difference would not result in an appreciable reduction in health and safety as compared with Alternative 2. Because of its alignment near the floor of Catch Valley, the gondola alignment under Alternative 3 would be more easily accessible than under Alternative 2, making evacuation of gondola cabins, if needed, a simpler process.

All of the other analysis provided under this header for Alternative 2 (discussion of hazards associated with construction of the gondola) is the same for Alternative 3.

NEPA Effects Conclusion

Under Alternative 3 there would be no effect to health and safety as the Alpine Meadows Ski Patrol would continue to deploy all necessary efforts to ensure avalanche hazard within the *Buttress* skiing terrain has been mitigated to an acceptable level or the terrain would remain closed to skiing. These procedures presently occur within *the Buttress* area and would continue with implementation of Alternative 3. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would **no effect** to health and safety as the efficacy of existing avalanche hazard mitigation would not be reduced.

CEQA Determination of Effects

Alternative 3 would not create a significant health or safety effect for the reasons described above. As described above in Section 4.6.2.3, "Issues Not Discussed Further," most of the CEQA criteria related to hazards and hazardous materials are not addressed in this section because project impacts were determined to be less than significant in the Initial Study (Appendix A). Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because Alternative 3 would not create or expose people to an existing health or safety hazard. In addition, RPMs HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 would require detailed construction plans, enforce regulations related to the storage of hazardous wastes and CAL FIRE regulations, and regulate the qualifications of personnel conducting blasting. With implementation of these RPMs, any potential impacts to health and safety would be reduced, although these RPMs are not necessary to reduce a significant impact 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 HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 as mitigation measures would decrease risks associated with fire risk and blasting during construction, but are not necessary to reduce a significant effect.

Impact 4.6-2 (Alt. 3): Operations Efficiency

Alternative 3 would have some effect on operations efficiency for avalanche hazard mitigation conducted at Alpine Meadows. In particular, two 105-mm howitzer shot placements within *the Buttress* area (where fragmentation resulting from the impact of artillery shots would potentially damage proposed gondola infrastructure) would be eliminated. However, avalanche hazard mitigation under Alternative 3 would still effectively be accomplished through the use of hand charges and avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. While avalanche hazard mitigation could still effectively be accomplished with hand charges and avalaunchers, ski patrollers would lose one form of redundancy with which to perform avalanche hazard mitigation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to operations efficiency would be **minorly adverse**. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criterion. No CEQA determination of effect is provided.

Under Alternative 3, there are two existing 105-mm howitzer shot placements that would be removed as options for avalanche hazard mitigation within *the Buttress* area to avoid potential safety and operational issues associated with fragmentation resulting from impact of artillery shots. This analysis is similar to the analysis provided under this header for Alternative 2, except for the number of 105-mm howitzer shot placements that would be eliminated as options for avalanche hazard mitigation. More specifically, under Alternative 3, two existing 105-mm howitzer shot placements within *the Buttress* area would be removed as options for avalanche hazard mitigation for the same reasons described under Alternative 2 (meaning that under Alternative 3, five fewer 105-mm howitzer shot placements would be eliminated than under Alternative 2). Even with this change, avalanche hazard mitigation would still be effectively accomplished within *the Buttress* area using existing technologies, as stated under this header for Alternative 2. As with Alternative 2, this change would constitute a minorly adverse effect on operations efficiency because ski patrollers would lose one existing form of redundancy with which to perform avalanche hazard mitigation within *the Buttress* area.

Gondola evacuation protocol under Alternative 3 would be easier to conduct than under Alternative 2, because the gondola alignment associated with Alternative 3 runs through Catch Valley, and rescue teams would be able to access the gondola on the valley floor in this area much more easily than if the gondola were located high on the ridgeline along the west edge of the Caldwell property. Of all the action alternatives, the gondola alignment associated with Alternative 3 would be the easiest for rescue teams to access in the event of an emergency requiring evacuation of the gondola, although the difference between Alternatives 3 and 4 is minor. As described under Impact 4.6-2 (Alt. 2), the applicant is required to prepare an EPEP for the project. The EPEP would provide guidance and procedures for SVSH staff in the unlikely event of an emergency requiring evacuation. Refer to RPM HAZ-11 in Appendix B.

NEPA Effects Conclusion

Alternative 3 would have a minorly adverse effect on operations efficiency for avalanche hazard mitigation conducted at Alpine Meadows. In particular, two 105-mm howitzer shot placements within *the Buttress* area would be eliminated. However, avalanche hazard mitigation under Alternative 3 would still effectively be accomplished through the use of hand charges and avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. While avalanche hazard mitigation could still effectively be accomplished with hand charges and avalaunchers, ski patrollers would lose one form of redundancy with which to perform avalanche hazard mitigation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to operations efficiency would be **minorly adverse**. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

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

Mitigation Measures

No mitigation measures are required.

4.6.3.4 ALTERNATIVE 4

Impact 4.6-1 (Alt. 4): Health and Safety

Alternative 4 would have no effect on health and safety within the project area for either snow safety personnel or the public because the efficacy of existing avalanche hazard mitigation protocol would not be reduced. With the exception of a minor difference in the gondola alignment and the implications of this minor difference on evacuation protocol, impacts to health and safety under Alternative 4 would be identical to those described above under Alternative 3. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would **no effect** to health and safety as the efficacy of existing avalanche hazard mitigation would not be reduced. Under CEQA, and using the CEQA criteria, this impact would be **less**

than significant because Alternative 3 would not create or expose people to an existing health or safety hazard. In addition, RPMs HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 would require detailed construction plans, enforce regulations related to the storage of hazardous wastes and CAL FIRE regulations, and regulate the qualifications of personnel conducting blasting. With implementation of these RPMs, any potential impacts to health and safety would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Avalanche Risk

While avalanche risk would remain an inherent component of the recreation experience at Alpine Meadows, Alternative 4 would not increase the level of avalanche risk present at Alpine Meadows or Squaw Valley in any way. The analysis under this header is identical to the analysis provided under this header for Alternative 3. Two 105-mm howitzer shot placements would be eliminated as options for avalanche hazard mitigation under Alternative 4 for the same reasons described under Alternative 2 (meaning that under Alternative 4, five fewer 105-mm howitzer shot placements would be eliminated than under Alternative 2). Even with this change, avalanche hazard mitigation would still be effectively accomplished within *the Buttress* area using existing technologies, as stated under this header for Alternative 2.

Hazards Associated with Construction, Operation, and Maintenance

Avalanche hazard mitigation activities would continue within slide-prone terrain until an acceptable level of risk is achieved. Under Alternative 4, the gondola alignment would run close to the valley floor of Catch Valley. As a result, this gondola alignment could be more susceptible to damage by avalanche and slope failures on infrastructure than under Alternative 2 because it would be at the base of the valley and, therefore, near the path of potential avalanche runout zones. However, gondola infrastructure would be strategically engineered to avoid these avalanche runout zones as much as possible. In addition, like other ski area facilities at Squaw Valley and Alpine Meadows, the gondola would not operate if there was significant avalanche risk until appropriate avalanche hazard mitigation actions had been implemented. As a result, this difference would not result in an appreciable reduction in health and safety as compared with Alternative 2. Because of its alignment, the gondola alignment under Alternative 4 would be more easily accessible than under Alternative 2, making evacuation of gondola cabins, if needed, a simpler process. As compared to Alternative 3, the gondola alignment under Alternative 4 would be slightly more difficult to access in the event of an emergency requiring evacuation of gondola cabins.

All of the other analysis provided under this header for Alternative 2 (discussion of hazards associated with construction of the gondola) is the same for Alternative 4.

NEPA Effects Conclusion

Under Alternative 4 there would be no effect to health and safety as the Alpine Meadows Ski Patrol would continue to deploy all necessary efforts to ensure avalanche hazard within the *Buttress* skiing terrain has been mitigated to an acceptable level or the terrain would remain closed to skiing. These procedures presently occur within *the Buttress* area and would continue with implementation of Alternative 4. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would **no effect** to health and safety as the efficacy of existing avalanche hazard mitigation would not be reduced.

CEQA Determination of Effects

Alternative 4 would not create a significant health or safety effect for the reasons described above. As described above in Section 4.6.2.3, "Issues Not Discussed Further," most of the CEQA criteria related to hazards and hazardous materials are not addressed in this section because project impacts were determined to be less than significant in the Initial Study (Appendix A). Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because Alternative 4 would not create or expose people to an existing health or safety hazard. In addition, RPMs HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 would require detailed construction plans, enforce regulations related to the storage of hazardous wastes and CAL FIRE regulations, and regulate the qualifications of personnel conducting blasting. With implementation of these RPMs, any potential impacts to health and safety would be reduced, although these RPMs are not necessary to reduce a significant impact 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 HAZ-2, HAZ-4, HAZ-6, HAZ-8 through HAZ-10, WQ-1, and NOI-4 as mitigation measures would decrease risks associated with fire risk and blasting during construction, but are not necessary to reduce a significant effect.

Impact 4.6-2 (Alt. 4): Operations Efficiency

Alternative 4 would have some effect on operations efficiency for avalanche hazard mitigation conducted at Alpine Meadows. With the exception of a minor difference in the gondola alignment and the implications of this minor difference on evacuation protocol, impacts to operations efficiency under Alternative 4 would be identical to those described above under Alternative 3. In particular, two 105-mm howitzer shot placements within *the Buttress* area would be eliminated. However, avalanche hazard mitigation under Alternative 4 would still effectively be accomplished through the use of hand charges and avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. While avalanche hazard mitigation could still effectively be accomplished with hand charges and avalaunchers, ski patrollers would lose one form of redundancy with which to perform avalanche hazard mitigation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to operations efficiency would be **minorly adverse**. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criterion. No CEQA determination of effect is provided.

Under Alternative 4, there are two existing 105-mm howitzer shot placements that would be removed as options for avalanche hazard mitigation within *the Buttress* area to avoid potential safety and operational issues associated with fragmentation resulting from impact of artillery shots. This analysis is identical to the analysis provided under this header for Alternative 3; while avalanche hazard mitigation would still be effectively accomplished within *the Buttress* area using existing technologies, ski patrollers would lose one existing form of redundancy with which to perform avalanche hazard mitigation within *the Buttress* area. This change would constitute a minorly adverse effect to operations efficiency within *the Buttress* area

Gondola evacuation protocol under Alternative 4 would be easier to conduct than under Alternative 2, because the gondola alignment associated with Alternative 4 would run close to the valley floor of Catch Valley, and rescue teams would be able to access the gondola on the valley floor in this area much more easily than if the gondola were located high on the ridgeline along the west edge of the Caldwell property. Of all the action alternatives, the gondola alignment associated with Alternative 3 would be the easiest for rescue teams to access in the event of an emergency requiring evacuation of the gondola, although the difference between Alternatives 3 and 4 would be minimal. As described under Impact 4.6-2 (Alt. 2), the applicant is required to prepare an EPEP for the project. The EPEP would provide guidance and procedures for SVSH staff in the unlikely event of an emergency requiring evacuation. Refer to RPM HAZ-11 in Appendix B.

NEPA Effects Conclusion

Alternative 4 would have a minorly adverse effect on operations efficiency for avalanche hazard mitigation conducted at Alpine Meadows. In particular, two 105-mm howitzer shot placements within *the Buttress* area would be eliminated. However, avalanche hazard mitigation under Alternative 4 would still effectively be accomplished through the use of hand charges and avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. While avalanche hazard mitigation could still effectively be accomplished with hand charges and avalaunchers, ski patrollers would lose one form of redundancy with which to perform avalanche hazard mitigation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to operations efficiency would be **minorly adverse**. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

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

Mitigation Measures

No mitigation measures are required.

4.6.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.6-1 below provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

For Alternative 1 – No Action Alternative, there would be no effect for either Impact 4.6-1 or Impact 4.6-2.

For Impact 4.6-1, there would be no effect under NEPA, and a less-than-significant effect under CEQA for all three action alternatives because the efficacy of existing avalanche hazard mitigation protocol would not be reduced by the project. Avalanche hazard mitigation activities would continue to be carried out with existing techniques in slide-prone terrain until an acceptable level of risk is achieved. Under all action alternatives, there are existing 105-mm howitzer shot placements within *the Buttress* area where fragmentation resulting from the impact of artillery shots would potentially damage proposed gondola infrastructure, thereby creating health and safety and operational issues (seven shot placements for Alternative 2, two shot placements for Alternatives 3 and 4). As such, implementation of any of the action alternatives would require the elimination of these existing 105-mm howitzer shot placements as options for avalanche hazard mitigation within *the Buttress* area to ensure that no damage from fragmentation occurs. With the elimination of these 105-mm howitzer shot placements as options for avalanche hazard mitigation, avalanche hazard mitigation would still be accomplished through the use of hand charges and avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan.

The alignments of Alternatives 3 and 4 along Catch Valley would increase the susceptibility of gondola infrastructure to avalanche because there are numerous avalanche runout zones along Catch Valley; however, the increased susceptibility of Alternatives 3 and 4 to avalanche is not critical because the gondola would be specifically sited to avoid avalanche runout zones as much as possible, the gondola would not operate during periods of high avalanche risk, and the gondola cabins could be evacuated in the event of an emergency caused by avalanche. There are no meaningful differences between Alternatives 3 and 4 with regard to susceptibility to avalanche.

For Impact 4.6-2, there would be a minorly adverse effect under NEPA for all action alternatives. This minorly adverse effect would be more substantial under Alternative 2 than under Alternatives 3 or 4. There would be no difference in the magnitude of this effect between Alternatives 3 and 4. The analysis of Impact 4.6-2 is specific to a NEPA analytical indicator and is not responsive to a CEQA criteria, so no CEQA determination of effect is provided. Under all action alternatives, there are existing 105-mm howitzer shot placements within *the Buttress* area where fragmentation resulting from the impact of artillery shots would potentially damage proposed gondola infrastructure, thereby creating potential health and safety and operational issues (seven shot placements for Alternative 2, two shot placements for Alternatives 3 and 4). As such, implementation of any of the action alternatives would require the elimination of these existing 105-mm howitzer shot placements as options for avalanche hazard mitigation within *the Buttress* area to ensure that no damage from fragmentation occurs. While avalanche hazard mitigation under would still effectively be accomplished through the use of hand charges and avalaunchers, ski patrollers would lose one form of redundancy with which to perform avalanche hazard mitigation in the areas where these 105-mm howitzer shot placements would be lost, which would constitute a minorly adverse effect.

Under Alternative 2, the gondola would be more difficult to evacuate in an emergency than under Alternatives 3 and 4 because of its alignment along the ridgeline separating the National Forest System-GCW and the Caldwell property, which would complicate access for safety crews; evacuation protocol would be easier to carry out under Alternatives 3 and 4 because of their proposed alignments through Catch Valley, which is easily accessible by safety crews. There is only a minor difference between Alternatives 3 and 4 with regard to ease of evacuation protocol, with evacuation anticipated to be slightly easier to execute under Alternative 3.

Table 4.6-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.6-1: Health and Safety	Description of the existing level of avalanche risk and avalanche hazard mitigation protocols in the study area based on existing data	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Description of changes to the level of avalanche risk and avalanche hazard mitigation protocols	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Discussion of potential changes to avalanche risk resulting from climate change	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Description of hazards associated with construction, operation, and maintenance of project infrastructure	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or acutely hazardous materials	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3

Table 4.6-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Create any health hazard or potential health hazard; Expose people to existing sources of potential health hazards	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Expose people to existing sources of potential health hazards	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Similar to Alternative 2	No effect under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
4.6-2: Operations Efficiency	Description of the existing level of avalanche risk and avalanche hazard mitigation protocols in the study area based on existing data	No effect	Minorly adverse under NEPA	Minorly adverse under NEPA Similar to Alternative 2	Minorly adverse under NEPA Similar to Alternatives 2 and 3
	Description of changes to the level of avalanche risk and avalanche hazard mitigation protocols (including development of an Avalanche hazard mitigation Plan) under the proposed project	No effect	Minorly adverse under NEPA	Minorly adverse under NEPA Similar to Alternative 2	Minorly adverse under NEPA Similar to Alternatives 2 and 3
	Disclosure of proposed gondola evacuation protocol and potential changes in demand on emergency service providers	No effect	Minorly beneficial under NEPA	Beneficial under NEPA Less than under Alternative 2	Beneficial under NEPA Less than under Alternative 2 and similar to Alternative 3

4.6.4 Cumulative Effects

4.6.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. Past ski area and Placer County development projects have been incorporated and analyzed in this document as part of the Affected Environment. The spatial scope for this cumulative effects analysis of public safety includes the extent of the Alpine Meadows and Squaw Valley developed ski areas and public and private lands immediately adjacent to the ski areas.

The following is a list of present and reasonably foreseeable future projects that could affect public safety.

Project	Potential impacts
Caldwell property (White Wolf) development	Proximity of residences or other structures associated with this project to the gondola alignment could result in effects on health and safety and operational efficiency.
General Development in Olympic Valley	Presence of additional residential and commercial developments in Olympic Valley could result in effects on health and safety and operational efficiency.

4.6.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct and indirect effects and thus, by definition, no cumulative impacts to public safety.

Alternative 2

Under Alternative 2, the gondola would be constructed. The only reasonably foreseeable projects with the potential to interact with the public safety effects of Alternative 2 is the Caldwell property (White Wolf) development and General Development in Olympic Valley, which would be most likely to occur after the implementation of Alternative 2. These projects are not actions connected to Alternative 2 and are instead considered here as additive actions; implementation of these projects does not depend on implementation of Alternative 2, and implementation of Alternative 2 does not depend on development of the Caldwell property or General Development at Olympic Valley.

Based on the initial proposal submitted to Placer County for the Caldwell property development, no residences or other structures on the Caldwell property would be constructed in proximity to or beneath the gondola alignment associated with Alternative 2, so no cumulative effects to health and safety associated with the Caldwell property development are anticipated.

Placer County estimates that General Development in Olympic Valley would result in 569 new lodging/residential units and 80,500 square feet of commercial units by 2039. This development would not occur within the operational boundaries of Squaw Valley or Alpine Meadows and therefore would not result in any cumulative effects to operations efficiency at either resort. Similarly, cumulative effects to health and safety would not occur because residential and commercial development in Olympic Valley would have no effect on avalanche hazard mitigation protocol or construction, operation, and maintenance of the gondola.

Alternative 2, on its own, would result in minorly beneficial impacts to health and safety and operations efficiency under NEPA, and less-than-significant impacts to health and safety under CEQA. When added to these Alternative 2 effects, the effects of the Caldwell property development discussed above would not result in any cumulative adverse effects to public safety within the project area.

Alternatives 3 and 4

Under Alternatives 3 and 4, the gondola would be constructed. The only reasonably foreseeable projects with the potential to interact with the public safety effects of Alternatives 3 and 4 is the Caldwell property (White Wolf) development and General Development in Olympic Valley, which would be most likely occur after the implementation of Alternative 3 or 4. For the same reasons described under Alternative 2, the Caldwell property development and General Development in Olympic Valley are not considered connected actions to Alternatives 3 or 4.

Based on the initial proposal submitted to Placer County for the Caldwell property development, residences or other structures could be constructed on the Caldwell property in proximity to, or potentially beneath, the gondola alignment associated with Alternatives 3 and 4. However, aerial tramway regulation established by ANSI would require that the interface between the proposed gondola alignments and the specific development of habitable structures on the Caldwell property be consistent with public safety standards; see ANSI B77.1-2017 for more details.

For the same reasons described above under Alternative 2, General Development in Olympic Valley would result in no cumulative effects to operations efficiency or health and safety under Alternative 3 or 4.

Alternatives 3 and 4 on their own would result in no effects to health and safety and minorly adverse effects to operations efficiency under NEPA, and less-than-significant impacts to health and safety under CEQA. When added to these effects associated with Alternatives 3 and 4, the effects of the Caldwell property development and General Development at Olympic Valley discussed above would not result in any cumulative adverse effects to public safety within the project area.

4.7 TRANSPORTATION AND CIRCULATION

This section describes existing transportation and circulation conditions in a defined traffic study area (see Section 4.7.1.1, "Environmental Setting," below) and analyzes the potential impacts of the alternatives on the surrounding roadway system as well as transit facilities/services and parking. Because the project would operate only during the winter season and would not result in meaningful levels of bicycling or pedestrian travel, these systems are not analyzed. All technical calculations can be found in Appendix E.

4.7.1 Affected Environment

4.7.1.1 ENVIRONMENTAL SETTING

This section describes existing regional and local environmental conditions relevant to transportation and circulation. It describes the selection of study periods, identification of the study area, data collection, and analysis of existing conditions.

Selection of Study Periods

The project would transport passengers via a gondola between the Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows) during winter/ski season only. This analysis, therefore, focuses on conditions for that operating period. Consistent with other studies in the region, this analysis focuses on Saturday AM peak hour and Sunday PM peak hour conditions (as well as daily conditions on each weekend day). These two peak hours were chosen because they represent each resort's busiest hour of winter time inbound and outbound travel and were specifically requested by the California Department of Transportation (Caltrans) to be studied as part of the *Village at Squaw Valley Specific Plan Draft EIR* (Placer County 2015). Although conditions on Friday afternoons can also be busy during winter months, this condition is more common during summer months as guests arrive to spend the weekend in the Tahoe area.

Previous studies relating to winter recreation in the Tahoe region have typically relied upon selection of study periods representing between the fifth and 10th busiest day of the ski season. This analysis follows that same approach. Agencies typically do not evaluate transportation impacts based on the busiest day or two of the season (e.g. holidays which see an increase in visitors) because doing so would likely identify mitigation measures for impacts that could result in overbuilding roads and other transportation infrastructure.

Existing Conditions

Traffic counts were collected over several weekends between January and April 2017. However, before choosing a particular day to represent an appropriate study period, it was first necessary to estimate the "effective capacity" of Squaw Valley using the following two measures:

1. The average number of skier visits on "parked out" days, and
2. The maximum number of skier visits on days that were not "parked out."

This "effective capacity" value does not represent the mountain's operating capacity and is not related to the *Squaw Valley General Plan and Land Use Ordinance's* limitation of skiers at the resort; rather, it is a design day value that results in the parking lots being effectively full (or parked out). In other words, the number of skiers is effectively capped by parking capacity. The analysis relies on proprietary Squaw Valley skier visitation and parking data provided by the applicant to Fehr and Peers, the traffic subconsultant. Comparable data for Alpine Meadows was not available. However, as described below, Squaw Valley accommodates the majority of skier visits at the two resorts and generally reaches "parked out" conditions before Alpine Meadows. Thus, "parked out" conditions at Squaw Valley are indicative of visitation at both resorts.

Using the two measurement techniques described above, the resulting "effective capacity" estimates are within 1–2 percent of each other, which suggests that this is a reasonable estimate for how parking supply limits overall use of the resort, as defined herein, of Squaw Valley. This value, which is a proprietary number (the nature and role of proprietary ski industry data used in this analysis are described further in Section, 4.7.2.1, "Methods and Assumptions"), is a critical part of the proposed analysis methodology because it is used to determine how many of the additional skier visits generated by the project can be assigned to a given weekend day without exceeding the effective capacity value. Lastly, the term "skiers" is used throughout this section for ease of reference, though it is recognized that both resorts attract skiers and snowboarders.

The following dates were selected to represent existing conditions:

- Saturday, February 18, 2017 (seventh busiest weekend day of the season in terms of skier visits); and
- Sunday, January 29, 2017 (sixth busiest weekend day of the season in terms of skier visits).

The above rankings apply both to Squaw Valley only and to combined visitation of Squaw Valley and Alpine Meadows. These dates were selected in part because skier visitation on each day at Squaw Valley was less than the "effective capacity" value, meaning that the resorts had capacity to accommodate additional skier visits (i.e., such as those generated by the project).

Heavy snowfall during the 2016–2017 ski season contributed to a number of peak weekend days in which the resorts reached their effective capacity. Many of these parked-out days had reduced parking supply due to a portion of the parking lots being used for snow storage.

Study Area Roadways and Intersections

Study intersections and roadways were selected for analysis in consultation with Placer County staff and based on the project's expected travel characteristics (i.e., the project location and the amount of project trips) as well as facilities susceptible to being affected by the project.

The following 14 intersections and eight study roadway segments were selected for study. Exhibit 4.7-1 displays the study intersections included in the transportation analysis, which encompass the "study area" for the transportation and circulation analysis. These study area roadways and intersections were deemed appropriate because they captured the locations where project-related traffic might be significant. Traffic at more distant facilities would be too dispersed to have a measurable effect.

Intersections

1. State Route (SR) 89/Donner Pass Road/Frates Lane
2. SR 89/Interstate 80 (I-80) Westbound Ramps
3. SR 89/I-80 Eastbound Ramps
4. SR 89/Deerfield Drive
5. SR 89/West River Street
6. Squaw Valley Road/Squaw Peak Road
7. Squaw Valley Road/Chamonix Place
8. Squaw Valley Road/Village East Road
9. Squaw Valley Road/Far East Road/Christy Hill Road
10. Squaw Valley Road/Wayne Road
11. Squaw Valley Road/Squaw Creek Road
12. SR 89/Squaw Valley Road
13. SR 89/Alpine Meadows Road
14. SR 89/SR 28

Roadways

1. SR 89 between Deerfield Drive and West River Street
2. SR 89 between West River Street and Squaw Valley Road
3. SR 89 between Squaw Valley Road and Alpine Meadows Road
4. SR 89 between Alpine Meadows Road and SR 28
5. SR 89 south of SR 28
6. SR 28 east of SR 89
7. Squaw Valley Road west of SR 89
8. Alpine Meadows Road west of SR 89

Source: Image and data provided by Fehr & Peers in 2018

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Exhibit 4.7-1 Study Area

Exhibit 4.7-1 shows that all study intersections are located along either SR 89, Squaw Valley Road, or Alpine Meadows Road, which provide regional and local access to the project area. These roadways are described in detail below:

State Route 89 is a north-south state highway that extends across the traffic study area from the Town of Truckee to Tahoe City and beyond. SR 89 has two lanes in each direction between Donner Pass Road and I-80. It continues south of I-80 as a four-lane highway, narrowing to a two-lane undivided highway south of Deerfield Drive. It continues as a two-lane highway to its junction with SR 28 in Tahoe City. Traffic signals exist on SR 89 at Donner Pass Road, Deerfield Drive, West River Street, Squaw Valley Road, Alpine Meadows Road, and SR 28. The I-80/SR 89 interchange has multi-lane (i.e., two circulating lanes) roundabouts at each ramp terminal intersection. SR 89 has a posted speed limit of 40 miles per hour (mph) south of I-80, increasing to 45 mph south of the Union Pacific Railroad tunnel (i.e., "Mousehole"), and 55 mph south of West River Street. South of Squaw Valley Road, it has a posted speed limit of 45 mph, decreasing to 35 mph approaching Tahoe City.

Squaw Valley Road extends westerly from SR 89 through Olympic Valley, terminating at Squaw Valley. West of Squaw Creek Road, the road features one lane in each direction plus shoulders. East of Squaw Creek Road, it widens to two eastbound lanes. Squaw Valley Road has a posted speed limit of 35 mph and passing is not permitted. As discussed below, Squaw Valley Road is operated with a directional three-lane coning program during peak winter periods. The *Placer County General Plan* (2013) classifies this facility as a rural arterial.

Alpine Meadows Road extends westerly from SR 89, terminating at Alpine Meadows. It consists of one lane in each direction plus shoulders, has a posted speed limit of 40 mph, and passing is not permitted. The *Placer County General Plan* (2013) classifies this facility as a rural arterial.

Data Collection

A series of traffic counts over four weekends were conducted at the SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road intersections during the 2016/2017 ski season. Counts were collected during the AM (7:00 a.m. to 10:00 a.m.) peak period on Saturdays and during the PM (2:00 p.m. to 5:00 p.m.) peak period on Sundays on the following days.

- Saturday, January 28, 2017;
- Sunday, January 29, 2017;
- Saturday, February 25, 2017;
- Sunday, February 26, 2017;
- Saturday, March 4, 2017; and
- Sunday, April 9, 2017.

February 18, 2017 was chosen for the Saturday analysis period despite the lack of traffic counts for that day because this day best met the design skier-day criterion (i.e., select a date in which skier attendance represented the 5th to 10th busiest day of the year and in which there was reserve capacity in parking lots to accommodate project trips). When the counts were being scheduled and performed, it was not possible to know this date would ultimately be the design skier Saturday. The lack of traffic count data on this day, however, did not pose any concerns because data from three other Saturdays were collected, and the number of skiers at each resort on each day was also known. Review of these three Saturday counts showed strong correlation between peak hour traffic volumes and the number of skiers, and thus a routinely used interpolation process was applied to develop existing volumes representative of conditions on February 18, 2017. It was then necessary to "balance" those volumes through adjacent study intersections to the west, north, and south based on counts at these locations in March and April 2017. These types of adjustments are routine in areas that experience surges in recreational travel.

Exhibit 4.7-2 displays the existing turning movement volumes at the study intersections for winter Saturday AM and Sunday PM peak hour conditions. Key findings regarding this data are as follows:

Winter Saturday AM Peak Hour

- The volume of traffic on SR 89 between I-80 and Squaw Valley Road is highly directional, with 82 percent traveling southbound (i.e., coming from the I-80 and Truckee area).
- Of vehicles traveling westbound on Squaw Valley Road, 55 percent originate from the north on SR 89 (i.e., coming from the I-80 and Truckee area).
- Of vehicles traveling westbound on Alpine Meadows Road, 52 percent originate from the south on SR 89 (i.e., coming from the north Lake Tahoe area).
- Traffic levels (both directions) on SR 89 on different segments are generally comparable, with the segment north of Squaw Valley Road carrying 1,290 vehicles, the segment between Squaw Valley Road and Alpine Meadows Road carrying 1,148 vehicles, and the segment south of Alpine Meadows Road carrying 1,137 vehicles.
- Squaw Valley Road experiences twice the amount of traffic as Alpine Meadows Road, with 87 percent of Saturday AM peak traffic on both facilities being westbound (inbound).

Winter Sunday PM Peak Hour

- The volume of traffic on SR 89 between I-80 and Squaw Valley Road is highly directional, with 80 percent traveling northbound (i.e., toward the I-80 and Truckee area).
- Of vehicles traveling eastbound on Squaw Valley Road, 75 percent are destined to the north on SR 89 (i.e., traveling toward the I-80 and Truckee area).
- Of vehicles traveling eastbound on Alpine Meadows Road, 64 percent are destined to the north on SR 89 (i.e., traveling toward the I-80 and Truckee area).
- The number of vehicles on SR 89 is generally greater to the north and lesser to the south. South of Alpine Meadows Road, SR 89 carries 1,002 vehicles; between Alpine Meadows Road and Squaw Valley Road, it carries 1,262 vehicles; and north of Squaw Valley Road, it carries 1,698 vehicles.
- Although Squaw Valley Road carries 20 percent more traffic than Alpine Meadows Road, with most of this increase associated with westbound travel. In the eastbound direction, both roadways carry comparable volumes. The Sunday PM peak hour volume represents 9 percent of the daily volume on Squaw Valley Road and 13 percent of the daily volume on Alpine Meadows Road.

Conclusions

1. Conditions during the Winter Sunday PM peak hour on Alpine Meadows Road have a clearer peak when compared to Squaw Valley Road. This makes sense given the variety of lodging options, restaurants, and other amenities in Olympic Valley supporting individuals staying in the area after lifts close versus more limited facilities/amenities present along Alpine Meadows Road. Based on the more limited facilities at Alpine Meadows, the bulk of visitors would be expected to leave the ski resort soon after they finish skiing rather than delay their departure because of stops at lodging, restaurants, and other facilities.

2. A significant component of Saturday AM peak hour travel into each resort comes from skiers permanently or temporarily residing from within the Tahoe Basin or Truckee area. Conversely, much of the outbound travel during the Sunday PM peak hour is destined to the north (i.e., away from the Tahoe Basin) toward I-80. This suggests that a component of skier visits to these resorts is comprised of skiers who arrive at lodging in the Tahoe Basin on a weeknight (i.e., Thursday or Friday), ski/stay for the weekend, then return to their permanent residence on Sunday afternoon.

Exhibit 4.7-2 shows the lane configurations and traffic controls present at each study intersection. The three-lane coning program was in effect along Squaw Valley Road during each count day (both inbound and outbound). Accordingly, the exhibit shows white arrows indicating the presence of a second westbound lane during the Saturday AM peak hour and a second eastbound lane during the Sunday PM peak hour at select intersections along Squaw Valley Road. The three-lane coning program is described in greater detail below under "Levels of Service."

For Saturday AM peak hour conditions, the peak hour of traffic along Squaw Valley Road occurs from 8:30 to 9:30 a.m. and along Alpine Meadows Road occurs from 8:15 to 9:15 a.m. For the Sunday PM peak hour, the peak hour of travel occurs from 2 to 3 p.m. on both roadways.

Levels of Service

The operational performance of the roadway network is commonly described with the term "level of service" (LOS). LOS is a qualitative description of operating conditions, ranging from LOS A (free-flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). The LOS analysis methods outlined in the *Highway Capacity Manual*, sixth edition (HCM) (Transportation Research Board 2016) were used in this study. The HCM methods for calculating LOS for intersections, roundabouts, and two-lane highways are described below. It is noted that the methodology for analyzing two-lane highways in the sixth edition of the HCM is unchanged from that in the 2010 HCM.

A signalized intersection's LOS is based on the weighted average control delay of all vehicles passing through the intersection. Delay is measured in seconds per vehicle, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. Table 4.7-1 summarizes the relationship between the delay and LOS for signalized intersections.

Table 4.7-1 LOS Criteria – Intersections

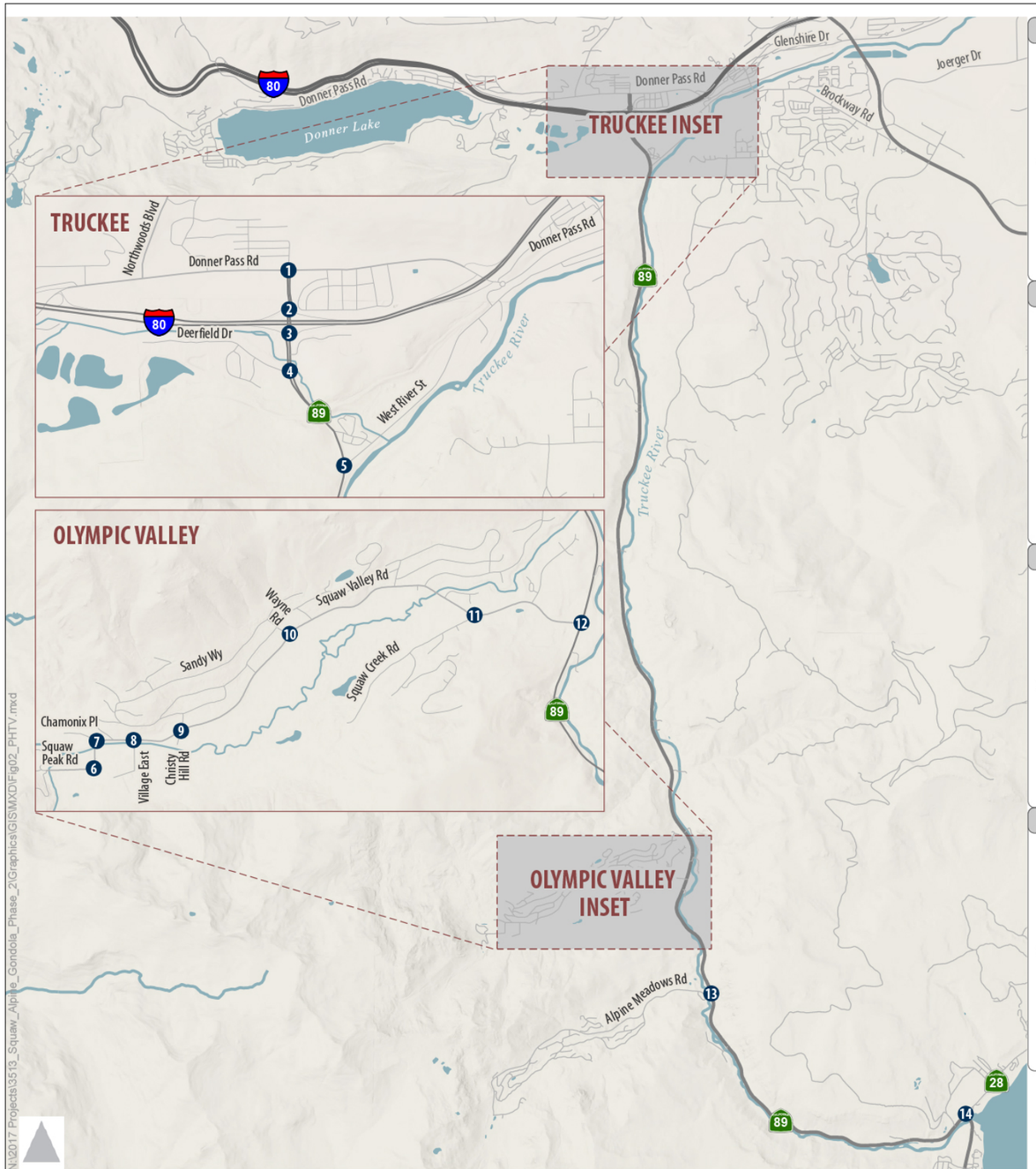
Level of Service	Description (for Signalized Intersections)	Average Delay (Seconds/Vehicle)	
		Signalized Intersections	Unsignalized Intersections and Roundabouts
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	≤ 10.0	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	> 10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	> 15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	Operations with high delay values indicating poor progression, and long cycle lengths. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0	> 35.0 to 50.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0	> 50.0

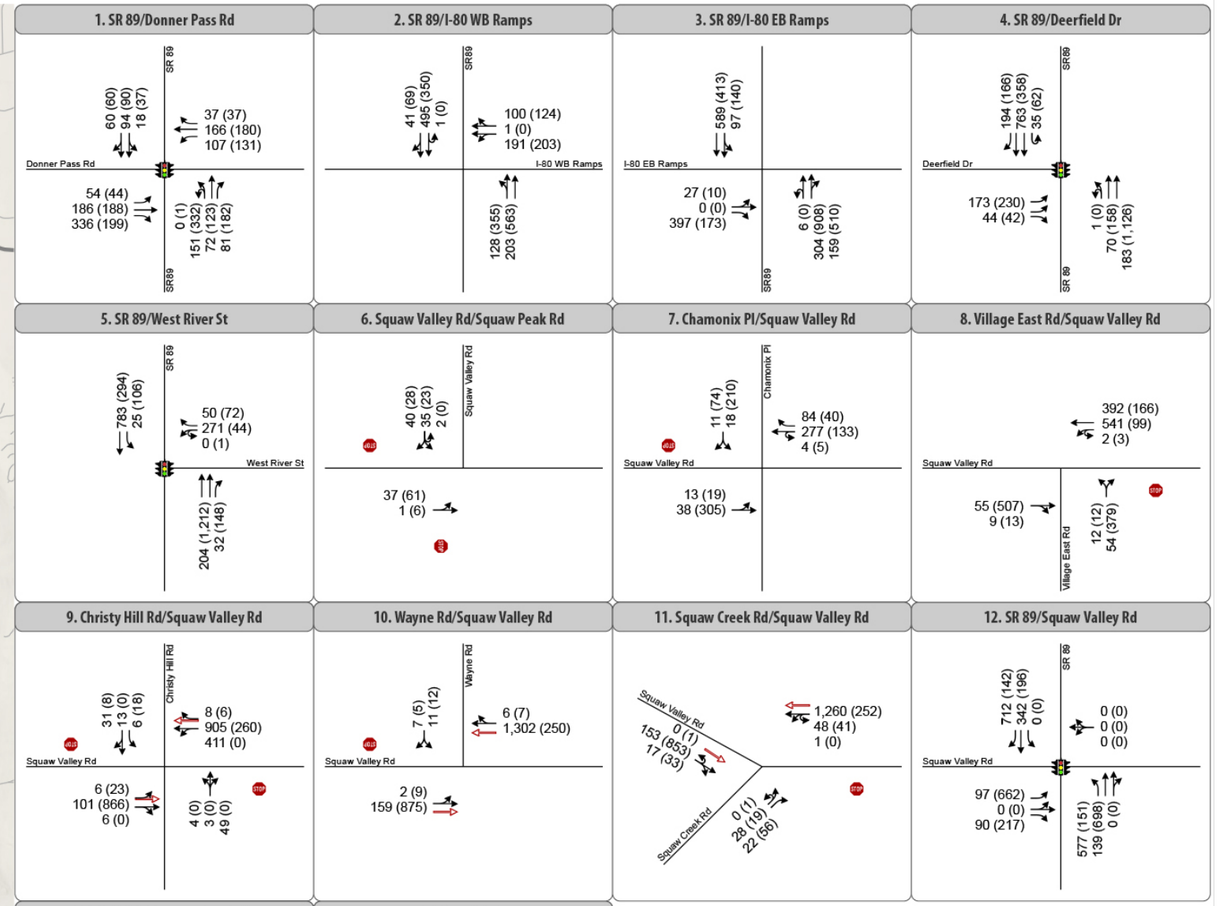
Notes: LOS = level of service; V/C ratio = volume-to-capacity ratio

LOS at signalized intersections and roundabouts based on average delay for all vehicles. LOS at unsignalized intersections is reported for the weighted average delay for all movements that yield the right-of-way.

Source: Transportation Research Board 2016

Policies of Placer County in its *Impact Analysis Methodology of Assessment* (Placer County Department of Public Works and Facilities 2015) specify that the average delay reported at unsignalized intersections should be the weighted average delay of all vehicles that yield right-of-way. At roundabouts, the average delay and LOS is reported for all movements. Table 4.7-1 also shows the average delay range associated with each LOS category for unsignalized intersections and roundabouts. This table shows that for a given LOS (except LOS A), a higher threshold of delay is provided at signalized intersections versus unsignalized intersections. This is based on driver expectation of having to wait less time at a stop sign versus a traffic signal.





Source: Image and data provided by Fehr & Peers in 2018

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Exhibit 4.7-2 Peak Hour Volume and Lane Configurations - Existing Conditions

Various traffic models are available for studying intersection operations. Different models are better suited to study different types of intersections and different operating conditions. The use of the different modeling methods described below is necessary to properly analyze various types of intersections and ranges of operating conditions in the study area. Further, these modeling approaches are consistent with guidance provided by Caltrans during the scoping process for the *Village at Squaw Valley Specific Plan Draft EIR* (Placer County 2015).

Due to the influences of congestion, queue spillbacks, lane utilization, and lane drops, the following intersections were analyzed using the SimTraffic micro-simulation model:

- SR 89/Squaw Valley Road,
- SR 89/Alpine Meadows Road, and
- Squaw Valley Road/Squaw Creek Road.

The remaining intersections controlled by signals or stop signs were analyzed using the Synchro software program, which employs 2016 HCM procedures. Roundabouts at the I-80/SR 89 interchange were analyzed using the Sidra traffic analysis software.

The following assumptions and inputs were used in the models:

- Traffic signal timings provided by Caltrans and observed in the field were used.
- The field-observed peak hour factors, a measure of variation or "peaking" of traffic within the peak hour, were used.
- During both study periods, Squaw Valley Road was operated with a directional three-lane coning program, as described below:
  - During the Saturday AM peak hour, two westbound lanes began at SR 89 (i.e., the northbound left-turn and southbound right-turn lanes each had their own receiving lanes) and extended to Village East Road.
  - During the Sunday PM peak hour, two eastbound lanes were provided beginning at Village East Road and extending to SR 89. The Far East Road approach to Squaw Valley Road was closed.
  - Traffic control personnel were present at certain intersections along the three-lane coning program segment. According to field observations and information provided by Squaw Valley, these traffic control personnel would occasionally stop through traffic under certain conditions in which side-street traffic could not find gaps in through traffic to enter the traffic stream. The Synchro models for these intersections consider these operational characteristics. No such operations were present along Alpine Meadows Road.

The study segments along SR 89 are two-lane undivided highways and are analyzed based on the HCM, sixth edition (Transportation Research Board 2016). Table 4.7-2 shows the range of Percent Time Spent Following (PTSF) and average speed for each LOS category for two-lane undivided highways. As shown, LOS F operations occur when certain traffic volume thresholds (either a single direction or both directions) are exceeded. The analysis methodology reports an LOS for each direction of travel. Results are then reported for the worst-case travel direction.

Table 4.7-2 LOS Criteria – Two-Lane Undivided State Highways

Level of Service	Two-Lane Undivided Highways	
	Average Travel Speed (ATS)	Percent Time Spent Following (PTSF)
A	> 55 mph	≤ 35
B	> 50.0 to 55.0 mph	> 35 to 50
C	> 45.0 to 50.0 mph	> 50 to 65
D	> 40.0 to 45.0 mph	> 65 to 80
E	≤ 40 mph	> 80
F	Traffic flow exceeds 1,700 pcph in one direction or 3,200 pcph in two directions	

Notes: ATS = average travel speed; mph = miles per hour; pcph = passenger cars per hour; PTSF = percent time spent following

Study segments of SR 89 between I-80 and SR 28 are Class I two-lane highway facilities. Segment of SR 89 south of SR 28 is a Class II two-lane highway facility. For Class I facilities, the ATS and PTSF are used to determine LOS. For Class II facilities, only the PTSF is used to determine LOS. Highway class definitions based on descriptions from Transportation Research Board 2016.

Source: Transportation Research Board 2016

The *Placer County General Plan* (2013) categorizes Squaw Valley Road and Alpine Meadows Road as rural arterials. They can be further defined as having low access control given their posted speed limits and the frequency of driveways. Table 4.7-3 shows the average daily traffic (ADT) range associated with each LOS grade for these categories of roadways based on the *Placer County General Plan* (2013) and the *Tahoe Basin Area Plan EIR/EIS* (Placer County and Tahoe Regional Planning Agency 2016).

Table 4.7-3 Daily LOS Criteria – Urban State Highways and County Roadways

Facility Type	Applicable Study Roadway	Maximum Traffic Volume to Achieve			
		LOS B	LOS C	LOS D	LOS E
Urban Street State Highway					
Two-Lane Median-Divided State Highway [1]	SR 28 east of SR 89 in Tahoe City	EB: 525 vph WB: 512 vph	EB: 600 vph WB: 585 vph	EB: 687 vph WB: 670 vph	EB: 750 vph WB: 731 vph
Placer County Roadways					
Three-Lane Low-Access Control Rural Arterial [2]	Squaw Valley Road west of SR 89	15,750 ADT	18,000 ADT	20,610 ADT	22,500 ADT
Two-Lane Low-Access Control Rural Arterial	Alpine Meadows Road west of SR 89	10,500 ADT	12,000 ADT	13,740 ADT	15,000 ADT

Notes: ADT = average daily traffic; N/A = not applicable; vph = vehicles per hour

1. Two-lane highway values for a Class I facility.

2. Three-lane rural arterial based on reversible three-lane coning program operated during analysis periods.

Sources: Placer County 2013; Placer County and Tahoe Regional Planning Agency 2016

The segment of SR 28 east of SR 89 is a two-lane highway with a two-way left-turn lane that traverses a developed area of Tahoe City. Table 4.7-3 shows the hourly, directional traffic volume range for SR 28 that corresponds to each LOS grade. These data were used to analyze this corridor as part of the *Placer County Tahoe Basin Area Plan and Tahoe City Lodge Draft EIR/EIS* (2016).

ANALYSIS RESULTS

Existing traffic operations were analyzed at the 14 study intersections for the two study hours. Table 4.7-4 displays the results. Refer to Appendix E for technical calculations. This table reveals the following key conclusions regarding existing operations:

- SR 89/Squaw Valley Road Intersection – existing operations at this signalized intersection are at LOS C during the Saturday AM peak hour and LOS D during the Sunday PM peak hour. The AM peak hour results are partially attributable to the three-lane coning program, which allows left- and right-turning vehicles to simultaneously turn onto Squaw Valley Road from SR 89. During the PM peak hour, long cycle lengths and heavy eastbound (outbound) traffic result in LOS D conditions.

- SR 89/Alpine Meadows Road Intersection – existing operations at this signalized intersection are at LOS B during the Saturday AM peak hour and LOS C during the Sunday PM peak hour. During the PM peak hour, operations are within 2 seconds of LOS D, and are caused primarily by the heavy eastbound left-turn volume (566 vehicles) served by a single lane.

- Other SR 89 Study Intersections – The other study intersections along SR 89 currently operate at LOS C or better. This is due primarily to their intersection geometrics such as additional (i.e., second) through lanes, multi-lane roundabouts, and channelized right-turn lanes, which increase the intersection's capacity.

- Squaw Valley Road Intersections – Several of the side-street stop-controlled study intersections along Squaw Valley Road currently experience LOS D to F conditions (for the minor street, worst-case movement) during the Saturday AM and Sunday PM peak hours. This is due to the heavy volume of through traffic, which causes a lack of available gaps for merging onto Squaw Valley Road. However, operations at the Squaw Valley Road/Wayne Road intersection are at LOS B or better due to the regular presence of traffic control officers at this intersection (and not other study intersections) that assign right-of-way.

Table 4.7-4 Peak Hour Intersection Level of Service – Existing Conditions

Intersection	Control	Saturday AM Peak Hour		Sunday PM Peak Hour	
		Delay[1]	LOS	Delay[1]	LOS
SR 89/Donner Pass Road	Traffic Signal	20 sec/veh	C	24 sec/veh	C
SR 89/I-80 WB Ramps	Roundabout	8 sec/veh	A	11 sec/veh	B
SR 89/I-80 EB Ramps	Roundabout	8 sec/veh	A	21 sec/veh	C
SR 89/Deerfield Drive	Traffic Signal	15 sec/veh	B	15 sec/veh	B
SR 89/West River Street	Traffic Signal	22 sec/veh	C	13 sec/veh	B
Squaw Valley Road/Squaw Peak Road	Side-Street Stop	7 (8) sec/veh	A (A)	7 (8) sec/veh	A (A)
Squaw Valley Road/Chamonix Place	Side-Street Stop	1 (10) sec/veh	A (B)	10 (26) sec/veh	B (D)
Squaw Valley Road/Village East Road	Side-Street Stop	2 (3) sec/veh	A (A)	1 (10) sec/veh	A (B)
Squaw Valley Road/Far East Road/Christy Hill Road	Side-Street Stop	17 (116) sec/veh	C (F)	1 (14) sec/veh	A (B)
Squaw Valley Road/Wayne Road	Side-Street Stop	12 (10) sec/veh	B (B)	8 (10) sec/veh	A (A)
Squaw Valley Road/Squaw Creek Road	Side-Street Stop	4 (7) sec/veh	A (A)	3 (13) sec/veh	A (B)
SR 89/Squaw Valley Road	Traffic Signal	34 sec/veh	C	42 sec/veh	D
SR 89/Alpine Meadows Road	Traffic Signal	18 sec/veh	B	33 sec/veh	C
SR 89/SR 28	Traffic Signal	15 sec/veh	B	16 sec/veh	B

Notes: LOS = level of service; sec/veh = seconds per vehicle

[1] For signalized and all-way stop-controlled intersections and roundabouts, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled intersections, the delay and LOS is reported for the entire intersection and for the weighted average delay of all vehicles that yield right-of-way (shown in parentheses).

Intersections shown as "> 180" represent over-saturated conditions, in which a reasonable delay cannot be estimated by the model.

Source: Data provided by Fehr & Peers in 2018

Table 4.7-5 displays the maximum vehicle queue during the Saturday AM and Sunday PM peak hours for critical movements at the SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road intersections. The maximum queue is an output from the SimTraffic model. This table reveals the following key conclusions regarding vehicle queuing during these periods:

- During the Saturday AM peak hour, traffic volumes spill out of the northbound left-turn lane at the SR 89/Squaw Valley Road intersection. The SimTraffic model reports a maximum queue of 575 feet (approximately 23 vehicles as the model equates 25 feet of queue length per vehicle). This measurement is consistent with field observations, which showed northbound queues of at least 16 vehicles, and was the maximum number of vehicles visible from the intersection. SimTraffic also shows a lengthy vehicle queue on the southbound approach to the intersection, which blocks access to the right-turn lane.

- During the Sunday PM peak hour, the maximum queue in the eastbound left-turn lanes exiting Squaw Valley are 400 feet per lane. The eastbound Alpine Meadows Road approach has a maximum queue of 1,000 feet, which is caused by substantial volumes of exiting traffic served by single left- and right-turn lanes.

- The above results are based on measured volumes at intersections and actual signal timings present at the time of the data collection. These results also match video from cameras used to collect traffic volumes during the data collection described above. Thus, these results represent an accurate depiction of existing conditions.

Table 4.7-5 Maximum Queue Lengths at SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road Intersections – Existing Conditions

Movement	Available Storage	Maximum Vehicle Queue [1]	
		Saturday AM Peak Hour	Sunday PM Peak Hour
SR 89/Squaw Valley Road			
Northbound Left-Turn Lane	400 feet	575 feet	—
Eastbound Left-Turn Lane	400 feet	—	400 feet
Eastbound Left/Through Lane	N / A [2]	—	400 feet
Eastbound Right-turn Lane	N / A [3]	—	50 feet
Southbound Through/Right-Turn Lane	250 feet [4]	1,025 feet	—
SR 89/Alpine Meadows Road			
Northbound Left-Turn Lane	300 feet	350 feet	-
Eastbound Left-Turn Lane	200 feet [5]	—	1,000 feet [6]
Eastbound Right-turn Lane	200 feet [5]	—	1,000 feet [6]
Southbound Right-Turn Lane	600 feet	200 feet	—

Notes: Values rounded up to the nearest 25 feet

" —" = not studied during off-peak condition.

[1] Based on output from SimTraffic model. Model identifies 25 feet of queue length for each vehicle in the queue.

[2] N / A = Inside travel lane on eastbound Squaw Valley Road transitions into this turn lane. A turn pocket does not exist.

[3] N / A = Outside travel lane on eastbound Squaw Valley Road transitions into this turn lane. A turn pocket does not exist.

[4] N / A = Although a 250 foot right-turn lane is provided, through traffic vehicle queues can prevent right-turning vehicles from accessing this turn lane. Accordingly, results shown represent maximum length of southbound queue on SR 89, which includes both through and right-turning traffic.

[5] Measured from the limit line to upstream Alpine Circle Road intersection.

[6] Turn lane queues become a single queue that extend 1,000 feet back from the limit line.

Source: Appendix E

The 2016–2017 ski season included several days in which peak skier visitation caused substantial queuing, congestion, and increased travel times on SR 89. To illustrate congestion during such periods, a travel time run was performed on southbound SR 89 on Saturday, January 28, 2017, which was among the busiest days of the ski season (and busier than either of the selected Saturday or Sunday periods). Departing at 7:30 a.m., the 8.3-mile trip on SR 89 from Deerfield Drive to Squaw Valley Road took 17 minutes, which corresponds to an average speed of 29 mph or about half the free-flow speed of 55 mph on this segment. It took another 8 minutes to reach the Squaw Valley parking lot. The elapsed travel time of 25 minutes represents a 78-percent increase over the 14-minute travel time under free-flow conditions.

Peak visitation conditions such as this do not form the baseline condition for which project impacts are judged for several reasons. First, they do not represent a frequently reoccurring condition and should not be the basis for identifying impacts. Second, they do not allow for any meaningful added project trips to occur due to both resorts being at capacity from a parking supply perspective. As noted previously, it is inappropriate to design the transportation system to handle this level of traffic for a peak weekend day such as the one described above due to its infrequency. However, Section 4.7.3, "Direct and Indirect Environmental Consequences," below, addresses the potential for motorists attempting to visit these resorts during such conditions and being forced to turn around due to lack of available parking and advanced notification.

The results of the analysis of existing conditions at the six study roadway segments on the state highway system are provided in Table 4.7-6. Refer to Appendix E for technical calculations. This table shows that all study segments of SR 89 currently operate at LOS E or better during the Saturday AM and Sunday PM peak hours. Between I-80 and Squaw Valley Road, the critical operating direction is southbound during the Saturday AM peak hour and northbound during the Sunday PM peak hour. Between SR 28 and Alpine Meadows Road, the critical operating direction is northbound during the Saturday AM peak hour and southbound during the Sunday PM peak hour. As shown in Table 4.7-6, SR 28 east of SR 89 currently operates at LOS F in the westbound direction during the Saturday AM peak hour. Operations are at LOS D or better during the other time periods and directions.

Table 4.7-6 State Highway Segment Level of Service – Existing Conditions

Segment[1]	Saturday AM Peak Hour					Sunday PM Peak Hour				
	Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS	Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS
SR 89 between Deerfield Dr and West River Street	SB	808	89.4	31.0	E	NB	1,284	96.1	27.5	E
SR 89 between West River St and Squaw Valley Rd	SB	1,054	88.3	45.3	E	NB	1,360	92.8	42.8	E
SR 89 between Squaw Valley Rd and Alpine Meadows Rd	NB	716	83.6	37.6	E	NB	849	87.0	36.6	E
SR 89 between Alpine Meadows Rd and SR 28	NB	979	88.9	35.8	E	SB	715	83.9	36.0	E
SR 89 south of SR 28	NB	643	79.2	N/A[2]	D	SB	462	73.6	N/A[2]	D
SR 28 east of SR 89	EB WB	310 761	N/A	N/A	B F	EB WB	658 333	N/A	N/A	D B

Notes: N/A = not applicable; EB = eastbound; LOS = level of service; NB = northbound; PTSF = percent time spent following; SB = southbound; vph = vehicles per hour; WB = westbound

[1] Refer to above section for description of facility types and analysis methods.

[2] Average Travel speed not applicable for Class II two-lane highways.

Source: Appendix E

Traffic operations were also analyzed at the Placer County study roadway segments of Squaw Valley Road and Alpine Meadows Road. Table 4.7-7 displays the results including footnotes depicting how ADT volumes were developed. This table shows that both roadways currently operate at LOS B during Saturday and Sunday daily conditions.

Table 4.7-7 Placer County Roadway Level of Service – Existing Conditions

Segment	Type	Saturday Daily Conditions			Sunday Daily Conditions		
		Average Daily Traffic	V/C Ratio	LOS	Average Daily Traffic [2]	V/C Ratio	LOS
Squaw Valley Road west of SR 89	Three-Lane Low Access Control Arterial	12,750 [1]	0.57	B	13,100 [2]	0.58	B
Alpine Meadows Road west of SR 89	Two-Lane Low Access Control Arterial	5,450 [3]	0.36	B	8,550 [4]	0.57	B

Note: LOS = level of service; V/C ratio = volume-to-capacity ratio

Values rounded to the nearest 50 vehicles.

[1] Reported value-based traffic count on Saturday, February 25, 2017 factored down by 7.7 percent to account for difference in skiers at Squaw Valley Ski Area for that day versus February 18, 2017.

[2] Reported value based on actual 3-hour flows measured from 2 to 5 p.m. on Sunday, January 29, 2017. Hourly flows during non-skier periods (i.e., midnight to 6 a.m. and 7 p.m. to midnight) based on counts collected on Sunday, February 26, 2017. Volumes for remaining hours estimated to be 20 percent greater (for peak travel direction) than the February 26, 2017 counts (based on the 3-hour growth increase from January 29th to February 26th). Note that direct proportionality application of differences in skiers is not applicable for Sundays because travel on this day on Squaw Valley Road not only includes skiers, but overnight guests departing after spending the weekend in Olympic Valley. Refer to Appendix E.

[3] Reported value-based traffic count on Saturday, February 25, 2017, factored down by 18.3 percent to account for difference in skiers at Alpine Meadows Ski Area for that day versus February 18, 2017.

[4] Reported value-based traffic count on Sunday, February 26, 2017, factored up based on increase in skiers at Alpine Meadows Ski Area for that day versus Sunday, January 29, 2017.

Source: Appendix E

Existing Transit Service

Several transit service options are available within the study area. This section describes those services, including operating hours, stop locations, and costs.

Tahoe Truckee Area Regional Transit (TART) – This service, which is operated by Placer County, connects Squaw Valley with Truckee and Tahoe City via the "SR 89 route" (TART 2018) It extends from the Tahoe City Transit Center to the Truckee Depot on Donner Pass Road. It operates on 1-hour headways on a daily basis from approximately 6 a.m. to 6 p.m. It includes two stops in the Squaw Valley Ski Area, as well as stops at the Squaw Creek Resort, and stops at the SR 89/Squaw Valley Road and SR 89/West River Street intersections. It is approximately a 15-minute ride from the Truckee and Tahoe City stop locations to Squaw Valley. The route does not stop at Alpine Meadows and has no stops on Alpine Meadows Road. A single ride costs $1.75, with discounts available for seniors, youth, disabled, and multi-ride passes. TART also operates a North Lake Tahoe night service bus route that stops at Squaw Valley.

Squaw Valley-Alpine Meadows Express Shuttle – This shuttle operates daily during the winter between Squaw Valley and Alpine Meadows. A lift ticket purchased at one resort is also valid at the other resort and includes use of the shuttle. It operates approximately every 20 minutes from approximately 8:30 a.m. to 4:30 p.m. and picks up at Squaw Valley near the southerly terminus of Village East Road (near the Squaw Valley Members Locker Room). This shuttle requires a wait at the bus stop, then travel of 15–30 minutes (depending on traffic conditions) to the shuttle stop at the other ski area. A review of ticket scans during the 2015–2016 season at the two resorts indicated that less than 1 percent of guests utilized their ticket (i.e., rode the shuttle) to visit both ski areas on a single day.

4.7.1.2 REGULATORY SETTING

Transportation in the study area is regulated by Caltrans, Placer County, the Town of Truckee, and the Tahoe Regional Planning Agency (TRPA). Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation.

Federal

There are no federal laws or regulations that are relevant to potential transportation impacts of the project.

State

Caltrans owns, operates, and maintains most of the study area's major roadways, including SR 89 and SR 28. As such, the following Caltrans (District 3) planning and policy documents provide guidance on expectations for these routes related to traffic operations relevant to this analysis and the potential effects of the project.

District System Management Plan

The *District System Management and Development Plan* (Caltrans 2013) sets forth the long-term (20-year) policy direction for Caltrans District 3 related to system maintenance, system completion, and congestion relief. The plan emphasizes that much of the state highway system was built many years ago and is reaching the end of its expected useful life. SR 28 and SR 89 both have sections with major pavement distress within the study area. The plan does not include any major expansion or modification of the state highways in the study area for vehicles, transit, bicyclists, or pedestrians. The plan does support complete streets development, but only includes performance expectations related to vehicle travel. In general, the plan establishes an LOS D threshold for rural areas noting that individual transportation corridor concept reports (TCCRs) for each state route set final thresholds. The document notes that once facilities worsen to LOS F, it becomes difficult to measure further degradation to any degree of accuracy. Therefore, other performance measures can be used to define thresholds for system planning and CEQA purposes. These include: vehicle travel time, vehicle hours of delay, travel reliability (i.e., the degree of variation in travel time due to congestion and non-recurring events), and lost productivity (i.e., ability of corridor to deliver travelers/good movement). The document mentions the need to develop thresholds of significance (but does not include any) to use these measures for defining significant impacts for facilities not operating at the concept LOS.

Transportation Corridor Concept Report, State Route 89

Within the study area, the *Transportation Corridor Concept Report: State Route 89* (Caltrans 2012a) establishes an LOS E concept level of service for the 13-mile segment between SR 28 and the Placer/Nevada County line. The TCCR acknowledges that expanding this segment is not feasible due to the environmental sensitivity of the area and topographic constraints. Thus, the existing two-lane conventional highway is not planned for any modifications, aside from pavement rehabilitation. For the 0.5-mile segment between the Placer/Nevada County line and I-80, the TCCR identifies a 20-year concept LOS E based on its widening to a four-lane conventional highway. It identifies a 20-year no build LOS F if no improvements are made. The segment of SR 89 south of Tahoe City also has a concept LOS E with widening not feasible due to the environmental sensitivity of the area and topographic constraints.

Transportation Corridor Concept Report, State Route 28

The *Transportation Corridor Concept Report: State Route 28* (Caltrans 2012b) establishes an LOS E threshold for the segment between SR 89 and Estates Drive in Tahoe Vista. The only planned modifications to the existing two-lane conventional highway are Class II bike lanes from Tahoe City to Kings Beach. The TCCR recognizes that LOS F conditions do occur during peak recreational seasons but expects LOS E conditions will be maintained during the 20-year planning period outside those conditions.

Local

The project site is located in unincorporated Placer County. However, the study area roadways extend outside Placer County to the jurisdictions of the Town of Truckee and TRPA. Specific regulatory conditions from these jurisdictions that would relate to the transportation impact analysis or the implementation of the project are described below.

Placer County General Plan

The *Placer County General Plan* (2013) provides long-range direction and policies for the use of land within Placer County. With regard to the transportation and circulation system serving the project, this document establishes an overall roadway system, including a roadway functional classification system, and designates a series of transit corridors. In addition, six modal goals are presented, each of which is supported by numerous policies and implementation programs. For the purposes of this EIS/EIR, the goals and policies of this document were used in developing the impact significance criteria (see Section 4.7.2.2, "Effects Analysis and Significance Criteria").

Placer County has established minimum acceptable LOS thresholds for roadways and intersections in the *Placer County General Plan* (2013). Policy 3.A.7 establishes the following LOS thresholds.

- **Policy 3.A.7:** The County shall develop and maintain its roadway system to maintain the following minimum levels of service (LOS).

    a. LOS "C" on rural roadways, except within one-half mile of state highways where the standard shall be LOS "D."

    b. LOS "C" on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS "D."

The *Placer County General Plan* (2013) allows the County to grant exceptions to these LOS standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable based on established criteria. In allowing any exceptions to the standards, the County shall consider the following factors:

1. The number of hours per day that the intersection or roadway segment would operate at conditions worse than the standard.
2. The ability of the required improvement to significantly reduce peak hour delay and improve traffic operations.
3. The right-of-way needs and the physical impacts on surrounding properties.
4. The visual aesthetics of the required improvement and its impact on community identity and character.
5. Environmental impacts including air quality and noise impacts.
6. Construction and right-of-way acquisition costs.
7. The impacts on general safety.
8. The impacts of the required construction phasing and traffic maintenance.
9. The impacts on quality of life as perceived by residents.
10. Consideration of other environmental, social, or economic factors on which the County may base findings to allow an exceedance of the standards.

Exceptions to the standards will be allowed only after all feasible measures and options are explored, including alternative forms of transportation.

Town of Truckee 2025 General Plan

The *Town of Truckee 2025 General Plan* (Town of Truckee 2009) guides the overall growth and development of the Town of Truckee, which is located north of the project site on SR 89. The plan calls for local roadways to operate at LOS D or better outside of the Downtown Study Area, and LOS E or better within the Downtown Study Area during summer conditions. An operating goal is not provided for winter conditions.

Lake Tahoe Regional Plan

TRPA maintains several environmental carrying capacities pertaining to traffic and air quality and, in particular, peak hour delays at intersections, daily traffic on certain key roadways, and vehicle miles traveled (VMT) for the entire basin for a peak summer Friday conditions (which would not apply to the gondola project because it would only operate in winter).

Tahoe Basin Area Plan 2016

Policy language from this plan calls for maintaining consistency with LOS and quality of service standards identified in the Regional Transportation Plan (RTP), with the exception of intersections and roadway segments within Tahoe City Town Center boundaries where LOS F is acceptable during peak periods.

Placer County 2036 Regional Transportation Plan

The *Placer County 2036 Regional Transportation Plan* (Placer County Transportation Planning Agency 2016) contains the regional policy direction for transportation investment in Placer County outside the Tahoe Basin. The plan identifies multi-modal regional transportation improvements. Review of the Tier 1 (financially constrained) project list did not reveal any planned capital improvements within the study area.

4.7.2 Analysis Methods

4.7.2.1 METHODS AND ASSUMPTIONS

This section describes the project's expected travel characteristics including trip generation, mode split, directionality of trips, VMT, and other factors. These characteristics are the same across all action alternatives.

Project Travel Characteristics

The project would operate between the bases of the two resorts and would include, under each action alternative, two mid-mountain stations. The project would not increase the total amount of skiable acreage at either resort, but it would provide better accessibility to existing ski terrain. The ride from one base to the other is expected to be approximately 16 minutes (not including wait times to board). When the gondola is operating, the existing bus ski shuttle between the two resorts would not be operational. This operational detail is part of the project description and would be made a Condition of Approval. The gondola would be able to transport approximately 1,400 persons per hour in each direction. The gondola would result in a net increase of two full-time year-round employees and eight full-time seasonal employees. This represents the maximum winter time employment level for the traffic analysis. Elsewhere in this document, an average annualized employment level is also identified. In this case, the two full-time year-round employees and eight full-time seasonal winter employees are converted to an equivalent six full-time year-round employees.

Under all action alternatives, the project would not change the supply of parking at either resort. During conditions in which parking lots are not needed for snow storage, Squaw Valley provides approximately 5,600 parking spaces and Alpine Meadows provides about 2,500 spaces (based on the maximum reported utilization on each of nine separate lots by Alpine Meadows personnel).

Estimation of New Annual Skier-Visits Generated by the Proposed Gondola

The *Squaw Valley | Alpine Meadows Base-to-Base Gondola Final Visitation and Use Assessment* (SE Group and RRC Associates 2018) contains estimates of the number of new skier visits (i.e., one skier or boarder using one or both of the resorts for 1 day) the proposed gondola would generate annually. This report, which was prepared by experts in the field of ski visitation, bases its conclusions on several considerations including the current Tahoe Region ski market and measured effects of similar capital improvements (before/after implementation) at other ski resorts in North America. The results of the report apply to all action alternatives. The entire report can be found in Appendix C. Key conclusions from the detailed analysis in that report that are relevant to this study include:

1. The proposed gondola is anticipated to be used primarily as transportation between the two resorts, functionally replacing the existing shuttle bus service (pg. 4).

2. The proposed gondola may increase the duration of time that skiers remain in overnight accommodations at each resort. Because resort room occupancies are typically greatest on weekends, this could result in more skier visits extending their stay into the mid-week period (pg. 12).

3. The gondola would help maintain or slightly increase the market share of Squaw Valley and Alpine Meadows in the Lake Tahoe area (pgs. 15 and 18).

4. An interconnected Squaw Valley and Alpine Meadows Ski Resort would make it the second largest ski area (by acreage) in the United States, trailing only the Park City Resort in Utah. This could provide a marketing opportunity, potentially drawing more business not only from local/regional markets, but also providing increased national/international notoriety (pg. 15).

Page 18 of the report concludes that in the first year after opening, there would be an estimated incremental increase of 12,400 skier visits over the current baseline. By year five, the cumulative incremental visits associated with the gondola would total roughly 36,856 skier visits. As discussed above, this increase stems primarily from the fact that the project would be an attraction to both local and non-local skiers. While it would help maintain the resort's current market share in the region, it also would likely draw skiers from other parts of the country.

The analysis in this EIS/EIR employs the following reasonably conservative set of assumptions to ensure that the project's transportation impacts are not understated:

- Although it is likely that some of the net annual skier-days at the resorts would be overnight visitors at/near each resort, the analysis conservatively assumes all skiers (under both existing and cumulative conditions) would be day skiers who enter and then exit each resort in a single day. In other words, the conservative analysis assumes that all new skiers would enter and exit each resort in a single day.

- Although the project could be expected to take market share from other resorts in the Lake Tahoe area, the analysis conservatively does not assume a shift in skier travel from one resort to another (aside from changes in the decision to park at Squaw Valley or Alpine Meadows due to the presence of the gondola). Had such an assumption been made, the result would have been less overall travel (although changes in trips added to SR 89 would have been modest).

Development of 2016-2017 Ski Season Database for Analysis

A database was assembled that included daily skier visitation, snowfall, and a variety of other conditions (e.g., daily traffic on SR 89, parking demand when available, three-lane coning program in effect) for days during the 2016–2017 ski season in which both resorts were open. All days after April 30, 2017 were excluded because those periods do not typically represent peak winter visitation. In all, 144 days between November 24, 2016 and April 30, 2017 were included in the database, which was used to estimate the project's trip generation and travel characteristics, as described below.

It is important to note that due to the proprietary nature of this data, this study does not disclose skier attendance on individual dates or for the entire season. Proprietary data are frequently used in transportation impact analyses, but not disclosed in public documents. For example, employee residence zip codes and GPS/cell phone trip origin-destination data (as provided by third party vendors who partner with major service carriers) are used to evaluate employee travel patterns, but names and other information is removed from the data sources to ensure an individual's anonymity. As another example, vehicle trip generation rates published by the Institute of Transportation Engineers in the *Trip Generation Manual* (2017) do not identify the exact date and location in which the individual data points were collected to establish the trip rate. Nonetheless, this document has been used in countless transportation impact analyses.

According to the OnTheSnow.com website, the 2016–2017 ski season consisted of total snowfall at Squaw Valley | Alpine Meadows that was 32 percent above the previous 8-year average (OnTheSnow.com 2017). Additionally, data provided by Squaw Valley suggest that visitation at the resort during this season was 5 percent above the previous 8-year average. This study relies on visitation data from the 2016–2017 ski

season as the baseline condition upon which project impacts are evaluated. However, the 2016–2017 ski season's abnormally high snowfall levels occasionally limited the available parking supply (due to the need for on-site snow storage). Because such conditions are atypical, the evaluations that follow do not presume such conditions (i.e., that parking supply is limited by snow storage) would necessarily occur in the future so as to provide a conservative analysis of project impacts.

Weekend versus Weekday Skier Visits

A database composed of data from 144 days from the 2016–2017 season at Squaw Valley and Alpine Meadows was developed to identify conclusions relating to periods with low and high attendance days. Because of the proprietary nature of the data, results are presented in relative versus absolute terms. The following key findings were drawn from this information:

- Non-holidays and weekdays made up a larger proportion of low attendance days, whereas holidays and weekends represented a larger proportion of high attendance days.
- The proportion of weekend versus weekday skier visits during the 2016–2017 ski season was similar to that during previous ski seasons. This suggests that the proportion of weekend skier visits is relatively constant year over year.
- On an annual basis, Squaw Valley has 70 percent of all visits to the two resorts, and Alpine Meadows has 30 percent. Percentages do vary from day to day.

New Skier Visits during Study Periods

This study conservatively assumes that the project would not change the annual percentage of weekend versus weekday ski visits. This is conservative because if the project were to change the ratio of weekend versus weekday visits, the change would most likely result in a higher percentage of weekday visitors due to the project contributing to longer multi-day stay durations and more parking availability on weekdays.

This study assumes the same percentage increase in skiers (over existing conditions) on all weekend days in which there was reserve parking capacity. It would be speculative to estimate whether some weekends would attract greater or lesser than the average weekend increase because visitation is a function of numerous variables such as weather, snowfall, and road conditions, all of which are unpredictable.

Table 4.7-8 displays the estimated number of daily skier visits that the proposed gondola would generate for the two study periods. As described above, these values were derived by determining the proportion of the 36,856 annual additional visits (see the *Squaw Valley | Alpine Meadows Base-to-Base Gondola Final Visitation and Use Assessment* [SE Group and RRC Associates 2018]) that would occur on weekends, and then assigning those trips among all weekend days in which reserve parking supply existed to accommodate the added trips. Skier visits are then reported for the two specific Saturday and Sunday conditions identified in Section 4.7.1, "Affected Environment," for this study. On both days, the addition of project-generated skier visits would cause each resort's parking demand to approach, but not exceed, its capacity. Table 4.7-8 does not imply that the specified number of skiers would be added during every Saturday and Sunday during a ski season. Rather, it represents the number of added skiers during the two weekend days being studied (i.e., on Saturday, February 18, 2017, and Sunday, January 29, 2017).

Table 4.7-8 Project-Generated New Daily Skier Visits

Study Period	Squaw Valley Ski Resort	Alpine Meadows Ski Resort	Total Daily Skier Visits
Winter Saturday	479	207	686
Winter Sunday	491	212	703

Source: Data provided by Fehr & Peers in 2018

Data from the 2016–2017 season indicated that Squaw Valley is the destination for approximately 70 percent of all skier visits to the two resorts. Data from previous seasons confirm the same proportion. Table 4.7-8 reflects this visitation preference. This table also indicates a slightly greater number of visits on the Sunday study period versus the Saturday study period. This occurs because the same growth rate was applied to each weekend day and combined existing visitation to the two resorts was 2.5 percent higher on Sunday, January 29, 2017, than on Saturday, February 18, 2017.

Vehicle Trips Generated by New Skier Visits

To convert daily skier visits into daily and peak hour vehicle trips, estimations of mode split and average vehicle occupancy were necessary as was the determination of temporal peak hour arrival and departure percentages.

Estimation of Mode Split and Average Vehicle Occupancy

In April 2015, LSC Transportation Consultants, on behalf of Squaw Valley Ski Resort, conducted an online survey of individuals who had skied at either Squaw Valley or Alpine Meadows over the past 3 years. The online survey was emailed to season pass holders, renters of equipment, and other guests. In total, 830 responses were received. The survey questions, sampling size, and survey methods were reviewed by Fehr & Peers and found to be acceptable for use in this study. The following key findings from this survey relate to mode split and average vehicle occupancy:

1. For those visiting Squaw Valley, 91 percent arrived by private vehicle. For those visiting Alpine Meadows, 89 percent arrived by private vehicle.

   Applicability: Based on this data, this study assumes 90 percent of new skiers arrive by private vehicle.

2. Of 720 completed responses regarding average vehicle occupancy while traveling to each resort, the average was 3.2 persons per vehicle. Accordingly, this value is used in this study.

   Applicability: Based on this data, this study assumes 3.2 persons per vehicle for analysis purposes.

Additionally, based on a 2011 survey of skiers at Squaw Valley (LSC Transportation Consultants 2011), five percent of day skier respondents indicated being dropped off from a private vehicle (i.e., not transported via public bus or shuttle). Accordingly, this assumption is used in this study.

Temporal Peak Hour Arrival and Departure Percentages

For Saturday AM peak hour conditions, the peak hour of traffic along Squaw Valley Road occurs from 8:30 to 9:30 a.m. To determine how many of the estimated 479 added Saturday daily skiers attributable to the project (Table 4.7-8) would arrive at Squaw Valley during the peak hour, information on lift ticket scans was evaluated. Skiers arriving at Squaw Valley that drove to the resort during the 8:30 to 9:30 a.m. traffic peak hour, after parking their vehicles, would need time to gather equipment, walk to the resort, purchase lift tickets (if not a season pass holder), and so on before entering a lift and having their lift ticket/season pass scanned for the first time that day. Evaluating the percentage of skiers that have their first lift ticket scan a set time after the start and finish of the traffic peak hour would provide an indication of the proportion of all skiers that arrived by vehicle during the peak hour. Initially, a 15-minute buffer after the traffic peak hour was used, resulting in an evaluation of first lift ticket scans from 8:45 to 9:45 a.m. Because it may take some skier groups greater than 15 minutes from the time of parking to have their pass scanned due to the need to rent equipment, decision to have a quick breakfast, sign up for ski school, and so on, a 30-minute buffer was also considered (i.e., evaluating first lift ticket scans from 9:00 to 10:00 a.m.). A review of the ticket scan data showed that using a 30-minute buffer would have slightly reduced the peak hour arrival percentage. Thus, the 15-minute buffer was selected because it was considered reasonably conservative. Thus, the amount of tickets that were scanned for the first time at the tram, funitel, or lift from 8:45 to 9:45 a.m., as a function of all ticket scans, would be a reasonable representation of skiers that arrived during the 8:30–9:30 a.m. peak hour. On Saturday, January 20, 2018, 32 percent of all passes scanned at Squaw Valley (for the first trip up the mountain) occurred from 8:45–9:45 a.m. Based on this, 32 percent of additional daily skier visits associated with the project are expected to arrive at Squaw Valley during the AM peak hour.

A similar exercise was performed for first scans of skiers at Alpine Meadows on Saturday, January 20, 2018. The peak hour at this resort occurs from 8:15 a.m. to 9:15 a.m. On this day, 34 percent of all scanned passes occurred from 8:30–9:30 a.m. Based on this, 34 percent of the daily skier visits associated with the project at Alpine Meadows (Table 4.7-8) are expected to arrive at the resort during the AM peak hour.

The PM peak hour at the SR 89/Squaw Valley Road intersection occurred from 2:00–3:00 p.m. on Sunday, January 29, 2017. Counts collected at intersections along Squaw Valley Road on Sunday, April 9, 2017 revealed that nearly 100 percent of eastbound traffic flows on Squaw Valley Road approaching Squaw Creek Road between 2:00 and 3:00 p.m. originated from Squaw Valley. Using the same evaluation process, about 63 percent of trips on eastbound Squaw Valley Road at Squaw Creek Road from 3:00–5:00 p.m. were resort-related. The 24-hour count of eastbound traffic on Squaw Valley Road from Sunday, February 26, 2017 was then used, based on these empirical measurements and other knowledge of skier behavior, to estimate the percentage of daily skiers that exit from 2:00–3:00 p.m. The process assumes all eastbound (outbound) skier-related travel occurs between 11:00 a.m. and 6:00 p.m., with declining levels of skier-related usage the further the hour is from the 2:00–3:00 p.m. peak hour. Refer to Appendix E for technical calculations. As shown in this appendix, this process yields a conclusion that 34 percent of all outbound ski trips occur from 2:00–3:00 p.m. This percentage was applied to new skier trips at Alpine Meadows and Squaw Valley for the Sunday, January 29, 2017, study day (212 and 491 skiers, respectively [Table 4.7-8]) to determine the PM peak hour trip generation for the project.

Vehicle Trips Generated by Employees

The gondola would result in a net increase of two full-time year-round employees and eight full-time seasonal employees. According to the *Village at Squaw Valley Specific Plan EIR* (Placer County 2015), 82 percent of winter employees drove to work, with the majority (67 percent) starting their shift before 8:00 a.m. and ending their shift after 3:00 p.m. Therefore, for analysis purposes, it is conservatively assumed that one-third of daily employee vehicle trips (based on the surveyed mode split) arrive during the Saturday AM peak hour and depart during the Sunday PM peak hour.

Vehicle Trip Generation

Table 4.7-9 displays the number of new (i.e., generated by new skiers and employees) vehicle trips generated by the project for a Saturday condition. As shown, the project would generate a combined 422 daily vehicle trips to/from the two resorts, with 74 vehicle trips occurring during the Saturday AM peak hour.

Table 4.7-9 Winter Saturday Trip Generation – New Vehicle Trips Generated by Skiers and Employees

Resort	Saturday New Skiers	New Employees	Saturday Daily Vehicle Trips			Saturday AM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
Squaw Valley Ski Area	479	–	142 [1]	142 [1]	284	46 [2]	3 [2]	49
	–	5	4	4	8	2	0	2
Alpine Meadows Ski Area	207	–	61	61	122	20	1	21
	–	5	4	4	8	2	0	2
Total	686	10	211	211	422	70	4	74

Notes:

[1] Calculated as follows: 479 skiers x 90 percent drive = 431 skiers arrive by vehicle. Each vehicle holds an average of 3.2 skiers, which results in 135 inbound trips and 135 outbound trips. Because 5 percent of vehicle trips are pick-ups and drop-offs, an additional 7 inbound and outbound trips are added, resulting in 142 inbound trips and 142 outbound trips.

[2] Calculated as follows: 32 percent of inbound vehicle trips (142) arrive during the AM peak hour, which equates to 46 inbound trips, with three of these being outbound after dropping off skiers.

Source: Data provided by Fehr & Peers in 2018

Table 4.7-10 displays the number of new (i.e., generated by new skiers and employees) vehicle trips generated by the project for a Sunday condition. As shown, the project would generate a combined 432 new daily vehicle trips to/from the two resorts, with 82 vehicle trips occurring during the Sunday PM peak hour.

Table 4.7-10 Winter Sunday Trip Generation – New Vehicle Trips Generated by Skiers and Employees

Resort	Saturday New Skiers	New Employees	Sunday Daily Vehicle Trips			Sunday PM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
Squaw Valley Ski Area	491	–	145 [1]	145 [1]	290	3	52 [2]	55
	–	5	4	4	8	0	2	2
Alpine Meadows Ski Area	212	–	63	63	126	1	22	23
	–	5	4	4	8	0	2	2
Total	703	10	216	216	432	4	78	82

Notes:

[1] Calculated as follows: 491 skiers x 90 percent drive = 442 skiers arrive by vehicle. Each vehicle holds an average of 3.2 skiers, which results in 138 inbound trips and 138 outbound trips. Because 5 percent of vehicle trips are pick-ups and drop-offs, an additional 7 inbound and outbound trips are added, resulting in 145 inbound trips and 145 outbound trips.

[2] Calculated as follows: 32 percent of inbound vehicle trips (142) arrive during the AM peak hour, which equates to 46 inbound trips, with three of these being outbound after dropping off skiers.

Source: Data provided by Fehr & Peers in 2018

The totals in these tables represent the number of new trips added to portions of SR 89 (and beyond). See below for changes in travel associated with shifts in trips between the two resorts and elimination of the shuttle, which affect usage of Squaw Valley Road and Alpine Meadows Road (and SR 89 between each resort).

Anticipated Shift in Existing Skier Vehicle Trips between Squaw Valley and Alpine Meadows Ski Areas

A wide array of factors would be expected to contribute to a skier group's decision to visit one resort instead of the other in response to the presence of the proposed gondola, including the following considerations:

- travel time savings;
- parking lot occupancy and time to reach capacity;
- weekend day (i.e., departing the region after skiing or staying for the night);
- snow conditions (both on the road and on the mountain);
- walking distance from vehicle to ticket counter/chair lift;
- geographic trip origin/destination; and
- lifestyle (e.g., children, resort familiarity, residence area, skiing ability/terrain, perceived value, social).

To assess the potential for parking lot occupancy times to affect resort selection, Exhibit 4.7-3 shows parking accumulation over time at each resort as measured in 5-minute increments on Saturday, February 20, 2016. As shown, the two resorts had similar temporal parking demand patterns on this busy day, although Squaw Valley reached its ultimate parking demand slightly earlier in the day. However, parking occupancy levels between the two resorts did not differ substantially during the Saturday AM peak hour.

During the 2014–2015 ski season, LSC Transportation Consultants surveyed over a combined 700 guests at the two resorts. The key question asked was: "How likely would you be to use the gondola to ski both mountains in a single day?" Among respondents, 43 percent indicated that they would use the gondola "most of the time" or "all of the time" to ski both mountains. Another 33 percent responded that they would "sometimes" use the gondola, and 23 percent responded saying they would "infrequently" or "never" use the gondola to ski both mountains in a single day. The conclusion that over 50 percent of respondents chose "sometimes," "infrequently," or "never" suggests that sizeable shifts of existing skier vehicle trips from one resort to the other in response to the gondola's presence are not expected. However, some shifts are expected given the proportion of "most of the time" or "all of the time" responses.

The survey also included additional questions to investigate preferences for when respondents might switch from one resort to the other, including consideration of both their inbound trip origin and outbound trip destination. Tables 4.7-11 and 4.7-12 show how travel direction influences likelihood for shifting resort destination.

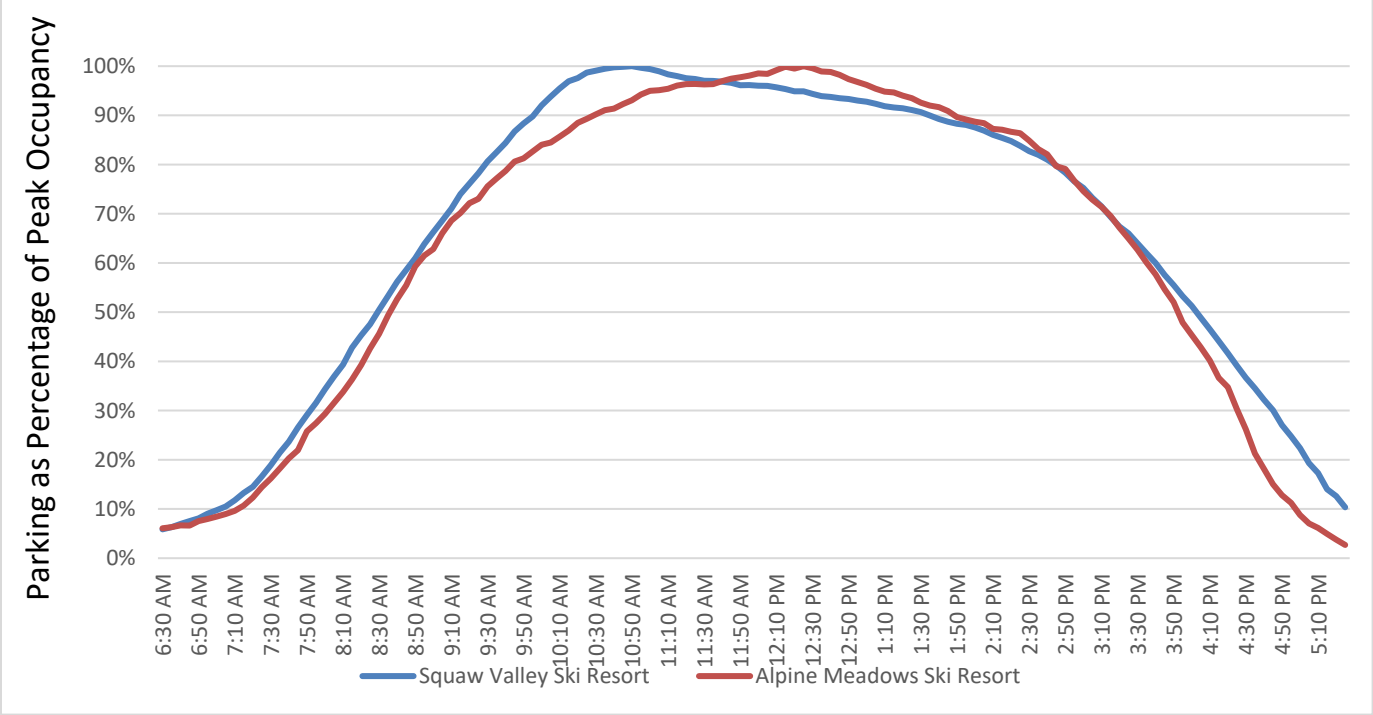


Exhibit 4.7-3 Comparison of Parking Accumulation on Saturday, February 20, 2016

Table 4.7-11 Squaw Valley and Alpine Meadows Ski Area Skier Survey Responses Regarding Changes in Resort Selection Due to Presence of Proposed Gondola – Inbound Travel

Respondent Surveyed Was Skiing at	How Likely Would You Be to Instead Drive to	When Traveling Inbound from the…	Survey Response	
			Most of the Time	All of the Time
Squaw Valley Ski Resort	Alpine Meadows Ski Resort	North (i.e., Truckee and beyond)	8%	8%
		South (i.e., Tahoe City and beyond)	14%	4%
Alpine Meadows Ski Resort	Squaw Valley Ski Resort	North (i.e., Truckee and beyond)	22%	16%
		South (i.e., Tahoe City and beyond)	12%	6%

Source: LSC Transportation Consultants On-Line Survey of Squaw Valley and Alpine Meadows Ski Area skiers in 2015

Table 4.7-12 Squaw Valley and Alpine Meadows Ski Area Skier Survey Responses Regarding Changes in Resort Selection Due to Presence of Proposed Gondola – Outbound Travel

Respondent Surveyed Was Skiing at	How Likely Would You Be to Instead Drive to	When Traveling Outbound toward the…	Survey Response	
			Most of the Time	All of the Time
Squaw Valley Ski Resort	Alpine Meadows Ski Resort	North (i.e., Truckee and beyond)	8%	7%
		South (i.e., Tahoe City and beyond)	13%	5%
Alpine Meadows Ski Resort	Squaw Valley Ski Resort	North (i.e., Truckee and beyond) [1]	22%	15%
		South (i.e., Tahoe City and beyond)	13%	6%

Notes:

1. Another 38 percent indicated that they would sometimes switch from Alpine Meadows to Squaw Valley if traveling outbound toward the north.

Source: LSC Transportation Consultants On-Line Survey of Squaw Valley and Alpine Meadows Ski Area skiers in 2015

Arriving skiers that were previously planning to visit Alpine Meadows would be more likely to visit Squaw Valley if their trip originated from the north (i.e., 38 percent selected most or all of the time) versus the south (i.e., 18 percent selected most or all of the time). Based on this table and other considerations (e.g., travel time, parking):

- 25 percent of southbound right-turning vehicles at the SR 89/Alpine Meadows Road intersection during the Saturday AM peak hour would instead be expected to turn right at the SR 89/Squaw Valley Road intersection to access Squaw Valley.

- 10 percent of northbound left-turning vehicles at the SR 89/Alpine Meadows Road intersection during the Saturday AM peak hour would instead be expected to continue on SR 89 and turn left at the SR 89/Squaw Valley Road intersection to access Squaw Valley.

Arriving skiers that were previously planning to visit Squaw Valley showed similar levels of intent to instead visit Alpine Meadows regardless of their geographic trip origin. Based on this table and other considerations:

- 10 percent of southbound right-turning vehicles at the SR 89/Squaw Valley Road intersection during the Saturday AM peak hour would instead be expected to continue on SR 89 and turn right at the SR 89/Alpine Meadows Road intersection.

- 15 percent of northbound left-turning vehicles at the SR 89/Squaw Valley Road intersection during the Saturday AM peak hour would instead be expected to turn left at the SR 89/Alpine Meadows Road intersection.

For outbound travel (for Sunday PM peak hour conditions), it is anticipated that more skiers would shift from visiting Alpine Meadows to visiting Squaw Valley based on Table 4.7-12 and the heavy northbound directionality of travel departing each resort. Skiers may perceive there to be an advantage in driving to Squaw Valley during Sunday morning, using the gondola to access ski terrain at Alpine Meadows, and then departing Squaw Valley and heading north on SR 89. Similarly, some skiers who arrived from the north on Sunday and planned to access Alpine Meadows would instead travel to Squaw Valley. The following shifts are expected:

- 25-percent increase in eastbound left-turning vehicles at the SR 89/Squaw Valley Road intersection during the Sunday PM peak hour with a corresponding decrease in eastbound left turns at the SR 89/Alpine Meadows Road intersection, and

- 10-percent increase in eastbound right-turning vehicles at the SR 89/Alpine Meadows Road intersection during the Sunday PM peak hour with a corresponding decrease in eastbound right turns at the SR 89/Squaw Valley Road intersection.

The reasonableness of the shift in Sunday PM peak hour traffic was confirmed for existing plus project conditions through a travel time evaluation using the SimTraffic microsimulation model. Under this scenario, in which Squaw Valley Road experiences a net increase of 195 eastbound vehicle trips (compared to existing conditions) while Alpine Meadows Road experiences a net decrease of 123 eastbound vehicles (compared to existing conditions), a motorist (desiring to travel north on SR 89 toward I-80) departing the Squaw Valley Ski Resort parking lot would still experience an approximately 4-minute travel time savings compared to a motorist departing from the Alpine Meadows Ski Resort parking lot. This suggests that the eastbound left-turn shift is not excessive (because motorists typically will not shift to a slower route).

However, as discussed in Section 4.7.4, “Cumulative Effects,” background traffic growth and other planned development in the area are expected to result in worsened congestion on study roadways. These conditions would have the potential to affect the degree to which Sunday PM peak hour traffic would shift from one resort to the other. Using the cumulative version of the SimTraffic microsimulation model, it was concluded that the above-mentioned 25-percent shift in eastbound left turns would cause a trip using the Squaw Valley Road route to take about 4 minutes longer than a trip using the Alpine Meadows Road route. Additional

analysis determined that if no shift occurred, a trip using the Alpine Meadows Road route would take 14 minutes longer than the Squaw Valley Road route. Interpolation of these numbers suggests that travel times would be comparable on both routes under a condition in which about three-quarters of the 25 percent shift were to occur. Accordingly, this adjustment was applied under cumulative conditions.

Table 4.7-13 shows how the project would change the number of vehicle trips accessing Squaw Valley and Alpine Meadows during the study period. These totals, which represent the new change in travel on Squaw Valley Road and Alpine Meadows Road, include net changes associated with new skier vehicle trips, employee trips, redistributed trips from one resort to the other, and eliminated trips associated with the shuttle no longer operating during periods in which the gondola is operational.

Table 4.7-13 Project-Related Net Change in Vehicle Trips to/from Squaw Valley and Alpine Meadows Ski Areas

Resort	Factor	Saturday Daily Vehicle Trips	Sunday Daily Vehicle Trips	Saturday AM Peak Hour Vehicle Trips			Sunday PM Peak Hour Vehicle Trips		
				In	Out	Total	In	Out	Total
Squaw Valley Ski Area	New Skiers [1]	284	290	46	3	49	3	52	55
	New Employees [1]	8	8	2	0	2	0	2	2
	Shift in Trips Between Resorts[2]	-300	880	-48	0	-48	0	141	141
	Elimination of Shuttle [3]	-48	-48	-3	-3	-6	-3	-3	-6
	Total	-56	1,130	-3	0	-3	0	192	192
Alpine Meadows Ski Area	New Skiers [1]	122	126	20	1	21	1	22	23
	New Employees[1]	8	8	2	0	2	0	2	2
	Shift in Trips Between Resorts[2]	300	-880	48	0	48	0	-141	-141
	Elimination of Shuttle [3]	-48	-48	-3	-3	-6	-3	-3	-6
	Total	382	-794	67	-2	65	-2	-120	-122

Notes:

[1] Refer to Tables 4.7-9 and 4.7-10.

[2] Refer to prior pages for analysis methodologies used to estimate shifts in skiers between the two resorts. Shift in skier vehicle trips between the two resorts is slightly less under cumulative conditions (refer to previous page).

[3] Shuttle currently operates on 20-minute headways for 8 hours per day. Elimination results in 24 fewer inbound and 24 fewer outbound vehicle trips at each resort.

Source: Data provided by Fehr & Peers in 2018

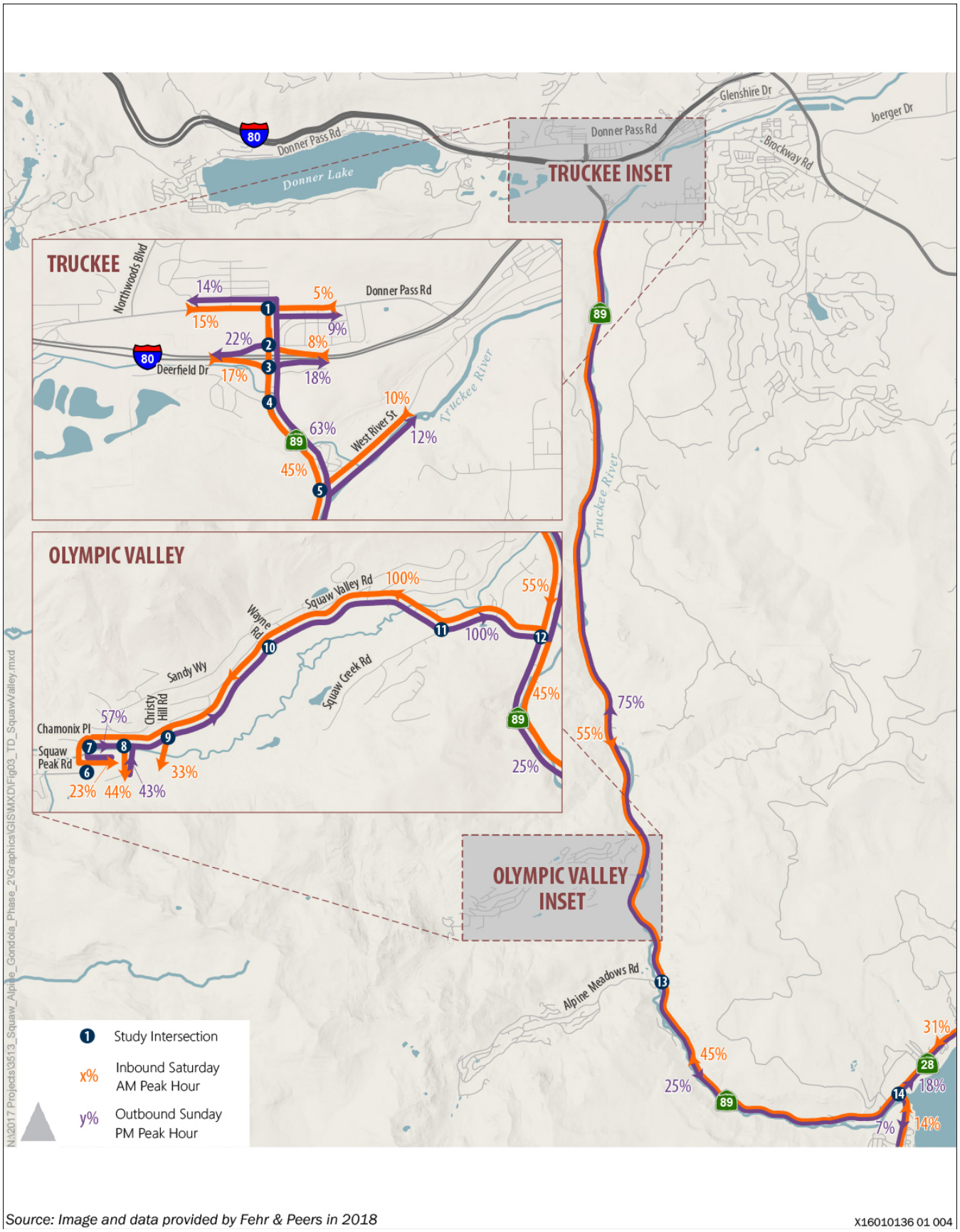
Distribution of New Vehicle Trips

Exhibits 4.7-4 and 4.7-5 show the expected distribution of new vehicle trips during the Saturday AM and Sunday PM peak hours at Squaw Valley and Alpine Meadows, respectively. These distribution percentages are based on the existing directional turning movements at each resort. They also presume a conservative assumption in which all trips generated by the gondola are new day-use skier trips versus trips made by skiers staying overnight nearby (i.e., within Olympic Valley).

These exhibits show that while the Saturday AM peak hour distribution is fairly balanced to/from the north and south on SR 89, the Sunday PM peak hour distribution is more heavily oriented to the north in recognition of skier groups returning to their primary residences at the end of the weekend.

Assignment of Project-Related Vehicle Trips

Exhibit 4.7-6 shows resulting existing plus project vehicle trips during the Saturday AM and Sunday PM peak hours at the study intersections. This exhibit layers on top of existing volumes, the new trips generated by the gondola (i.e., new day-use skiers and employees), redistributed trips between the two resorts due to the presence of the gondola, and eliminated trips due to the shuttle no longer operating during periods in which the gondola is operational.



Source: Image and data provided by Fehr & Peers in 2018

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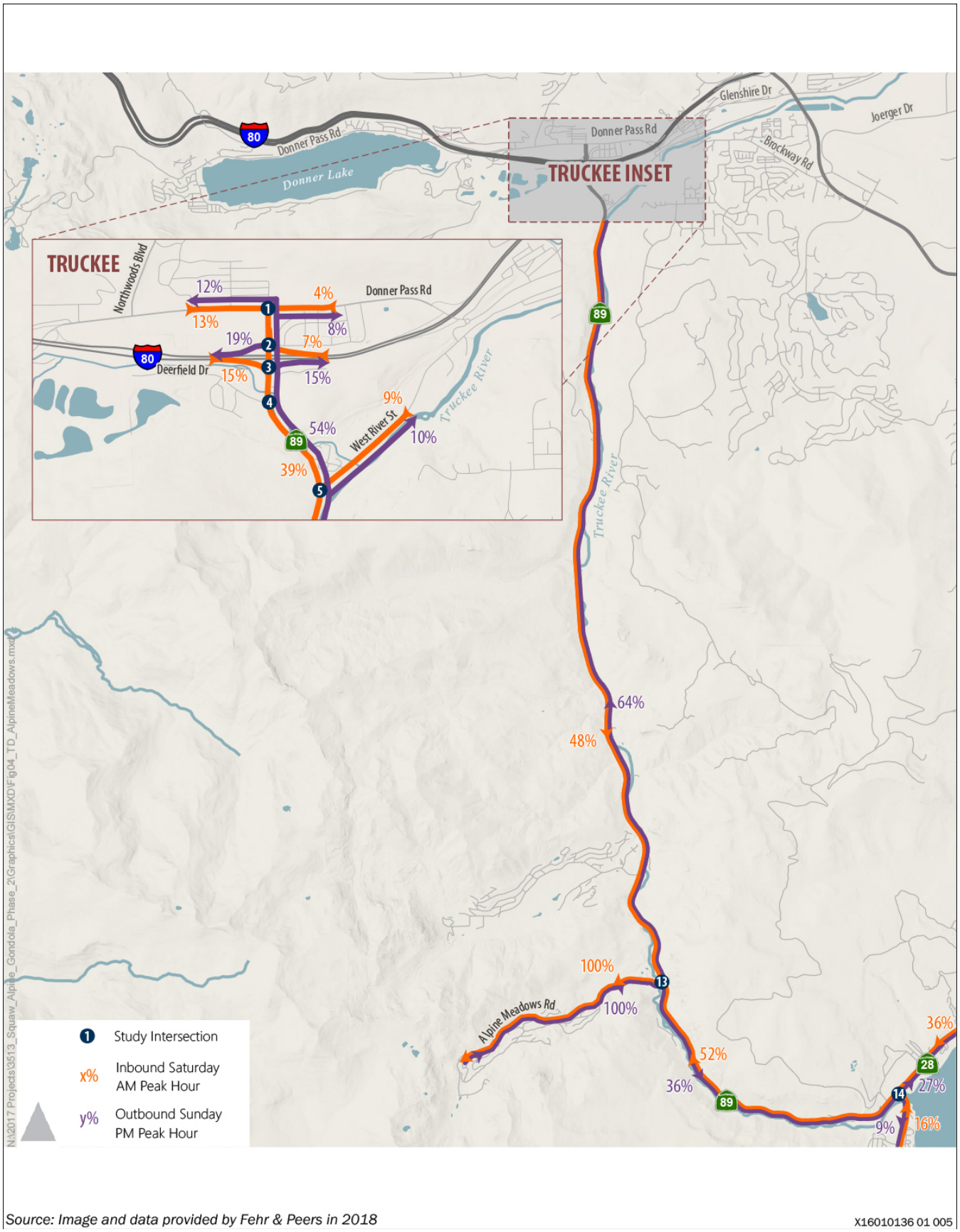
Exhibit 4.7-4 Distribution of New Skier Vehicle Trips to Squaw Valley Ski Resort



Source: Image and data provided by Fehr & Peers in 2018

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Exhibit 4.7-5 Distribution of New Skier Vehicle Trips to Alpine Meadows Ski Resort

Vehicle Miles Traveled

Table 4.7-14 displays the estimated VMT of the project for a Saturday and Sunday daily condition. Refer to Appendix E for technical calculations. The calculation uses the daily trip totals from Table 4.7-13 and assigns an average trip length based on data from the 2012 LSC Transportation Consultants survey of the residence location of day skiers and winter employees at Squaw Valley. This table is conservative in two ways. First, it assumes all new skier visits are day skiers and not overnight guests. Second, it assumes that none of the added day skiers have chosen Squaw Valley or Alpine Meadows instead of visiting another Sierra Region resort (i.e., shifted from one resort to another, thereby reducing travel distance attributable to the project).

Table 4.7-14 Project-Related Net Change in Vehicle Miles Traveled

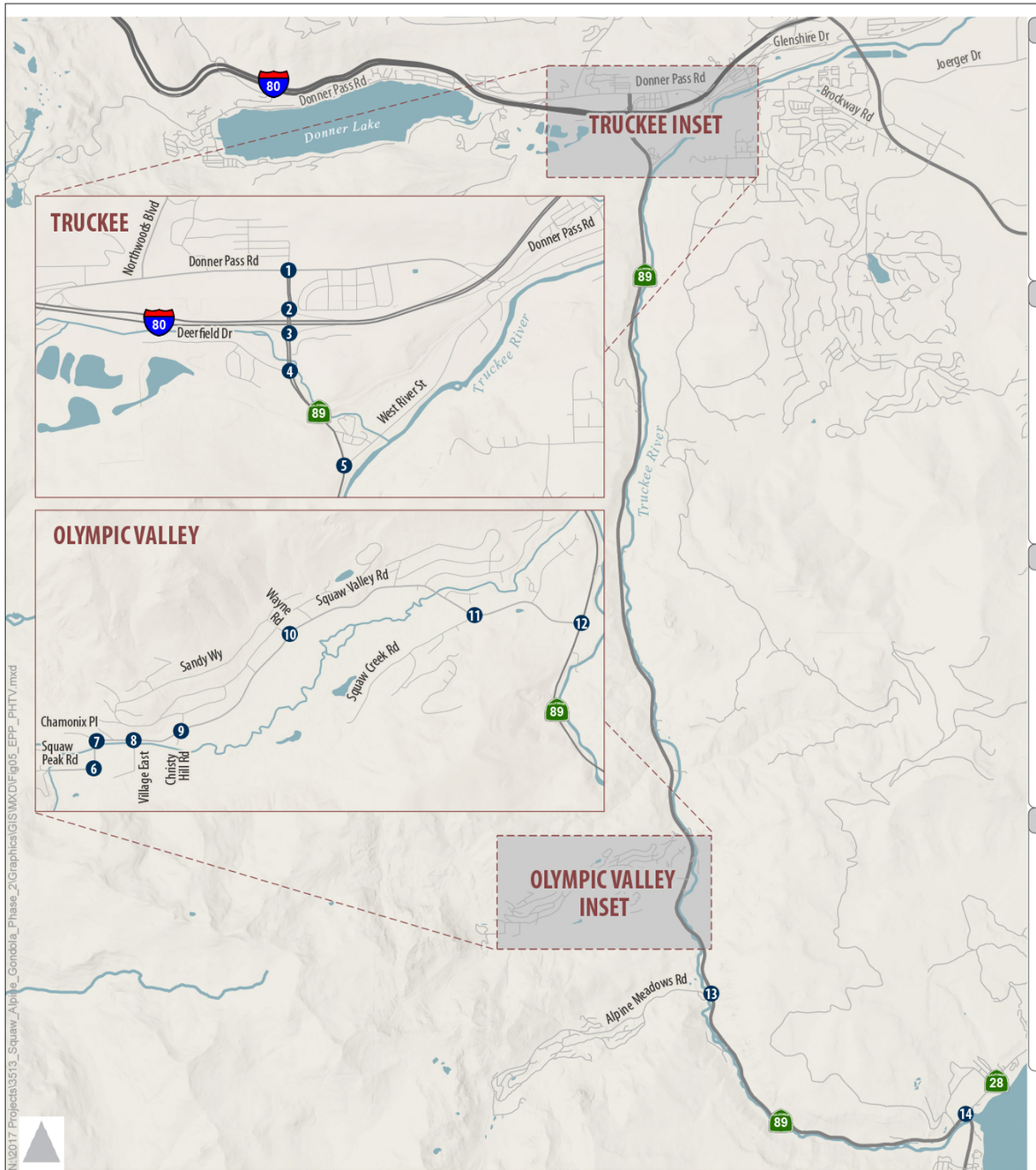
Resort	Factor	Total VMT	
		Saturday	Sunday
Squaw Valley Ski Area	New Skiers	11,965	13,498
	New Employees	136	136
	Shift in Trips Between Resorts	- 42	- 682
	Elimination of Shuttle	- 168	- 168
	Total	11,891	12,784
Alpine Meadows Ski Area	New Skiers	4,824	5,252
	New Employees	136	136
	Shift in Trips Between Resorts	- 42	- 682
	Elimination of Shuttle	- 168	- 168
	Total	4,750	4,538
Total of Both Resorts		16,641	17,322

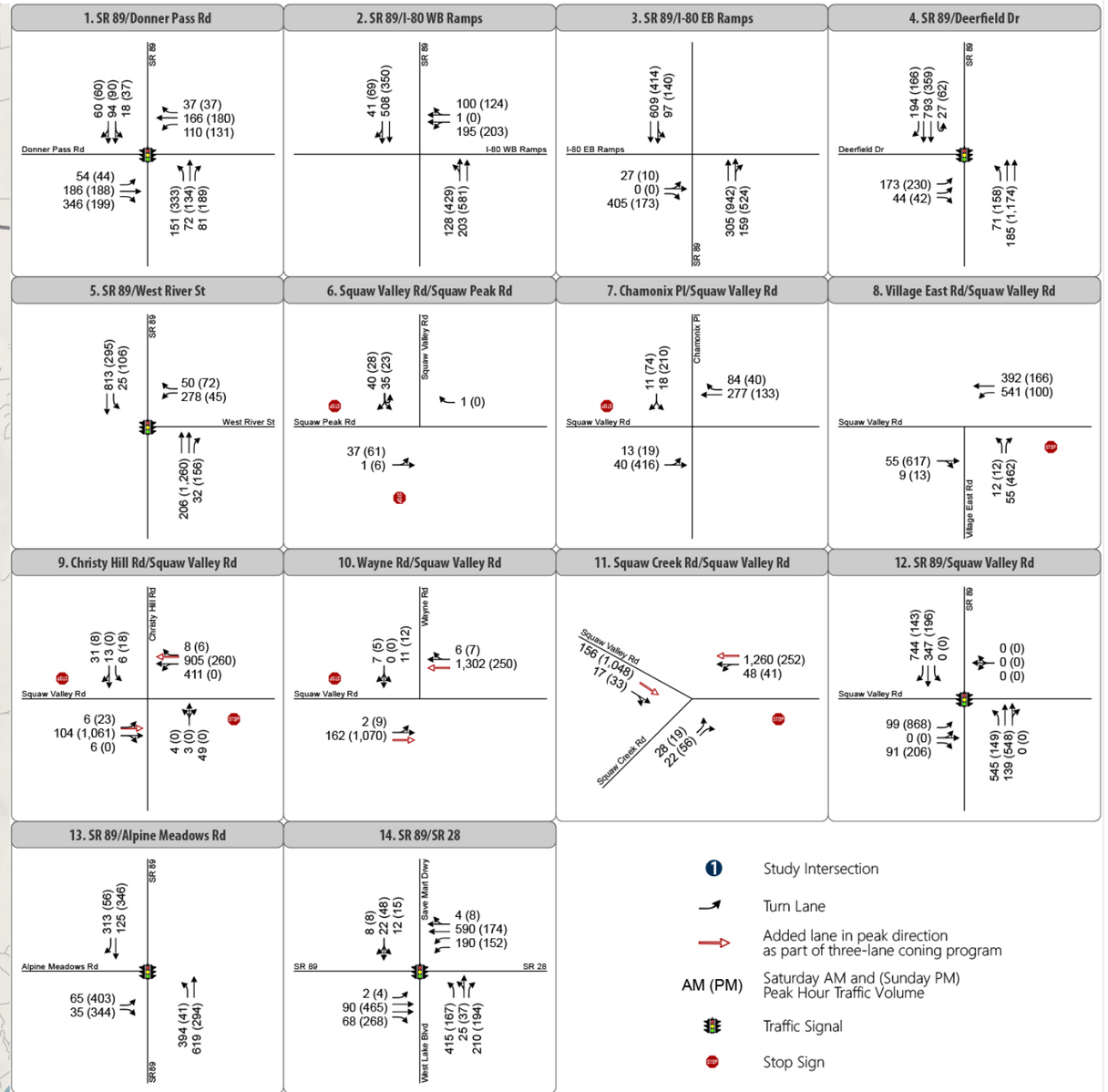
Note: VMT = vehicle miles traveled.

Source: Data provided by Fehr & Peers in 2018

This table shows that the project would generate approximately 16,640 additional VMT on a Saturday and 17,320 additional VMT on a Sunday. While this metric is not used in this study as a measure of transportation impact or efficiency, it is used as an input in other sections of this EIS/EIR (e.g., greenhouse gas emissions calculations) and, therefore, presented here. While CEQA guidelines envision the use of VMT to assess the significance of impacts under Senate Bill 743, the VMT metric focuses on the overall efficiency of the transportation system, and not on congestion at particular roadways or intersections for which County policies directly apply. In addition to estimating the project's total VMT, two other VMT estimates were also performed including:

1. Pages 14 and 15 of the *Squaw Valley | Alpine Meadows Base-to-Base Gondola Final Visitation and Use Assessment* (SE Group and RRC Associates 2018) concludes that the gondola would maintain or slightly improve each resort's share of the Tahoe ski market, but that total skier visits to the region would remain mostly flat in the long term. Accordingly, a portion of the additional skier visits resulting from the gondola may reasonably be assumed to have diverted from other Tahoe area resorts. To test the effects of this occurrence on VMT, the project's VMT was re-estimated assuming 50 percent of day skier visits would be diverted from other Sierra region resorts along the I-80 corridor. Under this scenario, the project would result in a net increase of 7,804 VMT on a Saturday, which represents 47 percent of the project's overall VMT estimate (assuming all skier trips are new and none are diverted from other resorts).





Source: Image and data provided by Fehr & Peers in 2018

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Exhibit 4.7-6 Peak Hour Volume and Lane Configurations - Existing Plus Project Condition

2. The portion of the project's VMT that would occur within the TRPA boundary was estimated. This is a particularly important metric for summer conditions and is listed as one of TRPA's environmental carrying capacities. Although a threshold value does not exist for winter daily conditions, the project's VMT within the TRPA boundary has nevertheless been estimated for readers interested in this value. The VMT is estimated to be 1,956 on a Saturday and 1,768 on a Sunday. By definition, one end of each trip is associated with land uses within the TRPA boundary, which means that this VMT is not "new" (i.e., not attributed to a traveler that would otherwise not be in the basin). Some of these trips could have also potentially been visiting other resorts had the proposed gondola not been in place.

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. 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, then 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 implementation of RPMs. 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.

4.7.2.2 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 transportation and circulation. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Estimated baseline and future traffic volumes on Alpine Meadows Road, Squaw Valley Road, and State Route 89 as related to Squaw Valley and Alpine Meadows operations during winter months **(Section 4.7.1.1, "Environmental Setting"; and Impacts 4.7-1 through 4.7-5 and Impacts 4.7-9 through 4.7-13 for estimated baseline)**.

- Discussion of safety issues associated with existing traffic volumes and anticipated changes **(Impacts 4.7-7 and 4.7-15)**.

- Estimated traffic generated by construction activities **(Impacts 4.7-8 and 4.7-16)**.

- Quantification of parking capacities, and demands, at Alpine Meadows and Squaw Valley, during winter months **(Section 4.7.1.1, "Environmental Setting").**

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 transportation and circulation if it would:

- conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, and mass transit **(Impacts 4.7-1 through 4.7-6 and Impact 4.7-8 for existing plus project conditions and Impacts 4.7-9 through 4.7-14 for cumulative plus project conditions)**.

- result in an increase in traffic which may be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections) **(Impacts 4.7-1 through 4.7-5 for existing plus project conditions and Impacts 4.7-9 through 4.7-13 for cumulative plus project conditions)**.

- exceed, either individually or cumulatively, an LOS standard established by the County General Plan and/or Community Plan for roads affected by project traffic **(Impacts 4.7-1 and 4.7-2 for existing plus project conditions and Impacts 4.7-9 and 4.7-10 for cumulative plus project conditions)**.

- conflict with an applicable congestion management program, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways **(Impacts 4.7-1 through 4.7-5 for existing plus project conditions and Impact 4.7-9 through 4.7-13 for cumulative plus project conditions)**.

- increase impacts to vehicle safety due to roadway design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) **(Impact 4.7-7 for existing plus project conditions and Impact 4.7-15 for cumulative plus project conditions)**.

- conflict with adopted policies, plans, or programs regarding public transit or otherwise decrease the performance or safety of such facilities **(Impact 4.7-6 for existing plus project conditions and Impact 4.7-14 for cumulative plus project conditions)**.

- conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle lanes, bicycle racks, public transit, pedestrian facilities) or otherwise decrease the performance or safety of such facilities **(Impacts 4.7-6 and 4.7-8 for existing plus project conditions and Impacts 4.7-14 and 4.7-16 for cumulative plus project conditions)**.

Based on applicable policies of Placer County (including the *Impact Analysis Methodology of Assessment* [Placer County Department of Public Works and Facilities 2015]) and Caltrans, implementing any of the alternatives would result in a significant impact related to transportation and circulation if it would:

<u>Roadway System</u>

Signalized Intersections and Roundabouts

- Cause the LOS to worsen from acceptable to unacceptable levels according to the following **(Impacts 4.7-2 and 4.7-3 for existing plus project conditions and Impacts 4.7-10 and 4.7-11 for cumulative plus project conditions)**:

    a. For signalized intersections and roundabouts on SR 89 from Donner Pass Road southerly to Alpine Meadows Road, LOS E or better is considered acceptable.

    b. For the signalized SR 28/SR 89 intersection, LOS F applies based on the Tahoe Basin Area Plan policy language.

- Worsen unacceptable existing (or projected cumulative) operations by causing a 4-second or more increase in average overall intersection delay **(Impacts 4.7-2 and 4.7-3 for existing plus project conditions and Impacts 4.7-10 and 4.7-11 for cumulative plus project conditions)**.

- Cause the vehicular queuing and deceleration requirements within a turn lane at a signalized intersection along SR 89 to not meet the applicable design standard **(Impact 4.7-4 for existing plus project conditions and Impact 4.7-12 for cumulative plus project conditions)**.

Unsignalized (Side-Street Stop) Intersections

- Cause the MUTCD [*Manual on Uniform Traffic Control Devices for Streets and Highways*] traffic signal warrant to be met, and worsen operations (for the weighted average of all movements yielding right-of-way) from acceptable to unacceptable levels according to the following **(Impact 4.7-2 for the existing plus project condition and Impact 4.7-10 for the cumulative plus project condition)**:

    a. For the Squaw Valley Road/Squaw Creek Road intersection, LOS D or better is considered acceptable.

    b. For the remaining side-street stop-controlled intersections along Squaw Valley Road, LOS C or better is considered acceptable.

- For intersections that currently meet (or are projected to cumulatively to meet) the MUTCD traffic signal warrant, and already (or are projected cumulatively to) operate unacceptably, exacerbate operations by causing a 2.5-second or more increase in the weighted average delay of all movements yielding right-of-way **(Impact 4.7-2 for the existing plus project condition and Impact 4.7-10 for the cumulative plus project condition)**.

County Roadways

- Cause the LOS to worsen from acceptable to unacceptable levels according to the following **(Impact 4.7-1 for the existing plus project condition and Impact 4.7-9 for the cumulative plus project condition)**:

    a. Because the study segments of Squaw Valley Road and Alpine Meadows Road extend westerly from SR 89 to each resort's terminus, LOS C or better is considered acceptable (though it is noted that LOS D is considered acceptable for segments within ½ mile of SR 89).

- Worsen unacceptable existing (or projected cumulative) operations by causing a 0.05 or more increase in the volume-to-capacity (V/C) ratio or adding more than 100 ADT per lane **(Impact 4.7-1 for the existing plus project condition and Impact 4.7-9 for the cumulative plus project condition)**.

State Highways

- Cause the LOS to worsen from acceptable to unacceptable levels according to the following **(Impact 4.7-4 for the existing plus project condition and Impact 4.7-12 for the cumulative plus project condition)**:

    a. For study segment of SR 89, LOS E or better is considered acceptable.

    b. For the study segment of SR 28 east of SR 89, LOS F is considered acceptable.

- Worsen unacceptable existing (or projected cumulative) operations by causing a 0.05 or more increase in the V/C ratio **(Impact 4.7-4 for the existing plus project condition and Impact 4.7-12 for the cumulative plus project condition)**.

Roadway Design Features

- Increase impacts to vehicle safety due to roadway design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) **(Impact 4.7-7 for the existing plus project condition and Impact 4.7-15 for the cumulative plus project condition)**.

Construction-Related Activities

- Create a temporary but prolonged impact due to lane closures, need for temporary signals, emergency vehicle access, traffic hazards to bikes/pedestrians, damage to roadbed, or truck traffic on roadways not designated as truck routes (**Impact 4.7-8 for the existing plus project condition and Impact 4.7-16 for the cumulative plus project condition**).

Transit System

- Create demand for public transit service above that which is provided or planned (**Impact 4.7-6 for the existing plus project condition and Impact 4.7-14 for the cumulative plus project condition**).
- Disrupt existing public transit services or facilities (**Impact 4.7-6 for the existing plus project condition and Impact 4.7-14 for the cumulative plus project condition**).
- Interfere with planned public transit services or facilities (**Impact 4.7-6 for the existing plus project condition and Impact 4.7-14 for the cumulative plus project condition**).

The use of a 5-percent-V/C-ratio threshold as the significance criteria for determining impacts to facilities that already operate unacceptably is supported by substantial evidence indicating that a 5-percent degradation is significant because it would be noticeable to the average driver, whereas an increase below this level would be within normal daily fluctuations in traffic volumes and therefore not noticeable.

4.7.2.3 ISSUES NOT DISCUSSED FURTHER

The project would operate during the winter season only and result in travel almost exclusively by motorized forms of surface travel. Accordingly, travel by bicycle and pedestrian modes would be minimal. Similarly, the project could cause increases in commercial airline travel but would not affect operations. In addition, impacts associated with parking are not considered a significance criterion under CEQA. The project would not alter emergency vehicle access provisions at either resort. Accordingly, no impacts would occur and these issues are not discussed any further.

4.7.3 Direct and Indirect Environmental Consequences

4.7.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.7-1 (Alt. 1): Impacts on Placer County Roadways

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new vehicle trips; therefore, traffic conditions on Placer County roadways would not be affected. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, the Tahoe National Forest (TNF) and Placer County would not provide the necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions, and no construction or installation and operation of new facilities would take place. Therefore, no new vehicle trips would be added to Placer County roadways.

NEPA Effects Conclusion

With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-2 (Alt. 1): Impacts on Placer County Intersections

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new vehicle trips; therefore, traffic conditions at Placer County intersections would not be affected. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions, and no construction or installation and operation of new facilities would take place. Therefore, traffic conditions at Placer County intersections would not be affected.

NEPA Effects Conclusion

With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-3 (Alt. 1): Impacts on Caltrans Intersections

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new vehicle trips; therefore, traffic conditions at Caltrans intersections would not be affected. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions, and no construction or installation and operation of new facilities would take place. Therefore, traffic conditions at Caltrans intersections would not be affected.

NEPA Effects Conclusion

With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-4 (Alt. 1): Impacts on Vehicular Queuing at Caltrans Intersections

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new vehicle trips; therefore, turn lane storage at intersections owned and operated by Caltrans would not be affected. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions, and no construction or installation and operation of new facilities would take place. Therefore, turn lane storage at intersections owned and operated by Caltrans would not be affected.

NEPA Effects Conclusion
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-5 (Alt. 1): Impacts on Caltrans Highways

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new vehicle trips; therefore, traffic conditions on Caltrans highways would not be affected. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions, and no construction or installation and operation of new facilities would take place. Therefore, traffic conditions on Caltrans highways would not be affected.

NEPA Effects Conclusion
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-6 (Alt. 1): Impacts on Transit

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. Therefore, transit facilities and services would not be affected. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions, and no construction or installation and operation of new facilities would take place. Therefore, transit facilities and services would not be affected.

NEPA Effects Conclusion
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-7 (Alt. 1): Impacts on Vehicle Safety Related to Roadway Design Features

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new vehicle trips; therefore, no additional congestion or safety concerns would be created. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions, and no construction or installation and operation of new facilities would take place. Therefore, no additional congestion or safety concerns would be created.

NEPA Effects Conclusion
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-8 (Alt. 1): Construction Impacts on Transportation Facilities

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction; therefore, no construction activities, which could cause temporary impacts on transportation facilities, would occur. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions, and no construction of new facilities would take place. Therefore, no construction activities, which could cause temporary impacts on transportation facilities, would occur.

NEPA Effects Conclusion
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction or operation activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.7.3.2 ALTERNATIVE 2

Impact 4.7-1 (Alt. 2): Impacts on Placer County Roadways

Vehicle trips generated under Alternative 2 would not worsen traffic conditions to an unacceptable level on a Placer County roadway. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to traffic on Placer County roadways would be a **minorly adverse** effect because there would be a modest increase in traffic, but conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because although there would be a modest increase in traffic, conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

LOS on Placer County roadways in the study area (i.e., Squaw Valley Road and Alpine Meadows Road) under existing conditions and existing plus project conditions is shown in Table 4.7-15. With the addition of Saturday vehicle trips attributed to Alternative 2, traffic volumes on Squaw Valley Road would remain nearly unchanged (i.e., vary by 50 vehicles) and volumes on Alpine Meadows Road would increase by 400 daily vehicles. For Sunday conditions, Squaw Valley Road would experience an 1,150 ADT increase and Alpine Meadows Road would experience an 800 vehicle decrease. This decrease results because, under Alternative 2, it is expected that on Sundays, more vehicles would park at Squaw Valley and use the gondola to access Alpine Meadows (see the discussion of "Anticipated Shift in Existing Skier Vehicle Trips between the Squaw Valley and Alpine Meadows Ski Areas" provided above in Section 4.7.2.1. "Methods and Assumptions"). LOS on these two roadways remains unchanged, at LOS B, under the existing plus project condition.

Table 4.7-15 Placer County Roadway Level of Service – Existing Plus Project Conditions

Segment	Type	LOS Standard	Existing Conditions						Existing Plus Project Conditions					
			Saturday Daily Conditions			Sunday Daily Conditions			Saturday Daily Conditions			Sunday Daily Conditions		
			ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS
Squaw Valley Road west of SR 89	Three-Lane Low Access Control Arterial	C / D [5]	12,750	0.57	B	13,100	0.58	B	12,700 [1]	0.56	B	14,250 [2]	0.63	B
Alpine Meadows Road west of SR 89	Two-Lane Low Access Control Arterial	C / D [5]	5,450	0.36	B	8,550	0.57	B	5,850 [3]	0.39	B	7,750 [4]	0.52	B

Notes: ADT = average daily traffic; LOS = level of service; V/C ratio = volume-to-capacity ratio

Values rounded to the nearest 50 vehicles.

Calculated as follows:

1. Project would add 292 new daily skier/employee trips, cause a shift of 150 inbound and 150 outbound daily ski trips from Squaw Valley to Alpine Meadows, and result in elimination of shuttle, which would reduce daily volume of travel on Squaw Valley Road by 24 inbound and 24 outbound trips.
   Net result is 12,750 + 292 – 300 – 48 = 12,700 (rounded).
2. Project would add 298 new daily skier/employee trips, cause a shift of 440 inbound and 440 outbound daily ski trips from Alpine Meadows to Squaw Valley, and result in elimination of shuttle, which would reduce daily volume of travel on Squaw Valley Road by 24 inbound and 24 outbound trips.
   Net result is 13,100 + 298 + 880 – 48 = 14,250 (rounded).
3. Project would add 130 new daily skier/employee trips, cause a shift of 150 inbound and 150 outbound daily ski trips from Squaw Valley to Alpine Meadows, and result in elimination of shuttle, which would reduce daily volume of travel on Alpine Meadows Road by 24 inbound and 24 outbound trips.
   Net result is 5,450 + 130 + 300 – 48 = 5,850 (rounded).
4. Project would add 134 new daily skier/employee trips, cause a shift of 440 inbound and 440 outbound daily ski trips from Alpine Meadows to Squaw Valley, and result in elimination of shuttle, which would reduce daily volume of travel on Alpine Meadows Road by 24 inbound and 24 outbound trips.
   Net result is 8,550 + 134 – 880 – 48 = 7,750 (rounded).
5. An LOS C standard applies on County roadways with the exception of segments within ½ mile of a state highway in which an LOS D standard applies.

Source: Appendix E

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to traffic on Placer County roadways would be a **minorly adverse** effect because there would be a modest increase in traffic, but conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because although there would be a modest increase in traffic, conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-2 (Alt. 2): Impacts on Placer County Intersections

Vehicle trips generated under Alternative 2 would worsen unacceptable operations at intersections along Squaw Valley Road. Specifically, the Squaw Valley Road/Chamonix Place intersection would experience a 2.5-second or more increase in the weighted average delay of all movements yielding right-of-way during the Sunday PM peak hour. These conditions meet the MUTCD traffic signal warrant. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to intersection operations would be **adverse** because the MUTCD traffic signal warrant is met at the Squaw Valley Road/Chamonix Place intersection. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, the meeting of the MUTCD traffic signal warrant at the Squaw Valley Road/Chamonix Place is a **significant** impact. There are no applicable RPMs that would reduce this impact.

Table 4.7-16 shows the expected change in Saturday AM and Sunday PM peak hour operations at Placer County study intersections resulting from implementation of Alternative 2. Under existing plus project conditions, vehicle trips attributable to Alternative 2 would worsen the Squaw Valley Road/Chamonix Place intersection from LOS D to E, causing a 14-second increase in delay. This intersection would meet the MUTCD traffic signal warrant during the period of impact.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to intersection operations would be **adverse** because the MUTCD traffic signal warrant is met at the Squaw Valley Road/Chamonix Place intersection. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, the meeting of the MUTCD traffic signal warrant at the Squaw Valley Road/Chamonix Place is a **significant** impact. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-2 (Alt. 2): Conduct Traffic Management at Squaw Valley Road/Chamonix Place Intersection

Prior to October 15th annually, Squaw Valley Ski Holdings (SVSH) shall submit to Placer County Department of Public Works and Facilities a traffic management plan that shall include traffic management associated with Squaw Valley Road and intersecting roadways, including Chamonix Place and Squaw Creek Road. The traffic management plan shall include lessons learned from the previous season as well as modifications for the upcoming season and shall identify operational details and safety provisions to ensure both effective and safe management of traffic congestion. Upon approval of the traffic management plan, SVSH shall implement the traffic management plan with approval of an encroachment permit from Placer County Department of Public Works and Facilities.

The traffic management plan may include, but not be limited to, employing traffic management personnel at intersections during the afternoon peak periods of peak weekend ski days. Traffic control personnel may manage traffic on Squaw Valley Road to assign right-of-way to vehicles on Chamonix Place and Squaw Creek Road. This type of traffic control is in effect at other intersections along Squaw Valley Road including at Wayne Road, which operates at an acceptable LOS.

Significance after Mitigation

With implementation of Mitigation Measure 4.7-2 (Alt. 2), the Squaw Valley Road/Chamonix Place intersection would operate with acceptable LOS and vehicle delays (i.e., the impact of adding 2.5 seconds of delay to unacceptable operating condition would be avoided). This impact would be reduced to a **less-than-significant** level.

Table 4.7-16 Peak Hour Intersection Level of Service – Existing Plus Project Conditions

Intersection	Control	LOS Standard	Existing Conditions				Existing Plus Project Conditions			
			Saturday AM Peak Hour		Sunday PM Peak Hour		Saturday AM Peak Hour		Sunday PM Peak Hour	
			Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
SR 89/ Donner Pass Road	Traffic Signal	E	20 sec/veh	C	24 sec/veh	C	20 sec/veh	C	22 sec/veh	C
SR 89/I-80 WB Ramps	Roundabout	E	8 sec/veh	A	11 sec/veh	B	8 sec/veh	A	12 sec/veh	B
SR 89/I-80 EB Ramps	Roundabout	E	8 sec/veh	A	21 sec/veh	C	9 sec/veh	A	23 sec/veh	C
SR 89/Deerfield Drive	Traffic Signal	E	15 sec/veh	B	15 sec/veh	B	15 sec/veh	B	15 sec/veh	B
SR 89/West River Street	Traffic Signal	E	22 sec/veh	C	13 sec/veh	B	22 sec/veh	C	12 sec/veh	B
Squaw Valley Road/ Squaw Peak Road	Side-Street Stop	C	7 (8) sec/veh	A (A)	7 (8) sec/veh	A (A)	7 (8) sec/veh	A (A)	7 (8) sec/veh	A (A)
Squaw Valley Road/ Chamonix Place	Side-Street Stop	C	1 (10) sec/veh	A (B)	10 (26) sec/veh	B (D)	1 (11) sec/veh	A (B)	**15 (40) sec/veh**	**A (E)**
Squaw Valley Road/ Village East Road	Side-Street Stop	C	2 (3) sec/veh	A (A)	1 (10) sec/veh	A (B)	2 (3) sec/veh	A (A)	1 (12) sec/veh	A (B)
Squaw Valley Road/ Far East Road/ Christy Hill Road	Side-Street Stop	C	17 (116) sec/veh	C (F)	1 (14) sec/veh	A (B)	17 (116) sec/veh	C (F)	1 (16) sec/veh	A (C)
Squaw Valley Road/ Wayne Road	Side-Street Stop	C	12 (10) sec/veh	B (B)	8 (10) sec/veh	A (A)	12 (10) sec/veh	B (B)	10 (11) sec/veh	B (B)
Squaw Valley Road/ Squaw Creek Road	Side-Street Stop	D	4 (7) sec/veh	A (A)	3 (13) sec/veh	A (B)	4 (7) sec/veh	A (A)	4 (21) sec/veh	A (C)
SR 89/ Squaw Valley Road	Traffic Signal	E	34 sec/veh	C	42 sec/veh	D	40 sec/veh	D	62 sec/veh	E
SR 89/ Alpine Meadows Road	Traffic Signal	E	18 sec/veh	B	33 sec/veh	C	20 sec/veh	B	20 sec/veh	C
SR 89/SR 28	Traffic Signal	F	15 sec/veh	B	16 sec/veh	B	15 sec/veh	B	16 sec/veh	B

Notes: LOS = level of service; sec/veh = seconds per vehicle. Shaded and bolded cells identify significant impacts.

[1] For signalized and all-way stop-controlled intersections and roundabouts, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled intersections, the delay and LOS is reported for the entire intersection and for the weighted average delay for all movements that yield the right-of-way (shown in parentheses).

Source: Data provided by Fehr & Peers in 2018

Impact 4.7-3 (Alt. 2): Impacts on Caltrans Intersections

Vehicle trips generated under Alternative 2 would not worsen traffic conditions to an unacceptable level at an intersection on a Caltrans facility. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to traffic on Caltrans intersections would be a **minorly adverse** effect because there would be an increase in traffic, but conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because although there would be an increase in traffic, conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

Table 4.7-16 shows the projected change in Saturday AM and Sunday PM peak hour operations at Caltrans study intersections resulting from implementation of Alternative 2. Alternative 2 would result in slight increases in delays at some intersections and decreases at others due to the combined effects of adding new day use skier trips, redistributing some existing trips from one resort to the other, and eliminating trips associated with the shuttle. Table 4.7-16 shows that the project would not cause any intersections on SR 89 to degrade to an unacceptable LOS E or worse. Although the project would cause the SR 89/Squaw Valley Road intersection to worsen from LOS C to D during the Saturday AM peak hour and worsen from LOS D to E during the Sunday PM peak hour, operations would remain acceptable.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to traffic on Caltrans intersection would be a **minorly adverse** effect because there would be an increase in traffic, but conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because although there would be an increase in traffic at Caltrans intersection, conditions at these intersections would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-4 (Alt. 2): Impacts on Vehicular Queuing at Caltrans Intersections

Vehicle trips generated under Alternative 2 would adversely affect turn lane storage at intersections owned/operated by Caltrans. The maximum queue length in the northbound left-turn lane at the SR 89/Alpine Meadows Road intersection would be extended from 350 to 375 feet, thereby further exceeding the 300 feet of available storage. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to vehicular queuing at Caltrans intersections would be **adverse** because the queuing that exceeds the available storage under existing conditions would be extended an additional 25 feet. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, this further increase in queuing beyond the available storage is a **significant** impact. There are no applicable RPMs that would reduce this impact.

Table 4.7-17 shows the projected change in Saturday AM and Sunday PM peak hour vehicular queuing at the SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road intersections resulting from implementation of Alternative 2. This table shows that Alternative 2 would not increase maximum queues on SR 89 turn lanes at the Squaw Valley Road intersection. However, it would increase the maximum queue length in the northbound left-turn lane at the SR 89/Alpine Meadows Road intersection from 350 to 375 feet during the Saturday AM peak hour, thereby further exceeding the 300 feet of available storage. This 25-foot increase in queue length equates to one additional vehicle as the traffic model used provides 25 feet of queue length for each vehicle.

Table 4.7-17 Maximum Queue Lengths at SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road Intersections – Existing Plus Project Conditions

Movement	Available Storage	Maximum Vehicle Queue [1]			
		Existing Conditions		Existing Plus Project Conditions	
		Saturday AM Peak Hour	Sunday PM Peak Hour	Saturday AM Peak Hour	Sunday PM Peak Hour
SR 89/Squaw Valley Road					
Northbound Left-Turn Lane	400 feet	575 feet	–	500 feet	–
Eastbound Left-Turn Lane	400 feet	–	400 feet	–	725 feet
Eastbound Left/Through Lane	N / A [2]	–	400 feet	–	800 feet
Eastbound Right-turn Lane	N / A [3]	–	50 feet	–	275 feet
Southbound Through/Right-Turn Lane	250 feet [4]	1,025 feet	-	975 feet	–
SR 89/Alpine Meadows Road					
Northbound Left-Turn Lane	300 feet	350 feet	–	375 feet	–
Eastbound Left-Turn Lane	200 feet [5]	–	1,000 feet [6]	–	325 feet
Eastbound Right-turn Lane	200 feet [5]	–	1,000 feet [6]	–	400 feet
Southbound Right-Turn Lane	600 feet	200 feet	–	250 feet	–

Notes: Values rounded up the nearest 25 feet.

"–" = not studied during off-peak condition.

[1] Based on output from SimTraffic model.

[2] N / A = Inside travel lane on eastbound Squaw Valley Road transitions into this turn lane. A turn pocket does not exist.

[3] N / A = Outside travel lane on eastbound Squaw Valley Road transitions into this turn lane. A turn pocket does not exist.

[4] N / A = Although a 250-foot right-turn lane is provided, through traffic vehicle queues can prevent right-turning vehicles from accessing this turn lane. Accordingly, results shown represent maximum length of southbound queue on SR 89, which includes both through and right-turning traffic.

[5] Measured from the limit line to upstream Alpine Circle Road intersection.

[6] Turn lane queues become a single queue that extend 1,000 feet back from the limit line.

Source: Appendix E

Queuing on County roadway approaches to SR 89 is not considered significant because approaching traffic would typically be traveling more slowly than on SR 89. Because both County study roadways terminate at a T-intersection at SR 89, motorists are slowing to turn left or right, which means less difference in adjacent lane vehicle speeds than on SR 89.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to vehicular queuing at Caltrans intersections would be **adverse** because the queuing that exceeds the available storage under existing conditions would be extended an additional 25 feet at the SR 89/Alpine Meadows Road intersection during the Saturday AM peak hour. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, adding an additional vehicle/25 feet of queue length to the SR 89/Alpine Meadows Road intersection, when the existing queue length (350 feet) exceeds the available storage capacity (300 feet) is a **significant** impact. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-4 (Alt. 2): Coordinate with Caltrans to Increase Maximum Amount of Green Time Provided for Northbound Left-Turn Movement at SR 89/Alpine Meadows Road Intersection

The project applicant shall coordinate with Caltrans to implement signal timing modifications that provide a greater amount of green time for this movement during peak winter AM periods. Caltrans staff (Brake,

pers. comm., 2015) has indicated that they support the idea of modifying signal timing in response to changes in travel demand. Because there are so few competing movements at this intersection during the AM peak hour, it is possible to provide longer green times for this movement without adversely affecting queuing in the southbound right-turn and eastbound left- and right-turn movements.

Significance after Mitigation

Mitigation Measure 4.7-4 (Alt. 2), if implemented, would reduce the maximum queue length in the northbound left-turn lane at the SR 89/Alpine Meadows Road intersection during the Saturday AM peak hour to fit within the available storage that is provided. However, Placer County cannot ensure that this improvement would be implemented because it would occur under Caltrans's and not the County's jurisdiction. Therefore, this impact would be **significant and unavoidable** despite the availability of a mitigation measure that, if implemented, would restore operations to an acceptable level.

Impact 4.7-5 (Alt. 2): Impacts on Caltrans Highways

Vehicle trips generated under Alternative 2 would not worsen traffic conditions to an unacceptable level on a Caltrans facility. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to traffic on Caltrans highways would be a **minorly adverse** effect because there would be a modest increase in traffic, but conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because although there would be a modest increase in traffic, conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

Table 4.7-18 shows the projected change in Saturday AM and Sunday PM peak hour operations on study segments of SR 89 and SR 28, which are owned and operated by Caltrans. This table shows that although vehicle trips attributable to Alternative 2 would increase traffic volumes on most of the Caltrans highway segments in the study area, the increases would not be sufficient to change the LOS at any specific facilities.

Alternative 2 would increase traffic volumes in the westbound direction of SR 28, which currently operates at LOS F during the Saturday AM peak hour. This would result in a 0.03 volume-to-capacity ratio increase (i.e., 1.04 to 1.07, calculated by dividing the segment's directional volume by its capacity of 731 vph in Table 4.7-3), which is less than the threshold of 0.05 for causing a significant impact.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to traffic on Caltrans highways would be a **minorly adverse** effect because there would be a modest increase in traffic, but conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because although there would be a modest increase in traffic, conditions would not worsen to an unacceptable level. There are no RPMs applicable to this impact.

Mitigation Measures

No mitigation measures are required.

Table 4.7-18 State Highway Segment Level of Service – Existing Plus Project Conditions

Segment[1]	LOS Threshold	Existing Conditions										Existing Plus Project Conditions									
		Saturday AM Peak Hour					Sunday PM Peak Hour					Saturday AM Peak Hour					Sunday PM Peak Hour				
		Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS	Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS	Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS	Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS
SR 89 between Deerfield Dr and West River Street	E	SB	808	89.4	31.0	E	NB	1,284	96.1	27.5	E	SB	838	92.9	30.7	E	NB	1,364	96.2	26.8	E
SR 89 between West River St and Squaw Valley Rd	E	SB	1,054	88.3	45.3	E	NB	1,360	92.8	42.8	E	SB	1,091	88.8	44.9	E	NB	1,416	93.4	42.3	E
SR 89 between Squaw Valley Rd and Alpine Meadows Rd	E	NB	716	83.6	37.6	E	NB	849	87.0	36.6	E	NB	684	83.1	37.8	E	NB	697	82.3	37.9	E
SR 89 between Alpine Meadows Rd and SR 28	E	NB	979	88.9	35.8	E	SB	715	83.9	36.0	E	NB	1013	89.3	35.5	E	SB	737	84.5	35.8	E
SR 89 south of SR 28	E	NB	643	79.2	N/A[2]	D	SB	462	73.6	N/A[2]	D	NB	650	79.4	N/A[2]	D	SB	468	74.1	29.9	D
SR 28 east of SR 89	F	EB WB	310 761	N/A	N/A	B F	EB WB	658 333	N/A	N/A	D B	EB WB	312 784	N/A	N/A	B F	EB WB	674 334	N/A	N/A	D B

Notes: N/A = not applicable; EB = eastbound; LOS = level of service; NB = northbound; PTSF = percent time spent following; SB = southbound; vph = vehicles per hour;, WB = westbound.

[1] Refer to above section for description of facility types and analysis methods.

[2] Average Travel speed not applicable for Class II two-lane highways.

Source: Appendix E

Impact 4.7-6 (Alt. 2): Impacts on Transit

Implementing Alternative 2 would not adversely affect public transit facilities or services or the performance or safety of these services. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, implementation of Alternative 2 would not affect the performance or safety of public transit facilities and there would be **no effect** related to this issue. Under CEQA, and using the CEQA criteria, implementation of Alternative 2 would not affect the performance or safety of public transit facilities and there would be **no effect** related to this issue.

Implementation of Alternative 2 would replace a sparsely used, privately operated shuttle that currently travels on public streets between the two resorts with a base-to-base gondola. This shuttle is not a public transit facility. The gondola is not located near any transit facilities and would not alter, remove, or obstruct any transit facilities. The project could add a modest number of new riders to the TART SR 89 route based on the addition to the area of two full-time year-round employees, eight seasonal full-time employees, and skiers associated with the increase in skier-days attributable to the project. However, if these individuals were to use the TART system, numbers would be very small relative to the existing population that generates ridership. The project could enable skiers desiring to travel by transit to Alpine Meadows to access that resort by the TART bus that stops at Squaw Valley. Alpine Meadows is not currently accessible via fixed route transit. However, this potential population of new riders would also be small. Any increase in ridership of public transit attributable to Alternative 2 would not conflict with adopted policies, plans, or programs regarding public transit or otherwise decrease the performance or safety of such facilities.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, implementation of Alternative 2 would not affect the performance or safety of public transit facilities and there would be **no effect** related to this issue.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, implementation of Alternative 2 would not affect the performance or safety of public transit facilities and there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-7 (Alt. 2): Impacts on Vehicle Safety Related to Roadway Design Features

Vehicle trips generated under Alternative 2 could occur on peak winter days when there is no available parking at either resort. This could cause vehicles to turn around along Squaw Valley Road and Alpine Meadows Road, thereby creating additional congestion and safety concerns. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to vehicle safety would be **adverse** because when resort parking lots reach capacity, vehicle trips attributable to Alternative 2 could contribute to the number of U-turns required on portions of Squaw Valley Road and Alpine Meadows Road that are not designed to accommodate this turning movement. There are no applicable RPMs that would mitigate this effect. Under CEQA, and considering the CEQA criteria, impacts related to vehicle safety would be **significant** because on peak days when resort parking lots reach capacity, vehicle trips attributable to Alternative 2 could contribute to the number of U-turns required on portions of Squaw Valley Road and Alpine Meadows Road that are not designed to accommodate this turning movement. There are no applicable RPMs that would reduce this impact.

During the busiest winter (i.e., top five) ski days at Squaw Valley and Alpine Meadows, parking lots reach capacity and motorists who arrive during the late morning are often turned away. On most days under these conditions, motorists drive westbound on Squaw Valley Road or Alpine Meadows Road only to be informed (through personnel or visual confirmation) that there is no available parking. These vehicles then turn

around and travel eastbound toward SR 89. If 50 vehicles perform such a maneuver over the course of a day, 100 ADT would be added to the roadway. Most of this turned-around traffic would be required to perform a U-turn (or three-point) along a "mid-block" location or intersection that does not have an adequate design to accommodate U-turns. U-turns in these locations could adversely affect vehicle safety for the vehicle making the turn, and other vehicles in the immediate area.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to vehicle safety would be **adverse** because on peak days when resort parking lots reach capacity, vehicle trips attributable to Alternative 2 could contribute to the number of U-turns required on portions of Squaw Valley Road and Alpine Meadows Road that are not designed to accommodate this turning movement. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and considering the CEQA criteria, impacts related to vehicle safety would be **significant** because on peak days when resort parking lots reach capacity, vehicle trips attributable to Alternative 2 could contribute to the number of U-turns required on portions of Squaw Valley Road and Alpine Meadows Road that are not designed to accommodate this turning movement. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-7 (Alt. 2): Advise Motorists of "Parked Out" Conditions before They Enter Squaw Valley Road or Alpine Meadows Road Using Traffic Control Personnel, Changeable Message Signs on SR 89, Online Mobile App, or Other Means

Prior to October 15th annually, SVSH shall submit to Placer County Department of Public Works and Facilities a traffic management plan that shall include an advanced messaging system to alert motorists of parking availability at the Squaw Valley and Alpine Meadows Ski Resorts. The traffic management plan shall include lessons learned from the previous season as well as modifications for the upcoming season. SVSH will be responsible to engage and coordinate affected agencies, including Caltrans, Placer County and the California Highway Patrol. Upon approval of the traffic management plan by all affected agencies, SVSH shall implement the traffic management plan with approval of any necessary encroachment permits from Caltrans and/or Placer County. Potential advanced messaging system(s) may include, but not be limited to, one or more of the following measures:

- California Highway Patrol or other traffic control personnel, accompanied by advisory signage or other means of disseminating information, present at the Squaw Valley Road and Alpine Meadows Road intersections on SR 89;
- portable or permanent changeable message signs placed in both directions of SR 89 (i.e., in the southbound direction north of Squaw Valley Road and in the northbound direction south of Alpine Meadows Rad) during peak days (fed with "real-time" parking availability information); and
- other methods, such as smartphone mobile apps that provide "real-time" information related to existing parking availability at each resort and travel times to each resort (both inbound and outbound).

Significance after Mitigation

Implementation of Mitigation Measure 4.7-7 (Alt. 2) would reduce this impact to a **less-than-significant** level because motorists would be much less likely to travel toward each resort, be turned away, and be required to make U-turns in locations not designed for this turning movement, due to at-capacity parking conditions if they receive advance notice of such conditions.

Impact 4.7-8 (Alt. 2): Construction Impacts on Transportation Facilities

Alternative 2 would involve construction activities that could cause temporary impacts on transportation facilities, including degrading roadway pavement conditions, and cause conflicts with bicyclists and pedestrians. It could also require temporary traffic controls and lane closures when transporting certain building materials (e.g., poles, columns). Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to construction activities interfering with transportation facilities would be **adverse.** RPMs MUL-7, REC-1, REC-2, and TREE-9 would mitigate this effect. Under CEQA, this impact would be **significant**. RPMs MUL-7, REC-1, REC-2, and TREE-9 would reduce this effect by limiting construction to a single season, minimizing construction conflicts with recreational events, and directing the timing of transport of removed trees away from peak activity periods. With implementation of these RPMs, this impact would be reduced, but not to a less-than-significant level.

Project construction would occur during the summer season. During peak periods, approximately 35 persons would work at the site. Construction activities would generate truck trips to transport materials to/from the site, including potentially the transport of trees removed from the project alignment. This added traffic would have the potential to degrade roadway pavement conditions and cause conflicts with bicyclists and pedestrians. It could also require temporary traffic controls and lane closures when transporting certain building materials (e.g., poles, columns).

RPM MUL-7 would reduce the duration of construction impacts on the transportation system by limiting construction to a single season. RPM REC-1 would require providing the public information on construction activities, including through a project website, and providing a public-liaison for individuals to contact during the construction process. This could assist in identifying and resolving or avoiding effects of construction on transportation system operations. RPM REC-2 requires coordination with the Forest Service to minimize conflicts between construction and permitted recreational events. RPM TREE-9 restricts hauling of removed trees on Forest Service and public roads on weekends and holidays, and during special events that generate high levels of traffic on local roadways or SR 89.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to construction activities interfering with transportation facilities would be **adverse.** RPMs MUL-7, REC-1, REC-2, and TREE-9 would mitigate this effect.

CEQA Determination of Effects

Construction traffic associated with Alternative 2 would have the potential to degrade roadway pavement conditions and cause conflicts with bicyclists and pedestrians. It could also require temporary traffic controls and lane closures when transporting certain building materials (e.g., poles, columns) and otherwise conflict with transportation system operations. These impacts would be **significant**. RPMs MUL-7, REC-1, REC-2, and TREE-9 would reduce this effect by limiting construction to a single season, minimizing construction conflicts with recreational events, and directing the timing of transport of removed trees away from peak activity periods. With implementation of these two RPMs, this impact would be reduced, but not to a less-than-significant level.

Mitigation Measure 4.7-8 (Alt. 2): Develop Construction Traffic Management Plan

Prior to the issuance of any grading or demolition permits, the project applicant shall prepare a Construction Traffic Management Plan to the satisfaction of the Forest Service, and Placer County Department of Public Works and the Engineering and Surveying Division. The plan shall include (but not be limited to) items such as:

- guidance on the number and size of trucks per day entering and leaving the project site;
- identification of arrival/departure times that would minimize traffic impacts;

- approved truck circulation patterns;
- locations of staging areas;
- locations of employee parking and methods to encourage carpooling and use of alternative transportation;
- methods for partial/complete street closures (e.g., timing, signage, location and duration restrictions);
- criteria for use of flaggers and other traffic controls;
- preservation of safe and convenient passage for bicyclists and pedestrians through/around construction areas;
- monitoring for roadbed damage and timing for completing repairs;
- limitations on construction activity during peak/holiday weekends and special events;
- preservation of emergency vehicle access;
- coordination with any other ongoing construction activities elsewhere within Olympic Valley, at Alpine Meadows, or at other locations along SR 89 to minimize potential additive construction traffic disruptions, avoid duplicative efforts (e.g., multiple occurrences if similar signage), and maximize effectiveness of traffic mitigation measures (e.g., joint employee alternative transportation programs); and
- a point of contact for Olympic Valley and Alpine Meadows residents and guests to obtain construction information, have questions answered, and convey complaints.

The Construction Traffic Management Plan shall be developed such that the following minimum set of performance standards is achieved throughout project construction. It is anticipated that additional performance standards would be developed once details of project construction are better known.

1) Delivery trucks do not idle/stage on Squaw Valley Road, Alpine Meadows Road, or SR 89.
2) Squaw Valley Road and Alpine Meadows Road do not feature any construction-related lane closures on peak activity days.
3) All construction employees shall park in designated lots owned by Squaw Valley Ski Holdings.
4) Roadways, sidewalks, crosswalks, and bicycle facilities shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety.

Significance after Mitigation

Implementation of Mitigation Measure 4.7-8 (Alt. 2) would reduce this impact to a **less-than-significant** level because the potential conflicts between project construction and local vehicle, bicycle, and pedestrian travel would be avoided and minimized and any potential damage to transportation infrastructure would be repaired. In addition, all RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs MUL-7, REC-1, REC-2, and TREE-9 as mitigation measures contributes to the reduction of this significant impact to a less-than-significant level.

4.7.3.3 ALTERNATIVE 3

Impacts of this alternative would be identical to Alternative 2 as their transportation characteristics are identical.

4.7.3.4 ALTERNATIVE 4

Impacts of this alternative would be identical to Alternative 2 as their transportation characteristics are identical.

4.7.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.7-19 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Alternatives 2, 3, and 4 are identical from a transportation perspective. Therefore, the conclusions described below are identical for each of these alternatives:

- For Impacts 4.7-1, 4.7-3, 4.7-5, and 4.7-6, effects under NEPA would be minorly adverse or there would be no effect, and impacts under CEQA would be less than significant or there would be no effect. No mitigation would be required.
- For Impacts 4.7-2, 4.7-7, and 4.7-8, effects under NEPA would be adverse, and impacts under CEQA would be significant. These effects would be mitigated under NEPA and reduced to less-than-significant levels under CEQA with mitigation.
- For Impact 4.7-4, the effect under NEPA would be adverse and the impact under CEQA would be significant. Even after mitigation, this impact would be significant and unavoidable.

Table 4.7-19 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.7-1: Impacts on Placer County Roadways	Estimated baseline and future traffic volumes on Alpine Meadows Road, Squaw Valley Road, and State Route 89 as related to Squaw Valley and Alpine Meadows operations during winter months	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, and mass transit	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.7-19 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Result in an increase in traffic which may be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Exceed, either individually or cumulatively, an LOS standard established by the County General Plan and/or Community Plan for roads affected by project traffic	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable congestion management program, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
4.7-2: Impacts on Placer County Intersections	Estimated baseline and future traffic volumes on Alpine Meadows Road, Squaw Valley Road, and State Route 89 as related to Squaw Valley and Alpine Meadows operations during winter months	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, and mass transit	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3
	Result in an increase in traffic which may be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3

Table 4.7-19 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Exceed, either individually or cumulatively, an LOS standard established by the County General Plan and/or Community Plan for roads affected by project traffic	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable congestion management program, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3
4.7-3: Impacts on Caltrans Intersections	Estimated baseline and future traffic volumes on Alpine Meadows Road, Squaw Valley Road, and State Route 89 as related to Squaw Valley and Alpine Meadows operations during winter months	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, and mass transit	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Result in an increase in traffic which may be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable congestion management program, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.7-19 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.7-4: Impacts on Vehicle Queuing at Caltrans Intersections	Estimated baseline and future traffic volumes on Alpine Meadows Road, Squaw Valley Road, and State Route 89 as related to Squaw Valley and Alpine Meadows operations during winter months	No effect	Adverse under NEPA; significant and unavoidable under CEQA	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternative 2	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, and mass transit	No effect	Adverse under NEPA; significant and unavoidable under CEQA	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternative 2	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternatives 2 and 3
	Result in an increase in traffic which may be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)	No effect	Adverse under NEPA; significant and unavoidable under CEQA	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternative 2	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable congestion management program, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	No effect	Adverse under NEPA; significant and unavoidable under CEQA	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternative 2	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternatives 2 and 3
4.7-5: Impacts on Caltrans Highways	Estimated baseline and future traffic volumes on Alpine Meadows Road, Squaw Valley Road, and State Route 89 as related to Squaw Valley and Alpine Meadows operations during winter months	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, and mass transit	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.7-19 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Result in an increase in traffic which may be substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable congestion management program, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
4.7-6: Impacts on Transit	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, and mass transit	No effect	No effect	No effect Same as for Alternative 2	No effect Same as for Alternatives 2 and 3
	Conflict with adopted policies, plans, or programs regarding public transit or otherwise decrease the performance or safety of such facilities	No effect	No effect	No effect Same as for Alternative 2	No effect Same as for Alternatives 2 and 3
	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle lanes, bicycle racks, public transit, pedestrian facilities) or otherwise decrease the performance or safety of such facilities	No effect	No effect	No effect Same as for Alternative 2	No effect Same as for Alternatives 2 and 3
4.7-7: Impacts on Vehicle Safety Related to Roadway Design Features	Discussion of safety issues associated with existing traffic volumes and anticipated changes	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3
	Increase impacts to vehicle safety due to roadway design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3

Table 4.7-19 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.7-8: Construction Impacts on Transportation Facilities	Estimated traffic generated by construction activities	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, and mass transit	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3
	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle lanes, bicycle racks, public transit, pedestrian facilities) or otherwise decrease the performance or safety of such facilities	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Same as for Alternatives 2 and 3

Note: Impacts associated with Alternatives 2–4 are identical from a transportation perspective.

4.7.4 Cumulative Effects

4.7.4.1 METHODS AND APPROACH

This section analyzes the cumulative effects of the alternatives. The *Village at Squaw Valley Specific Plan EIR* (Placer County 2015) included a well-documented, reasonably conservative approach to developing cumulative forecasts in the study area. The study conducted for this Final EIS/EIR applied the cumulative forecasts from that study, which represented a 20-percent growth rate to existing traffic levels on SR 89 based on historic traffic growth and Caltrans forecasts. In addition, the forecasts assume added growth in traffic associated with reasonably foreseeable projects (e.g., Village at Squaw Valley, Plumpjack project, Resort at Squaw Creek, Alpine Sierra subdivision). Refer to Chapter 3 for a full list of reasonably foreseeable future projects.

The cumulative no project scenario assumes that the gondola project is not constructed.

The traffic forecasts assume the following roadway improvements:

- Extension of Deerfield Drive as a continuous public street between SR 89 and Coldstream Road as part of the Coldstream Specific Plan (Planned Community-1) project in the Town of Truckee.
- Construction of a new crossing of the Truckee River downstream of the SR 89 Fanny Bridge and construction of roundabouts at the SR 89/SR 28 intersection and the two termini of a new bridge

crossing on either side of SR 89 (downstream of the existing Fanny bridge). These intersections are referenced as intersections 14a, 14b, and 14c.

Exhibit 4.7-7 displays the cumulative no project peak hour traffic forecasts at the study intersections for winter Saturday AM and Sunday PM peak hours. Table 4.7-20 displays the ADT on the Placer County study roadway segments for cumulative no project conditions.

Under cumulative conditions, more lodging options would be available near the Squaw Valley Ski Resort. Accordingly, there is a greater likelihood that some of the new skier-days predicted to occur as a result of project implementation could be associated with skiers staying overnight near the resort. However, the degree to which such activity may occur is not possible to estimate with any degree of certainty. Therefore, this study employs a conservative approach whereby all added skier trips under cumulative conditions are assumed to be new day skiers (similar to the existing plus project analysis). Thus, project vehicle trips estimated under existing plus project conditions were added to the cumulative no project forecasts to yield the "cumulative plus project" forecasts, which are shown on Exhibit 4.7-8. Table 4.7-20 shows the cumulative plus project ADT estimates on Placer County study roadways.

Table 4.7-20 Placer County Roadway Level of Service – Cumulative Plus Project Conditions

Segment	Type	LOS Standard	Cumulative No Project Conditions						Cumulative Plus Project Conditions					
			Saturday Daily Conditions			Sunday Daily Conditions			Saturday Daily Conditions			Sunday Daily Conditions		
			ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS	ADT	V/C Ratio	LOS
Squaw Valley Road west of SR 89	Three-Lane Low Access Control Arterial	C / D [5]	18,450	0. 82	D	18,800	0.84	D	18,400	0.82	D	19,650	0.87	D
Alpine Meadows Road west of SR 89	Two-Lane Low Access Control Arterial	C / D [5]	5,700	0.38	B	9,000	0.60	B	6,100	0.41	B	8,450	0.56	B

Notes: ADT = Average Daily Traffic; LOS = level of service; V/C ratio = volume-to-capacity ratio

Values rounded to the nearest 50 vehicles.

1. Project would add 292 new daily skier/employee trips, cause a shift of 150 inbound and 150 outbound daily ski trips from Squaw Valley to Alpine Meadows, and result in elimination of the shuttle, which would reduce the daily volume of travel on Squaw Valley Road by 24 inbound and 24 outbound trips. Net result is 18,450 + 292 - 300 - 48 = 18,400 (rounded).
2. Project would add 298 new daily skier/employee trips, cause a shift of 310 inbound and 310 outbound daily ski trips from Alpine Meadows to Squaw Valley, and result in elimination of the shuttle, which would reduce the daily volume of travel on Squaw Valley Road by 24 inbound and 24 outbound trips. Net result is 18,800 + 298 + 620 - 48 = 19,650 (rounded).
3. Project would add 130 new daily skier/employee trips, cause a shift of 150 inbound and 150 outbound daily ski trips from Squaw Valley to Alpine Meadows, and result in elimination of the shuttle, which would reduce the daily volume of travel on Alpine Meadows Road by 24 inbound and 24 outbound trips. Net result is 5,700 + 130 + 300 - 48 = 6,100 (rounded).
4. Project would add 134 new daily skier/employee trips, cause a shift of 310 inbound and 310 outbound daily ski trips from Alpine Meadows to Squaw Valley, and result in elimination of the shuttle, which would reduce daily volume of travel on Alpine Meadows Road by 24 inbound and 24 outbound trips. Net result is 9,000 + 134 - 620 - 48 = 8,450 (rounded).
5. An LOS C standard applies on County roadways with the exception of segments within ½ mile of a state highway in which an LOS D standard applies.

Source: Appendix E

The cumulative forecasts in this EIS/EIR are generally higher than cumulative forecasts reported in the *Village at Squaw Valley Specific Plan EIR* (Placer County 2015). This occurs because traffic growth (associated with a 20-percent increase in background traffic increases on SR 89 and resulting from reasonably foreseeable land developments) is added to a larger set of existing traffic volumes when compared to the existing volumes in the *Village at Squaw Valley Specific Plan EIR* (Placer County 2015). Both studies projected similar increases in traffic growth. However, differing levels of existing traffic volumes between the two studies (i.e., between the 2011–2012 and 2016–2017 seasons) may be attributable to differences in snowfall and economic conditions as well as other factors.

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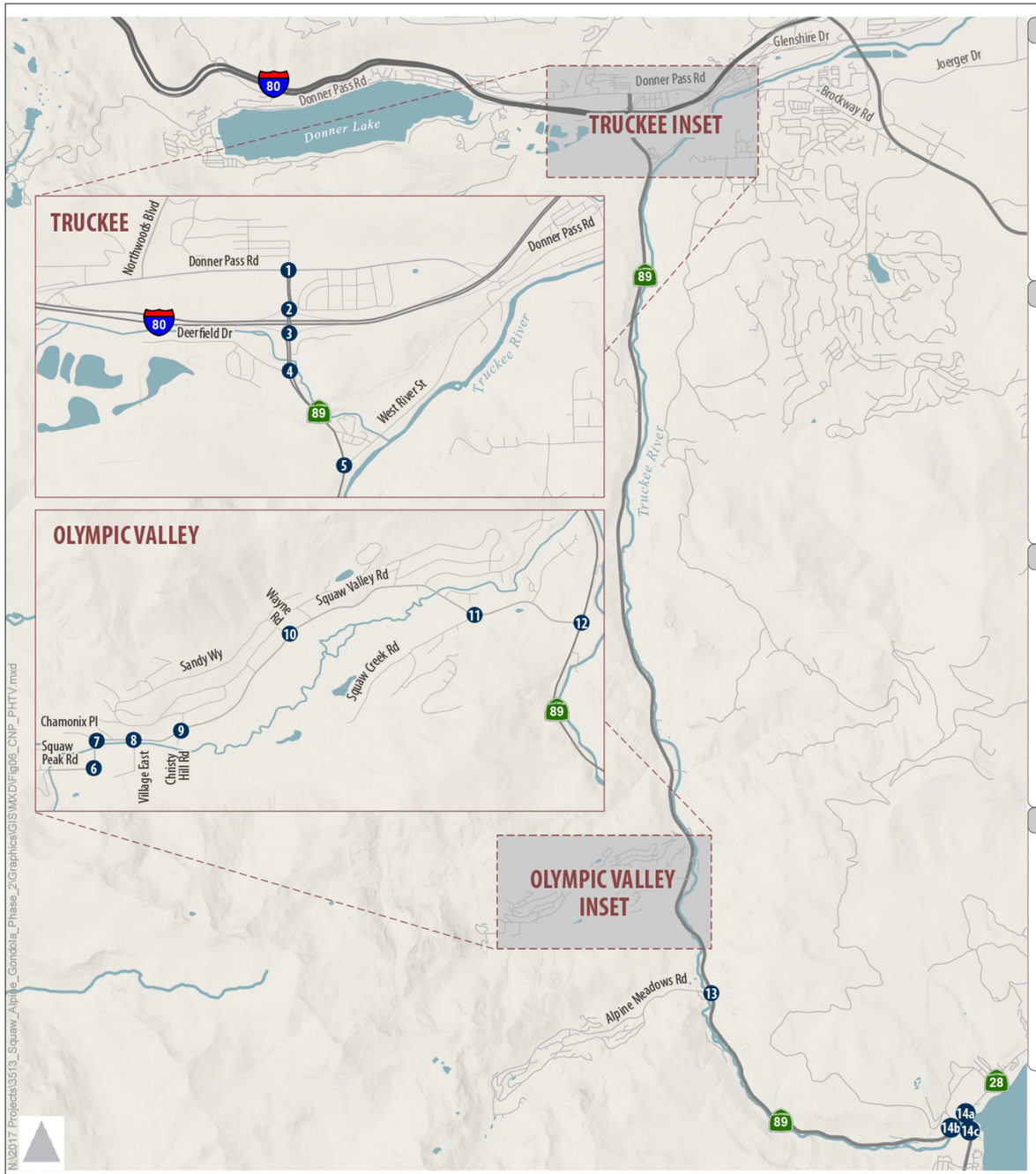

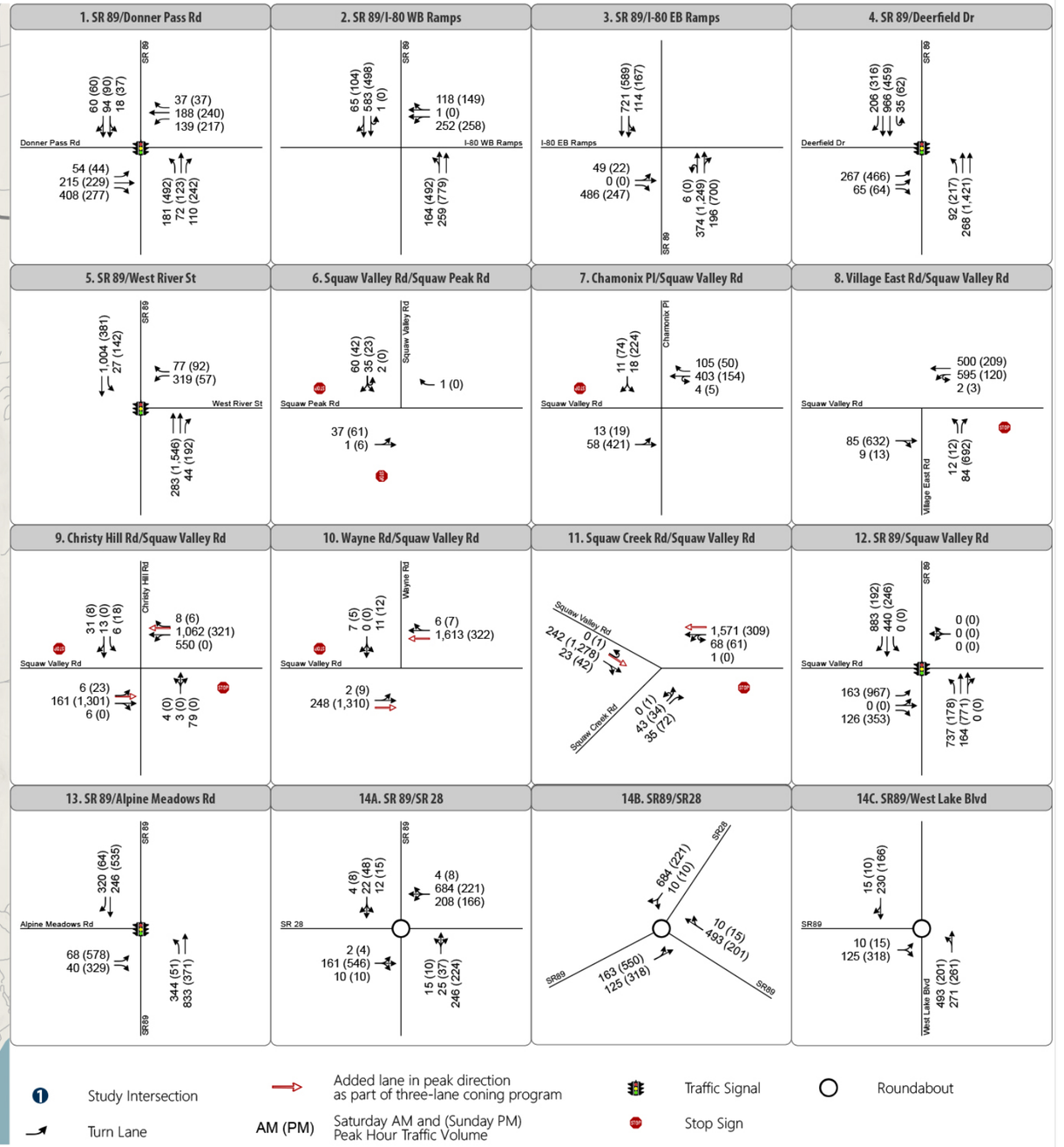

Source: Image and data provided by Fehr & Peers in 2018

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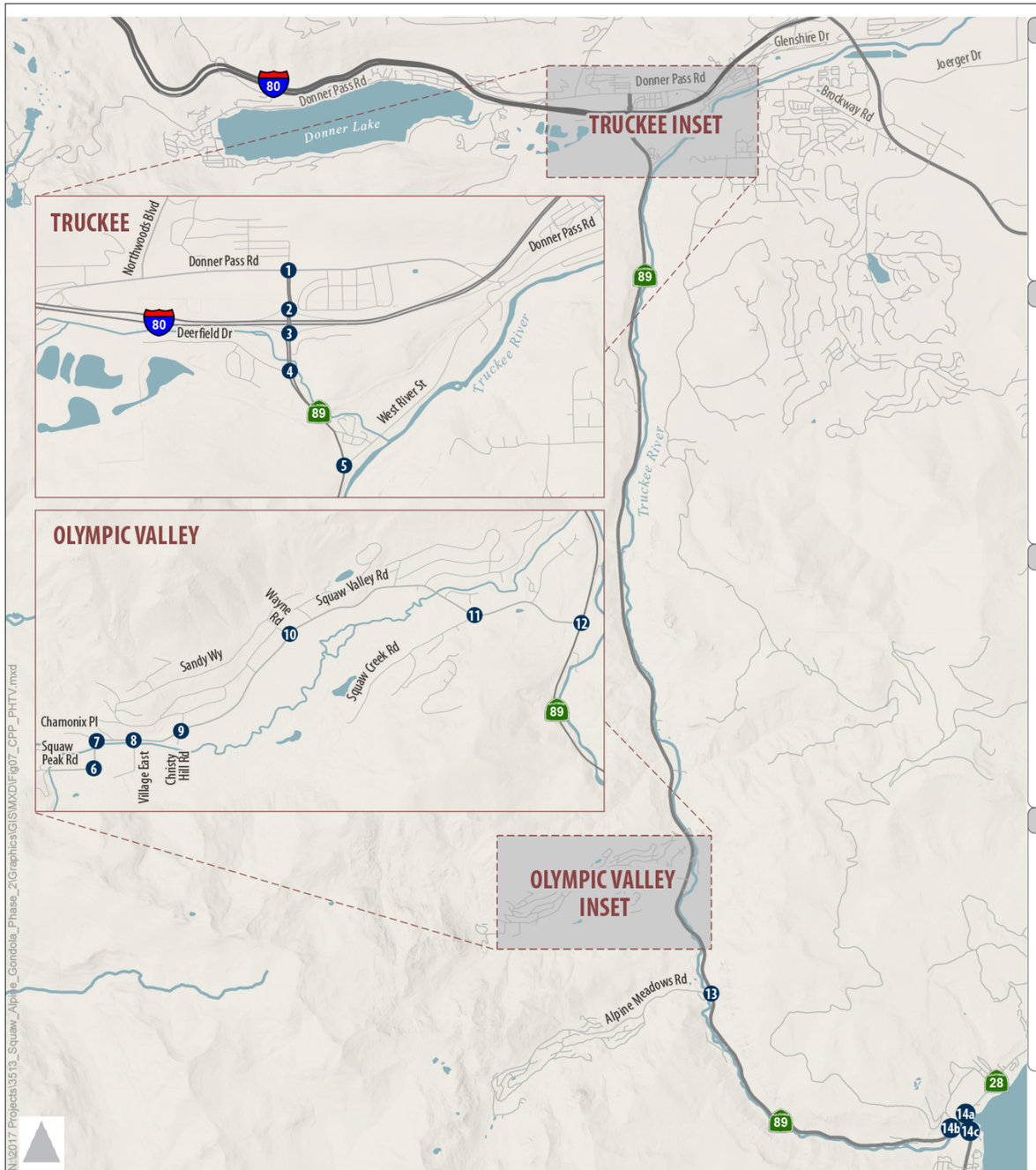
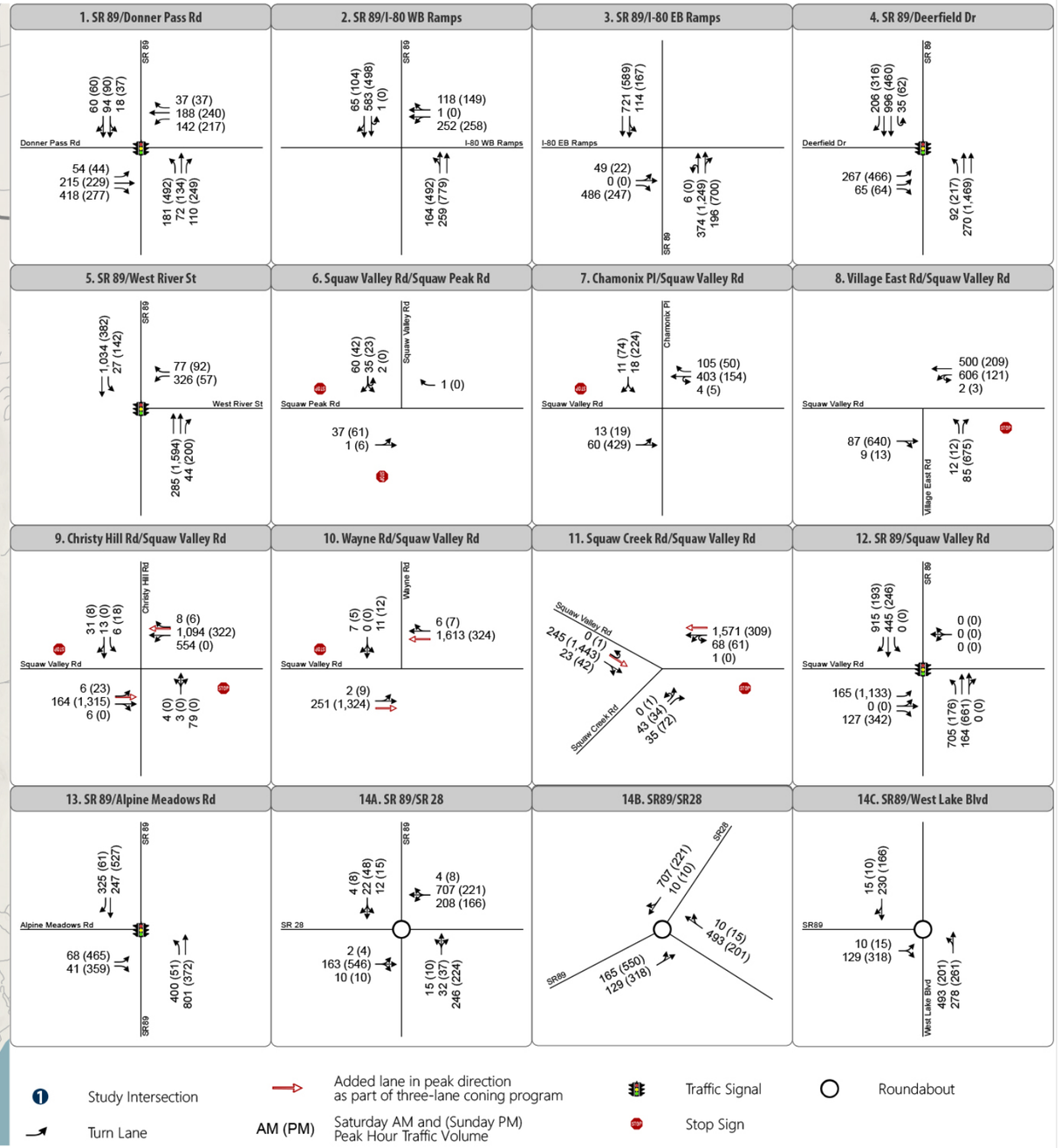
Exhibit 4.7-7 Peak Hour Volume and Lane Configurations - Cumulative No Project Condition





Source: Image and data provided by Fehr & Peers in 2018

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Exhibit 4.7-8 Peak Hour Volume and Lane Configurations - Cumulative Plus Project Condition

4.7.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide necessary authorizations to allow construction of the gondola. The outcome would be a continuation of existing conditions. There would be no new vehicle trips that would affect the transportation network. There would be no construction-related traffic that would potentially cause degraded traffic operations. As a result, there would be no contribution to any cumulative traffic and transportation impacts.

Alternative 2

Impact 4.7-9 (Alt. 2): Impacts on Placer County Roadways

Vehicle trips generated under Alternative 2 would not worsen conditions to an unacceptable level and would not exacerbate cumulatively unacceptable traffic conditions on a Placer County roadway under the cumulative plus project condition through increases in the V/C ratio and ADT on Squaw Valley Road. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects related to Placer County roadway operations would be **adverse** because of these increases in the V/C ratio and ADT on Squaw Valley Road. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, the increase in V/C ratio and ADT on Squaw Valley Road would exceed thresholds related to these operational parameters resulting in a **significant** cumulative impact. There are no applicable RPMs that would reduce this impact.

Table 4.7-20 shows the projected change in daily traffic conditions on Squaw Valley Road and Alpine Meadows Road resulting from implementation of Alternative 2 under cumulative conditions. This table shows LOS D conditions on Squaw Valley Road under cumulative no project Sunday daily conditions. With the addition of vehicle trips attributable to Alternative 2 the roadway would maintain LOS D, but would cause the segment's V/C ratio to increase from 0.84 to 0.87, which would be less than the 0.05-V/C-ratio-increase significance threshold. However, project added traffic of 850 vehicles would also exceed the 100-ADT-per-lane significance threshold (i.e., no more than 300 ADT for a three-lane facility). Of this increase, 300 new daily trips would be associated with new skiers, while the rest would result from a redistribution of background skier trips from Alpine Meadows to Squaw Valley.

NEPA Effects Conclusion

Under NEPA, and using the NEPA indicators, absent RPMs and/or mitigation, the increase in V/C ratio and ADT on Squaw Valley Road would exceed thresholds related to these operational parameters resulting in an **adverse** cumulative impact. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, the increase in V/C ratio and ADT on Squaw Valley Road would exceed thresholds related to these operational parameters resulting in a **significant** cumulative impact. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-9 (Alt. 2): Conduct Traffic Management along Squaw Valley Road

Prior to October 15th annually, SVSH shall submit to Placer County Department of Public Works and Facilities a traffic management plan that shall include traffic management on ski days on which traffic on Squaw Valley Road is projected to exceed 13,500 ADT. The traffic management plan shall include operation of the three-lane coning program during both the AM and PM peak periods. The traffic management plan shall include lessons learned from the previous season as well as modifications for the upcoming season. Upon approval of the traffic management plan, SVSH shall implement the traffic management plan with approval of an encroachment permit from Placer County.

Although it is noted that these types of traffic management techniques were implemented during the 2016–2017 season, they have not always been used during peak conditions. This mitigation measure is therefore intended to reestablish the need for this traffic management during such conditions.

Significance after Mitigation
With implementation of Mitigation Measure 4.7-9 (Alt. 2), cumulative impacts along Squaw Valley Road would be reduced to a **less-than-significant** level.

Impact 4.7-10 (Alt. 2): Impacts on Placer County Intersections

Vehicle trips generated under Alternative 2 would worsen unacceptable operations at intersections along Squaw Valley Road under the cumulative plus project condition. Specifically, the Squaw Valley Road/Chamonix Place and Squaw Valley Road/Squaw Creek Road intersections would experience a 2.5-second or more increase in the weighted average delay of all movements yielding right-of-way during the Sunday PM peak hour. These conditions meet the MUTCD traffic signal warrant. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects related to intersection operations would be **adverse**. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, this is a **significant** cumulative impact. There are no applicable RPMs that would reduce this impact.

Table 4.7-21 shows the expected change in Saturday AM and Sunday PM peak hour operations at Placer County study intersections resulting from implementation of Alternative 2 under cumulative conditions. Under cumulative plus project conditions, vehicle trips attributable to Alternative 2 would worsen delays at several intersections along Squaw Valley Road. The Squaw Valley Road/Chamonix Place and Squaw Valley Road/Squaw Creek Road intersections would operate unacceptably, experience a 2.5-second or more increase in the weighted average delay of all movements yielding right-of-way, and meet the MUTCD peak hour traffic signal warrant during this period. Although the Squaw Valley Road/Squaw Creek Road, Squaw Valley Road/Chamonix Place, and Squaw Valley Road/Far East Road/Christy Hill Road intersections would also experience degraded operations (in terms of further delays at LOS D or worse conditions), these are not significant impacts because none of these intersections meets the MUTCD traffic signal warrant during the period of impact.

NEPA Effects Conclusion
Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects related to intersection operations would be **adverse** at the Squaw Valley Road/Chamonix Place and Squaw Valley Road/Squaw Creek Road intersections. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects
Under CEQA, and using the CEQA criteria, this is a **significant** cumulative impact. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-10 (Alt. 2): Conduct Traffic Management at Squaw Valley Road/Chamonix Place and Squaw Valley Road/Squaw Creek Road Intersections

Implement Mitigation Measure 4.7-2 (Alt. 2).

Significance after Mitigation
With implementation of Mitigation Measure 4.7-10 (Alt. 2), cumulative impacts at the Squaw Valley Road/Chamonix Place and Squaw Valley Road/Squaw Creek Road intersections would be reduced to a **less-than-significant** level.

Table 4.7-21 Peak Hour Intersection Level of Service – Cumulative Plus Project Conditions

Intersection	Control	LOS Threshold	Cumulative No Project Conditions				Cumulative Plus Project Conditions			
			Saturday AM Peak Hour		Sunday PM Peak Hour		Saturday AM Peak Hour		Sunday PM Peak Hour	
			Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS
SR 89/Donner Pass Road	Traffic Signal	E	21	C	39	D	21	C	39	D
SR 89/I-80 WB Ramps	Roundabout	E	10	A	23	C	10	A	25	C
SR 89/I-80 EB Ramps	Roundabout	E	11	B	96	F	12	B	**105**	**F**
SR 89/Deerfield Drive	Traffic Signal	E	18	B	32	C	18	B	33	C
SR 89/West River Street	Traffic Signal	E	30	C	17	B	32	C	18	B
Squaw Valley Road/ Squaw Peak Road	Side-Street Stop	C	7 (8)	A (A)	7 (8)	A (A)	7 (8)	A (A)	7 (8)	A (A)
Squaw Valley Road/ Chamonix Place	Side-Street Stop	C	1 (11)	A (B)	19 (54)	C (F)	1 (11)	A (B)	**20 (57)**	**C (F)**
Squaw Valley Road/ Village East Road	Side-Street Stop	C	2 (4)	A (A)	1 (13)	A (B)	2 (4)	A (A)	1 (16)	A (C)
Squaw Valley Road/Far East Road/Christy Hill Road	Side-Street Stop	C	4 (10)	A (B)	5 (113)	A (F)	4 (11)	A (B)	**5 (118)**	**A (F)**
Squaw Valley Road/ Wayne Road	Side-Street Stop	C	24 (10)	C (B)	23 (40)	C (E)	24 (10)	C (B)	**25 (41)**	**C(E)**
Squaw Valley Road/ Squaw Creek Road[2]	Side-Street Stop	D	4 (8)	A (A)	170 (233)	F (F)	4 (8)	A (A)	**227 (293)**	**F (F)**
SR 89/Squaw Valley Road[2]	Traffic Signal	E	215	F	345	F	182	F	**368**	**F**
SR 89/Alpine Meadows Road	Traffic Signal	E	20	C	41	D	20	B	21	C
SR 89/SR 28	Roundabout	F	33	D	16	C	33	D	17	C
SR 89/New Crossing (North)	Roundabout	D	76	F	24	C	76	F	27	D
SR 89/New Crossing (South)	Roundabout	D	14	B	9	A	14	B	9	A

Notes: LOS = level of service. Shaded and bolded cells identify significant impacts.

[1] For signalized and all-way stop-controlled intersections and roundabouts, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled intersections, the delay and LOS is reported for the entire intersection and the weighted average delay for all movements that yield the right-of-way (shown in parentheses).

[2] Refer to following pages for discussion of eastbound queue spillbacks between intersections, which affects reported results.

Source: Data provided by Fehr & Peers in 2018

Impact 4.7-11 (Alt. 2): Impacts on Caltrans Intersections

Vehicle trips generated under Alternative 2 would worsen unacceptable traffic conditions at the I-80 EB Ramps/SR 89 roundabout and the SR 89/Squaw Valley Road intersection during the Sunday PM peak hour. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects related to Caltrans intersections would be **adverse** because modelled, or anticipated increases in delays at these Caltrans intersections would exceed applicable thresholds for intersections that already operate at unacceptable levels under the cumulative no project condition. There are no applicable RPMs that would mitigate this effect. Under CEQA, and considering the CEQA criteria, cumulative effects related to Caltrans intersections would be **significant** because modelled, or anticipated increases in delays at the I-80 EB Ramps/SR 89 roundabout and the SR 89/Squaw Valley Road intersection under the Sunday PM peak hour condition would exceed applicable thresholds for intersections that already operate at unacceptable levels under the cumulative no project condition. There are no applicable RPMs that would reduce this impact.

Alternative 2 would worsen LOS F conditions at the I-80 EB Ramps/SR 89 roundabout during the PM peak hour by increasing average delays by 9 seconds. The project would also exacerbate LOS F conditions at the SR 89/Squaw Valley Road intersection during the Sunday PM peak hour by increasing the average delay by 23 seconds. This is caused by the addition of 166 vehicles being added to the critical eastbound left-turn movement. For both of these intersections, delays attributable to Alternative 2 would exceed applicable thresholds for intersections that already operate at unacceptable levels under the cumulative no project condition. Although the project would increase delays marginally at other intersections on this corridor, none of those increases would exceed applicable thresholds.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects related to Caltrans intersections would be **adverse** because modelled, or anticipated increases in delays at the I-80 EB Ramps/SR 89 roundabout and the SR 89/Squaw Valley Road intersection under the Sunday PM peak hour condition would exceed applicable thresholds for intersections that already operate at unacceptable levels under the cumulative no project condition. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and considering the CEQA criteria, cumulative effects related to Caltrans intersection would be **significant** because modelled, or anticipated increases in delays at the I-80 EB Ramps/SR 89 roundabout and the SR 89/Squaw Valley Road intersection under the Sunday PM peak hour condition would exceed applicable thresholds for intersections that already operate at unacceptable levels under the cumulative no project condition. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-11 (Alt. 2): Pursue Strategies to Reduce Vehicle Trips Generated during the Sunday PM Peak Hour on Peak Ski Days

Prior to Improvement Plan approval, the applicant shall provide evidence to the Department of Public Works and Facilities of compliance with the Placer County Trip Reduction Ordinance, including a detailed accounting of Transportation Demand Management strategies currently provided for or planned by Squaw Valley. These strategies may include, but not be limited to, one or more of the following:

- operating a complementary and convenient shuttle between resorts and off-site park-and-ride lots (i.e., within Truckee or Tahoe City);
- implementing programs to better disperse the departures of skiers during peak afternoons, through entertainment options and other incentives; and
- joining/renewing membership in the Truckee North Tahoe Transportation Management Association.

Significance after Mitigation

Although the strategies listed above would potentially reduce the number of vehicle trips generated during peak periods, there are no assurances that such reductions would be sufficient to eliminate the impacts. Therefore, this impact would be **significant and unavoidable**.

Impact 4.7-12 (Alt. 2): Impacts on Vehicular Queuing at Caltrans Intersections

Vehicle trips generated under Alternative 2 would exacerbate vehicle spillbacks and affect turn lane storage at intersections owned/operated by Caltrans (i.e., SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road). Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects on vehicle queuing at the SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road intersections would be **adverse** because vehicle trips attributable to Alternative 2 would exacerbate vehicle spillbacks and exceedances of turn lane storage. There are no applicable RPMs that would mitigate this effect. Under CEQA, and considering the CEQA criteria, cumulative effects on vehicle queuing at the SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road intersections would be **significant** because vehicle trips attributable to Alternative 2 would exacerbate vehicle spillbacks and exceedances of turn lane storage. There are no applicable RPMs that would reduce this impact.

Under cumulative no project conditions, northbound traffic on SR 89 during the Saturday AM peak hour would extend from the SR 89/Squaw Valley Road intersection back through the SR 89/Alpine Meadows Road intersection. The project, by virtue of attracting new skiers and shifting some would-be skiers from Squaw Valley to Alpine Meadows, would result in a 25-foot increase in the maximum queue on northbound SR 89 approaching Alpine Meadows Road. As identified above under Impact 4.7-4, under existing conditions, queueing during the Saturday AM peak hour exceeds available storage. This would be further exacerbated under the cumulative plus project condition. The project would also exacerbate queuing in the southbound approach to the SR 89/Squaw Valley Road intersection. Sunday PM peak hour queue spillbacks would occur in the eastbound directions of Alpine Meadows Road and Squaw Valley Road but would not occur on the state highway.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects on vehicle queuing at the SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road intersections would be **adverse** because by virtue of attracting new skiers and shifting some skiers between Squaw Valley and Alpine Meadows, vehicle trips attributable to Alternative 2 would exacerbate vehicle spillbacks and exceedances of turn lane storage. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and considering the CEQA criteria, cumulative effects on vehicle queuing at the SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road intersections would be **significant** because by virtue of attracting new skiers and shifting some skiers between Squaw Valley and Alpine Meadows, vehicle trips attributable to Alternative 2 would exacerbate vehicle spillbacks and exceedances of turn lane storage. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-12 (Alt. 2): Pursue Strategies to Reduce Vehicle Trips Generated during the Sunday PM Peak Hour on Peak Ski Days

Implement Mitigation Measure 4.7-11 (Alt. 2).

Significance after Mitigation

Although Mitigation Measure 4.7-12 (Alt. 2) would potentially reduce the number of vehicle trips generated during peak periods, there are no assurances that such reductions would be sufficient to eliminate the impacts. Therefore, this impact would be **significant and unavoidable**.

Impact 4.7-13 (Alt. 2): Impacts on Caltrans Highways

Vehicle trips generated under Alternative 2 would exacerbate cumulatively unacceptable operations on a Caltrans highway segment. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects on the segment of SR 89 between Squaw Valley Road and West River Street intersections would be **adverse** because this segment would experience an increase in V/C ratio that would exceed applicable thresholds. There are no applicable RPMs that would mitigate this effect. Under CEQA, and considering the CEQA indicators, cumulative effects on the segment of SR 89 between Squaw Valley Road and West River Street intersections would be **significant** because this segment would experience an increase in V/C ratio that would exceed applicable thresholds. There are no applicable RPMs that would reduce this impact.

Table 4.7-22 shows the projected change in Saturday AM and Sunday PM peak hour operations on study segments of SR 89 and SR 28, which are owned and operated by Caltrans. This table shows that all facilities would operate at LOS D or worse. The project would not worsen the LOS at any specific facilities. However, it would add traffic during the Sunday PM peak hour to the segment of SR 89 between Squaw Valley Road and West River Street, which would operate at LOS F without the project. This added traffic would result in an increase in the V/C ratio of greater than 0.05.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects on Caltrans highway segments in the study area would be **adverse** because although there would be an increase in traffic and most segments would not experience a degradation in LOS, the segment of SR 89 between Squaw Valley Road and West River Street intersections would experience an increase in V/C ratio that would exceed applicable thresholds. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and considering the CEQA criteria, cumulative effects on Caltrans highway segments in the study area would be **significant** because although there would be an increase in traffic and most segments would not experience a degradation in LOS, the segment of SR 89 between Squaw Valley Road and West River Street intersections would experience an increase in V/C ratio that would exceed the applicable 0.05 v/c ratio threshold. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-13 (Alt. 2): Pursue Strategies to Reduce Vehicle Trips Generated during the Sunday PM Peak Hour on Peak Ski Days

Implement Mitigation Measure 4.7-11 (Alt. 2).

Significance after Mitigation

Although Mitigation Measure 4.7-13 (Alt. 2) would potentially reduce the number of vehicle trips generated during peak periods, there are no assurances that such reductions would be sufficient to eliminate the impacts. Therefore, this impact would be **significant and unavoidable**.

Table 4.7-22 State Highway Segment Level of Service – Cumulative Plus Project Conditions

Segment[1]	LOS Threshold	Cumulative No Project Conditions										Cumulative Plus Project Conditions									
		Saturday AM Peak Hour					Sunday PM Peak Hour					Saturday AM Peak Hour					Sunday PM Peak Hour				
		Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS	Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS	Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS	Peak Direction	Volume (vph)	PTSF	Avg. Speed	LOS
SR 89 between Deerfield Dr and West River Street	E	SB	1,031	94.2	28.6	E	NB	1,638	97.9	24.2	F	SB	1,061	94.2	28.4	E	NB	1,686	98.3	23.8	F
SR 89 between West River St and Squaw Valley Rd	E	SB	1,323	92.8	42.7	E	NB	1,738	98.4	39.3	F	SB	1,360	93.2	42.4	E	NB	**1,794**	**98.9**	**41.9**	**F**
SR 89 between Squaw Valley Rd and Alpine Meadows Rd	E	NB	901	88.0	35.6	E	NB	949	70.1	35.0	E	NB	869	86.7	35.8	E	SB	797	84.9	36.4	E
SR 89 between Alpine Meadows Rd and SR 28	E	NB	1,177	98.4	34.0	E	SB	868	88.3	34.4	E	NB	1,201	92.4	32.8	E	SB	868	88.0	34.4	E
SR 89 south of SR 28	E	NB	764	83.0	N/A[2]	D	SB	484	73.4	N/A[2]	D	NB	771	82.9	28.1	D	SB	484	73.8	N/A[2]	D
SR 28 east of SR 89	F	EB WB	419 896	N/A	N/A	B F	EB WB	785 395	N/A	N/A	F B	EB WB	421 919	N/A	N/A	B F	EB WB	785 395	N/A	N/A	F B

Notes: N/A = not applicable; LOS = level of service; NB = northbound; PTSF = percent time spent following; SB = southbound; vph = vehicles per hour, EB = eastbound, WB = Westbound.

Shaded and bolded cells identify significant impacts.

[1] Refer to above section for description of facility types and analysis methods.

[2] Average Travel speed not applicable for Class II two-lane highways.

Source: Appendix E

Impact 4.7-14 (Alt. 2): Impacts on Transit

Implementing Alternative 2 would not adversely affect public transit facilities or services or the performance or safety of these services under cumulative plus project conditions. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, implementation of Alternative 2 would not affect the performance or safety of public transit facilities and there would be **no effect** related to this issue. Under CEQA, and using the CEQA criteria, implementation of Alternative 2 would not affect the performance or safety of public transit facilities and there would be **no effect** related to this issue.

Implementation of Alternative 2 under the cumulative plus project condition would replace a sparsely used, privately operated shuttle that currently travels on public streets between the two resorts with a base-to-base gondola. This shuttle is not a public transit facility. The gondola is not located near any transit facilities and would not alter, remove, or obstruct any transit facilities. The project could add a modest number of new riders to the TART SR 89 route based on the addition to the area of two full-time year-round employees, eight seasonal full-time employees, and skiers associated with the increase in skier-days attributable to the project. However, if these individuals were to use the TART system, numbers would be very small relative to the existing population that generates ridership. The project could enable skiers desiring to travel by transit to Alpine Meadows to access that resort by the TART bus that stops at Squaw Valley. Alpine Meadows is not currently accessible via fixed route transit. However, this potential population of new riders would also be small. Any increase in ridership of public transit attributable to Alternative 2 would not conflict with adopted policies, plans, or programs regarding public transit or otherwise decrease the performance or safety of such facilities.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, implementation of Alternative 2 would not affect the performance or safety of public transit facilities and there would be **no effect** related to this issue.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, implementation of Alternative 2 would not affect the performance or safety of public transit facilities and there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.7-15 (Alt. 2): Impacts on Vehicle Safety Related to Roadway Design Features

Vehicle trips generated under Alternative 2 could occur on peak winter days when there is no available parking at either resort. This could cause vehicles to turn around along Squaw Valley Road and Alpine Meadows Road, thereby creating additional congestion and safety concerns. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects related to vehicle safety would be **adverse** because when resort parking lots reach capacity, vehicle trips attributable to Alternative 2 could contribute to the number of U-turns required on portions of Squaw Valley Road and Alpine Meadows Road that are not designed to accommodate this turning movement. There are no applicable RPMs that would mitigate this effect. Under CEQA, and considering the CEQA criteria, adverse cumulative impacts related to vehicle safety would be **significant** because on peak days when resort parking lots reach capacity, vehicle trips attributable to Alternative 2 could contribute to the number of U-turns required on portions of Squaw Valley Road and Alpine Meadows Road that are not designed to accommodate this turning movement. There are no applicable RPMs that would reduce this impact.

Currently, during the busiest winter (i.e., top five) ski days at Squaw Valley and Alpine Meadows, parking lots reach capacity and vehicles that arrive during the late morning are often turned away. There are no reasonably foreseeable future projects that include additional parking at Squaw Valley and Alpine Meadows; therefore, turning away of vehicles under the busiest winter conditions would continue under the cumulative plus project

condition. On most days under the busiest winter conditions, motorists drive westbound on Squaw Valley Road or Alpine Meadows Road only to be informed (through personnel or visual confirmation) that there is no available parking. These vehicles then turn around and travel eastbound toward SR 89. If 50 vehicles perform such a maneuver over the course of a day, 100 ADT would be added to the roadway. Most of this turned-around traffic would be required to perform a U-turn (or three-point) along a 'mid-block' location or intersection that does not have an adequate design to accommodate U-turns. U-turns in these locations could adversely affect vehicle safety for the vehicle making the turn, and other vehicles in the immediate area.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, cumulative effects related to vehicle safety would be **adverse** because on peak days when resort parking lots reach capacity, vehicle trips attributable to Alternative 2 could contribute to the number of U-turns required on portions of Squaw Valley Road and Alpine Meadows Road that are not designed to accommodate this turning movement. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and considering the CEQA criteria, adverse cumulative impacts related to vehicle safety would be **significant** because on peak days when resort parking lots reach capacity, vehicle trips attributable to Alternative 2 could contribute to the number of U-turns required on portions of Squaw Valley Road and Alpine Meadows Road that are not designed to accommodate this turning movement. There are no applicable RPMs that would reduce this impact.

Mitigation Measure 4.7-15 (Alt. 2): Advise Motorists of "Parked Out" Conditions before They Enter Squaw Valley Road or Alpine Meadows Road Using Traffic Control Personnel, Changeable Message Signs on SR 89, Mobile Online Apps, or Other Means

Implement Mitigation Measure 4.7-7 (Alt. 2).

Significance after Mitigation

Implementation of Mitigation Measure 4.7-15 (Alt. 2) would reduce this impact to a **less-than-significant** level because motorists would be notified of parking capacity situations before traveling toward each resort, which would reduce U-turns in locations not designed for this turning movement.

Impact 4.7-16 (Alt. 2): Construction Impacts on Transportation Facilities

Because construction of Alternative 2 would be complete prior to the cumulative plus project condition being in effect, construction would not cause any impacts on transportation facilities under the cumulative plus project condition. There would be **no effect** under both NEPA and CEQA.

Under the cumulative plus project condition, construction of Alternative 2 would be complete. Therefore, there would be no project related construction activities that could cause any impacts on transportation facilities under the cumulative plus project condition.

NEPA Effects Conclusion

With no project related construction activities under the cumulative plus project condition, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no project related construction activities under the cumulative plus project condition, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

ALTERNATIVE 3

Cumulative impacts related to this alternative would be identical to Alternative 2 as their transportation characteristics are identical.

ALTERNATIVE 4

Cumulative impacts related to this alternative would be identical to Alternative 2 as their transportation characteristics are identical.

4.8 UTILITIES

This section describes existing public utilities in the project area and their potential to be affected by the action alternatives. Public utilities addressed in this section include water supply, solid waste, and energy demand. Section 4.17, "Hydrology and Water Quality," includes the evaluation of stormwater management. The provision of stormwater drainage is not discussed further in this section.

4.8.1 Affected Environment

4.8.1.1 ENVIRONMENTAL SETTING

Water Providers

The Squaw Valley Ski Area (Squaw Valley) is located on the western end of the Olympic Valley. There are two municipal and commercial water suppliers within the Olympic Valley: Squaw Valley Public Service District (SVPSD) and Squaw Valley Mutual Water Company (SVMWC). There are also several private parties that use groundwater to serve nonpotable needs, including golf course irrigation and snowmaking at the Resort at Squaw Creek and snowmaking at the Squaw Valley (Farr West Engineering et al. 2015).

SVPSD is a special district organized under California Water Code (CWC) Division 12 and incorporated in the State of California in 1964. It serves approximately 1,600 residential connections and roughly 40 commercial entities (SVPSD 2017) from four active wells in the Olympic Valley Groundwater Basin, two horizontal bedrock wells, and a distribution network that runs through most of Olympic Valley. The SVPSD water service area (excluding the SVMWC area) encompasses about 5,350 acres. SVPSD is the largest water purveyor in the Squaw Valley community.

SVMWC provides water to approximately 265 residential connections within a 115-acre service area that lies entirely within the overall boundaries of the SVPSD service area.

Two parties in Olympic Valley use unmetered groundwater from private wells: the PlumpJack Squaw Valley Inn (PlumpJack) and Gladys K. Poulsen. No recorded information regarding the volume or timing of the water use or demand is available for these private parties. However, the volumes extracted by these two pumpers are considered to be limited in comparison to the SVPSD and SVMWC deliveries. PlumpJack is a hotel that receives potable water from SVPSD, and the private well on the property is used only for limited landscape irrigation. The volume of water demand associated with this small area is not substantial in comparison to other pumping in the western portion of the Olympic Valley Groundwater Basin (Farr West Engineering et al. 2015).

Management of the Olympic Valley Groundwater Basin includes various methods of water conservation (Element 7 of the *Olympic Valley Groundwater Management Plan* [Management Plan]). State and local laws requiring indoor and outdoor conservation are implemented by SVPSD. SVPSD also has an Irrigation Conservation Ordinance with measures to promote voluntary conservation, including metered use and tiered rates, incentives, and informational programs. Stage 2 Water Conservation Restrictions and Emergency Irrigation Regulations were implemented for the first time in May 2015 in response to California Department of Water Resource (DWR) statewide water conservation requirements. There are no provisions through which groundwater pumping by SVMWC or private parties is controlled (Farr West Engineering et al. 2015).

Domestic and emergency water service for the Alpine Meadows Ski Area (Alpine Meadows) and community is provided by Alpine Springs County Water District. Alpine Meadows is served by four horizontal wells and two vertical wells. The horizontal wells are in remote areas on the south side of Alpine Meadows, whereas the Alpine Meadows Estates Well (a vertical well) is located in the central portion of the Alpine Meadows valley, and the R-1 well (a vertical well) is located near the Alpine Springs County Water District office (Alpine Springs County Water District 2015).

Water Sources

Almost all domestic, municipal, and nonpotable water used in the Olympic Valley is derived from local groundwater sources, primarily from the alluvial valley fill, along with a minor amount from fractured bedrock (Farr West Engineering et al. 2015). The alluvial groundwater system is generally unconfined but has some areas with vertical pressure gradients. These data are consistent with the geologic patterns of mixed glacial, lake, and stream deposits and suggest that some portions of the aquifer are covered by low-permeability clay and silt. Additional information describing the geologic and hydrologic characteristics of the Olympic Valley Groundwater Basin is provided in Section 4.17, "Hydrology and Water Quality."

The geologic materials in the western portion of the Olympic Valley Groundwater Basin have a larger capacity for water supply production than those in the east, and all the existing municipal water supply wells are located in the western area. Groundwater also is present in fractured bedrock sources in the mountains above the valley floor. Studies by the Lawrence Livermore National Laboratory have shown that there is not a strong connection between the basin on the valley floor and the fractured bedrock groundwater system above (Farr West Engineering et al. 2015), meaning that the bedrock groundwater system does not contribute to recharge of the basin. In addition, these studies found that on an annual basis, groundwater flow into Squaw Creek is more significant than stream flows percolating into the groundwater basin.

The active vertical wells tapping the alluvial aquifer are four SVPSD wells and one SVMWC well in the east parking lot area of Squaw Valley and one SVMWC well near the Olympic Channel, four Squaw Valley wells along the toe of the ski runs at the southwestern end of the valley, and three Resort at Squaw Creek wells southeast of Squaw Creek in the mid-meadow. The active horizontal wells extending to the bedrock source are two SVMWC wells on the north side slope above the valley floor and two SVPSD wells on the south side slope above the meadow east of Squaw Valley. Horizontal wells are not equipped with pumps; water that enters the well is drained out of the opening by gravity.

Domestic and emergency water supplies for Alpine Meadows are derived from the four groundwater wells described above and four springs. Emergency water supply is also available from multiple ponds along Bear Creek and the Truckee River (Geoarch Sciences, Inc. and C. G. Celio & Sons Co. 2005).

Energy

The California Pacific Electric Company (CalPeco), an element of Liberty Utilities, provides electrical service to Squaw Valley and Alpine Meadows. The project vicinity is served by the North Lake Tahoe Transmission System, one element of CalPeco's total electric utility holdings. CalPeco procures its electricity for the North Lake Tahoe Transmission System from NV Energy (CalPeco 2018).

Electrical service to Squaw Valley and Alpine Meadows is provided via the Squaw Valley Substation, located near the northwestern corner of Squaw Valley Road and State Route 89. The Squaw Valley Substation is a 50-megavolt amperes substation (a megavolt ampere is a unit of energy similar to a megawatt) fed by both a 60-kilovolt (kV) power line and a 120-kV power line from substations in Truckee and by a 120-kV line currently operating at 60 kV from Tahoe City in the south. Four main circuits extend from the Squaw Valley Substation: One serves the Squaw Valley Basin, one serves Alpine Meadows, and two serve Squaw Valley resort. Lines parallel State Route 89, providing connections at Squaw Valley Road and Alpine Meadows Road.

Propane is provided to the project vicinity by AmeriGas. AmeriGas is a national propane supplier, operating in all 50 states and with a customer base of over 2 million (AmeriGas 2016). According to the U.S. Department of Energy, propane is a clean-burning, high-energy alternative fuel. It is produced from liquid components recovered during natural gas processing and is a produced domestically. The expansion in natural gas production has led to an expanded availability of propane gas, and the United States is a net exporter of propane (U.S. Department of Energy 2015). The primary use of the propane within Squaw Valley is to feed the boilers that supply space and water heating to the residential and commercial areas of the village. Cooking, fire pits, and fire places account for the remaining propane use. The primary use of the propane in Alpine Meadows is to feed the boilers that supply space and water heating to the residential customers and the lodge and Alpine Meadows Ski Resort.

Solid Waste

Tahoe Truckee Sierra Disposal is responsible for waste and recycling services in the project area. Materials are transported to the Placer County Eastern Regional Material Recovery Facility (MRF) in Truckee, where they are sorted in an effort to meet California's mandatory solid waste diversion requirements. Waste materials are then transported to the Lockwood Regional Landfill, a 1,535-acre municipal solid waste facility located in Storey County, Nevada. The Eastern Regional MRF is permitted to receive 800 tons of material per day and 832 vehicles per day and is operated subject to a Solid Waste Facility Permit under the jurisdiction of the California Department of Resources Recycling and Recovery (CalRecycle) (Placer County Environmental Utilities 2018). The Lockwood Regional Landfill has a total capacity of 302.5 million cubic yards. As of 2010 the landfill had a remaining capacity of 264.68 million cubic yards (NDEP 2017).

4.8.1.2 REGULATORY SETTING

Federal

Truckee River Operating Agreement

The Truckee River Operating Agreement, which was approved on September 6, 2008, was developed to formalize, regulate, and monitor water rights and water use within the Tahoe Region, the Truckee River watershed, and the final outflow areas of Pyramid Lake and the Carson River. This agreement was designed to improve the operational flexibility of Truckee River reservoirs and was made by and among the United States of America, State of California, State of Nevada, Truckee Meadows Water Authority, Pyramid Lake Paiute Tribe of Indians, Washoe County Water Conservation District, City of Reno, City of Sparks, City of Fernley, Washoe County, Sierra Valley Water Company, Truckee Donner Public Utility District, North Tahoe Public Utility District, Carson-Truckee Water Conservancy District, and Placer County Water Agency. Under the agreement, Tahoe Region water rights for surface water and groundwater are capped at 34,000 acre-feet annually, split by 11,000 acre-feet per year (afy) designated for use in Nevada and 23,000 afy for use in California (U.S. Bureau of Reclamation et al. 2008).

Code of Federal Regulations

Volume 40, Part 258 of the CFR contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the locations, operation, design, groundwater monitoring, and closure of landfills.

State

California Water Code, Water Supply Wells and Groundwater Management

The CWC is enforced by DWR. DWR's mission is "[t]o manage the water resources of California in cooperation with other agencies, to benefit the State's people and to protect, restore and enhance the natural and human environments" (DWR 2018). DWR is responsible for promoting California's general welfare by ensuring beneficial water use and development statewide. Groundwater management is outlined in the CWC, Division 6, Part 2.75, Chapters 1–5, Sections 10750–10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030 and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and AB 1739 in 2014. The intent of the Groundwater Management Act is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a groundwater management plan.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015, and applies to all groundwater basins in the state (CWC Section 10720.3). (The SGMA comprises three separate bills: SB 1168, SB 1319, and AB 1739. All three were signed into law by the governor on September 16, 2014.) By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (CWC Section 10720.1).

Under the SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency" for that basin (CWC Section 10723). It is possible that SVPSD or Placer County (County) may elect to become the groundwater sustainability agency for the Olympic Valley Groundwater Basin or that both agencies may elect to form a joint groundwater sustainability agency. The Alpine Meadows area is not designated as a groundwater basin subject to SGMA.

Any groundwater sustainability agency established for the Olympic Valley Groundwater Basin would have additional powers under the SGMA to manage groundwater within the basin, including, for example, the power to conduct investigations of the basin, require registration of groundwater extraction facilities and metering of groundwater extractions, regulate groundwater extractions from individual groundwater wells or wells generally, and assess fees on groundwater extractions (see, generally, CWC Section 10725 et seq.).

The SGMA also requires DWR to categorize each groundwater basin in the state as high, medium, low, or very low priority (CWC Sections 10720.7, 10722.4). On December 15, 2014, DWR announced its official "initial prioritization" of the state's groundwater basins for purposes of complying with the SGMA, and this priority list became effective on January 1, 2015 (DWR 2014). DWR has ranked the Olympic Valley Groundwater Basin as "low priority." Groundwater sustainability plans are not required for low- and very low–priority basins. Although the County and/or SVPSD will still need to take steps to designate and form a groundwater sustainability agency for the Olympic Valley Groundwater Basin, these administrative obligations will not affect the availability of water to serve the project. There is no designated groundwater basin for the Alpine Meadows area.

California Environmental Quality Act

Appendix F of the State CEQA Guidelines sets forth goals for energy conservation, including decreasing per capita energy consumption and reliance on fossil fuels and increasing reliance on renewable energy sources. CEQA requires EIRs to describe potential energy impacts of projects, with an emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (Public Resources Code Public Resources Code Section 21100[b][3]).

The California Energy Commission prepares an integrated policy report every 2 years that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (CEC 2017a). Energy efficiency is one of the key components of the state's strategy to reduce greenhouse gas (GHG) emissions and achieve reduction targets set forth by AB 32, SB 32, Governor Brown's Executive Order B-30-15, and SB 32 and AB 197 of 2016. Efficiency achieved through building codes, appliance standards, and ratepayer-funded programs has had a positive impact on GHG emissions in recent years (CEC 2017a:10). The policy report discusses efforts to decarbonize California's energy system and recognizes that transitioning to zero- and near-zero emission vehicles will be a fundamental part of meeting the state's climate goals.

The California Public Utilities Commission's *California Long Term Energy Efficiency Strategic Plan* established goals of having all new residential construction in California be zero net energy by 2020 and all new commercial construction zero net energy by 2030 (CPUC 2011).

Clean Energy and Pollution Reduction Act

On October 7, 2015, the Clean Energy and Pollution Reduction Act (SB 350) was signed into law, establishing new clean energy, clean air, and GHG reduction goals for 2030 and beyond. SB 350 codifies Governor Brown's clean energy goals to increase California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030, and it is part of California's overall strategy to address climate change (CEC 2017b). SB 350 enhances the state's ability to meet its long-term climate goal of reducing GHG emissions to 40 percent of 1990 levels by 2030 and 80 percent below 1990 levels by 2050 (CEC 2017b).

California Code of Regulations, Energy Efficiency Standards

Energy consumption of new buildings and structures in California is regulated by State Building Energy Efficiency Standards contained in the CCR, Title 24, Part 2, Chapter 13. Title 24 applies to all new construction and regulates energy consumed for heating, cooling, ventilation, water heating, and lighting. The 2016 Building Energy Efficiency Standards have improved efficiency requirements from previous codes, and the updated standards are expected to result in a statewide energy consumption reduction.

Effective January 1, 2011, the CALGreen Code became California's first green building standards code. It is formally known as the California Green Building Standards Code, Title 24, Part 11, of the CCR. The CALGreen Code establishes mandatory minimum green building standards and includes more stringent optional provisions known as Tier 1 and Tier 2. Cities and counties, at their discretion, may adopt Tier 1 or Tier 2 as mandatory or adopt and enforce other standards that are more stringent than the CALGreen Code. Placer County has adopted several modifications to both the residential and nonresidential CALGreen mandatory sections.

California Integrated Waste Management Act (1989)

AB 939 contains regulations affecting solid waste disposal in California. AB 939 requires that counties prepare integrated waste management plans to implement landfill diversion goals and prepare and adopt source reduction and recycling elements (SRREs). Each SRRE must establish a program for managing and reducing waste generated in that county.

Solid Waste Reuse and Recycling Access Act (1991)

AB 1327 requires jurisdictions to adopt ordinances requiring development projects to provide adequate storage area for the collection and removal of recyclable materials. Placer County adopted such an ordinance (Municipal Code Section 8.16.080).

California Building Standards Code (Title 24)

Where a local jurisdiction has not adopted a more stringent construction and demolition (C&D) ordinance, construction activities are required to implement Section 5.408 of the California Green Building Standards Code (CALGreen Code). Under Section 5.408, and in accordance with amendments to SB 1374 (2002), effective January 1, 2017, a minimum of 65 percent of nonhazardous C&D waste must be recycled and/or salvaged for reuse. Applicable projects are required to prepare and implement a construction waste management plan, which is submitted to the local jurisdiction before building permits are issued. Applicable projects include all newly constructed residential buildings or structures, existing residential buildings or structures with additions/alterations, all newly constructed nonresidential buildings or structures, existing nonresidential buildings with additions of 1,000 or more square feet, and existing nonresidential alterations when permit valuation or estimated construction cost of alteration is $200,000 or more. The Eastern Regional MRF accepts mixed and separated construction debris for recycling. Contractors may also separate and self-haul debris to a recycler of their choice. Tahoe Truckee Sierra Disposal, under contract with the County, provides debris box collection service to aid in the separation of recyclable debris.

Solid Waste Disposal Measurement Act (2007)

SB 1016 amended portions of the California Integrated Waste Management Act to allow CalRecycle to use per capita disposal as an indicator in evaluating compliance with the requirements of AB 939. Jurisdictions track and report their per capita disposal rates to CalRecycle. Solid waste facilities are required to obtain a Solid Waste Facility Permit from the Placer County Local Enforcement Agency and obtain Waste Discharge Requirements from the California Regional Water Quality Control Board.

Mandatory Commercial Recycling Measure (2011)

AB 341 established a statewide recycling goal of 75 percent by 2020; the 50-percent disposal reduction mandate established under AB 939 (1989) still applies for cities and counties. This law also requires certain businesses to recycle. To comply with this requirement, businesses may separate their recyclables and self-haul them to a recycling facility, recycle on-site, or subscribe to a mixed waste process service that diverts recyclables. The Eastern Regional MRF receives and sorts commercial waste to recover recyclable materials

and accepts source-separated recyclables. Tahoe Truckee Sierra Disposal, under contract with the County, also provides commercial recycling collection for some material types.

Mandatory Commercial Organics Recycling (2014)

AB 1826 requires certain businesses, beginning in 2016, to recycle their organic waste. The law also requires jurisdictions to develop and implement an organics recycling program. To comply with this requirement, businesses may separate their organic waste and self-haul it to an organics recycling facility, recycle on-site, or subscribe to a service that recycles organic waste. The Eastern Regional MRF receives and sorts commercial waste to recover organic materials, such as green waste and wood waste, and accepts separated green waste and wood waste. Tahoe Truckee Sierra Disposal, under contract with the County, offers food waste recycling collection.

Short-Lived Climate Pollutants: Organic Waste Methane Emissions Reductions (2016)

SB 1383 builds on California's commitment to reduce GHG emissions and air pollution statewide and, as it pertains to CalRecycle, establishes targets to achieve a 50-percent statewide reduction (from the 2014 level) by 2020 in the amount of organic waste disposed of and a 75-percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of the edible food currently disposed of will be recovered for human consumption by 2025.

Local

Placer County General Plan

The *Placer County General Plan* (Placer County 2013) contains a Public Facilities and Services Element that addresses water supply, solid waste services, and a Housing Element that addresses energy efficiency. The following policies are applicable to the action alternatives:

Public Facilities and Services Element

- **Policy 4.B.1.** The County shall require that new development pay its fair share of the cost of all existing facilities it uses based on the demand for these facilities attributable to the new development; exceptions may be made when new development generates significant public benefits (e.g., low income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues.

- **Policy 4.B.2.** The County shall require that new development pay the cost of upgrading existing public facilities or construction of new facilities that are needed to serve the new development; exceptions may be made when new development generates significant public benefits (e.g., low income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues.

- **Policy 4.C.1.** The County shall require proponents of new development to demonstrate the availability of a long-term, reliable water supply. The County shall require written certification from the service provider that either existing services are available or needed improvements will be made prior to occupancy. Where the County will approve groundwater as the domestic water source, test wells, appropriate testing, and/or report(s) from qualified professionals will be required substantiating the long-term availability of suitable groundwater.

- **Policy 4 G.2.** The County shall promote maximum use of solid waste source reduction, recycling, composting, and environmentally-safe transformation of wastes.

- **Policy 4.G.7.** The County shall require that all new development complies with applicable provisions of the Placer County Integrated Waste Management Plan.

Housing Element

- **Policy G-2**. The County shall promote land use patterns that encourage energy efficiency, to the extent feasible, and encourage efficient energy use in new development, including but not limited to access to non-auto transit, use of traffic demand management, and water-efficient landscaping.

Squaw Valley General Plan and Land Use Ordinance

The following policies provided in the *Squaw Valley General Plan and Land Use Ordinance* (Placer County 2006) are applicable to the alternatives:

- **Policy 145.10.** All developments must be served with adequate water in accordance with requirements of the Placer County Health Department. Fire flow requirements as determined by the Squaw Valley Fire Department and the Uniform Fire Code must be provided without reducing the level of service to existing development.

Olympic Valley Groundwater Management Plan

SVPSD led the development of the Management Plan in accordance with AB 3030 and SB 1938 under the CWC (HydroMetrics 2007). SVPSD is the only entity in the Olympic Valley that qualifies as a local agency as defined in CWC Section 10752 for the purpose of preparing a groundwater management plan. The Management Plan was developed in cooperation with a stakeholder group representing local groundwater users, environmental organizations, regulatory agencies, and the public. In addition to information about the existing groundwater conditions, the Management Plan includes specific basin management goals and objectives; identifies projects, programs, and policies to guide management of the basin resources; and outlines expected agency coordination under implementation. The Management Plan does not allow or impose restrictions or limitations on or by any one user. The management goals, objectives, and activities are to be accomplished through cooperative management by all the basin users.

The Management Plan provides a framework under which all the groundwater users in Olympic Valley move toward a commonly held set of goals and specific basin management objectives.

As discussed above, the Olympic Valley Groundwater Basin has been identified as a "low-priority" basin under the SGMA, and as a result, preparation of a groundwater sustainability plan is not required for this basin. Therefore, it is assumed that for the foreseeable future, the Management Plan will continue to be the guiding document for the Olympic Valley Groundwater Basin. As stated above, no groundwater basin has been identified for the Alpine Meadows area and no similar Management Plan has been prepared for this area.

Alpine Meadows General Plan

The *Alpine Meadows General Plan* (Placer County 1968) does not contain any goals or policies related to water supply or energy efficiency.

4.8.2 Analysis Methods

4.8.2.1 METHODS AND ASSUMPTIONS

Project impacts on water supply, energy demand, and generation of solid waste were identified by considering if and how existing levels of service would be changed by project implementation. Evaluation of potential impacts on water supply and energy demand was based on a review of documents pertaining to the project site and surrounding area. The impacts on solid waste was based on review of available landfill capacity. It is assumed that the action alternatives would be implemented in compliance with all applicable state and local laws.

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.

4.8.2.2 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 the provision of public utilities on the project site. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Discussion of supply and demand for water supply, sewer/wastewater services, and electricity/gas/energy services under existing and proposed conditions **(Impacts 4.8-1 and 4.8-2 and Section 4.8.2.3, "Issues Not Discussed Further").**
- Qualitative discussion of energy use associated with the proposed project **(Impact 4.8-2).**

CEQA Criteria

Based on the Placer County CEQA checklist, Appendix G of the State CEQA Guidelines, and utilities policies and standards in the *Placer County General Plan*, implementing any of the alternatives would result in a significant impact related to utilities if it would:

- exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board **(Section 4.8.2.3, "Issues Not Discussed Further")**;
- require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects **(Section 4.8.2.3, "Issues Not Discussed Further")**;
- require or result in the construction of new on-site sewage systems **(Section 4.8.2.3, "Issues Not Discussed Further");**
- require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects **(Section 4.8.2.3, "Issues Not Discussed Further," and Impact 4.17-5 in Section 4.17, "Hydrology and Water Quality")**;
- have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed **(Impact 4.8-1)**;

- result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's project demand, in addition to the provider's existing commitments **(Section 4.8.2.3, "Issues Not Discussed Further")**;
- require sewer service that may not be available by the area's waste water treatment provider **(Section 4.8.2.3, "Issues Not Discussed Further")**;
- be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs **(Impact 4.8-3)**;
- comply with federal, state, and local statutes and regulations related to solid waste **(Impact 4.8-3)**; or
- result in inefficient and wasteful consumption of energy during construction or operations or require new or expanded energy facilities that could cause significant environmental effects **(Impact 4.8-2).**

4.8.2.3 ISSUES NOT DISCUSSED FURTHER

As discussed in the initial study prepared for the project (Appendix A), no septic systems or restrooms exist on the project site, and none would be constructed for the gondola project.

Additional wastewater generation may be attributed to the project because of increased visitation (approximately 36,856 visitor-days per year) during winter months when the project is operational, but, as discussed below, the project would not alter the wastewater capacity of Squaw Valley or Alpine Meadows. The Tahoe-Truckee Sanitation Agency wastewater treatment facility serves both Squaw Valley and Alpine Meadows, so total visitation (including visitation to both resorts) was used to estimate wastewater generation for the project. To determine peak wastewater generation, the annual visitor-days were divided by the 5-month winter season, which resulted in approximately 7,371 additional visitor-days per month, or approximately 246 visitors per day for both resorts combined. Because visitation peaks during weekends and holidays, the daily visitation rate (i.e., 246 visitors per day) was tripled to get a conservative estimate of increased visitation on peak days that would not underestimate possible visitation. Therefore, to calculate the peak-day wastewater generation, a maximum of 738 visitors per day were assumed. Note that an estimate of daily increases in visitation is also provided in Section 4.7, "Transportation and Circulation." A more detailed methodology is used in Section 4.7 geared toward identifying visitation during specific peak days where traffic modelling is conducted. Although a much simpler methodology is used here for the estimate of wastewater capacity, the estimate of a maximum of 738 visitors per day identified here is conservative, and exceeds the daily weekend visitation estimated for the traffic analysis (see Table 4.7-8).

To continue the conservative approach to the analysis, it was assumed that all water used by visitors would become wastewater. Therefore, peak wastewater generation would be equal to peak water demand. Assuming a maximum of 5 gallons of water per day per visitor, the peak wastewater generation would be 3,690 gallons per day (0.003690 million gallons per day). Based on the EIR prepared for the *Village at Squaw Valley Specific Plan*, the remaining wastewater treatment capacity at the Tahoe-Truckee Sanitation Agency wastewater treatment facility, which serves both Squaw Valley and Alpine Meadows, is 1.07 million gallons per day (Placer County 2015). Therefore, adequate capacity exists to serve the project. The project would not exceed wastewater treatment requirements or require new sewer service. These issues are not discussed further in this Final EIS/EIR.

The adequacy of the storm drainage system relative to capacity and protection of water quality is evaluated in Section 4.17, "Hydrology and Water Quality." The physical environmental effects of installing the storm drainage system are evaluated as appropriate throughout this Final EIS/EIR. Storm drainage is not discussed further in this section.

4.8.3 Direct and Indirect Environmental Consequences

4.8.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.8-1 (Alt. 1): Water Supply Impacts

Alternative 1 - No Action Alternative would result in a continuation of existing conditions. There would be no construction or operation of the proposed gondola and no increases in visitation attributable to the action alternatives would occur. Under this alternative, there would be no direct or indirect effects on water supply in the project vicinity. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 - No Action Alternative, the Tahoe National Forest (TNF) and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. No increases in visitation related to the action alternatives would occur. Therefore, there would be no changes to existing water supplies and no direct or indirect effects on demand for water supply.

NEPA Effects Conclusion
With no direct or indirect effects on water supply, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no direct or indirect effects on water supply, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.8-2 (Alt. 1): Inefficient, Wasteful, and Unnecessary Consumption of Energy Resources

Alternative 1- No Action Alternative would result in a continuation of existing conditions. There would be no construction or operation of the proposed gondola and no increases in visitation attributable to the action alternatives. Under this alternative, there would be no direct or indirect increase in energy consumption, and continuation of existing energy usage would not be considered inefficient, wasteful, or unnecessary. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 - No Action Alternative, TNF and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, and there would be no energy consumed for construction of the action alternatives and no energy consumed by operation of the gondola. In addition, there would be no indirect increases in energy usage related to increases in visitation related to the action alternatives. Therefore, there would be no changes to existing energy usage that would be considered inefficient, wasteful, or unnecessary.

NEPA Effects Conclusion
With no direct or indirect effects on energy usage, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no direct or indirect effects on energy usage, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.8-3 (Alt. 1): Increased Generation of Solid Waste

Alternative 1 - No Action Alternative would result in a continuation of existing conditions. There would be no construction or operation of the proposed gondola and no increases in visitation attributable to the action alternatives. Under this alternative, there would be no direct or indirect increase in the generation of solid waste. Using the CEQA criteria, there would be **no effect**. 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.

Under the No Action Alternative, TNF and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, and there would be no solid waste generated during construction of the action alternatives and no solid waste generated by an increase in visitors. In addition, there would be no indirect increases in solid waste generation related to increases in visitation related to the action alternatives. Therefore, there would be no changes to existing solid waste generation that would exceed the capacity of any landfills.

NEPA Effects Conclusion

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

With no direct or indirect effects on solid waste generation, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.8.3.2 ALTERNATIVE 2

Impact 4.8-1 (Alt. 2): Water Supply Impacts

Although Alternative 2 is not expected to directly increase water demand, construction of this alternative could result in increased resort visitation during winter months. The indirect water demand related to increases in visitation is expected to be approximately 184,280 gallons per year (0.57 afy), which could be adequately met by existing water supplies at Squaw Valley and Alpine Meadows. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to water supply because there would be sufficient water supply to support projected demand. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, the effect on water supply would be **less than significant** because there would be sufficient water supplies available to serve the project from existing entitlements and resources. There are no applicable RPMs that would reduce this impact.

Alternative 2 would not directly increase water demand; however, construction of the gondola could result in an increase in visitation to Squaw Valley and Alpine Meadows. It is anticipated that the alternative could result in an increase of up to approximately 36,856 visitor-days per year. This increase in visitor-days would occur during the approximately 5-month winter season when the gondola would be operating and would result in both daytime and overnight visits. As described above, water for Squaw Valley is supplied by groundwater, and water for Alpine Meadows is supplied by a combination of groundwater and springs. Therefore, because water supply sources are different for Squaw Valley and Alpine Meadows, the increased water demand resulting from increased visitation generated under Alternative 2 would be divided between Squaw Valley and Alpine Meadows. However, to provide a highly conservative estimate of water demand effects, this analysis evaluates a condition in which all the increased water demand is attributed to each ski area (i.e., 246 visitors at Squaw Valley and 246 visitors at Alpine Meadows). To provide a conservative estimate of indirect increases in water demand, it is assumed that 100 percent of the additional visitors would be day skiers because water demand for this portion of visitors was not previously addressed by the *Village at Squaw Valley Specific Plan*. Overnight visitors would use existing lodging or lodging proposed as

part of the Village at Squaw Valley. No new lodging is proposed under Alternative 2. Therefore, if new visitors were assumed to be overnight guests, water demand for those visitors would be included in the water supply assessment previously prepared for the *Village at Squaw Valley Specific Plan* (Farr West Engineering et al. 2014, 2015). It is assumed that daytime visitors would use a maximum of 5 gallons of water per day per visitor. Thus, indirect water demand for Alternative 2 is expected to be approximately 184,280 gallons per year (0.57 afy).

Projected water supply capacity modeled for Squaw Valley ranges from 950 afy in 2020 to 1,205 afy in 2040 (Farr West Engineering et al. 2014). If it was conservatively assumed that all 0.57 afy of increased demand were applied to Squaw Valley, sufficient water supplies would be available to serve Alternative 2 because it would result in a very minor increase (0.06 percent) in water demand compared to the 950-afy water supply capacity. Therefore, an increase in demand of 0.57 afy would not result in a substantial increase in water demand for Squaw Valley. Projected water supply for Alpine Meadows is approximately 915 afy. Sufficient water supplies would be available to serve Alternative 2 because it would result in a very minor increase (0.06 percent) in water demand compared to the available water supply. An increase in demand of 0.57 afy would not result in a substantial increase in water demand for Alpine Meadows.

Therefore, there would be sufficient water supply to provide for increases in water demand that may occur as a result of Alternative 2.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to water supply resulting from Alternative 2 because there would be sufficient water supply to support projected demand. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Alternative 2 would generate demand for water supply because proposed facilities could indirectly increase the number of visitors to the project site. However, water demand would not exceed available supplies. Under CEQA, and using the CEQA criteria, the effect on water supply would be **less than significant** because there would be sufficient water supplies available to serve the project from existing entitlements and resources. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.8-2 (Alt. 2): Inefficient, Wasteful, and Unnecessary Consumption of Energy Resources

Construction of Alternative 2 would consume energy in the form of fuel for construction vehicles, but this energy consumption would be temporary. Operation of the alternative would result in an increase in electricity usage for operation of the gondola and indirect increases in fuel for visitor vehicle trips. However, Alternative 2 would use a gondola motor properly sized to the project and electricity generated from the gondola at the mid-stations. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to energy usage would be **minorly adverse** because although the alternative would not result in the inefficient or wasteful use of energy, it would increase energy usage. Implementation of RPMs AQ-9 and AQ-18 would mitigate this effect. Under CEQA, and using the CEQA criteria, impacts related to energy usage would be **less than significant**. In addition, RPMs AQ-9 and AQ-18 would reduce fuel usage during construction. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Appendix F of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a project, and CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). However, neither the law nor the State CEQA Guidelines establish thresholds that define *wasteful*, *inefficient*, or *unnecessary* use. Compliance with California's Title 24 Energy Efficiency Standards would generally promote energy efficiency

of structures during operation. However, compliance with building codes does not adequately address all potential energy impacts during project construction and operation. For example, energy would be required to transport people to and from the project site.

Increases in energy consumption have the potential to occur during construction and operation of Alternative 2. Construction of the alternative would require use of energy, particularly to fuel vehicles and construction equipment. However, energy usage associated with construction would be temporary, and vehicle trips would be a maximum of 70 worker trips per day (35 workers x 2) and several deliveries per day for materials. Therefore, the energy expenditure associated with construction of Alternative 2 is expected to be minor and temporary, and it would be the minimum necessary to successfully implement this alternative. In addition, implementation of two RPMs intended to protect air quality would also benefit energy efficiency during construction. RPM AQ-8 would result in the use of construction equipment with more modern engines, which would be more fuel efficient than older engines. RPM AQ-18 directs the contractor to minimize idling time to a maximum of 5 minutes for all diesel-powered equipment, reducing fuel consumption.

As described in Chapter 2, "Description of Alternatives," both base terminals for the gondola would be powered by new connections to electrical service. The motors at the base terminals would be the minimum size necessary to safely and efficiently operate the gondola. Electricity to both mid-stations would be supplied via a "line generator" that uses the moving lift to generate the power needed at the stations. Electrical demand would increase primarily during winter months (November through March) when the gondola is operational; however, a limited amount of power would be needed to support intermittent maintenance and testing during summer. The electrical demand for operation of the gondola under Alternative 2 is estimated at 7,164 kWh per day during the operating season. The length of the operating season would vary from year to year based on snowfall. The gondola would also operate for approximately 100 hours for maintenance during the non-operating season. This would result in approximately 71,600 kWh for the entire non-operating season.

In January 2018, Squaw Valley Ski Holdings (SVSH) signed a memorandum of understanding (MOU) with Liberty Utilities, the local electrical utility that serves Squaw Valley and Alpine Meadows, to provide 100% of the electricity to Squaw Valley and Alpine Meadows from renewable sources. The intent of the MOU is to achieve this objective by December 1, 2018. However, authorizations from the California Public Utilities Commission (CPUC) and other regulatory and technical steps must be completed before the goal of 100% renewable electricity deliveries can be reached. Therefore, at the time of writing this Final EIS/EIR, the MOU's target date of December 1, 2018 had not been achieved. However, if the objective of the MOU is ultimately achieved, the gondola would be powered by electricity generated from 100% renewable sources.

In addition, indirect increases in energy consumption could result from increases in the number of daily vehicle trips and fuel usage associated with increases in visitation under Alternative 2. Although implementing the alternative could result in an estimated increase of approximately 36,700 visitor-days per year, it would provide direct access to existing ski terrain and resort amenities, providing an alternative to the use of the shuttle bus and other vehicles that use fuel to move people between ski areas. The existing shuttle bus system would not operate while the gondola is in operation, reducing fuel use by these vehicles.

According to Appendix F of the State CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall per capita energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources. Alternative 2 would reduce fuel usage during construction, use gondola motors properly sized to the project, and generate electricity from the gondola at the mid-stations. Therefore, although Alternative 2 would increase energy demand as a result of project development, implementing the alternative would not result in the inefficient or wasteful use of energy.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to energy usage resulting from Alternative 2 would be **minorly adverse** because although the alternative would not result in the inefficient or wasteful use of energy, it would increase energy usage. These effects would be mitigated through implementation of RPMs AQ-8 and AQ-18.

CEQA Determination of Effects

Alternative 2 would increase demand for energy usage. However, the increase in energy usage would not result in the inefficient or wasteful use of energy. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-8 and AQ-18 would reduce fuel usage during construction. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 AQ-9 and AQ-18 as mitigation measures reduces fuel consumption during construction, but these RPMs are not necessary to reduce a significant effect.

Impact 4.8-3 (Alt. 2): Increased Generation of Solid Waste

Alternative 2 would result in an increase in solid waste generation during construction. Operation of the alternative would generate approximately 0.06 ton per day of solid waste related to increases in visitation. The solid waste generated by construction and operation would not exceed the permitted capacity of the Lockwood Regional Landfill or the maximum throughput for the Eastern Regional MRF, which would receive solid waste from the project site. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact. 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.

Solid waste service would continue with the existing provider, Tahoe Truckee Sierra Disposal. Project construction activities would temporarily generate solid waste, including excess construction materials and material removed during site clearing. Most of the material removed during construction would be vegetation and trees, which would not be transported to the landfill. The remaining material would be transported to the Placer County Eastern Regional MRF in Truckee, where it would be sorted in an effort to meet California's mandatory solid waste diversion requirements. Waste materials would then be transported to the Lockwood Regional Landfill. Eastern Regional MRF has a maximum permitted throughput of 800 tons of material per day (Placer County Environmental Utilities 2018). The Lockwood Regional Landfill has a total capacity of 302.5 million cubic yards. As of 2010, the landfill had a remaining capacity of 269.7 million cubic yards (NDEP 2017), or 89% of its total capacity. Approximately 24 million cubic yards of material were placed in the landfill between 1994 and 2010 (NDEP 2017).

Solid waste related to operation of the project would primarily be from increases in visitation. CalRecycle does not have published waste generation rates for ski resorts; however, waste generation for similar recreation uses is 0.5 pound per visitor per day (CalRecycle 2016). Using this solid waste generation rate, the estimated increase of 36,856 visitor-days per year would generate 18,428 pounds of solid waste each year (9.21 tons per year), or 122.8 pounds of solid waste per day (0.06 ton per day). The 0.06 ton of solid waste per day would be very small compared to the permitted throughput of the Eastern Regional MRF (800 tons per day). In addition, assuming approximately 1.3 tons per cubic yard, the project would result in approximately 7.08 cubic yards of solid waste per year, which would not be a substantial contribution to the remaining capacity (269.7 million cubic yards) of the Lockwood Regional Landfill.

Solid waste generated by project construction would be temporary, and solid waste generated by operation of the project would not cause the landfill to exceed its permitted capacity. The project would also comply with all federal, state, and local statutes and regulations related to solid waste reduction and recycling.

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
Alternative 2 would increase the generation of solid waste during construction. However, it would not result in any landfills exceeding their capacity. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.8.3.3 ALTERNATIVE 3

Impact 4.8-1 (Alt. 3): Water Supply Impacts

Although Alternative 3 is not expected to directly increase water demand, operation of the alternative could result in increased resort visitation during winter months. The indirect water demand related to increases in visitation is expected to be approximately 184,280 gallons per year (0.57 afy), which could be adequately met by existing water supplies at Squaw Valley and Alpine Meadows. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to water supply because there would be sufficient water supply to support projected demand. Under CEQA, and using the CEQA criteria, the effect on water supply would be **less than significant** because there would be sufficient water supplies available to serve the project from existing entitlements and resources. There are no applicable RPMs that would reduce this impact.

This impact would be the same as described for Alternative 2 because the projected increase in indirect water demand is the same. There would be sufficient water supply to provide for increases in water demand that may occur as a result of Alternative 3.

NEPA Effects Conclusion
Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to water supply resulting from Alternative 3 because there is sufficient water supply to support projected demand. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects
Although Alternative 3 would potentially increase water demand, this increase could be adequately met with existing water supplies at Squaw Valley and Alpine Meadows. Under CEQA, and using the CEQA criteria, the effect on water supply would be **less than significant** because there would be sufficient water supplies available to serve the project from existing entitlements and resources. This impact would not differ materially from that under Alternative 2 because both alternatives would generate the same, or very similar, increases in demand for water supply. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.8-2 (Alt. 3): Inefficient, Wasteful, and Unnecessary Consumption of Energy Resources

Construction of Alternative 3 would consume energy in the form of fuel for construction vehicles, but this energy consumption would be temporary. Operation of the alternative would result in an increase in electricity usage for operation of the gondola and indirect increases in fuel for visitor vehicle trips. However, Alternative 3 would use a gondola motor properly sized to the project and electricity generated from the gondola at one of the mid-stations. Under NEPA, and considering the NEPA indicators, absent of RPMs and/or mitigation, direct and indirect effects related to energy usage would be **minorly adverse** because although the alternative would not result in the inefficient or wasteful use of energy, it would increase energy usage. Implementation of RPMs AQ-9 and AQ-18 would mitigate this effect. Under CEQA, using the CEQA criteria, the impact related to energy usage would be **less than significant**. In addition, RPMs AQ-9 and AQ-18 would reduce fuel usage during construction. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

This impact would be similar to the impact described for Alternative 2 because both alternatives would result in similar increases in energy usage. For Alternative 3, the Squaw Valley mid-station would use a line generator similar to that planned for the mid-stations under Alternative 2; however, the Alpine Meadows mid-station would receive power from electrical infrastructure that serves the Caldwell property. Peak electrical demand for operation of Alternative 3 is estimated at 7,164 kWh per day, which is the same electrical demand estimated for Alternative 2. All other energy usage for Alternative 3 is expected to be similar to that under Alternative 2.

The same RPMs identified above for Alternative 2 would apply to Alternative 3. RPMs AQ-8 and AQ-18 would be equally effective at improving energy efficiency during construction.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent of RPMs and/or mitigation, direct and indirect effects related to energy usage resulting from Alternative 3 would be **minorly adverse** because although Alternative 3 would not result in the inefficient or wasteful use of energy, it would increase energy usage. These effects would be mitigated through implementation of RPMs AQ-8 and AQ-18. This impact under Alternative 3 would be the same as under Alternative 2.

CEQA Determination of Effects

Alternative 3 would increase energy usage; however, it would not result in inefficient or wasteful use of energy. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-8 and AQ-18 would reduce fuel usage during construction. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 AQ-8 and AQ-18 as mitigation measures reduces fuel consumption during construction, but these RPMs are not necessary to reduce a significant effect.

Impact 4.8-3 (Alt. 3): Increased Generation of Solid Waste

Alternative 3 would result in an increase in solid waste generation during construction. Operation of the alternative would generate approximately 0.06 ton per day of solid waste related to increases in visitation. The solid waste generated by construction and operation would not exceed the permitted capacity of the Lockwood Regional Landfill or the maximum throughput for the Eastern Regional MRF, which would receive solid waste from the project site. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact. 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.

This impact would be the same as described for Alternative 2 because both alternatives would generate the same amount of solid waste during construction and would not increase solid waste during operation.

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
Alternative 3 would increase solid waste generation during construction; however, it would not result in any landfills exceeding their capacity. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact. This impact would be the same as under Alternative 2 because neither alternative would result in any landfills exceeding their capacity.

Mitigation Measures

No mitigation measures are required.

4.8.3.4 ALTERNATIVE 4

Impact 4.8-1 (Alt. 4): Water Supply Impacts

Although Alternative 4 is not expected to directly increase water demand, operation of the alternative could result in increased resort visitation during winter months. The indirect water demand related to increases in visitation is expected to be approximately 184,820 gallons (0.57 afy), which could be adequately met by existing water supplies at Squaw Valley and Alpine Meadows. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to water supply because there would be sufficient water supply to support projected demand. Under CEQA, and using the CEQA criteria, the effect on water supply would be **less than significant** because there would be sufficient water supplies available to serve the project from existing entitlements and resources. There are no applicable RPMs that would reduce this impact.

This impact would be the same as described for Alternative 2 because the projected increase in indirect water demand is the same. There would be sufficient water supply to provide for increases in water demand that may occur as a result of Alternative 4.

NEPA Effects Conclusion
Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to water supply resulting from Alternative 4 because there would be sufficient water supply to support projected demand. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects
Although Alternative 4 would potentially increase water demand, this increase could be adequately met with existing water supplies at Squaw Valley and Alpine Meadows. Under CEQA, and using the CEQA criteria, the effect on water supply would be **less than significant** because there would be sufficient water supplies available to serve the project from existing entitlements and resources. This impact would not differ materially from that under Alternative 2 because both alternatives would generate the same, or very similar, increases in demand for water supply. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.8-2 (Alt. 4): Inefficient, Wasteful, and Unnecessary Consumption of Energy Resources

Construction of Alternative 4 would consume energy in the form of fuel for construction vehicles, but this energy consumption would be temporary. Operation of the alternative would result in an increase in electricity usage for operation of the gondola and indirect increases in fuel for visitor vehicle trips. However, Alternative 4 would use a gondola motor properly sized to the project. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to energy usage would be **minorly adverse** because although the alternative would not result in the inefficient or wasteful use of energy, it would increase energy usage. Implementation of RPMs AQ-8 and AQ-18 would mitigate this effect. Under CEQA, using the CEQA criteria, impacts related to energy usage would be **less than significant**. In addition, RPMs AQ-8 and AQ-18 would reduce fuel usage during construction. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

This impact would be similar to the impact described for Alternative 2 because both alternatives would result in similar increases in energy usage. However, although both alternatives would require power to both base terminals and mid-stations, Alternative 4, unlike Alternative 2, would not use line generators for the mid-stations. Peak electrical demand for operation of Alternative 4 is estimated at 7,164 kWh per day, which is the same electrical demand estimated for Alternative 2. All other energy usage for Alternative 4 is expected to be similar to that under Alternative 2.

The same RPMs identified above for Alternative 2 would apply to Alternative 4. RPMs AQ-8 and AQ-18 would be equally effective at improving energy efficiency during construction.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to energy usage resulting from Alternative 4 would be **minorly adverse** because although Alternative 4 would not result in the inefficient or wasteful use of energy, it would increase energy usage. These effects would be mitigated through implementation of RPMs AQ-8 and AQ-18. This effect under Alternative 4 would be the same as under Alternative 2.

CEQA Determination of Effects

Alternative 4 would increase energy usage; however, it would not result in inefficient or wasteful use of energy. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-8 and AQ-18 would reduce fuel usage during construction. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 AQ-8 and AQ-18 as mitigation measures reduces fuel consumption during construction, but these RPMs are not necessary to reduce a significant effect.

Impact 4.8-3 (Alt. 4): Increased Generation of Solid Waste

Alternative 4 would result in an increase in solid waste generation during construction. Operation of the alternative would generate approximately 0.06 ton per day of solid waste related to increases in visitation. The solid waste generated by construction and operation would not exceed the permitted capacity of the Lockwood Regional Landfill or the maximum throughput for the Eastern Regional MRF, which would receive solid waste from the project site. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact. 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.

This impact would be the same as described for Alternative 2 because both alternatives would generate the same amount of solid waste during construction and would not increase solid waste during operation.

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

Alternative 4 would increase solid waste generation during construction; however, it would not result in any landfills exceeding their capacity. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact. This impact would be the same as under Alternative 2 because neither alternative would result in any landfills exceeding their capacity.

Mitigation Measures

No mitigation measures are required.

4.8.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.8-1 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Addressing the action alternatives, for Impact 4.8-1, there would be no effects related to water supply for all NEPA indicators, and effects would be less than significant for CEQA criteria for all three action alternatives. For this impact, water demand would be the same across all the action alternatives, and there would be no meaningful difference in effects across the three action alternatives.

For Impact 4.8-2, effects related to energy efficiency would be minorly adverse for all NEPA indicators, and effects would be less than significant for all CEQA criteria for all three action alternatives. There would be no difference in effects across the action alternatives because energy demand among the action alternatives would be similar.

For Impact 4.8-3, effects related to generation of solid waste would be less than significant under CEQA for all three action alternatives. There would be no difference in effects across the action alternatives because solid waste generation among the action alternatives would be similar. The analysis provided for Impact 4.8-3 is specific to a CEQA criterion and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided.

Table 4.8-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.8-1: Water Supply Impacts	Discussion of supply and demand for water supply, sewer/wastewater services, and electricity/gas/energy services under existing and proposed conditions	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Same as for Alternative 2	No effect under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Same as for Alternative 2	No effect under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.8-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.8-2: Inefficient, Wasteful, and Unnecessary Consumption of Energy Resources	Discussion of supply and demand for water supply, sewer/wastewater services, and electricity/gas/energy services under existing and proposed conditions	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Similar to Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Qualitative discussion of energy use associated with the proposed project	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Similar to Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Result in inefficient and wasteful consumption of energy during construction or operations or require new or expanded energy facilities that could cause significant environmental effects	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Similar to Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
4.8-3: Increased Generation of Solid Waste	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs	No effect	Less than significant under CEQA	Less than significant under CEQA Same as for Alternative 2	Less than significant under CEQA Same as for Alternatives 2 and 3
	Comply with federal, state, and local statutes and regulations related to solid waste	No effect	Less than significant under CEQA	Less than significant under CEQA Same as for Alternative 2	Less than significant under CEQA Same as for Alternatives 2 and 3

4.8.4 Cumulative Effects

4.8.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope for the cumulative effects analysis of water supply includes the groundwater aquifer of Squaw Valley and Alpine Meadows and the local utility service areas for energy usage and solid waste generation. The temporal scope includes the construction period (6–8 months) as well as the operational period of the gondola. 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 timeframe is also consistent with the timeframe considered for the water supply assessment previously prepared for the Village at Squaw Valley Specific Plan (Farr West Engineering et al. 2014, 2015).

Any present or reasonably foreseeable future projects in the project vicinity that have the potential to create impacts on utilities are listed below. Potential impacts associated with these projects include increases in water demand, energy usage, or solid waste generation caused by construction or operation.

The following present and reasonably foreseeable future projects could potentially affect one or more utilities in a cumulative manner with the proposed gondola.

Project	Potential Impacts
Alpine Meadows Hot Wheels Lift Replacement	Solid waste generation
Timberline Twister	Increased utility use and solid waste generation
Squaw Valley Red Dog Lift Replacement	Solid waste generation
Alpine Meadows Master Development Plan	Increased utility use and solid waste generation
Alpine Sierra subdivision	Increased utility use and solid waste generation
White Wolf project	Increased utility use and solid waste generation
General development in Olympic Valley	Increased utility use and solid waste generation
General development in Alpine Meadows	Increased utility use and solid waste generation
State Route 89/Fanny Bridge Improvement Project	Solid waste generation

4.8.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct or indirect impacts and thus by definition no contribution to cumulative impacts related to utilities.

Alternative 2

Various future projects that propose new residential and commercial development would increase demand for water supply and energy and generate solid waste, including those projects listed above. Each new project would be reviewed by decision makers to ensure that adequate water supply and utility capacity are available to serve the project before it is approved and that energy usage is minimized. Utility providers would continue to employ programs and mechanisms to support provision of these services to new development. Infrastructure upgrades necessary to supply water and electricity to existing and future users are planned by the County and utility providers, and new projects would be required to reduce energy usage to the extent possible. Local jurisdictions are also required to reduce solid waste to meet California's mandatory solid waste diversion requirements. Overall, the cumulative condition for water supply, utilities, and solid waste impacts would not be adverse. As described in the discussions of Impacts 4.8-1, 4.8-2, and 4.8-3, above, Alternative 2 would not result in significant impacts related to water supply; inefficient, wasteful, and unnecessary consumption of energy resources; or increased generation of solid waste, because the demands of the project would be small in comparison to available capacity, and the project would not result in inefficient, wasteful, and unnecessary consumption of energy resources. In addition, as stated in the discussion of Impact 4.8-3 (Alt. 2), as of 2010 the Lockwood Regional Landfill had a remaining capacity of 269.7 million cubic yards (NDEP 2017). Approximately 24 million cubic yards of material were placed in the landfill between 1994 and 2010 (NDEP 2017), resulting in an average annual input of 1.5 million cubic yards per a year. Even if this rate of material entering the landfill were doubled, the landfill would have over 75-years of capacity remaining to accommodate any future cumulative increase in demand. For water supply, the water supply assessment previously prepared for the Village at Squaw Valley Specific Plan (Farr West Engineering et al. 2014, 2015) found sufficient groundwater available to support 20-years of anticipated cumulative development in Olympic Valley. Given these conditions, Alternative 2 **would not make a considerable contribution** to a significant cumulative impact on water supply, utilities, or solid waste.

Alternatives 3 and 4

Alternatives 3 and 4 would have the same cumulative effects related to water supply, utilities, and solid waste as Alternative 2 because each would involve the same projected increase in water demand, similar increases in energy usage, and similar amounts of solid waste generation during construction. There is no meaningful difference in effects across the three action alternatives.

4.9 NOISE

This section includes definitions of common noise descriptions; descriptions of applicable noise regulations, acoustic fundamentals, and existing ambient noise conditions; and an analysis of potential short- and long-term noise impacts associated with implementation of the alternatives.

4.9.1 Affected Environment

4.9.1.1 COMMON NOISE DESCRIPTORS

Before discussing the noise setting for the project, background information on sound, noise, vibration, and common noise descriptors is needed to provide context and a better understanding of the technical terms and regulations referenced throughout this section. The noise descriptors referenced or used in this section are defined as follows (Caltrans 2009):

- Decibel (dB): a sound level expressed in decibels which is the logarithmic ratio of two like-pressure quantities, with one pressure quantity being a reference sound pressure of 20 micropascals.
- A-weighted decibel (dBA): the frequency-response adjustment of a sound level meter that conditions the output signal to approximate human hearing response. All noise levels in this analysis are A-weighted unless otherwise noted.
- C-weighted decibel (dBC): the frequency-response adjustment of a sound level meter that conditions the output signal to account for the frequency sensitivity of the human ear at very high noise levels.
- Equivalent continuous sound level (L_{eq}): the equivalent steady-state sound level in a stated period that would contain the same acoustic energy as the time-varying sound level during the same period (i.e., average noise level).
- Maximum sound level (L_{max}): the highest instantaneous noise level during a specified period.
- Day-night sound level (L_{dn}): the 24-hour L_{eq} with a 10-dBA penalty applied to noise events during the hours from 10 p.m. to 7 a.m., which accounts for a typically quieter background and the time typically reserved for sleeping.
- Community noise equivalent level (L_{dn}/CNEL): similar to L_{dn}, L_{dn}/CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to sound levels occurring between 10 p.m. and 7 a.m. and a 5-dB penalty applied to noise events occurring during evening hours between 7 p.m. and 10 p.m.

4.9.1.2 CHARACTERISTICS OF ENVIRONMENTAL NOISE

Sound, Noise, and Acoustics

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium to the human ear. In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this huge range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels.

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. That is, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than if only one of the sound sources was producing sound under the same conditions. For example, if one automobile generates 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 hertz (Hz) and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of dBA) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the A-scale sound levels of those sounds. Thus, noise levels are typically reported in terms of A-weighted decibels, or dBA. Table 4.9-1 describes typical A-weighted noise levels for various noise sources.

Table 4.9-1 Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 miles per hour	— 80 —	Food blender at 3 feet, garbage disposal at 3 feet
Noisy urban area, daytime, Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet, normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Large business office, dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library, bedroom at night
Quiet rural nighttime	— 20 —	Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2009

Human Response to Changes in Noise Levels

As discussed above, the doubling of sound energy results in a 3-dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured. Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000–8,000 Hz) range. With respect to how humans perceive and react to changes in noise levels, a 1-dBA increase is imperceptible, a 3-dBA increase is barely perceptible, a 6-dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Egan 2007).

In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness. Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound would generally be perceived as barely detectable.

4.9.1.3 VIBRATION

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery or transient in nature). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (FTA 2006, Caltrans 2013). PPV and RMS vibration velocity are normally described in inches per second (in/sec).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006). This is based on a reference value of 1 microinch per second.

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest for evaluating ground vibration is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Table 4.9-2 describes the general human response to different ground vibration-velocity levels.

Table 4.9-2 Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Notes: VdB = vibration decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude.

Source: FTA 2006

Blasting

When a blast is detonated to break up or disrupt rock, only a portion of the energy is consumed in breaking up and moving the rock. The remaining energy is dissipated in the form of seismic waves expanding rapidly outward from the blast, either through the ground (as vibration) or through the air (as air overpressure or airblast). While an explosives specialist can quite easily design a blast to stay well below any vibration or air overpressure levels that could cause damage, it is virtually impossible to design blasts that are not perceptible by people in the vicinity.

Noise from blasting or "blast noise" is primarily composed of sound pressures at frequencies below the threshold-of-hearing for humans (16–20 Hz). Therefore, blast noise is not typically measured with an A-weighted scale, but rather a linear scale expressed simply as dB. A-weighted scales will usually record significantly lower levels of noise than linear scaled noise levels. However, to evaluate human response to blast noise, reference noise levels in dBA can be used. Further, blast overpressure at higher frequencies can be startling in a quiet surrounding, but it will not normally cause damage unless it exceeds approximately 150 dB (linear, unweighted). Low frequency overpressures, although they might be below the range of human hearing, can impact structures, such as resulting in windows rattling. On hearing window rattling or similar overpressure generated noise, the average homeowner will not be able to distinguish between air overpressure or ground vibration as the source but will generally incorrectly attribute the effect to the latter (Caltrans 2013). For these reasons, ground vibration impact criteria (discussed above) is appropriate for evaluating disturbance to people occupying nearby structures and dBA is used to evaluate the human response to blasting noise. *Placer County General Plan* policies pertaining to blast overpressure (discussed below) regulate the design of the blast.

4.9.1.4 ENVIRONMENTAL SETTING

Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, schools, historic sites, cemeteries, and recreation areas are also generally considered sensitive to increases in exterior noise levels. Places of worship and transient lodging, and other places where low interior noise levels are essential, are also considered noise-sensitive. Those noted above are also considered vibration-sensitive land uses in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance. In addition, buildings of older age are more prone to vibration-induced damage.

Existing sensitive land uses exist throughout the study area, which encompasses the disturbance areas surrounding the proposed gondola alignments between the Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows). Squaw Valley Lodge and some scattered residential land uses are located near the proposed location of the Squaw Valley base terminal along Squaw Peak Road. In the Alpine Meadows portion of the study area, a residential area is located along Alpine Meadows Road, Chalet Road, and two individual houses located near the proposed gondola study area for Alternatives 3 and 4. Exhibit 4.9-1 shows existing sensitive land uses and proposed project components.

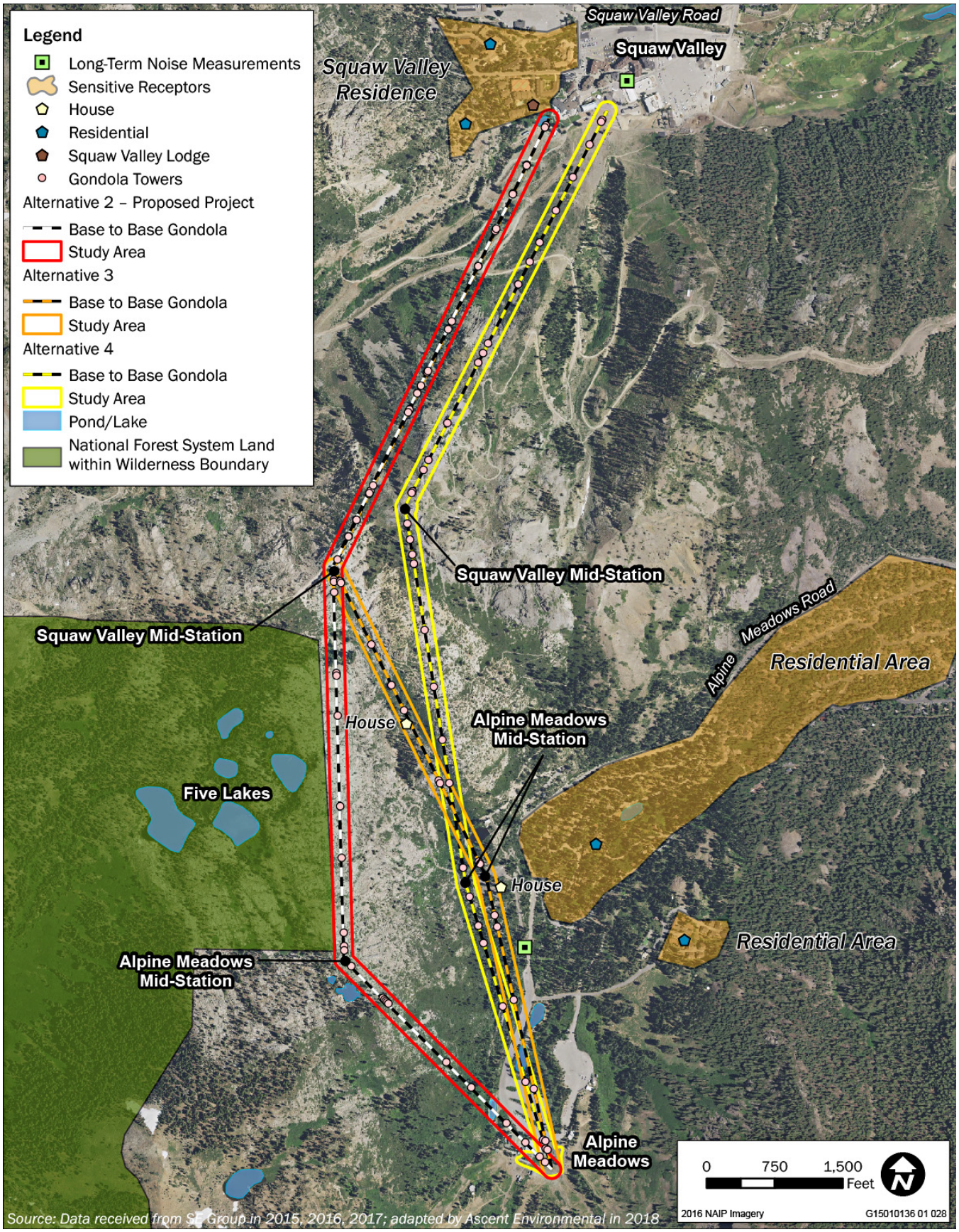

Exhibit 4.9-1 Existing Noise and Vibration Sensitive Land Uses and Proposed Project Components

Regional Setting

Regional noise sources include traffic-related noise on roadways and highways, airplanes and helicopters flying overhead, and noise associated with typical residential development (e.g., people talking, dogs barking, children playing, yard maintenance equipment).

Sound is affected by distance from the source, surrounding obstacles, and atmospheric properties. Thus, regional noise sources would not typically interfere or combine with noise sources on or close to the project site. Therefore, noise sources and levels that would affect the project or nearby sensitive receptors are discussed below in "Local Setting."

Local Setting

Primary noise sources include traffic noise on surrounding roadways, community noise, and recreational activities associated with equipment, events, and people using the facilities at both Squaw Valley and Alpine Meadows. In addition, during the winter ski season avalanche mitigation activities (by howitzer projectiles, hand-placed charges, or existing Gazex facilities such as those located at Squaw Valley and Alpine Meadows) occur periodically, resulting in short, but relatively loud explosions that can be heard throughout the area.

To characterize existing ambient noise levels, noise-level measurements were taken, traffic noise modeling was conducted, and a review of available documentation was completed. A summary of short-term measurements is presented in Table 4.9-3, long-term measurements in Table 4.9-4, and existing traffic noise levels in Table 4.9-5. Locations of long-term (24-hour) noise measurements are shown on Exhibit 4.9-1.

Table 4.9-3 Summary of Short-Term Noise Measurements

	Date	Time/Duration	Primary Noise Source	Location/Distance from Avalanche Control Activity	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)
Squaw Valley							
1	4/12/2013	11:10 a.m./15 min	Ski lifts/people talking	Squaw Valley Lodge	55.5	53.7	64.2
2	3/30/2012	3:30 p.m./15 min	Far East Express Lift	Far East Express Lift	69.6	66.8	73.5
3	4/21/2016	8:09 a.m./<1 min	Avalanche control (existing Gazex)	850 feet	NA	NA	105.4
Alpine Meadows							
1	4/21/2016	7:18 a.m./<1 min	Avalanche control (howitzer warhead)	2,690 feet	NA	NA	96.5
2	4/21/2016	7:18 a.m./<1 min	Avalanche control (howitzer projectile)	25 feet	NA	NA	115.1
3	4/21/2016	7:41 a.m./<1 min	Avalanche control (4-pound hand charge)	80 feet	NA	NA	109.7
4	4/21/2016	7:44 a.m./<1 min	Avalanche Control (2-pound hand charge)	80 feet	NA	NA	109.1

Notes: L_{eq}= equivalent continuous noise level; L_{min}= minimum noise level; L_{max}= maximum noise levels; dBA= A-weighted decibels.

All measurements conducted by Ascent Environmental in 2012, 2013, 2016

Table 4.9-4 Summary of Long-Term Noise Measurements

	Date	Time/Duration	Location	L_{dn} (dBA)
Squaw Valley				
1	4/12/2013	24-hour	Squaw Village	58.0
Alpine Meadows				
1	4/4/2014	24-hour	Alpine Meadows Road	55.0

Notes: L_{dn} = day-night sound level; dBA = A-weighted decibels.

Source: Squaw Valley measurements conducted by Ascent Environmental 2013; Alpine Meadows measurements conducted by Bollard Acoustics in 2014 as referenced in the Draft EIR for the Alpine Subdivision project (Placer County 2017)

Table 4.9-5 Summary of Modeled Existing Traffic Noise Levels

Segment Number	Roadway Segment/Segment Description	CNEL/L_{dn} (dB) at 100 Feet from Roadway Centerline	Distance (feet) from Roadway Centerline to CNEL/L_{dn}(dB)		
			65	60	55
1	Squaw Valley Road west of State Route 89 (winter Saturday)	60.2	48	103	221
2	Alpine Meadows Road west of State Route 89 (winter Saturday)	58.0	34	73	158
1	Squaw Valley Road west of State Route 89 (winter Sunday)	63.0	74	159	342
2	Alpine Meadows Road west of State Route 89 (winter Sunday)	62.3	66	143	308

Source: Modeled by Ascent Environmental in 2018

4.9.1.5 REGULATORY SETTING

Federal

U.S. Department of Transportation

To address the human response to ground vibration, FTA set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. Among these guidelines are the following maximum-acceptable vibration limits:

- 65 VdB, referenced to 1 microinch per second and based on the RMS velocity amplitude, for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities);
- 80 VdB for residential uses and buildings where people normally sleep; and
- 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2006).

U.S. Bureau of Mines

In 1974, the U.S. Bureau of Mines (USBM) began a study to gather and update available blast vibration data. Work was included in the area of structural and human response to vibration. This resulted in the publishing in 1980 of USBM RI 8507, "Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting." USBM recommends a maximum safe overpressure of 0.014 pound per square inch (134 dB linear, unweighted) for residential structures. The first occurrence of airblast damage is usually the breakage of poorly mounted windows.

Office of Surface Mining Reclamation and Enforcement

The Office of Surface Mining Reclamation and Enforcement (OSMRE) published a document titled "Blasting Guidance Manual" that addresses the negative effects of blasting. The OSMRE Guidance Manual includes noise and vibration limits with respect to building damage and human perception. The OSMRE airblast noise limits with respect to building damage are similar to those of the USBM, as described above. The OSMRE airblast limits for building damage may apply to the location of any dwelling, public building, school, church, community or institutional building in connection with blasting under the jurisdiction of the OSMRE. Based on OSMRE data, a 129-dB peak noise level is utilized for evaluating building damage impacts associated with the project's blasting-related activities. This airblast limit set forth by the OSMRE is based on the minimal probability of superficial damage to residential type structures, and also takes into consideration subjective human response. Per the OSMRE, if an airblast can be kept at or below 120 dB, then annoyance would be minimal.

Federal Transit Administration Vibration Impact Criteria

FTA provides guidance on evaluating effects of vibration levels on humans from various vibration-inducing events, including construction activities such as blasting and pile driving. The impact criteria are based on receptor categories and frequency of events occurring in 1 day. Table 4.9-6 summarizes the FTA vibration impact criteria.

Table 4.9-6 FTA Ground-Borne Vibration Impact Criteria

Land Use Category	GVB Impact Levels (VdB re 1 micro-inch /sec)		
	Frequent Event[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations.[4]	65 VdB	65 VdB	65 VdB
Category 2: Residences and buildings where people normally sleep.	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use.	75 VdB	78 VdB	80 VdB

Notes: GVB = groundborne vibration; VdB = vibration decibels.

1 "Frequent Events" is defined as more than 70 vibration events of the same source per day. Most rapid transit projects fall into this category.

2 "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have these many operations.

3 "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.

4 This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

Source: FTA 2006

State

California Department of Transportation Noise and Vibration Standards

As presented in the Protocol, Section 14-8.2, Noise Control, Caltrans standard specifications establish a construction noise exposure/production limit of 86 dB (L_{max}) at a distance of 50 feet. Additionally, this specification establishes that all internal combustion engines should be equipped with manufacturer-recommended mufflers, and that no internal combustion engines may be operated without mufflers.

In 2013, Caltrans published the Transportation and Construction Vibration Guidance Manual, which provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. With respect to structural damage, Caltrans recommends that a level of 0.2 in/sec PPV not be exceeded for the protection of normal residential buildings, and that 0.1 in/sec PPV not be exceeded for the protection of old or historically significant structures (Caltrans 2013).

Local

Placer County General Plan

The *Placer County General Plan* (Placer County 2013) contains noise policies and standards (e.g., exterior and interior noise-level performance standards for new projects affected by or including non-transportation noise sources [Table 4.9-7], and maximum allowable noise exposure levels for transportation noise sources [Table 4.9-8]) and the Placer County Noise Ordinance (Article 9.36 of the Placer County Code) contains noise limits for sensitive receptors (Placer County 2004). The following policies and standards contained in the General Plan and ordinance are relevant to the alternatives:

- **Policy 9.A.2.** Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 9-1 [Table 4.9-7 in this EIS/EIR] as measured immediately within the property line of lands designated for noise-sensitive uses: provided, however, the noise created by occasional events occurring within a stadium on land zoned for university purposes may temporarily exceed these standards as provided in an approved Specific Plan.

- **Policy 9.A.4**. Impulsive noise produced by blasting should not be subject to the criteria listed in Table 9-1 [Table 4.9-7]. Single event impulsive noise levels produced by gunshots or blasting shall not exceed a peak linear overpressure of 122 dB, or a C-weighted Sound Exposure Level (SEL) of 98 dBC. The cumulative noise level from impulsive sounds such as gunshots and blasting shall not exceed 60 dB L_{Cdn} or $CNEL_C$ on any given day. These standards shall be applied at the property line of a receiving land use.

- **Policy 9.A.5.** Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 9-1 [Table 4.9-7] at existing or planned noise-sensitive uses, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. The requirements for the content of an acoustical analysis are listed in Table 9-2 [available in the General Plan].

- **Policy 9.A.9.** Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 9-3 [Table 4.9-8] or the performance standards in Table 9-3 [Table 4.9-8] at outdoor activity areas or interior spaces of existing noise-sensitive land uses.

Table 4.9-7 Placer County Allowable L_{dn} Noise Levels Within Specified Zone Districts[1] Applicable to New Projects Affected by or Including Non-Transportation Noise Sources

Zone District of Receptor	L_{dn} (dBA) at Property Line of Receiving Use	Interior Spaces (dBA)[2]
Residential Adjacent to Industrial[3]	60	45
Other Residential[4]	50	45
Office/Professional	70	45
Transient Lodging	65	45
Neighborhood/General Commercial/Shopping Center	70	45
Heavy Commercial/Limited Industrial/Highway Service	75	45
Industrial	-	45
Industrial Park	75	45
Industrial Reserve	-	-
Airport	-	45
Unclassified	-	-
Farm/Agriculture Exclusive[6]	-	-
Recreation and Forestry	70	-

Notes: Except where noted otherwise, noise exposures will be those which occur at the property line of the receiving use.

Where existing transportation noise levels exceed the standards of this table, the allowable L_{dn} shall be raised to the same level as that of the ambient level.

If the noise source generated by, or affecting, the uses shown above consists primarily of speech or music, or if the noise source is impulsive in nature, the noise standards shown above shall be decreased by 5 dBA.

Where a use permit has established noise level standards for an existing use, those standards shall supersede the levels specified in this table. Similarly, where an existing use which is not subject to a use permit causes noise in excess of the allowable levels in this table, said excess noise shall be considered the allowable level. If a new development is proposed which will be affected by noise from such an existing use, it will ordinarily be assumed that the noise levels already existing or those levels allowed by the existing use permit, whichever are greater, are those levels actually produced by the existing use.

Existing industry located in industrial zones will be given the benefit of the doubt in being allowed to emit increased noise consistent with the state of the art[5] at the time of expansion. In no case will expansion of an existing industrial operation because to decrease allowable noise emission limits. Increase emissions above those normally allowable should be limited to a one-time 5 dBA increase at the discretion of the decision-making body.

The noise level standards applicable to land uses containing incidental residential uses, such as caretaker dwellings at industrial facilities and homes on agriculturally-zoned land, shall be the standards applicable to the zone district, not those applicable to residential uses.

Where no noise level standards have been provided for a specific zone district, it is assumed that the interior and/or exterior spaces of these uses are effectively insensitive to noise.

[1] Overriding policy on interpretation of allowable noise levels: Industrial-zoned properties are confined to unique areas of the County, and are irreplaceable. Industries which provide primary wage-earner jobs in the County, if forced to relocate, will likely be forced to leave the County. For this reason, industries operating upon industrial zoned properties must be afforded reasonable opportunity to exercise the rights/privileges conferred upon them be their zoning. Whenever the allowable noise levels herein fall subject to interpretation relative to industrial activities, the benefit of the doubt shall be afforded to the industrial use.

Table 4.9-7 Placer County Allowable L_{dn} Noise Levels Within Specified Zone Districts[1] Applicable to New Projects Affected by or Including Non-Transportation Noise Sources

Where an industrial use is subject to infrequent and unplanned upset or breakdown of operations resulting in increased noise emissions, where such upsets and breakdowns are reasonable considering the type of industry, and where the industrial use exercises due diligence in preventing as well as correcting such upsets and breakdowns, noise generated during such upsets and breakdowns shall not be included in calculations to determine conformance with allowable noise levels.

2 Interior spaces are defined as any locations where some degree of noise-sensitivity exists. Examples include all habitable rooms of residences, and areas where communication and speech intelligibility are essential, such as classrooms and offices.

3 Noise from industrial operations may be difficult to mitigate in a cost-effective manner. In recognition of this fact, the exterior noise standards for residential zone districts immediately adjacent to industrial, limited industrial, industrial park, and industrial reserve zone districts have been increased by 10 dB as compared to residential districts adjacent to other land uses.

For purposes of the Noise Element, residential zone districts are defined to include the following zoning classifications: AR, R-1, R-2, R-3, FR, RP, TR-1, TR-2, TR-3, and TR-4.

4 Where a residential zone district is located within an -SP combining district, the exterior noise level standards are applied at the outer boundary of the -SP district. If an existing industrial operation within an -SP district is expanded or modified, the noise level standards at the outer boundary of the -SP district may be increased as described above in these standards.

Where a new residential use is proposed in an -SP zone, an Administrative Review Permit is required, which may require mitigation measures at the residence for noise levels existing and/or allowed by use permit as described under "NOTES," above, in these standards.

5 State of the art should include the use of modern equipment with lower noise emissions, site design, and plant orientation to mitigate off-site noise impacts, and similar methodology.

6 Normally, agricultural uses are noise insensitive and will be treated in this way. However, conflicts with agricultural noise emissions can occur where single-family residences exist within agricultural zone districts. Therefore, where effects of agricultural noise upon residences located in these agricultural zones are a concern, an L_{dn} of 70 dBA will be considered acceptable outdoor exposure at a residence.

Source: Placer County 2013

Table 4.9-8 Placer County Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Spaces	
	L_{dn}/CNEL	L_{dn}/CNEL	L_{eq}, dBA[2]
Residential	60[3]	45	
Transient Lodging	60[3]	45	
Hospitals, Nursing Homes	60[3]	45	
Theaters, Auditoriums, Music Halls			35
Churches, Meeting Halls	60[3]		40
Office Buildings			45
Schools, Libraries, Museums			45
Playgrounds, Neighborhood Parks	70		

Notes: CNEL = community noise equivalent level

1 Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

2 As determined for a typical worst-case hour during periods of use.

3 Where it is not possible to reduce noise in outdoor activity areas to 60 L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dBA L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: Placer County 2013

Placer County Municipal Code

The Placer County Noise Ordinance (Article 9.36.060 Sound limits for sensitive receptors of the Placer County Code) defines sound level performance standards for sensitive receptors (Table 4.9-9). The ordinance states that it is unlawful for any person at any location to create any sound, or to allow the creation of any sound, on property owned, leased, occupied, or otherwise controlled by such a person that causes the exterior sound level, when measured at the property line of any affected sensitive receptor, to

exceed the ambient sound level by 5 dBA or exceed the sound level standards as set forth in Table 4.9-9, whichever is greater.

Each of the sound level standards specified in Table 4.9-9 shall be reduced by 5 dBA for simple tone noises, consisting of speech and music. However, in no case shall the sound level standard be lower than the ambient sound level plus 5 dBA.

Table 4.9-9 Placer County Noise Ordinance Noise Level Standards for Sensitive Receptors

Sound Level Descriptor (dBA)	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq}	55	45
L_{max}	70	65

Source: Placer County 2004

According to Article 9.36.030, "Exemptions," some noise-generating activities are exempt from the above noise ordinance standards, including construction that is performed between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday, provided that all construction equipment is fitted with factory-installed muffler devices and maintained in good working order.

Other noise sources applicable to the alternatives that are exempt from the Placer County Noise Ordinance include:

- sound sources typically associated with residential uses (e.g., children at play, air conditioners in good working order); and
- emergencies, involving the execution of the duties of duly authorized governmental personnel and others providing emergency response to the general public, including but not limited to sworn peace officers, emergency personnel, utility personnel, and the operation of emergency response vehicles and equipment.

4.9.2 Analysis Methods

4.9.2.1 METHODS AND ASSUMPTIONS

To assess potential short-term (construction-related) noise and vibration impacts, sensitive receptors and their relative exposure were identified. Project-generated construction source noise and vibration levels were determined based on methodologies, reference emission levels, and usage factors from the FTA *Guide on Transit Noise and Vibration Impact Assessment* methodology (FTA 2006) and the Federal Highway Administration *Roadway Construction Noise Model User's Guide* (FHWA 2006). Reference levels are noise and vibration emissions for specific equipment or activity types that are well documented in the field of acoustics.

The assessment of long-term (operational) impacts was based on reference noise emission levels and measured noise levels for activities and equipment associated with project operation (e.g., gondola stations), and standard attenuation rates and modeling techniques.

The assessment of potential long-term (operational) noise impacts from project-generated increases in traffic was conducted using modeling based on the Caltrans traffic noise analysis protocol and the technical noise supplement (Caltrans 2013), as well as project-specific traffic data (Appendix E). To assess this impact, traffic noise levels under existing and existing-plus-project conditions for affected roadway segments were modeled. The modeling conducted does not account for any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings) and, consequently, represents worst-case noise levels.

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, 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.

4.9.2.2 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 will 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 would have noise effects. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Narrative discussion of existing noise levels in the study area based on existing documentation (including additional noise measurements taken for this project and accepted prediction methodologies) **(Section 4.9.1.4, "Environmental Setting").**
- Identification of sensitive receptors in the study area **(Section 4.9.1.4, "Environmental Setting").**
- Identification of major noise sources in the study area **(Section 4.9.1.4, "Environmental Setting").**
- Narrative description of potential noise-related impacts associated with construction and operation of the proposed projects, including short-term construction-related noise (e.g., use of heavy equipment and helicopters) and long-term operational noise (e.g., gondola), and traffic-related noise **(Impacts 4.9-1, 4.9-2, 4.9-3, 4.9-4).**
- Discussion of the helicopter flight plan and its potential to increase noise levels in the study area **(Impact 4.9-2).**

CEQA Criteria

Based on the Placer County CEQA checklist, Appendix G of the State CEQA Guidelines, and noise policies and standards in the *Placer County General Plan*, implementing any of the alternatives would result in a significant impact related to noise if it would:

- expose persons to or generation of noise levels in excess of standards established in the local General Plan (Tables 4.9-7 and 4.9-8), noise ordinance (Table 4.9-9) **(Impacts 4.9-1, 4.9-3)**;

- expose persons to or generation of excessive groundborne vibration (Table 4.9-6) or groundborne noise levels (Impact 4.9-2);
- result in a substantial permanent increase (i.e., 5 dB) in ambient noise levels in the project vicinity above levels existing without the project (Impacts 4.9-3, 4.9-4);
- result in a substantial temporary or periodic increase (Table 4.9-9) in ambient noise levels in the project vicinity above existing without the project (Impact 4.9-1);
- for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels (Section 4.9.2.3, "Issues not Discussed Further"); or
- for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels (Section 4.9.2.3, "Issues not Discussed Further").

4.9.2.3 ISSUES NOT DISCUSSED FURTHER

As discussed in the initial study prepared for the project (Appendix A), the project site is not located within an airport land use plan, nor is it located within 2 miles of a public airport or airstrip. Therefore, none of the alternatives would result in noise impacts for people residing or working close to an airport or airstrip. No impact would occur; therefore, these issues are not discussed further in this Final EIS/EIR.

4.9.3 Direct and Indirect Environmental Consequences

4.9.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.9-1 (Alt. 1): Construction Noise Impacts

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no construction activities that would result in substantial temporary increases in noise. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, the Tahoe National Forest (TNF) and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no generation of construction noise.

NEPA Effects Conclusion
With no generation of construction noise, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no generation of construction noise, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.9-2 (Alt. 1): Construction Vibration Impacts

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no construction activities that would result in substantial temporary increases in vibration levels that could damage nearby structures or disturb sensitive land uses. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no generation of construction-related vibration.

NEPA Effects Conclusion
With no generation of construction vibration, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no generation of construction vibration, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.9-3 (Alt. 1): Exposure of Existing Sensitive Receptors to Operational Noise from Proposed Gondola

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new gondola or noise associated from stationary equipment (e.g., drive unit, motor, cooling fans). There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new gondola or associated stationary equipment. The existing ambient noise environment would not change.

NEPA Effects Conclusion
With no new noise sources, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new noise sources, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.9-4 (Alt. 1): Exposure of Existing Sensitive Receptors to Operational Project-Generated Transportation Noise Sources

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new gondola or noise associated from increased vehicle trips on area roadways associated with increased ski days at Squaw Valley or Alpine Meadows. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new gondola or associated stationary equipment. The existing ambient noise environment would not change.

NEPA Effects Conclusion
With no increases in traffic or associated traffic noise, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no increases in traffic or associated traffic noise, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.9.3.2 ALTERNATIVE 2

Impact 4.9-1 (Alt. 2): Construction Noise Impacts

Under Alternative 2, existing noise-sensitive receptors would be located close to the Squaw Valley base terminal proposed construction area. Blasting may be necessary at remote locations for tower installation and mid-station construction, exposing existing receptors to blast noise. Helicopters would be used to transport material and personnel to construction sites, resulting in noise exposure to existing receptors, depending on specific flight paths. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise would be **adverse** because construction activities would temporarily increase existing noise levels. However, construction activities would be temporary, lasting one season, and would occur during the less sensitive times of the day when people are less likely to be disturbed. Implementation of RPMs NOI-1 through NOI-6 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because without implementation of RPMs that define the timing and duration of construction and the proper use of muffling devices on equipment, construction could occur during times of day, or in a manner, outside those identified in the Placer County Noise Ordinance. Implementation of RPMs MUL-7, NOI-2, NOI-5, and NOI-6 would limit the timing of construction to those identified in the Placer County Municipal Code, require the proper use of muffling devices, and limit the duration of construction to a single construction season. In addition, RPMs NOI-1, NOI-3, and NOI-4 would ensure construction noise is minimized to the extent possible by limiting helicopter flight paths to avoid residential areas and the Granite Chief Wilderness (GCW), requiring blasting to be conducted by qualified contractors, and providing a means to reduce potentially disturbing noise during ongoing construction activities by establishing a disturbance coordinator. With implementation of these three additional RPMs, this impact would be reduced, although helicopter noise could still occur for up to 20 days in proximity to existing sensitive land uses and could result in substantial temporary increases in disturbance. This impact would remain **significant.** (Impacts related to wilderness activities are addressed separately in Section 4.3, “Wilderness.”)

The effects of construction noise depend on the type of construction activities occurring on any given day; noise levels generated by those activities; distances to noise-sensitive receptors; potential noise attenuating features such as topography, vegetation, and existing structures; and the existing ambient noise environment in the receptor’s vicinity. Construction generally occurs in several discrete stages, each phase requiring a specific complement of equipment with varying equipment type, quantity, and intensity. These variations in the operational characteristics of the equipment change the effect they have on the noise environment of the project site and in the surrounding area for the duration of the construction process. Additionally, for evaluation of construction noise, activities that occur during the more noise-sensitive evening and nighttime hours are of greater concern than daytime noise. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as traffic volumes and commercial activities decrease, construction activities performed during these more noise-sensitive periods are more conspicuous and can result in increased annoyance and potential sleep disruption for occupants of nearby residences. Construction-related noise is discussed separately below for the various project components.

Under Alternative 2, project construction would occur over a single construction season (i.e., 180–200 days), beginning in late spring and ending in the fall. Although this period of construction is included in the text of the project description (Chapter 2, “Description of Alternatives”), it is also identified as a RPM, RPM MUL-7, which states that construction would be completed in a single construction season. General construction activities would include grubbing/clearing of on-site vegetation, excavation and relocation of rock and soil on the site, backfilling and compaction of soils, and construction of proposed facilities (e.g., base terminals, mid-stations, lift towers). It is anticipated that helicopters would be used during construction to transport personnel and equipment to and from the project site, during installation of lift infrastructure,

and for tree removal activities. Some blasting may be required to remove rock outcroppings during terminal, mid-station, and lift tower construction. Construction equipment would be staged at the existing Squaw Valley and Alpine Meadows surface parking lots.

Construction noise can be characterized based on the type of activity and associated equipment needed and, in this analysis, is evaluated by considering noise levels associated with vegetation clearing/tree removal, grading/foundation work, building/structure construction, blasting, and helicopter use. Reference noise levels for typical construction equipment required for these activities are shown in Table 4.9-10. Assuming simultaneously operating equipment and typical reference noise levels for construction equipment, representative noise levels for the various types of construction activity are shown in Table 4.9-11.

Table 4.9-10 Noise Emission Levels from Construction Equipment

Equipment Type	Typical Noise Level (L_{max} dBA) @ 50 feet
Chain saw	85
Chipper	75
Concrete mixer	85
Crane	85
Dozer	85
Dump truck	84
Rock drill	85
Excavator (spider/tracked)	85
Front end loader	80
Generator	70
Grader	85
Pickup trucks	55

Notes: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

Sources: FTA 2006, Berger et al. 2010

Table 4.9-11 Noise Emission Levels from Construction Activities

Construction Activity	Noise Level (L_{eq} dBA) @ 50 feet	Noise Level (L_{max} dBA) @ 50 feet
Vegetation clearing	83.0	88.4
Grading/foundation work	86.0	90.0
Building construction/tower installation	81.6	89.0
Blasting	NA	94.0
Helicopter	87.9	NA

Notes: Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.

Source: FTA 2006

Different construction activities would occur for different components of the proposed gondola construction. To evaluate construction noise impacts, existing sensitive receptors near the study area were identified, the various construction activities and associated noise levels were modeled, and noise levels were compared to Placer County daytime noise standards for sensitive receptors (i.e., daytime 55 dBA L_{eq}/70 dBA L_{max}, also

shown in Table 4.9-9 above). Construction impacts are evaluated below based on construction activity type. Because of the nature of construction activities and remote locations, nighttime construction is not proposed. This analysis focusses on daytime activities and daytime noise standards.

Off-Road Equipment

Construction for base terminals and mid-stations would include foundation/grading work, minimal excavation, and structure construction. Tower installation would include excavation/digging, concrete pours, and foundation/structure construction. Based on modeling conducted for these types of activities, excavation and foundation work would result in the highest noise levels, potentially reaching 86.0 dBA L_{eq} and 90 dBA L_{max} at 50 feet from construction activity.

Construction activities in much of the study area would be located in remote locations where no sensitive receptors exist. However, existing sensitive land uses (i.e., Squaw Valley Lodge) are located approximately 175 feet north of the proposed Squaw Valley base terminal location along Squaw Peak Road. On the Alpine Meadows side, a residential neighborhood is located approximately 2,500 feet northeast of the proposed Alpine Meadows base terminal location along Alpine Meadows Road. Two residential structures are located 750 feet east and 1,800 feet east of the proposed gondola alignment. See Exhibit 4.9-1 for location of project components (e.g., base terminals, mid-stations, towers) in proximity to existing sensitive land uses. Construction activities associated with station and tower construction would attenuate to below Placer County daytime noise standards at 846 feet from construction activities. Thus, construction noise would exceed daytime standards at the residences and Squaw Valley Lodge and the one residence located just east of the proposed gondola alignment.

Construction activity that would occur closest to the National Forest System-GCW would be associated with tower installations occurring as close as 100 feet from the eastern boundary and near the proposed gondola alignment (Exhibit 4.9-1). Construction noise would attenuate to 73.7 dBA L_{eq} and 81.1 dBA L_{max} at the National Forest System-GCW boundary.

Construction noise from heavy-duty equipment could exceed daytime standards at residences located near the proposed Squaw Valley base terminal and the residence located near the proposed gondola alignment.

Blasting

Construction activities associated with mid-stations and tower installation may require blasting to remove rock outcroppings, resulting in noise levels of up to 94 dBA L_{max} at 50 feet from blasting activities. Blasting activity is typically limited to isolated locations and few occurrences to remove the identified obstruction, and because of safety concerns, is not typically conducted during the night. Because of the intermittent nature of blasting, only L_{max} standards are applied to blasting noise.

Blasting activities associated with mid-station and tower installation would attenuate to below Placer County daytime noise standards at 400 feet from the blast site. Specific locations and need for blasting would be determined based on final on-the-ground assessments. Considering the proposed tower and mid-station locations, the only existing sensitive receptors that could be disturbed by blasting are located on the Squaw Valley side of the gondola. Although it is not known exactly where blasting would occur, lift tower locations would be at least 175 feet (i.e., beyond the base terminal) and thus blasting noise would be less than 79.6 dBA L_{max} (i.e., noise level 175 feet from blasting) at the sensitive receptors near the Squaw Valley base terminal, above the applicable Placer County standard. However, blasting would likely be required only in very remote places where large outcroppings obstruct construction, and blasting would generally be a last resort construction method. Also, it is highly unlikely that blasting would be used as a construction method near structures that would qualify as sensitive receptors because of safety concerns.

As discussed above, blasting may be required at remote locations. Thus, assuming that blasting would occur for tower installations under this alternative, blasting noise could reach 86.0 dBA L_{max} within the eastern boundary of the National Forest System-GCW, located 100 feet east of proposed tower installations.

Because of the intermittent and infrequent occurrence of blasting activities, and considering that blasting would not occur during the more sensitive times of the day and is highly unlikely to be used as a construction method near sensitive receptors, blasting would not result in a substantial temporary increase in noise at sensitive receptors or exceed applicable County standards.

Helicopter Noise

In addition to typical land equipment and occasional blasting, helicopter use would be required to transport materials (e.g., tower poles, removed trees) and personnel to various inaccessible locations within the study area. Total helicopter usage over a 180- to 200-day construction season is anticipated to occur up to 20 days. For safety and visibility reasons, helicopters would be used only during the day.

Helicopter noise represents the loudest average noise level that could occur (Table 4.9-11) and; therefore, the largest impact area when compared to L_{eq} standards. Based on reference noise levels, helicopters can emit noise levels of 87.9 dBA at 50 feet overhead. Helicopter flyovers would exceed daytime noise standards of 55 dBA L_{eq} within 1,520 feet of helicopter flight. Helicopters would be staged at existing parking lots at Squaw Valley and Alpine Meadows and therefore could disturb nearby residences during takeoff/approach and flyover depending on the altitude of flights, specific flight pattern, and location of material delivery. Nonetheless, overall helicopter activity would be relatively short-term and infrequent, occurring up to 20 days over the entire construction period. Further, daily helicopter use would include material delivery and transport to construction sites located in remote locations, exposing existing land uses to helicopter noise only during approach and takeoff procedures. It should be noted that helicopter use in the area is not uncommon (e.g., ski patrol, medical personnel, law enforcement) and; therefore, would not be a completely new or unfamiliar noise source at nearby sensitive receptors.

Helicopter use would be relatively infrequent and temporary, occurring up to 20 days out of the entire construction period and only during daytime hours, minimizing the potential to disturb people when they are sleeping. However, because specific helicopter flight paths and daily activity levels are unknown, a conservative approach is taken here and it is concluded that helicopter use has the potential to result in temporary, but substantial, disturbance to existing sensitive receptors, depending on specific flight paths, drop-off locations, and activity levels.

All Construction

As discussed above, construction activities would include off-road vehicles, helicopter use, and potential blasting that would result in increases in temporary noise levels during these activities. Construction would be relatively short-term, lasting only one construction season (up to 200 days) with helicopter use occurring up to 20 days. Further, in accordance with Article 9.36.030, "Exemptions," of the Placer County Noise Ordinance, construction activities that occur between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday, provided that all construction equipment is fitted with factory-installed muffler devices and maintained in good working order, are exempt from Placer County noise limits for sensitive receptors (Table 4.9-9). However, if construction of Alternative 2 did not occur in a manner that qualified for this exemption, construction noise could exceed daytime standards and could occur outside of daytime hours when people are more sensitive to noise. However, RPM NOI-6 specifically identifies that construction activity would occur within the daily timeframes identified in the Placer County Noise Ordinance construction exemption. RPM MUL-7 identifies that construction would occur in a single construction season, minimizing the duration of construction noise generation. RPMs NOI-2 and NOI-5 require that construction equipment is equipped with properly operating and maintained muffler devices, which would be consistent with the requirement of the Placer County Noise Ordinance construction exemption.

With implementation of these RPMs, construction activities would occur during times, and in a manner, consistent with the Placer County Noise Ordinance construction exemption. Construction would not occur during night time hours, and in addition, would be completed in a single construction season. Thus, because of the short-term nature of construction activities and the implementation of applicable RPMs, daytime construction activities would not result in a substantial temporary increase in noise and would not expose persons to generation of noise levels in excess of standards established in the local noise ordinance. However, because specific helicopter flight paths and daily activity levels are unknown, a conservative

approach is taken here and it is concluded that helicopter use has the potential to result in temporary, but substantial, disturbance to existing sensitive receptors, depending on specific flight paths, drop-off locations, and activity levels.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise under Alternative 2 would be **adverse** because construction activities would temporarily increase existing noise levels. These effects would be mitigated through implementation of RPMs MUL-7 and NOI-1 through NOI-6.

CEQA Determination of Effects

Alternative 2 would result in daytime construction activities and noise from heavy-duty equipment, blasting, and helicopter use. Without proper implementation of RPMs, it is possible that construction could occur at times, or in a manner, inconsistent with the Placer County Noise Ordinance, resulting in exposure of persons to noise levels in excess of standards established in the local noise ordinance and at times during which people are more sensitive to noise exposure. Under CEQA, and using the CEQA criteria, if construction of Alternative 2 occurs at times, or in a manner inconsistent with the Placer County Noise Ordinance, this would be a significant impact. However, with implementation of RPMs MUL-7, NOI-2, NOI-5, and NOI-6, construction activities would be temporary, lasting one season, and would occur during the less noise-sensitive times of the day when people are less likely to be disturbed, consistent with the Placer County Noise Ordinance; and mufflers would be properly installed and maintained on construction equipment in compliance with the Noise Ordinance. With implementation of these RPMs, the potential to disturb people during construction activities would be substantially reduced.

RPMs NOI-1, NOI-3, and NOI-4 would further reduce adverse effects from construction noise by limiting helicopter flight paths to avoid residential areas and the GCW, providing a means to reduce potentially disturbing noise during ongoing construction activities by establishing a disturbance coordinator, and requiring that blasting be conducted by qualified contractors (thereby helping ensure that the proper amount and type of explosive is used to achieve the desired result). However, given the uncertainty of helicopter flight path and daily activity levels, and the proximity to existing receptors, helicopter noise could result in substantial disturbance to existing sensitive receptors and this impact would be **significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs MUL-7, NOI-2, NOI-5, and NOI-6 as mitigation measures reduces this significant impact by limiting construction to a single season and requiring that construction activities be conducted in a manner consistent with the Placer County Noise Ordinance. The adoption of RPMs NOI-1, NOI-3, and NOI-4 as mitigation measures further reduces the effects of construction noise but does not eliminate the potential for helicopters to result in substantial temporary disturbance to sensitive receptors. There is no feasible mechanism to ensure that helicopters flying between available staging areas (i.e., the Squaw Valley and Alpine Meadows Parking lots) and the gondola alignment will not generate substantial disturbance to nearby sensitive receptors. This impact would be **significant and unavoidable**.

Impact 4.9-2 (Alt. 2): Construction Vibration Impacts

Under Alternative 2, existing sensitive receptors would be located close to the Squaw Valley base terminal construction area. In addition, blasting may be necessary at remote locations for tower installation and mid-station construction, exposing existing receptors to ground vibration from blasting. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise would be **adverse** because construction activities would temporarily increase vibration levels. However, blasting activities would be temporary and would occur during the less sensitive times of the day when people are less likely to be disturbed. Further, potential blast site locations would not be close to any existing residences or places where people sleep. RPMs NOI-4 and NOI-6 would mitigate this effect. Under CEQA, vibration levels would not exceed applicable thresholds and this impact would be **less than significant**. In addition, RPMs NOI-4 and NOI-6 would ensure proper considerations are taken during blasting activities and by limiting construction times, including blasting, to the less sensitive daytime hours when construction noise is exempt from the Placer County Noise Ordinance. With implementation of these two RPMs, this impact would be reduced, although these RPMs are not necessary to reduce the significant impact to a less-than-significant level.

Construction activities generate varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, result in low rumbling sounds and detectable vibrations at moderate levels, and, at high-levels, can cause annoyance and sleep disturbance.

Project construction would include various types of equipment including, excavators, cranes, loaders, trucks, drills, and others. In addition, blasting may be required to remove rock outcroppings during mid-station or tower installations. Considering these construction activities, blasting would result in the highest vibration levels and is therefore of greatest concern when evaluating construction-related vibration levels.

Although residential structures may not be as strongly constructed as engineered structures (e.g., commercial buildings, infrastructure), it is unusual to find damage to them from blast vibration. In numerous instances, vibration levels far greater than the maximum levels recommended by the USBM or OSMRE failed to cause damage (FTA 2006). Further, considering that blasting would occur only in remote locations within the proposed gondola alignment for tower or mid-station construction, blasting would occur beyond 100 feet of any structure. At this distance, because of the rapidly diminishing intensity of ground vibration as distance from the source increase, no existing structures would be exposed to blasting activities that could result in structural damage and; therefore, this analysis focusses on disturbance and annoyance to people from vibration noise (i.e., VdB).

Vibration levels can result in interference or annoyance impacts on residences or other land uses where people sleep, such as, hotels and hospitals. According to FTA, vibration levels associated with blasting are 100 VdB at 50 feet (FTA 2006). FTA vibration annoyance potential criteria depend on the frequency of the vibration events. Specific blasting parameters are not typically known until it has been determined that blasting would occur, and site-specific geology and soil parameters evaluated. Nonetheless, to evaluate vibration levels from blasting activities it was assumed that blast events could occur less than 30 times in 1 day. Given the nature of the proposed project, with relatively small disturbance footprints for individual towers and other facilities, large numbers of blasts would not be needed to achieve desired effects. Based on FTA vibration impact criteria, when vibration events occur less than 30 times per day, they are considered “infrequent events.” Infrequent events in excess of 80 VdB are considered to result in a significant vibration impact on residences and places where people sleep. Based on FTA’s recommended procedure for applying propagation adjustments to these reference levels, vibration levels from blasting could exceed threshold of significance for “infrequent events” within 230 feet of a sensitive land use (refer to Appendix F for modeling details).

Under Alternative 2, blasting activities would not occur during nighttime hours when people are sleeping and more likely to be disturbed. Further, potential blast sites would be located along the proposed gondola

alignment and the mid-station locations where rock outcroppings may be present, all at locations beyond 230 feet of existing residences. Blasting would not result in sleep disturbance or exposure of sensitive receptors to substantial short-term increases in noise.

For the reasons described above, although construction of Alternative 2 would generate some level of ground vibration, levels would not exceed applicable thresholds. RPM NOI-4 would further reduce the potential for ground vibration by requiring that a licensed blasting contractor would be used in the event that blasting is required (thereby helping ensure that the proper amount and type of explosive is used to achieve the desired result), and all blasting activities would be required to comply with Placer County municipal code (i.e., construction hour time limits). RPM NOI-6 would limit the potential for human disturbance from ground vibration by requiring that all construction work, including blasting, occur during daytime hours, consistent with Placer County Noise Ordinance, minimizing the potential to result in sleep disturbance from any blasting activities.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to blasting vibration under Alternative 2 would be **adverse** because blasting activities would temporarily increase existing vibration levels. These effects would be mitigated through implementation of RPMs NOI-4 and NOI-6.

CEQA Determination of Effects

Alternative 2 may require blasting to remove rock outcroppings for construction of mid-stations or towers in remote locations. However, blasting activities would be temporary and would be infrequent enough and far enough away from sensitive receptors that ground vibration thresholds would not be exceeded. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs NOI-4 and NOI-6 would further reduce potential effects from construction- generated ground vibration by requiring that a licensed blasting contractor would be used in the event that blasting is required, and all blasting activities would be required to comply with Placer County municipal code (i.e., construction hour time limits). However, these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs NOI-4 and NOI-6 as mitigation measures would reduce the effects of construction generated ground vibration but are not necessary to reduce a significant effect.

Impact 4.9-3 (Alt. 2): Exposure of Existing Sensitive Receptors to Operational Noise from Proposed Gondola

Under Alternative 2, the proposed gondola would result in a new noise source at the base terminals, mid-stations, and tower locations. No receptors are located close to the proposed gondola base terminal at Alpine Meadows. However, the new gondola would be located close to existing receptors at the Squaw Valley base terminal location. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to the gondola operational noise would be **adverse** because the new gondola would result in a new noise source at the base terminals, mid-stations, and tower locations. The addition of the new gondola to Squaw Valley would not result in a substantial permanent increase in noise, and under CEQA this impact would be **less than significant**.

Alternative 2 would include operation of a gondola connecting the ski and base terminal areas of Alpine Meadows and Squaw Valley. Refer to Exhibit 4.9-1 for proposed gondola alignment locations.

Noise would be generated by the new gondola, associated with stationary equipment (e.g., drive units, motors, cooling fans) and during operation when the gondola passes over lift towers and the mid-stations, associated with the gondola arm passing over cable wheels and when over-the-snow vehicles (i.e.,

snowmobiles and snowcats) are used to access portions of the gondola alignment to support operations and maintenance. The most frequent use of over-the-snow vehicles for operations and maintenance would be for snow grooming at the base terminals and mid-stations and to move materials and equipment to the mid-stations. Between the base terminals and mid-stations on both the Squaw Valley and Alpine Meadows sides of the alignment there are existing ski resort operations involving the use of snowmobiles and snowcats as well as other noise generating activities such as operation and maintenance of existing lifts and avalanche mitigation operations. Noise generated by over-the-snow vehicle use associated with the gondola would be consistent with the existing noise environment in these areas and would not add a new or disruptive noise source. Between the mid-stations there is currently very little winter activity. The use of snowmobiles and snowcats in this area would add a new noise source. However, the need to access towers in this area for winter maintenance or repairs would be infrequent. There are no sensitive receptors in this area, and even if a receptor such as a residence were located in the vicinity, the common presence of residential uses at ski resort base areas shows the use of over-the-snow vehicles for resort operations is compatible with nearby residential uses. Winter recreational use between the mid-stations is infrequent and sparse; therefore, occasional use of over-the-snow vehicles would rarely be audible to recreational users in this area. Given that noise generated by the use of over-the-snow vehicles as part of gondola operations would have little effect on the existing noise environmental, the remainder of this analysis focusses on noise generated by the operation of the gondola equipment itself.

The proposed gondola would include two individual gondola units, one from Alpine Meadows, the other at Squaw Valley. Both units would be driven from the base terminals that would be located in each area (Exhibit 4.9-1).

Noise sources associated with the base terminals include the drive units, the motor, primary reducer, and the motor cooling fan. The drive units would be located above the gondola cabins in a machine room and, therefore; would not contribute substantially to the noise generated from the terminal station. Gondola machinery is fairly generic and would be very similar to other existing lifts currently operating at Squaw Valley, such as the Far East Express lift. A noise study was conducted at the Far East lift in 2015, which captured noise levels generated by the lifts entering and leaving the base terminal (Ascent Environmental 2015). Measured noise levels for the Far East Express were 69.6 dBA L_{eq} and 73.5 L_{max} at 54 feet. The maximum noise level occurred when the lift chair entered the base terminal, passing over the guide rails and driver bullwheel. The proposed gondola would include similar equipment as the Far East Express and, therefore; these reference noise levels would be representative of operating noise at the new gondola base terminals, mid-stations, and when the gondola cabin passes over the horizontal arm on top of a tower, to which the sheave wheels are attached. When the gondola is moving between towers, there are no moving parts and thus no noise sources. Noise levels between towers would be minimal and would not increase ambient noise levels over existing conditions. This analysis focusses on noise generated at the base terminals, mid-stations, and tower-crossings.

Based on the above reference noise levels, noise generated from the new gondola at the base terminals/mid-stations and tower crossings would attenuate to below Placer County daytime noise standards for sensitive receptors at 200 feet from the stations and tower locations. No receptors are located within 200 feet of the proposed alignment or tower locations for this alternative and, therefore; noise generated by the gondola passing over towers would not result in noise exposure that exceeds applicable standards at any existing sensitive land use. Noise levels from the proposed gondola would be 62.6 dBA L_{eq} at the eastern boundary of the National Forest System-GCW (i.e., 100 feet west of proposed tower locations)

Existing sensitive receptors are located 2,500 feet north of the proposed Alpine Meadows base terminal, well beyond the distance that gondola operating noise would exceed Placer County noise standards for sensitive receptors. The new gondola would not exceed Placer County noise standards at any of the existing sensitive land uses near Alpine Meadows.

At the Squaw Valley base terminal location, existing sensitive receptors are located approximately 175 feet north of the proposed base terminal (i.e., Squaw Valley Lodge and some residences). Noise levels from the Squaw Valley base terminal would attenuate to 56.3 dBA L_{eq} and 60.2 dBA L_{max} at this location, exceeding

Placer County daytime noise standards of 55 dBA L_{eq} at Squaw Valley Lodge. However, the gondola would operate during the winter season only, from just before Alpine Meadows and Squaw Valley open until just after closing (approximately 8:00 a.m. to 6:00 p.m.), the same time as other ski lift operations. Thus, operation of the new gondola would not likely disturb people sleeping at Squaw Valley Lodge and would not result in any noise during most of the year. In addition, during the winter season many noise-generating activities take place at Squaw Valley daily, including amplified music at bars, people talking and laughing, and other ski lift operations (e.g., Gold Coast Funitel, Squaw One Express). The addition of the new gondola would generate noise that is similar to existing conditions and is the type of noise that would be expected at a ski resort such as Squaw Valley. As discussed previously in this section, a doubling of a noise source is required to result in a 3-dB increase in noise, and this is the point at which noise increases are clearly audible. Thus, assuming the existing lifts in this location also operate at similar noise levels as would the proposed gondola, noise would increase by up to 3 dB. In accordance with Placer County Municipal Code, a 5-dB increase in noise would be considered substantial. The addition of a new gondola would not result in substantial changes or increases in noise over existing conditions and would not operate during the sensitive times of the day, minimizing the likelihood of disturbing people.

Based on the discussion above, operation of Alternative 2 would not result in a substantial permanent increase in ambient noise levels.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to operational noise (gondola) under Alternative 2 would be **adverse** because the new gondola would result in a new noise source at the base terminals, mid-stations, and tower locations. However, any increases in noise levels would be minor and would be consistent with the existing noise environment. Short of relocating the proposed gondola equipment or not approving the project, no measures are available to reduce noise associated with gondola operation.

CEQA Determination of Effects

The new gondola under Alternative 2 would result in a new noise source at the existing Squaw Valley and Alpine Meadows base terminal locations. No receptors are located close to the proposed gondola base terminal at Alpine Meadows. Under CEQA, and using the CEQA criteria, the addition of the new gondola to Squaw Valley would not result in a substantial permanent increase in noise and this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.9-4 (Alt. 2): Exposure of Existing Sensitive Receptors to Operational Project-Generated Transportation Noise Sources

Under Alternative 2, the proposed gondola would result in increases in visitation rates to Squaw Valley and Alpine Meadows. Overall, traffic would increase as a result of additional people traveling to either Squaw Valley or Alpine Meadows. In addition, the new gondola would result in a slight shift in current travel patterns to and between Squaw Valley and Alpine Meadows. The net effect would result in both slight increases and decreases in traffic (and traffic noise) on Squaw Valley Road and Alpine Meadows Road depending on the day. Nonetheless, any increases in traffic noise would be less than 0.5 dBA in all circumstances and, therefore, would not be audible. Consistent with the Placer County Noise Ordinance, project-generated increases in traffic noise would not be substantial and would not expose existing sensitive receptors to permanent increases in noise. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly adverse** direct and indirect effects related to the gondola operational traffic noise because the new gondola would result in slight (i.e., inaudible) increases in traffic noise. There are no applicable RPMs that would reduce this effect. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because traffic noise increases would not result in a substantial permanent increase in noise or expose existing receptors to excessive noise levels. There are no applicable RPMs that would reduce this impact.

Project implementation would result in an increase in traffic volumes on affected roadway segments and, potentially, an increase in traffic noise levels. Generally, a doubling of a noise source (such as twice as much traffic) is required to result in an increase of 3 dB, which is perceived as barely noticeable by people (Egan 2007:21). The Placer County Noise Ordinance establishes a 5-dBA increase in a noise source as a substantial noise increase. Thus, regarding traffic noise specifically, an increase in 5 dB or more in traffic noise would be considered substantial. In addition, as indicated in Table 4.9-8, Placer County has established land use-based noise standards from transportation noise for residential/transient lodging land uses as 60 dB L_{dn} at the exterior property line. However, regardless of whether existing noise levels currently exceed standards, projects that do not result in a substantial permanent increase in noise would not result in noise levels that substantially alter the existing condition or expose receptors to excessive or substantial increases in noise.

Traffic noise modeling was conducted based on projected traffic increases during the winter season as a result of increased visitation to Squaw Valley and Alpine Meadows attributable to the project. Refer to Section 4.7, "Transportation and Circulation," and Appendix F for more details regarding inputs and results of the traffic noise modeling. Traffic noise modeling was conducted for winter weekend days (i.e., peak traffic days) for existing conditions and existing plus project conditions. Results are show in Table 4.9-12.

Based on the modeling conducted, overall, traffic would increase as a result of additional people traveling to either Squaw Valley or Alpine Meadows. The average daily trips (ADT) combined for both resorts would increase for both Saturday and Sunday (Table 4.9-12). However, the new gondola would result in a slight shift in current travel patterns at, and between, Squaw Valley and Alpine Meadows. The net effect of this shift results in both slight increases and decreases in traffic (and traffic noise) on Squaw Valley Road and Alpine Meadows Road depending on the day. Compared to existing conditions, Squaw Valley Road would have a lower ADT on Saturday and a resulting reduction in traffic noise but an increase in trips on Sunday and an increase in traffic noise. Conversely, Alpine Meadows Road would have a higher ADT on Saturday and a resulting increase in traffic noise but a decrease in trips on Sunday and a decrease in traffic noise. Ceasing operation of the current shuttle between Squaw Valley and Alpine Meadows while the gondola is in operation also results in an overall reduction in ADT on Squaw Valley Road and Alpine Meadows Road. When there are increases in traffic and traffic noise on Squaw Valley Road and Alpine Meadows Road, increases in noise would be less than 0.5 dBA (i.e., not audible). Consistent with the Placer County Noise Ordinance, project-generated increases in traffic noise would not be substantial and would not expose existing sensitive receptors to substantial increases in noise.

Table 4.9-12 Placer County Roadway Level of Service – Existing Plus Project Conditions

Segment	Existing Conditions				Existing Plus Project Conditions					
	Saturday Daily Conditions		Sunday Daily Conditions		Saturday Daily Conditions			Sunday Daily Conditions		
	ADT	CNEL[1]	ADT	CNEL[1]	ADT	CNEL[1]	Change (dBA)	ADT	CNEL[1]	Change (dBA)
Squaw Valley Road west of SR 89	12,750	60.2	13,100	63.0	12,700	60.1	-0.1	14,250	63.4	+0.4
Alpine Meadows Road west of SR 89	5,450	58.0	8,550	62.3	5,850	58.3	+0.3	7,750	61.9	-0.4

Notes: ADT = average daily trips; dBA= A-weighted decibel; CNEL = community noise equivalent level in dBA.

1. Traffic noise is reported as a 24-hour community noise equivalent level in A-weighted decibels at 100 feet from the centerline of the road.

Source: Modeling conducted by Ascent Environmental in 2018

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly adverse** direct and indirect effects related to operational traffic noise under Alternative 2 because the new gondola would result in increases in noise levels, but these increases would be below 0.5 dBA and would not be audible. There are no applicable RPMs that would reduce this effect.

CEQA Determination of Effects

The new gondola under Alternative 2 would result in additional traffic, and associated noise, on Squaw Valley Road and Alpine Meadows Road. However, any increases in noise levels would be below 0.5 dBA and would not be audible. Under CEQA, and using the CEQA criteria, increases in traffic noise would not result in a substantial permanent increase in noise or expose existing or future sensitive receptors to excessive traffic noise levels. This impact would be **less than significant**. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.9.3.3 ALTERNATIVE 3

Impact 4.9-1 (Alt. 3): Construction Noise Impacts

Under Alternative 3, existing noise-sensitive receptors would be located close to the Squaw Valley base terminal construction area. Blasting may be necessary at remote locations for tower installation, and mid-station construction, exposing existing receptors to blast noise. Helicopters would be used to transport material and personnel to construction sites, resulting in noise exposure to existing receptors, depending on specific flight paths. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise would be **adverse** because construction activities would temporarily increase existing noise levels. However, construction activities would be temporary, lasting one season, and would occur during the less sensitive times of the day when people are less likely to be disturbed. Implementation of RPMs NOI-1 through NOI-6 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because without implementation of RPMs that define the timing and duration of construction and the proper use of muffling devices on equipment, construction could occur during times of day, or in a manner, outside those identified in the Placer County Noise Ordinance. Implementation of RPMs MUL-7, NOI-2, NOI-5, and NOI-6 would limit the timing of construction to those identified in the Placer County Municipal Code, require the proper use of muffling devices, and limit the duration of construction to a single construction season. In addition, RPMs NOI-1, NOI-3, and NOI-4 would ensure construction noise is minimized to the extent possible by limiting helicopter flight paths to avoid residential areas and the GCW, requiring blasting to be conducted by qualified contractors, and providing a means to reduce potentially disturbing noise during ongoing construction activities by establishing a disturbance coordinator. With implementation of these three additional RPMs, this impact would be reduced, although helicopter noise could still occur for up to 20 days in proximity to existing sensitive land uses and could result in substantial temporary increases in disturbance. This impact would remain **significant**. (Impacts related to wilderness activities are addressed separately in Section 4.3, “Wilderness.”)

Primary project components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, construction activities and associated noise levels for Alternative 3 would also be the same as those described for Alternative 2. The only difference would be that the proposed gondola alignment for Alternative 3 would be located further to the east compared to Alternative 2 (see Exhibit 4.9-1). As a result, construction and blasting activities associated with lift tower installations and the Alpine Meadows mid-station would be located closer to the existing residences on the Alpine Meadows side of the gondola but further away from the National Forest System-GCW, resulting in slightly higher noise levels at these residences but lower levels within the National Forest System-GCW. In addition, if helicopter activity were required for material delivery along the gondola alignment for Alternative 3, helicopter activity would be located closer to existing residences under this alternative as compared to Alternative 2.

As discussed above for Alternative 2, construction activities would include off-road vehicles, helicopter use, and potential blasting that would result in increases in temporary noise levels during these activities. Construction would be relatively short-term, lasting only one construction season (up to 200 days) with

helicopter use occurring up to 20 days. Further, in accordance with Article 9.36.030, "Exemptions," of the Placer County Noise Ordinance, construction activities that occur between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday, provided that all construction equipment is fitted with factory-installed muffler devices and maintained in good working order, are exempt from Placer County noise limits for sensitive receptors (Table 4.9-9). However, if construction of Alternative 3 did not occur in a manner that qualified for this exemption, construction noise could exceed daytime standards at residences located near project facilities and could occur outside of daytime hours when people are more sensitive to noise. However, RPM NOI-6 specifically identifies that construction activity would occur within the daily timeframes identified in the Placer County Noise Ordinance construction exemption. RPM MUL-7 identifies that construction would occur in a single construction season, minimizing the duration of construction noise generation. RPMs NOI-2 and NOI-5 require that construction equipment is equipped with properly operating and maintained muffler devices, which would be consistent with the requirement of the Placer County Noise Ordinance construction exemption.

With implementation of these RPMs, construction activities would occur during times, and in a manner, consistent with the Placer County Noise Ordinance construction exemption. Construction would not occur during night time hours, and in addition, would be completed in a single construction season. Blasting and helicopter use would be infrequent and intermittent. However, because specific helicopter flight paths and daily activity levels are unknown, a conservative approach is taken here and it is concluded that helicopter use has the potential to result in temporary, but substantial, disturbance to existing sensitive receptors, depending on specific flight paths, drop-off locations, and activity levels.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise under Alternative 3 would be **adverse** because construction activities would temporarily increase existing noise levels. These effects would be mitigated through implementation of RPMs MUL-7 and NOI-1 through NOI-6.

CEQA Determination of Effects

Alternative 3 would result in daytime construction activities and noise from heavy-duty equipment, blasting, and helicopter use. Without proper implementation of RPMs, it is possible that construction could occur at times, or in a manner, inconsistent with the Placer County Noise Ordinance, resulting in exposure of persons to noise levels in excess of standards established in the local noise ordinance and a substantial temporary increase in ambient noise levels above existing without the project. Under CEQA, and using the CEQA criteria, if construction of Alternative 3 occurs at times, or in a manner inconsistent with the Placer County Noise Ordinance, this would be a significant impact. However, with implementation of RPMs MUL-7, NOI-2, NOI-5, and NOI-6, construction activities would be temporary, lasting one season, and would occur during the less sensitive times of the day when people are less likely to be disturbed, consistent with the Placer County Noise Ordinance; and mufflers would be properly installed and maintained on construction equipment in compliance with the Noise Ordinance. With implementation of these RPMs, the potential to disturb people during construction activities would be substantially reduced. This impact would not differ materially from that under Alternative 2 because both alternatives would generate the same, or a very similar, amount of construction noise. RPMs NOI-1, NOI-3, and NOI-4 would further reduce adverse effects from construction noise by limiting helicopter flight paths to avoid residential areas, providing a means to reduce potentially disturbing noise during ongoing construction activities by establishing a disturbance coordinator, and requiring that blasting be conducted by qualified contractors. However, given the uncertainty of helicopter flight paths and daily activity levels and the proximity to existing receptors, helicopter noise could result in substantial disturbance to existing sensitive receptors and this impact would be **significant.**

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs MUL-7, NOI-2, NOI-5, and NOI-6 as mitigation measures reduces this significant impact by limiting construction to a single season and requiring that construction activities be conducted in a manner consistent with the

Placer County Noise Ordinance. The adoption of RPMs NOI-1, NOI-3, and NOI-4 as mitigation measures further reduces the effects of construction noise, but does not eliminate the potential for helicopters to result in substantial temporary disturbance to sensitive receptors. There is no feasible mechanism to ensure that helicopters flying between available staging areas (i.e., the Squaw Valley and Alpine Meadows Parking lots) and the gondola alignment will not generate substantial disturbance to nearby sensitive receptors. This impact would be **significant and unavoidable**.

Impact 4.9-2 (Alt. 3): Construction Vibration Impacts

Under Alternative 3, existing sensitive receptors would be located close to the Squaw Valley base terminal construction area. In addition, blasting may be necessary at remote locations for tower installation and mid-station construction, exposing existing receptors to ground vibration from blasting. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise would be **adverse** because construction activities would temporarily increase vibration levels. However, blasting activities would be temporary and would occur during the less sensitive times of the day when people are less likely to be disturbed. Further, potential blast site locations would not be close to any existing residences or places where people sleep. RPMs NOI-4 and NOI-6 would mitigate this effect. Under CEQA, vibration levels would not exceed applicable thresholds and this impact would be **less than significant**. In addition, RPMs NOI-4 and NOI-6 would ensure proper considerations are taken during blasting activities and by limiting construction times, including blasting, to the less sensitive daytime hours when construction noise is exempt from the Placer County Noise Ordinance. With implementation of these two RPMs, this impact would be reduced, although these RPMs are not necessary to reduce the significant impact to a less-than-significant level.

Primary project components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, like Alternative 2, blasting may also be required for Alternative 3 for construction of mid-stations and lift towers in remote locations along the gondola alignment. Blasting VdB levels would be the same as described for Alternative 2. With Alternative 3, the proposed gondola alignment for Alternative 3 would be located further to the east compared to Alternative 2 (see Exhibit 4.9-1). As a result, blasting activities associated with lift tower installations and the Alpine Meadows mid-station would be located closer to existing residences on the Alpine Meadows side of the gondola, resulting in slightly higher potential for vibration at these residences. Specifically, one residence is located within the proposed alignment for this alternative and if blasting were to occur at the tower location closest to this house (i.e., 130 feet), blasting would result in 87 VdB. Nonetheless, the impact criteria of 80 VdB is designed for places where people sleep. Blasting would not occur at night and therefore would not disturb sleep. Also, if blasting were needed at this location, it would be for a single tower and would be a one time, or very limited vibration generating event.

As discussed above for Alternative 2, blasting activities would be temporary and intermittent and would not occur during sensitive times of the day or within distances that could result in disturbance at places where people sleep. Although construction of Alternative 3 would generate some level of ground vibration, levels would not exceed applicable thresholds. RPM NOI-4 would further reduce the potential for ground vibration by requiring that a licensed blasting contractor be used in the event that blasting is required (thereby helping ensure that the proper amount and type of explosive is used to achieve the desired result), and all blasting activities would be required to comply with Placer County municipal code (i.e., construction hour time limits). RPM NOI-6 would limit the potential for human disturbance from ground vibration by requiring that all construction work, including blasting, occur during daytime hours, consistent with Placer County Noise Ordinance, minimizing the potential to result in sleep disturbance from any blasting activities.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to blasting vibration under Alternative 3 would be **adverse** because blasting activities would temporarily increase existing vibration levels. These effects would be mitigated through implementation of RPMs NOI-4 and NOI-6.

CEQA Determination of Effects

Like Alternative 2, Alternative 3 may require blasting to remove rock outcroppings during construction of mid-stations or towers in remote locations. However, blasting activities would be temporary and would be infrequent enough and far enough away from sensitive receptors that ground vibration thresholds would not be exceeded. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs NOI-4 and NOI-6 would further reduce potential effects from construction generated ground vibration by requiring that a licensed blasting contractor would be used in the event that blasting is required, and all blasting activities would be required to comply with Placer County municipal code (i.e., construction hour time limits). However, these RPMs would not be necessary to reduce a significant impact to a less-than-significant level. These RPMs would be equally effective under Alternative 3 and Alternative 2.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs NOI-4 and NOI-6 as mitigation measures would reduce the effects of construction generated ground vibration but are not necessary to reduce a significant effect.

Impact 4.9-3 (Alt. 3): Exposure of Existing Sensitive Receptors to Operational Noise from Proposed Gondola

Under Alternative 3, the proposed gondola would result in a new noise source at the base terminals, mid-stations, and tower locations. No receptors are located close to the proposed gondola base terminal at Alpine Meadows. However, the new gondola would be located close to existing receptors at the Squaw Valley base terminal location. In addition, the new gondola would exceed Placer County daytime noise standards at the existing residence that is located within the proposed gondola alignment. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to the gondola operational noise would be **adverse** because the new gondola would result in a new noise source at the base terminals, mid-stations, and tower locations. The addition of the new gondola to Squaw Valley would not result in a substantial permanent increase in noise. However, the new gondola would result in exceedance of Placer County daytime standards at the existing residences within the gondola alignment and near the Alpine Meadows mid-station, resulting in a substantial increase in noise at these locations. Under CEQA, this impact would be **significant**.

Primary project components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, operational noise sources (e.g., gondola equipment, over-the-snow vehicle use) and noise levels associated with the gondola would be the same. However, with Alternative 3, the proposed gondola alignment would be located further to the east compared to Alternative 2. As a result, the new alignment could place a lift tower approximately 130 feet from the house located within the gondola alignment, resulting in gondola equipment noise levels of 59.7 dBA L_{eq} and 63.5 dBA L_{max}, exceeding the daytime noise standard of 55 dBA L_{eq}. In addition, the Alpine Meadows mid-station would be located approximately 180 feet from an existing house near Alpine Meadows Road, resulting in gondola equipment noise levels of 56.0 dBA L_{eq}, and 59.9 dBA L_{max}, exceeding the daytime noise standard of 55 dBA L_{eq}. Operational noise associated with the gondola equipment could result in 52 dBA L_{eq} at the eastern boundary of the National Forest System-GCW (i.e., 258 feet west of the gondola), 10 dB lower compared to Alternative 2. Although the alignment of Alternative 3 could cause the use of over-the-snow equipment near these residences, as identified in the discussion of this impact for Alternative 2, the common presence of residential uses at ski resort base areas shows the use of over-the-snow vehicles for resort operations is compatible with nearby residential uses.

Although daytime noise standards would be exceeded by gondola equipment operations, typical wooden structures provide, at a minimum, an exterior-to-interior noise reduction of 25 dB (Caltrans 2002). Thus, interior noise levels at these residences would be well below the Placer County interior noise standards of 45 dBA. However, given that the location of the proposed gondola alignment under Alternative 3 is in an

area that is relatively undeveloped, rural, and quiet in nature, and the new gondola would introduce a new source that would exceed Placer County noise standards for sensitive receptors, Alternative 3 would result in a substantial permanent increase in noise levels.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, Alternative 3 would result in long-term noise increases associated with the new Alpine Meadows mid-station being near, and gondola passing over, existing residential uses, resulting an **adverse** effect on existing sensitive receptors.

CEQA Determination of Effects

Like Alternative 2, Alternative 3 would result in increases in operational noise associated with the new gondola base terminals and mid-stations. Increases in gondola noise at existing sensitive land uses would result in an exceedance of Placer County daytime noise standards and a substantial increase in noise in areas where no noise source currently exists. Using the CEQA criteria, this impact would be significant**.** This impact would be greater under Alternative 3 than under Alternative 2 because the gondola alignment under Alternative 3 would be closer to a residence than would be the case under Alternative 2. There are no applicable RPMs that would reduce this impact. Therefore, this impact would be **significant**.

Mitigation Measure 4.9-3 (Alt. 3): Reduce Noise Exposure to Existing Sensitive Receptors from Proposed Stationary Noise Sources

The location of the proposed gondola components (e.g., stations, towers) under Alternative 3 shall be located, at a minimum, 200 feet from any existing sensitive land use.

Significance after Mitigation

Siting new noise sources beyond 200 feet of sensitive land uses would ensure that Placer County daytime noise standards of 55 dBA L_{eq} and 70 dBA L_{max} are not exceeded at sensitive receptors. This impact would be reduced to a **less-than-significant** level**.**

Impact 4.9-4 (Alt. 3): Exposure of Existing Sensitive Receptors to Operational Project-Generated Transportation Noise Sources

Under Alternative 3, the proposed gondola would result in increases in visitation rates to Squaw Valley and Alpine Meadows. Overall, traffic would increase as a result of additional people traveling to either Squaw Valley or Alpine Meadows. In addition, the new gondola would result in a slight shift in current travel patterns at and between Squaw Valley and Alpine Meadows. The net effect would result in both slight increases and decreases in traffic (and traffic noise) on Squaw Valley Road and Alpine Meadows Road depending on the day. Nonetheless, any increases in traffic noise would be less than 0.5 dBA in all circumstances and, therefore, would not be audible. Consistent with the Placer County Noise Ordinance, project-generated increases in traffic noise would not be substantial and would not expose existing sensitive receptors to permanent increases in noise. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly adverse** direct and indirect effects related to the gondola operational traffic noise because the new gondola would result in slight (i.e., inaudible) increases in traffic noise. There are no applicable RPMs that would reduce this effect. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because traffic noise increases would not result in a substantial permanent increase in noise or expose existing receptors to excessive noise levels. There are no applicable RPMs that would reduce this impact.

Primary project components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, traffic patterns resulting from operation of the project would be the same. Therefore, associated traffic noise levels and impacts would also be the same.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly adverse** direct and indirect effects related to operational traffic noise under Alternative 3 because the new gondola would result in increases in noise levels, but these increases would be below 0.5 dBA and would not be audible. There are no applicable RPMs that would reduce this effect.

CEQA Determination of Effects

Like Alternative 2, the new gondola under Alternative 3 would result in additional traffic, and associated noise, on Squaw Valley Road and Alpine Meadows Road. However, any increases in noise levels would be below 0.5 dBA and would not be audible. Under CEQA, and using the CEQA criteria, increases in traffic noise would not result in a substantial permanent increase in noise or expose existing or future sensitive receptors to excessive traffic noise levels. This impact would be **less than significant**. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.9.3.4 ALTERNATIVE 4

Impact 4.9-1 (Alt. 4): Construction Noise Impacts

Under Alternative 4, existing noise-sensitive receptors would be located close to the Alpine Meadows mid-station construction area. Blasting may be necessary at remote locations for tower installation and mid-station construction, exposing existing receptors to blast noise. Helicopters would be used to transport material and personnel to construction sites, resulting in noise exposure to existing receptors, depending on specific flight paths. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise would be **adverse** because construction activities would temporarily increase existing noise levels. However, construction activities would be temporary, lasting one season, and would occur during the less sensitive times of the day when people are less likely to be disturbed. Implementation of RPMs NOI-1 through NOI-6 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because without implementation of RPMs that define the timing and duration of construction and the proper use of muffling devices on equipment, construction could occur during times of day, or in a manner, outside those identified in the Placer County Noise Ordinance. Implementation of RPMs MUL-7, NOI-2, NOI-5, and NOI-6 would limit the timing of construction to those identified in the Placer County Municipal Code, require the proper use of muffling devices, and limit the duration of construction to a single construction season. In addition, RPMs NOI-1, NOI-3, and NOI-4 would ensure construction noise is minimized to the extent possible by limiting helicopter flight paths to avoid residential areas and the GCW, requiring blasting to be conducted by qualified contractors, and providing a means to reduce potentially disturbing noise during ongoing construction activities by establishing a disturbance coordinator. With implementation of these three additional RPMs, this impact would be reduced, although helicopter noise could still occur for up to 20 days in proximity to existing sensitive land uses and could result in substantial temporary increases in disturbance. This impact would remain **significant**. (Impacts related to wilderness activities are addressed separately in Section 4.3, “Wilderness.”)

Primary project components for Alternative 4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, construction activities and associated noise levels for Alternative 4 would also be the same as those described for Alternative 2. The only difference would be that the proposed gondola alignment and Alpine Meadows mid-station for Alternative 4 would be located further to the east compared to Alternative 2 (see Exhibit 4.9-1). As a result, construction and blasting activities associated with lift tower installations and the Alpine Meadows mid-station would be located closer to existing residences on the Alpine Meadows side of the gondola but further from the National Forest System-GCW. In addition, if helicopter activity were required for material delivery along the gondola alignment for

Alternative 4, helicopter activity would be located closer to existing residences under this alternative as compared to Alternative 2.

As discussed above for Alternative 2, construction activities would include off-road vehicles, helicopter use, and potential blasting that would result in increases in temporary noise levels during these activities. Construction would be relatively short-term, lasting only one construction season (up to 200 days) with helicopter use occurring up to 20 days. Further, in accordance with Article 9.36.030, "Exemptions," of the Placer County Noise Ordinance, construction activities that occur between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday, provided that all construction equipment is fitted with factory-installed muffler devices and maintained in good working order, are exempt from Placer County noise limits for sensitive receptors (Table 4.9-9). However, if construction of Alternative 3 did not occur in a manner that qualified for this exemption, construction noise could exceed daytime standards at residences located near project facilities and could occur outside of daytime hours when people are more sensitive to noise. However, RPM NOI-6 specifically identifies that construction activity would occur within the daily timeframes identified in the Placer County Noise Ordinance construction exemption. RPM MUL-7 identifies that construction would occur in a single construction season, minimizing the duration of construction noise generation. RPMs NOI-2 and NOI-5 require that construction equipment is equipped with properly operating and maintained muffler devices, which would be consistent with the requirement of the Placer County Noise Ordinance construction exemption.

With implementation of these RPMs, construction activities would occur during times, and in a manner, consistent with the Placer County Noise Ordinance construction exemption. Construction would not occur during night time hours, and in addition, would be completed in a single construction season. Blasting and helicopter use would be infrequent and intermittent. However, because specific helicopter flight paths and daily activity levels are unknown, a conservative approach is taken here and it is concluded that helicopter use has the potential to result in temporary, but substantial, disturbance to existing sensitive receptors, depending on specific flight paths, drop-off locations, and activity levels.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise under Alternative 4 would be **adverse** because construction activities would temporarily increase existing noise levels. These effects would be mitigated through implementation of RPMs MUL-7 and NOI-1 through NOI-6.

CEQA Determination of Effects

Alternative 4 would result in daytime construction activities and noise from heavy-duty equipment, blasting, and helicopter use. Without proper implementation of RPMs, it is possible that construction could occur at times, or in a manner, inconsistent with the Placer County Noise Ordinance, resulting in exposure of persons to noise levels in excess of standards established in the local noise ordinance and a substantial temporary increase in ambient noise levels above existing without the project. Under CEQA, and using the CEQA criteria, if construction of Alternative 4 occurs at times, or in a manner inconsistent with the Placer County Noise Ordinance, this would be a significant impact. However, with implementation of RPMs MUL-7, NOI-2, NOI-5, and NOI-6, construction activities would be temporary, lasting one season, and would occur during the less sensitive times of the day when people are less likely to be disturbed, consistent with the Placer County Noise Ordinance; and mufflers would be properly installed and maintained on construction equipment in compliance with the Noise Ordinance. With implementation of these RPMs, disturbed, consistent with the Placer County Noise Ordinance; and mufflers would be properly installed and maintained on construction equipment in compliance with the Noise Ordinance. With implementation of these RPMs, the potential to disturb people during construction activities would be substantially reduced. This impact would not differ materially from that under Alternative 2 because both alternatives would generate the same, or a very similar, amount of construction noise. RPMs NOI-1, NOI-3, and NOI-4 would further reduce adverse effects from construction noise by limiting helicopter flight paths to avoid residential areas, providing a means to reduce potentially disturbing noise during ongoing construction activities by establishing a disturbance coordinator, and requiring that blasting be conducted by qualified contractors. However, given the uncertainty of helicopter flight paths

and daily activity levels and the proximity to existing receptors, helicopter noise could result in substantial disturbance to existing sensitive receptors and this impact would be **significant**.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs MUL-7, NOI-2, NOI-5, and NOI-6 as mitigation measures reduces this significant impact by limiting construction to a single season and requiring that construction activities be conducted in a manner consistent with the Placer County Noise Ordinance. The adoption of RPMs NOI-1, NOI-3, and NOI-4 as mitigation measures further reduces the effects of construction noise, but does not eliminate the potential for helicopters to result in substantial temporary disturbance to sensitive receptors. There is no feasible mechanism to ensure that helicopters flying between available staging areas (i.e., the Squaw Valley and Alpine Meadows Parking lots) and the gondola alignment will not generate substantial disturbance to nearby sensitive receptors. This impact would be **significant and unavoidable**.

Impact 4.9-2 (Alt. 4): Construction Vibration Impacts

Under Alternative 4, existing sensitive receptors would be located close to the Alpine Meadows mid-station construction area. In addition, blasting may be necessary at remote locations for tower installation and mid-station construction, exposing existing receptors to ground vibration from blasting. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to construction noise would be **adverse** because construction activities would temporarily increase vibration levels. However, blasting activities would be temporary and would occur during the less sensitive times of the day when people are less likely to be disturbed. Further, potential blast site locations would not be close to any existing residences or places where people sleep. RPMs NOI-4 and NOI-6 would mitigate this effect Under CEQA, vibration levels would not exceed applicable thresholds and this impact would be **less than significant**. In addition, RPMs NOI-4 and NOI-6 would ensure proper considerations are taken during blasting activities and by limiting construction times, including blasting, to the less sensitive daytime hours when construction noise is exempt from the Placer County Noise Ordinance. With implementation of these two RPMs, this impact would be reduced, although these RPMs are not necessary to reduce the significant impact to a less-than-significant level.

Primary project components for Alternative 4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, like Alternative 2, blasting may also be required for Alternative 4, for construction of mid-stations and lift towers in remote locations along the gondola alignment. Blasting VdB levels would be the same as described for Alternative 2. With Alternative 4, the proposed gondola alignment for would be located further to the east compared to Alternative 2 (see Exhibit 4.9-1). As a result, blasting activities potentially occurring at tower installations or the Alpine Meadows mid-station could be located approximately 300 feet from the existing residence near Alpine Meadows Road, resulting in slightly higher potential for vibrations levels at this location, but still would be located beyond the distance identified where blasting would exceed 80 VdB (i.e., 230 feet).

As discussed above for Alternative 2, blasting activities would be temporary and intermittent and would not occur during sensitive times of the day or within distances that could result in disturbance at places where people reside or sleep. Although construction of Alternative 4 would generate some level of ground vibration, levels would not exceed applicable thresholds. RPM NOI-4 would further reduce the potential for ground vibration by requiring that a licensed blasting contractor be used in the event that blasting is required (thereby helping ensure that the proper amount and type of explosive is used to achieve the desired result), and all blasting activities would be required to comply with Placer County municipal code (i.e., construction hour time limits). RPM NOI-6 would limit the potential for human disturbance from ground vibration by requiring that all construction work, including blasting, occur during daytime hours, consistent with Placer County Noise Ordinance, minimizing the potential to result in sleep disturbance from any blasting activities.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to blasting vibration under Alternative 4 would be **adverse** because blasting activities would temporarily increase existing vibration levels. These effects would be mitigated through implementation of RPMs NOI-4 and NOI-6.

CEQA Determination of Effects

Like Alternative 2, Alternative 4 may require blasting to remove rock outcroppings during construction of mid-stations or towers in remote locations. However, blasting activities would be temporary, and would be infrequent enough and far enough away from sensitive receptors that ground vibration thresholds would not be exceeded. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs NOI-4 and NOI-6 would further reduce potential effects from construction generated ground vibration by requiring that a licensed blasting contractor would be used in the event that blasting is required, and all blasting activities would be required to comply with Placer County municipal code (i.e., construction hour time limits). However, these RPMs would not be necessary to reduce a significant impact to a less-than-significant level. These RPMs would be equally effective under Alternative 4 and Alternative 2.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs NOI-4 and NOI-6 as mitigation measures would reduce the effects of construction generated ground vibration but are not necessary to reduce a significant effect.

Impact 4.9-3 (Alt. 4): Exposure of Existing Sensitive Receptors to Operational Noise from Proposed Gondola

Under Alternative 4, the proposed gondola would result in a new noise source at the base terminals, mid-stations, and tower locations. However, all facilities are far enough away from sensitive receptors that applicable noise standards would not be exceeded. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to the gondola operational noise would be **adverse** because the new gondola would result in a new noise source at the base terminals, mid-stations, and tower locations. The addition of the new gondola to Squaw Valley would not result in a substantial permanent increase in noise, and under CEQA, this impact would be **less than significant**.

Primary project components for Alternative 4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, operational noise sources (e.g., gondola equipment, over-the-snow vehicle use) and noise levels associated with the gondola for both operation and maintenance activities would be the same. However, with Alternative 4, the proposed gondola alignment would be located further to the east compared to Alternative 2. In addition, the Squaw Valley base terminal would also be located further east as compared to Alternative 2. As a result, the new alignment could place lift towers and mid-stations closer to existing houses, compared to Alternative 2 but would locate the Squaw Valley base terminal further away from existing sensitive receptors compared to Alternative 2. All components would be further from the National Forest System-GCW. Thus, the proposed gondola alignment, gondola stations, and tower locations with this alternative would be located more than 200 feet from any existing sensitive receptors and, therefore; would not exceed Placer County daytime nose standards at any existing sensitive receptor. Operational noise associated with the gondola equipment could result in 35.6 dBA L_{eq} at the eastern boundary of the National Forest System-GCW (i.e., 1,100 feet west of the gondola), 26 dB lower compared to Alternative 2.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to operational noise (gondola) under Alternative 4 would be **adverse** because the new gondola would result in a new noise source at the base terminals, mid-stations, and tower locations.

However, any increases in noise levels would be minor and would be consistent with the existing noise environment. Short of relocating the proposed gondola equipment or not approving the project, no measures are available to reduce noise associated with gondola operation.

CEQA Determination of Effects

Like Alternative 2, Alternative 4 would result in new and additional long-term operational noise associated with gondola operation. However, increases in noise would not exceed applicable standards and would not be considered substantial. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. There are no applicable RPMs that would reduce this impact. This impact would be the same as under Alternative 2 because neither alternative would create a substantial permanent increase in noise.

Mitigation Measures

No mitigation measures are required.

Impact 4.9-4 (Alt. 4): Exposure of Existing Sensitive Receptors to Operational Project-Generated Transportation Noise Sources

Under Alternative 4, the proposed gondola would result in increases in visitation rates to Squaw Valley and Alpine Meadows. Overall, traffic would increase as a result of additional people traveling to either Squaw Valley or Alpine Meadows. In addition, the new gondola would result in a slight shift in current travel patterns at and between Squaw Valley and Alpine Meadows. The net effect would result in both slight increases and decreases in traffic (and traffic noise) on Squaw Valley Road and Alpine Meadows Road depending on the day. Nonetheless, any increases in traffic noise would be less than 0.5 dBA in all circumstances and, therefore, would not be audible. Consistent with the Placer County Noise Ordinance, project-generated increases in traffic noise would not be substantial and would not expose existing sensitive receptors to permanent increases in noise. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly adverse** direct and indirect effects related to the gondola operational traffic noise because the new gondola would result in slight (i.e., inaudible) increases in traffic noise. There are no applicable RPMs that would reduce this effect. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because traffic noise increases would not result in a substantial permanent increase in noise or expose existing receptors to excessive noise levels. There are no applicable RPMs that would reduce this impact.

Primary project components for Alternative 4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, traffic patterns resulting from operation of the project would be the same. Therefore, associated traffic noise levels and impacts would also be the same.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **minorly adverse** direct and indirect effects related to operational traffic noise under Alternative 4 because the new gondola would result in increases in noise levels, but these increases would be below 0.5 dBA and would not be audible. There are no applicable RPMs that would reduce this effect.

CEQA Determination of Effects

Like Alternative 2, the new gondola under Alternative 4 would result in additional traffic, and associated noise, on Squaw Valley Road and Alpine Meadows Road. However, any increases in noise levels would be below 0.5 dBA and would not be audible. Under CEQA, and using the CEQA criteria, increases in traffic noise would not result in a substantial permanent increase in noise or expose existing or future sensitive receptors to excessive traffic noise levels. This impact would be **less than significant**. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.9.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.9-13 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

For all the action alternatives, Impacts 4.9-1 and 4.9-2 would be adverse for all NEPA indicators. Construction activities would result in temporary increases in noise associated with heavy-duty off-road equipment, blasting, and helicopter use. Incorporation of noise-related RPMs would reduce these effects to the extent possible, but construction noise would not be eliminated. Under CEQA, impacts for all alternatives would be significant and unavoidable due to the potential for helicopter noise to result in substantial disturbance to existing sensitive receptors. Because of location, construction noise from Alternative 2 would be more noticeable in the GCW; however, construction noise would be more noticeable at sensitive residential receptors along the southern part of the alignment under Alternatives 3 and 4. The Squaw Valley base terminal would be near the Squaw Valley Lodge under Alternatives 2 and 3 but more distant from this sensitive receptor under Alternative 4.

For Impact 4.9-3, long-term operation would introduce new stationary sources associated with the gondola stations and lift towers. Increases in noise would be associated with stationary equipment at the base terminals (e.g., drive units, motors, cooling fans) and noise associated with the gondola passing over lift towers. Considering that permanent increases in noise would occur, for all NEPA indicators effects are adverse. Under Alternative 3, the impact would be slighter greater compared to Alternative 2 because the gondola alignment would directly affect an existing residence in an area where no noise sources currently exist. Under Alternatives 2 and 4, the impact would be less than significant under CEQA and no mitigation would be required. Under Alternative 3, the impact would be significant because operation of the gondola would result in a substantial permanent increase in noise at existing sensitive receptors. However, with incorporation of Mitigation Measure 4.9-3, project components would be located far enough away from existing residences to minimize noise exposure, and the impact would be reduced to a less-than-significant level. Under Alternatives 2 and 3, the Squaw Valley base terminal would be closer to existing residences than under Alternative 4; however, operation of this base terminal does not result in a significant effect under CEQA for any alternative.

For Impact 4.9-4, effects related to operational traffic noise are minorly adverse for all NEPA indicators and less than significant for all CEQA criteria for all three action alternatives, and there is no difference in effects across the action alternatives because traffic patterns (and thus traffic noise) would be the same for all action alternatives.

Table 4.9-13 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.9-1: Construction Noise Impacts	Narrative description of potential noise-related impacts associated with construction of the proposed projects, including short-term construction-related noise (e.g., use of heavy equipment and helicopters)	No effect	Adverse under NEPA; significant and unavoidable under CEQA	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternative 2	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternatives 2 and 3
	Expose persons to or generation of noise levels in excess of standards established in the local General Plan, noise ordinance	No effect	Adverse under NEPA; significant under CEQA	Adverse under NEPA; significant under CEQA Same as for Alternative 2	Adverse under NEPA; significant under CEQA Same as for Alternatives 2 and 3

Table 4.9-13 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing without the project	No effect	Adverse under NEPA; significant and unavoidable under CEQA	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternative 2	Adverse under NEPA; significant and unavoidable under CEQA Same as for Alternatives 2 and 3
4.9-2: Construction Vibration Impacts	Narrative description of potential noise-related impacts associated with construction of the proposed projects, including short-term construction-related noise (e.g., use of heavy equipment and helicopters)	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Discussion of the helicopter flight plan and its potential to increase noise levels in the study area	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Expose persons to or generation of excessive groundborne vibration or groundborne noise levels	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
4.9-3: Exposure of Existing Sensitive Receptors to Operational Noise from Proposed Gondola	Narrative description of potential noise-related impacts associated with operation of the proposed projects, including long-term operational noise (e.g., gondola)	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Greater than under Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2 and less than for Alternative 3
	Expose persons to or generation of noise levels in excess of standards established in the local General Plan, noise ordinance	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Greater than under Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2 and less than for Alternative 3
	Result in a substantial permanent increase (i.e., 5 dB) in ambient noise levels in the project vicinity above levels existing without the project	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Greater than under Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2 and less than for Alternative 3
4.9-4: Exposure of Existing Sensitive Receptors to Operational Project-Generated Transportation Noise Sources	Narrative description of potential noise-related impacts associated with operation of the proposed projects, including traffic-related noise	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Result in a substantial permanent increase (i.e., 5 dB) in ambient noise levels in the project vicinity above levels existing without the project	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

4.9.4 Cumulative Effects

4.9.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope for the cumulative effects analysis of noise is limited primarily to the project area for construction and stationary noise sources because of the nature of sound that decreases rapidly with distance from the sources. Only projects and activities in relatively close proximity to the gondola would generate sound that could also be heard simultaneously with sound generated by gondola construction and operation, thus resulting in a cumulative interaction. Traffic noise occurs on regional and local roadways affected by the project but has local effects on the surrounding sensitive receptors adjacent to affected roads. The temporal scope for the cumulative effects analysis includes the gondola construction period (6–8 months) and the operational period of the gondola (winter season). These would be the times when noise generated by other projects could interact with noise generated by the gondola. 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).

Any present or reasonably foreseeable future projects within the spatial and temporal scope of analysis that have the potential to create impacts on noise are listed below. Potential impacts associated with these projects include increases in noise, including traffic noise, caused by construction or operation.

Project	Potential Impacts
Alpine Meadows Master Development Plan	Construction noise and traffic noise
Village at Squaw Valley Specific Plan	Construction noise and traffic noise
Squaw Valley Red Dog Lift Replacement	Construction noise and operational noise exposure
Alpine Meadows Hot Wheels Lift Replacement	Construction noise and operational noise exposure
White Wolf Development	Construction noise and operational noise exposure
General Development in Olympic Valley	Construction noise and operational noise exposure
Timberline Twister	Construction noise and operational noise exposure
General Development in Alpine Meadows	Construction noise and operational noise exposure
Alpine Sierra Subdivision	Construction noise and operational noise exposure

4.9.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct or indirect impacts and thus by definition no cumulative impacts from noise.

Alternative 2

Construction Noise and Vibration

Impacts associated with noise related to implementation of Alternative 2 are analyzed in Section 4.9.3.2. Noise impacts are based on factors related to site-specific and project-specific characteristics and conditions, including distance to noise sources, barriers between land uses and noise sources, and the duration of the noise event. A cumulative noise impact could occur if project construction activity combined with other

nearby construction activity, resulting in a substantial increase in noise at the same sensitive land use. Given the foreseeable future development in the area, construction activities associated with the Alpine Meadows Master Plan (which includes lift improvements like the Rollers Chair [see the first item in Table 3-3, "Cumulative Effects Projects], Village at Squaw Valley Specific Plan, Alpine Sierra subdivision, and the Timberline Twister could potentially occur at the same time as construction for this alternative.

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 the less sensitive times of the day when people are typically away from their homes or otherwise not sleeping. Further, as discussed in Section 4.9.3.2, 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. In addition, most of the proposed construction activities would take place in remote areas, where no existing or future planned development would occur. Construction noise is temporary, fluctuates throughout the duration of activities, and is of primary concern closest to the activities. Given the short-term nature of construction activities, the limited potential for construction to disturb any nearby receptor, and the inclusion of RPMs, construction activity associated with the gondola generally would not combine with construction activities of other future projects to result in a cumulatively adverse effect. The gondola project is considered to have a significant and unavoidable construction noise impact due to the use of a helicopter during construction and a lack of certainty at this time regarding the proximity of flight paths to nearby sensitive receptors. If existing sensitive receptors were simultaneously in close proximity to both gondola-related helicopter flight paths and construction of a reasonably foreseeable future project, this could result in an adverse cumulative effect and Alternative 2 would make a substantial contribution to this cumulative effect.

Operational Noise

Cumulative noise levels could be affected by additional buildout of surrounding land uses and increases in vehicular traffic on affected roadways. Future development in the area that could combine with project-generated operational noise include the Alpine Meadows Master Plan, Village at Squaw Valley Specific Plan, White Wolf project, Alpine Sierra subdivision, and the Timberline Twister.

Regarding increases in operational stationary noise, as discussed in Section 4.9.3.2, Alternative 2 would result in new stationary sources (e.g., gondola equipment, lift towers). However, noise from gondola operation would be similar to noise already existing at both Squaw Valley and Alpine Meadows and, as discussed in Section 4.9,3.2, would not result in substantial increases in noise over existing conditions (i.e., 5 dB). Further, noise generated from the new gondola would not result in substantial noise levels beyond 200 feet of the sources and thus would not combine with stationary sources associated with future planned development (e.g., building heating, ventilation, and air conditioning equipment; commercial loading docks). Increases in stationary noise would not result in a cumulatively adverse effect.

Future development in the project area would result in additional traffic-related noise on surrounding roadways and would contribute to the cumulative traffic noise condition. Alternative 2 would generate some increase in traffic, further increasing traffic noise under the cumulative condition. However, traffic noise increases attributable to Alternative 2 would be minor and inaudible (i.e., less than 0.5 dBA) (See Table 4.9-12). Therefore, traffic related noise attributable to Alternative 2 would not result in a substantial contribution to a significant cumulative noise impact.

Alternative 3

Construction Noise and Vibration

Construction activities and associated noise levels would be the same under this alternative as under Alternative 2. The only difference under this alternative is that the location of some project components would differ compared with Alternative 2. Nonetheless, all the project RPMs would continue to be in place, and impacts would be the same as described above for Alternative 2. If existing sensitive receptors were simultaneously in close proximity to both gondola-related helicopter flight paths and construction of a

reasonably foreseeable future project, this could result in an adverse cumulative effect and Alternative 3 would make a substantial contribution to this cumulative effect.

Operational Noise

Operational noise sources and associated noise levels would be the same under this alternative as under Alternative 2. The only difference under this alternative is that the location of some project components would differ compared with Alternative 2. Similar to Alternative 2, noise levels would be greatest closest to the source and would not be substantial beyond 200 feet of the new gondola. No cumulatively adverse effects would occur.

Long-term traffic noise impacts would be the same under this alternative as under Alternative 2. No cumulatively adverse effects would occur.

Alternative 4

Construction Noise and Vibration

Construction activities and associated noise levels would be the same under this alternative as under Alternative 2. The only difference under this alternative is that the location of some project components would differ compared with Alternative 2. Nonetheless, all the project RPMs would continue to be in place, and impacts would be the same as described above for Alternative 2. If existing sensitive receptors were simultaneously in close proximity to both gondola-related helicopter flight paths and construction of a reasonably foreseeable future project, this could result in an adverse cumulative effect and Alternative 4 would make a substantial contribution to this cumulative effect.

Operational Noise

Operational noise sources and associated noise levels would be the same under this alternative as under Alternative 2. The only difference under this alternative is that the location of some project components would differ compared with Alternative 2. Similar to Alternative 2, noise levels would be greatest closest to the source and would not be substantial beyond 200 feet of the new gondola. No cumulatively adverse effects would occur.

Long-term traffic noise impacts would be the same under this alternative as under Alternative 2. No cumulatively adverse effects would occur.

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4.10 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable regulations, and an analysis of potential short-term and long-term air quality impacts that could result from buildout of the project. The method of analysis for short-term construction, long-term regional (operational), and local mobile sources and toxic air emissions is consistent with the recommendations of the Placer County Air Pollution Control District (PCAPCD), the California Air Resources Board (CARB), and the U.S. Environmental Protection Agency (EPA).

4.10.1 Affected Environment

4.10.1.1 ENVIRONMENTAL SETTING

The project site is located in a portion of eastern Placer County that is part of the Mountain Counties Air Basin (MCAB). The MCAB comprises portions of eastern Placer County; portions of El Dorado County; and all of Plumas, Sierra, Nevada, Amador, Calaveras, Tuolumne, and Mariposa Counties. Some vehicle activity associated with operation of the project, particularly visitor trips, would also occur in the Lake Tahoe Air Basin, other portions of Placer and El Dorado Counties, and other parts of California and Nevada.

The ambient concentrations of air pollutant emissions in an air basin are determined by the amount of pollutants emitted and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as climate, meteorology, and topography, in addition to the level of emissions by existing air pollutant sources. These factors are discussed separately below.

The Desolation Wilderness is an EPA-designated Class I National Wilderness Area, located approximately 16 kilometers (km) south of the project site. In accordance with EPA guidance, new major sources associated with project development must consider air quality effects on Class I areas. Further details are provided in Section 4.10.1.3, "Regulatory Setting." Existing air quality conditions for the project area are described below. The federal and state attainment status for the project area and the Desolation Wilderness is presented in Section 4.10.1.3.

Climate, Meteorology, and Topography

The MCAB includes the central and northern Sierra Nevada. Elevations range from several hundred feet in the foothills to more than 10,000 feet above mean sea level along the Sierra crest.

The MCAB generally experiences warm, dry summers and wet winters. During summer, in the portion of the MCAB where the project site is located, maximum temperatures often exceed 85 degrees Fahrenheit (˚F) and are coupled with clear sky conditions, which is favorable for ozone formation. Local climatology of the project site is best represented by ambient temperature measurements at the Squaw Valley Lodge and wind measurements at Truckee Airport. Maximum temperatures occur during July and reach 80˚F on average. Minimum temperatures can be as low as 15˚F during winter months (WRCC 2012a). Average annual precipitation of approximately 51 inches (247 inches of snowfall) occurs primarily during the months of November through March (WRCC 2012a), although in recent years, between 93 and 422 inches and between 233 and 728 inches of snow have accumulated at the base and peaks, respectively, by the end of the season. Average annual wind speed is approximately 4 miles per hour from the south (WRCC 2012b, 2012c).

Criteria Air Pollutants

Concentrations of ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead are used as indicators of ambient air quality conditions and are referred to as criteria air pollutants (CAPs). CAPs are air pollutants for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set by EPA and CARB.

A brief description of each CAP's source types and health effects is provided in Table 4.10-1. Additional information, including future trends and monitoring data at those monitoring stations located closest to the project site, is provided for ozone, NO_2, and PM, the key CAPs associated with the project analysis.

Table 4.10-1 Sources and Health Effects of Criteria Air Pollutants

Pollutant	Sources	Acute[1] Health Effects	Chronic[2] Health Effects
Ozone	Secondary pollutant resulting from reaction of ROG and NO_X in presence of sunlight. ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels; NO_X results from the combustion of fuels	Increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	Decreased permeability of respiratory epithelia, possibility of permanent lung impairment
Carbon monoxide (CO)	Incomplete combustion of fuels; motor vehicle exhaust	Headache, dizziness, fatigue, nausea, vomiting, death	Permanent heart and brain damage
Nitrogen dioxide (NO_2)	Combustion devices (e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines)	Coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	Chronic bronchitis, decreased lung function
Sulfur dioxide (SO_2)	Coal and oil combustion, steel mills, refineries, and pulp and paper mills	Irritation of upper respiratory tract, increased asthma symptoms	Insufficient evidence linking SO_2 exposure to chronic health impacts
Respirable particulate matter (PM_{10}), Fine particulate matter ($PM_{2.5}$)	Fugitive dust, soot, smoke, mobile and stationary sources, construction, fires and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO_2 and ROG	Breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	Alterations to the immune system, carcinogenesis
Lead	Metal processing	Reproductive/developmental effects (fetuses and children)	Numerous effects, including neurological, endocrine, and cardiovascular effects

Notes: NO_X = oxides of nitrogen; ROG = reactive organic gases.
[1] "Acute" refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations.
[2] "Chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.
Source: EPA 2017a

Ozone

Ozone is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air in large amounts but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight (EPA 2017a). ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels. Emissions of the ozone precursors ROG and NO_X have decreased over the past two decades because of more stringent motor vehicle standards and cleaner burning fuels (CARB 2014a:3-4 and 4-46).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NO_X and are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be fully representative of the local sources of NO_X emissions (EPA 2017a).

Particulate Matter

Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (CARB 2014a:1-13 and 3-6; EPA 2017a). $PM_{2.5}$ includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM_{10} emissions are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM_{10} have increased slightly over the last 20 years and are projected to continue to increase slightly through 2035 (CARB 2014a:3-7). $PM_{2.5}$ emissions have remained relatively steady over the last 20 years and are projected to decrease slightly through 2035 (CARB 2014a:3-6).

Monitoring Station Data

Concentrations of CAPs are measured at several monitoring stations in and near the MCAB. The measurements at the Truckee Fire Station, Tahoe City Fire Station, South Lake Tahoe Airport Station, and the South Lake Tahoe-Sandy Way Station are presented here and are generally representative of ambient air quality in the project area. Table 4.10-2 summarizes the air quality data from these stations for 2014–2016 (the most recent data available at the time of preparation of this analysis).

Table 4.10-2 Summary of Annual Air Quality Data (2014–2016)[1]

Ozone[2]	2014	2015	2016
Maximum concentration (1-hour/8-hour, ppm)	0.076/0.069	0.077/0.068	0.073/0.069
Number of days state standard exceeded (1-hour/8-hour)	0/0	0/0	0/0
Number of days national standard exceeded (1-hour/8-hour)	0/0	0/0	0/0
Respirable Particulate Matter (PM_{10})[3]	**2014**	**2015**	**2016**
Maximum Concentration ($\mu g/m^3$) (California)	58.6	100.9	35.0
Number of days state standard exceeded (measured [4])	2	*	0
Number of days national standard exceeded (measured [4])	*	0	0
Fine Particulate Matter ($PM_{2.5}$)[5]	**2014**	**2015**	**2016**
Maximum Concentration ($\mu g/m^3$) (California)	145.5	71.5	26.5
Annual Average ($\mu g/m^3$) (California)	8.0	8.9	*
Number of days national standard exceeded (measured[4])	*	*	*

Notes: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million; * = data insufficient to determine the value.

[1] The ambient air quality standards and attainment status for these pollutants are presented in Table 4.10-3.

[2] Ozone data are from the Tahoe City Station.

[3] PM_{10} measurements are from the monitoring stations in South Lake Tahoe.

[4] Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard.

[5] $PM_{2.5}$ data are from the Tahoe City Station.

Sources: EPA 2012; CARB 2014b

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs), or in federal terminology, hazardous air pollutants (HAPs), are also used to indicate the quality of ambient air. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. Unlike CAPs, TACs are pollutants of local concern because they can present harmful effects when they are emitted close to sensitive receptors.

Most of the estimated health risks from TACs can be attributed to relatively few compounds, the most prominent being diesel PM (CARB 2005:9). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Regarding emissions of diesel PM, emissions from diesel mobile sources are projected to continue to decrease after 2010 following implementation of various emission control regulations. Overall, statewide emissions are forecasted to decline by 71 percent between 2000 and 2035 (CARB 2014a:3-8). Sources of diesel PM at and around the project site include diesel trucks, backup diesel generators, and diesel-powered snow removal equipment and gondola maintenance vehicles.

4.10.1.2 SENSITIVE LAND USES AND RECEPTORS

Land uses considered sensitive to air quality are generally those that include uses where exposure to pollutants could result in health-related risks to individuals. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of, or extended periods of exposure to, air pollutants. Existing sensitive land uses near the project site are the resort residences in the vicinity of the Squaw Valley Ski Area base terminal and residences in the vicinity of the Alpine Meadows Ski Area mid-station under Alternatives 3 and 4.

4.10.1.3 REGULATORY SETTING

Air quality in the project area is regulated by EPA, CARB, and PCAPCD. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, state and local regulations may be more stringent.

Federal

EPA has been charged with implementing national air quality programs. EPA air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

New Major Sources and Prevention of Significant Deterioration

In 1977, Congress amended the CAA to provide for a Prevention of Significant Deterioration (PSD) program. The PSD program protects air quality by requiring all major new and modified sources located in areas in which air quality has been designated under CAA Section 107 either as being in attainment of the National Ambient Air Quality Standards (NAAQS) or as unclassifiable to undergo a preconstruction review for each air pollutant regulated under the PSD program that the new major stationary source or major modification will emit or increase in significant amounts. Areas that are in attainment of the NAAQS are categorized as Class

I, Class II, or Class III areas. The different classes indicate the increment of air quality deterioration allowed in the areas. Under the PSD program, all international parks, national wilderness areas, and national memorial parks that exceed 5,000 acres and all national parks that exceed 6,000 acres are designated as mandatory federal Class I areas to preserve, protect, and enhance air quality. All other areas that attain the NAAQS are initially designated as Class II areas (EPA 2017b).

In accordance with 40 CFR 51.307, New Source Review, written notification and, if applicable, an analysis of air quality and visibility in the federal Class I area must be provided to the applicable federal land manager for new major stationary sources or major modifications to major sources that may affect visibility in federal Class I areas. Notification requirements specify that permit applications of all new major or modified major sources within 100 km of a Class I area, and large sources located at distances greater than 100 km if there is reason to believe that such sources could affect the air quality in the Class I area, should be evaluated and included in the notification to the federal land manager. Federal Class II lands are all areas designated by the state as attainment or unclassifiable and not established as Class I lands.

Major sources are defined by 40 CFR 51.307, which identifies numerous limits for several pollutants and varying limit levels based on attainment designations. Based on the definitions in Section 51.307, a new major source relevant to the project would emit or have the potential to emit 70 tons per year of PM_{10}/$PM_{2.5}$, 10 tons per year of volatile organic compounds, 50 tons per year of carbon monoxide, or 25 tons per year of nitrogen oxides.

Criteria Air Pollutants

The CAA required EPA to establish NAAQS. As shown in Table 4.10-3, EPA has established primary and secondary NAAQS for the CAPs of primary concern in Placer County: ozone, CO, NO_2, PM_{10}, and $PM_{2.5}$. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also required each state to prepare an air quality control plan, referred to as a state implementation plan (SIP), for areas that do not attain the NAAQS. The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with areas that are not in attainment of all NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and permitting of stationary air pollution sources in the nonattainment air basin.

Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan

Under the CAA requirements, each nonattainment area throughout the state is required to develop a regional air quality management plan. Collectively, all regional air quality management plans throughout the state constitute the SIP. With jurisdiction over part of the Sacramento Federal Ozone Nonattainment Area (which covers the project area), PCAPCD worked with the other local air districts within the Sacramento region to develop a regional air quality management plan to describe and demonstrate how Placer County, as well as the Sacramento federal nonattainment area, would attain the required federal 8-hour ozone standard by the proposed attainment deadline. In accordance with the requirements of the CAA, PCAPCD, along with the other air districts in the region, prepared the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Ozone Attainment Plan) in December 2008. The PCAPCD adopted the Ozone Attainment Plan on February 19, 2009, and CARB determined that the plan meets CAA requirements and approved it on March 26, 2009, as a revision to the SIP. Accordingly, the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* is the applicable air quality plan for the region.

Table 4.10-3 Ambient Air Quality Standards and Designations for Placer County

Pollutant	Averaging Time	California		National[1]	
		Standards[2,3]	Attainment Status[4]	Primary[3]	Attainment Status[5]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	Nonattainment	N/A	N/A
	8-hour	0.070 ppm (137 µg/m^3)		0.070 ppm (147 µg/m^3)	Nonattainment
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	Unclassified	35 ppm (40 mg/m^3)	Unclassified/Attainment
	8-hour (Lake Tahoe)	6 ppm (7 mg/m^3)		9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Unclassified/Attainment
	1-hour	0.18 ppm (339 µg/m^3)		0.100 ppm	
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	Nonattainment	N/A	N/A
	24-hour	50 µg/m^3		150 µg/m^3	Unclassified
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	Unclassified	12.0 µg/m^3	Unclassified/Attainment
	24-hour	N/A	N/A	35 µg/m^3	

Notes: µg/m^3 = micrograms per cubic meter; ppm = parts per million, N/A = not applicable

[1] National standards (other than ozone, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

[2] California standards for ozone, CO (except 8-hour Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California Ambient Air Quality Standards (CAAQS) are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[3] Concentration expressed first in units in which it was promulgated [i.e., parts per million (ppm) or micrograms per cubic meter (µg/m^3)]. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas. Secondary national standards are also available from EPA.

[4] Attainment: a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a 3-year period.
Nonattainment: a pollutant is designated nonattainment if there was a least one violation of a state standard for that pollutant in the area. Nonattainment designations for ozone are classified as marginal, serious, severe, or extreme depending on the magnitude of the highest 8-Hour ozone design value at a monitoring site in a nonattainment area.
Nonattainment (transitional) is a subcategory of the nonattainment designation. An area is designated nonattainment (transitional) to signify that the area is close to attaining the standard for that pollutant.

[5] Attainment: any area that meets the national primary or secondary ambient air quality standard for the pollutant.
Attainment (maintenance): any area previously designated nonattainment pursuant to the CAAA of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAA, as amended.

Sources: CARB 2016, data compiled by Ascent Environmental in 2017

Since the adoption of the Ozone Attainment Plan in early 2009, and its subsequent revision in 2011, there were significant updates to emissions calculation methods, vehicle traveled activity data, and growth assumptions used to develop the plan.

The 2013 Ozone Attainment Plan revision shows that the region continues to meet federal progress requirements and demonstrates that the Sacramento Region will meet the 1997 NAAQS in 2018. The 2013 Ozone Attainment Plan updates the emissions inventory, provides a review of photochemical modeling results based on changes in the emissions inventories, updates the reasonable further progress and attainment demonstrations, revises adoption dates for control measures, and establishes new motor vehicle emissions budgets for transportation conformity purposes. The 2013 Ozone Attainment Plan also includes a vehicle miles traveled (VMT) offset demonstration that showed the emissions reduction from transportation control measures and strategies are sufficient to offset the emissions increase attributable to VMT growth.

The 2013 Ozone Attainment Plan was approved by CARB on November 21, 2013, and submitted to EPA as a revision to the SIP on December 31, 2013. EPA found the motor vehicle emissions budgets in the plan for the 1997 8-hour ozone NAAQS to be adequate for attainment goals. The finding became effective on August 25, 2014. EPA approved the Sacramento Region SIP for the 1997 8-hour ozone standard in 2015.

The 2013 Ozone Attainment Plan contains regional and local control measures that address both ROG and NO_X. A single NO_X pollutant strategy is not appropriate because, even though ROG (and volatile organic compound) control measures are not as effective as NO_X control measures, ROG-reducing measures still provide needed reductions in ozone formation (SMAQMD et al. 2013:1-5).

Hazardous Air Pollutants

EPA and CARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for TACs to limit emissions. These, in conjunction with additional rules set forth by PCAPCD, described below in the subsection on local laws and regulations, establish the regulatory framework for TACs.

EPA has programs for identifying and regulating HAPs. Title III of the CAA directed EPA to promulgate national emissions standards for HAPs (NESHAP). The national emissions standards for HAPs may differ for major sources and for area sources of HAPs. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources. The emissions standards are to be promulgated in two ways. First, EPA has technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring maximum available control technology for toxics. For area sources, the standards may be different, based on generally available control technology. Second, EPA also has health risk–based emissions standards, where deemed necessary, to address risks remaining after implementation of the technology-based NESHAP standards.

The CAA also required EPA to issue vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, the CAA required the use of reformulated gasoline in selected areas with the most severe ozone nonattainment conditions to further reduce mobile-source emissions.

State

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). California law authorizes CARB to set ambient (outdoor) air pollution standards (California Health and Safety Code Section 39606) in consideration of public health, safety, and welfare (California Ambient Air Quality Standards [CAAQS]) (see Table 4.10-3).

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned CAPs. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest date practical. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources and provides districts with the authority to regulate indirect sources.

Among CARB's other responsibilities are overseeing local air district compliance with federal and state laws, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588,

Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs, including diesel PM, and adopted EPA's list of HAPs as TACs.

Once a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that particular TAC. If a safe threshold standard exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold standard. If no safe threshold standard exists, the measure must incorporate best available control technology for toxics to minimize emissions.

CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Recent milestones included the low-sulfur diesel fuel requirement and tighter emissions standards for heavy-duty diesel trucks (effective in 2007 and subsequent model years) and off-road diesel equipment (2011). Over time, replacing older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) in California have been reduced substantially over the last decade; such emissions will be reduced further through a progression of regulatory measures (e.g., low emission vehicle/clean fuels and Phase II reformulated-gasoline regulations) and control technologies.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

Local

California Health and Safety Code

California Health and Safety Code (HSC) Section 40920 establishes requirements that each air district within severe pollution designations shall meet and include in their attainment plants. Specifically, part (b) of the code includes the following requirement and emissions limit:

- A stationary source control program designed to achieve no net increase in emissions of nonattainment pollutants or their precursors from all new or modified stationary sources which emit, or have the potential to emit, 10 tons or more per year.

Placer County Air Pollution Control District

Criteria Air Pollutants

PCAPCD attains and maintains air quality conditions in Placer County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. PCAPCD's clean air strategy includes preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. PCAPCD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, CAAA, and CCAA.

All projects in the Placer County are subject to adopted PCAPCD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include but are not limited to:

- PCAPCD Rule 202—Visible Emissions,
- PCAPCD Rule 207—Particulate Matter,
- PCAPCD Rule 217—Cutback and Emulsified Asphalt Paving Materials,
- PCAPCD Rule 228—Fugitive Dust, and
- PCAPCD Rule 501—Permit Requirements.

Toxic Air Contaminants

At the local level, air districts may adopt and enforce CARB's airborne toxic control measures. Under PCAPCD Rule 501 ("Permit Requirements") and PCAPCD Rule 502 ("New Source Review"), all sources that possess the potential to emit TACs are required to obtain permits from the district. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new source review standards and air toxics control measures. PCAPCD limits emissions and public exposure to TACs through a number of programs.

Sources that require a permit are analyzed by PCAPCD (e.g., health risk assessment) based on their potential to emit TACs. If it is determined that the project will emit toxics in excess of a PCAPCD-established threshold standard of significance for TACs (i.e., 10 in 1 million or a hazard index greater than 1.0), sources have to implement the best available control technology (BACT) for TACs to reduce emissions. If a source cannot reduce the risk below the threshold standard of significance even after the BACT has been implemented, the air district will deny the permit required by the source. This helps to prevent new problems and reduces emissions from existing older sources by requiring them to apply new technology when retrofitting with respect to TACs.

Odors

PCAPCD and other air districts in California have determined some common types of facilities that have been known to produce odors: wastewater treatment facilities, chemical manufacturing plants, painting/coating operations, feed lots/dairies, composting facilities, landfills, and transfer stations. Because offensive odors rarely cause any physical harm, and federal and state air quality regulations do not contain any requirements for their control, PCAPCD has no rules or standards related to odor emissions other than its nuisance rule:

- **PCAPCD Rule 205—Nuisance.** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property. The provisions of Rule 205 do not apply to odors emanating from agriculture operations necessary for the growing of crops or raising of fowl or animals.

Any actions related to odors are based on citizen complaints to local governments and the air districts.

4.10.2 Analysis Methods

4.10.2.1 METHODS AND ASSUMPTIONS

This analysis uses quantitative modeling techniques primarily from CalEEMod to analyze impacts to air quality as a result of the project. The California Air Pollution Control Officers Association CalEEMod system provides a system to analyze air contaminants by considering both short-term construction emissions and long-term operational emissions. The results of the air quality modeling are presented in Appendix G.

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 (CUP). 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, and their implementation would be ensured by the CUP's conditions of approval. All RPMs are considered roughly proportional and have an essential nexus to the impacts they reduce. All applicable RPMs provided in Appendix B are considered in the air emissions analysis. Of particular importance are those in the air quality category (RPMs AQ-1 through AQ-26).

4.10.2.2 FEDERAL CONFORMITY ANALYSIS

A non-transportation project located in a nonattainment or maintenance area must undergo a general conformity analysis in accordance with 40 CFR 93 to ensure that the project does not:

- cause or contribute to new violations of any standard in any area;
- increase the frequency or severity of an existing violation of any standard; or
- delay timely attainment of any standard requiring interim emission reduction, or other milestones.

As a part of the general conformity process, a conformity analysis is required if a federal action satisfies one of the following two conditions:

- The action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at or above emission rates shown below in Table 4.10-4.

- The action's direct and indirect emissions of any criteria pollutant represent 10 percent of a nonattainment or maintenance area's total emissions inventory for that pollutant.

If the total direct emissions associated with the action are below the de minimis levels indicated in Table 4.10-4, general conformity requirements do not apply; the action is considered in conformity and would not result in an adverse effect. Since the air basin in which the project site is located is in attainment (based on federal standards) for the criteria pollutants indicated in Table 4.10-4 except for ozone (severe nonattainment status), a conformity analysis for ozone must be completed for the alternatives. In addition, the Desolation Wilderness, located in El Dorado County south of the project area, has the same attainment status as Placer County. Thus, for purposes of PSD review, attainment designations shown in Table 4.10-4 would apply.

Table 4.10-4 Federal de Minimis Levels for Placer County and El Dorado County

Pollutant	Federal Attainment Classification	De Minimis Levels (tons/year)
O_3, (VOC)	Severe nonattainment	25[1]
O_3, (NO_X)	Severe nonattainment	25[1]
PM_{10}	Attainment	N/A
$PM_{2.5}$	Attainment	N/A
CO	Attainment	N/A
Lead (Pb)	Attainment	N/A

Note: N/A not applicable.
[1] Nonattainment status based on the Sacramento Metropolitan area designation and used for a conservative analysis.
Source: EPA 2018

4.10.2.3 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 air quality. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Narrative description of existing air quality in the study area, including population centers and Class I and Class II areas in the vicinity **(Section 4.10.1.1, "Environmental Setting")**
- Compliance with local, state, and federal regulations regarding air quality **(Impacts 4.10-1, 4.10-2, and 4.10-3)**
- Estimated daily increase in number of vehicles associated with increased annual visitation and changes to circulation **(Impacts 4.10-1 and 4.10-2)**
- Estimated traffic and emissions associated with construction of the proposed project **(Impact 4.10-1)**
- Quantitative estimate of short-term construction-related emissions and long-term operational emissions through California Air Resources Board-approved California Emissions Estimator Model (CalEEMod) with project-specific details, PCAPCD-recommended input parameters, CalEEMod default settings, and specific data from the traffic analysis **(Impacts 4.10-1 and 4.10-2)**
- Estimated levels of ozone precursors and particulate matter will be compared to PCAPCD's recommended mass emission thresholds **(Impacts 4.10-1 and 4.10-2)**
- Qualitative analysis of potential exposure of sensitive receptors to toxic air contaminants (TAC) and odor sources **(Section 4.10.2.4, "Issues Not Discussed Further")**
- Discussion of any emissions reduction actions proposed to apply to the project as part of the Squaw Valley Ski Area's (Squaw Valley's) and Alpine Meadows Ski Area's (Alpine Meadow's) Environmental Programs **(Impacts 4.10-1 and 4.10-2)**
- Discussion of increases in criteria air pollutants, precursors, and exposure to TACs and odors (if applicable) during construction and operation of the project compared to applicable thresholds, and preparation of mitigation measures, as needed, that clearly identify timing, responsibility, and performance standards **(Impacts 4.10-1, 4.10-2, and 4.10-3 and Section 4.10.2.4, "Issues Not Discussed Further")**

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 air quality if it would:

- conflict with or obstruct implementation of the applicable air quality plan **(Impacts 4.10-1 and 4.10-2)**;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation **(Impacts 4.10-1, 4.10-2, and 4.10-3 and Section 4.10.2.4, "Issues Not Discussed Further")**;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors) **(Impacts 4.10-1 and 4.10-2)**:
  - construction-generated criteria air pollutant or precursor emissions that exceed the PCAPCD-recommended threshold of 82 pounds per day (lb/day) for ROG, NO_X, or PM_{10} (PCAPCD 2017:21);

operation-related (regional) emissions of ROG or NO_X that exceed a mass emission threshold of 55 lb/day; and emissions of PM_{10} that exceed 82 lb/day (cumulative thresholds are identical);

- expose sensitive receptors to substantial pollutant concentrations **(Impacts 4.10-1, 4.10-2, and 4.10-3 and Section 4.10.2.4, "Issues Not Discussed Further")**; or
- create objectionable odors affecting a substantial number of people **(Section 4.10.2.4, "Issues Not Discussed Further")**.

4.10.2.4 ISSUES NOT DISCUSSED FURTHER

The project does not involve development of land uses associated with odors. Construction would be temporary and minor, and odors associated with construction equipment exhaust would dissipate rapidly after construction is complete. None of the alternatives would introduce long-term odor sources or have the potential to expose substantial numbers of people to objectionable odors. This issue is not discussed further.

Construction activities would last only one season (i.e., 200 days), would be minor, and would be dispersed throughout the project area. Due to the relatively minor level of construction and temporary nature of activities, construction-related emissions of TACs from vehicular exhaust would not expose any nearby receptors to substantial concentrations that would exceed PCAPCD thresholds of significance. The project would not result in any new stationary sources of TACs and would not result in substantial increases in mobile-source TACs. This issue is not discussed further.

Due to the severe nonattainment status for ozone in the project area, the applicable threshold for a major source under 40 CFR 51.307 would be 25 tons per year for all pollutants and the applicable limit per California HSC 40920 would be 10 tons per year. Using the maximum daily emissions provided in the discussion of impact 4.10-2 (Alt. 2), below, even if the entire project operated at daily maximum emission levels for 365 days a year, emissions would not be sufficient to exceed the 40 CFR 51.307 major emissions source threshold or the 10 ton per year limit established by California HSC 40920 (b).

4.10.3 Direct and Indirect Environmental Consequences

4.10.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.10-1 (Alt. 1): Short-Term, Construction-Generated Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no construction-generated emissions that would contribute to air quality deterioration. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, the Tahoe National Forest (TNF) and Placer County would not provide necessary authorizations to allow construction of the gondola facilities. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities that could affect air quality.

NEPA Effects Conclusion
With no new construction, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.10-2 (Alt. 1): Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursors

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no long-term operational emissions that would contribute to air quality deterioration. There would be **no effect** 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 facilities. The outcome would be a continuation of existing conditions, with no new operational components that could affect air quality. This alternative would require the continuation of the shuttle system between Squaw Valley and Alpine Meadows.

NEPA Effects Conclusion

With no new operational requirements, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new operational requirements, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.10-3 (Alt. 1): Mobile-Source CO Concentrations

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no additional mobile-source emissions that would contribute to air quality deterioration. There would be **no effect** 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 facilities. The outcome would be a continuation of existing conditions, with no new mobile-source components that could affect air quality. This alternative would require the continuation of the shuttle system between Squaw Valley and Alpine Meadows.

NEPA Effects Conclusion

With no new construction or operational components, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new construction or operational components, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.10.3.2 ALTERNATIVE 2

Impact 4.10-1 (Alt. 2): Short-Term, Construction-Generated Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$

Under Alternative 2, construction activities would result in temporary increases in emissions of ROG, NO_X, and PM. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from construction would be **adverse** because construction would result in temporary emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions). Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because construction emissions would not exceed PCAPCD's threshold of significance for any pollutant. RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions) would further reduce potential effects from construction-generated emissions by requiring the construction contractor to submit a dust control plan to PCAPCD, including all standard dust reducing measures, as well as measures to control dust from helicopter use and reduce vehicle exhaust emissions. However, these RPMs would not be necessary to reduce a significant impact to a less-than-significant level.

Under Alternative 2, project construction would occur over a single construction season (i.e., 180–200 days), beginning in late spring and ending in the fall. This period of construction is mentioned in the text of the project description (Chapter 2, "Description of Alternatives"). Confining construction to a single construction season is also identified as an RPM (RPM MUL-7). General construction activities would include grubbing/clearing of on-site vegetation, removal of marketable timber, excavation and relocation of rock and soil on the site, backfilling and compaction of soils, and construction of proposed facilities (e.g., base terminals, mid-stations, lift towers). It is anticipated that helicopters would be used during construction to transport personnel and equipment to and from the project site, during installation of lift infrastructure, and for tree removal activities. Some blasting may be required to remove rock outcroppings during terminal, mid-station, and lift tower construction. Construction equipment would be staged at the existing Squaw Valley and Alpine Meadows surface parking lots, which would also serve as the helicopter landing and take-off location.

Construction-related activities would result in exhaust emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ (a subset of PM_{10}) off-road equipment, timber removal, material delivery, worker commute trips, and building construction. Fugitive dust emissions of PM_{10} and $PM_{2.5}$ are associated primarily with grading during the site preparation phase and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and vehicle miles traveled on and off the site. Additional sources of dust include the use of a helicopter during landing/take-off and blasting of rock outcroppings. Emissions of ozone precursors, ROG, and NO_X, are associated primarily with construction equipment and on-road mobile exhaust.

Typical construction activity would fluctuate daily and over the duration of construction. Helicopter use would be limited to approximately 20 days. Thus, to determine maximum daily construction emissions, maximum helicopter use (i.e., 8-hour day) was assumed to occur simultaneously with all other off-road equipment activity, excavation/grading and material import/export. Table 4.10-5 summarizes maximum daily construction emissions. Refer to Appendix G for detailed modeling inputs and outputs.

Table 4.10-5 Maximum Daily Construction Emissions

Construction Activity	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Helicopter	35.5	13.4	<1	<1
Off-road vehicles and worker commute	4.7	55.2	18.2	9.6
Combined maximum daily emissions	**40.22**	**68.61**	**18.2**	**9.6**
Threshold	82	82	82	N/A
Exceeds threshold?	No	No	No	N/A

Notes: N/A = not applicable.
Total annual ROG estimated to be 0.7 ton and NO_X to be 3 tons, not exceeding de minimis levels of 25 tons per year.
Source: Modeled by Ascent Environmental in 2018

As shown above, maximum daily emissions would not exceed applicable PCAPCD thresholds of significance for any criteria air pollutant or ozone precursor and would not conflict with regional air quality planning efforts. Further, annual ROG and NO_X emissions would not exceed federal de minimis levels of 25 tons per year. It should be noted that dust emissions may also occur from helicopter use and blasting activities. Dust from helicopter use can occur during the take-off and landing operations as the rotating blades approach the ground. However, the helicopter would take-off and land from a paved surface parking lot, minimizing the chances for dust emissions. At helicopter drop-off locations, the helicopter would not land but would instead hover, for short periods, close enough to the ground to drop off materials, but far enough to avoid generating substantial dust emissions. In addition, if blasting were to occur, some minimal fugitive dust emissions could occur depending on the size of the blast and material being blasted. Nonetheless, given that the estimated maximum daily dust emissions are well below the PCAPCD thresholds, blasting would be minimal and limited, such that even if it did occur on the same day as all other activities discussed above, daily maximum thresholds would not be exceeded.

For the reasons described above, although construction of Alternative 2 would generate some emissions, levels would not exceed applicable thresholds. RPMs related to air quality (RPMs AQ-1 through AQ-27) would further reduce the potential for construction to exceed exhaust and dust thresholds by requiring the construction contractor to prepare a dust control plan and comply with all standard PCAPCD requirements to reduce dust and exhaust emissions during construction activities. Specific measures include the use of dust suppressants, covering stockpiles, minimizing travel speed on unpaved surfaces, and limiting idle times of construction vehicles. In addition, RPM AQ-4 specifically requires dust suppressants be used to control dust from helicopter use.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from construction under Alternative 2 would be **adverse** because construction would result in temporary emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-1 through AQ-27.

CEQA Determination of Effects

Alternative 2 would involve construction activities that would result in emissions of ROG, NO_X, and PM. However, construction activities would be short term and minimal, and would not exceed applicable PCAPCD threshold of significance for any pollutant. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, and AQ-33, which relate to operational emissions) would further reduce potential effects from construction-generated emissions by requiring the construction contractor to submit a dust control plan to PCAPCD, including all standard dust reducing measures, as well as measures to control dust from helicopter use and reduce vehicle exhaust emissions. However, these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-1 through AQ-27 as mitigation measures would reduce the effects of construction-generated emissions but are not necessary to reduce a significant effect.

Impact 4.10-2 (Alt. 2): Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursors

Under Alternative 2, operational activities would result in emissions of ROG, NO_X, and PM. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from operation would be **adverse** because operation would result in permanent increases in emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-9 and AQ-23. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because operational emissions would not exceed PCAPCD's threshold of significance for any pollutant.

Operation of Alternative 2 would result in emissions of ROG, NO_X, and PM from various activities. As a result of the new gondola, increases in visitors traveling to Squaw Valley and Alpine Meadows would result in increases in vehicular exhaust emissions. Maintenance of the gondola and associated mechanical equipment would require minor use of off-road/all-terrain vehicles, resulting in exhaust and dust emissions. Emissions are summarized in Table 4.10-6. Refer to Appendix G for detailed modeling inputs and outputs.

Table 4.10-6 Maximum Daily Operational Emissions

Construction Activity	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Mobile sources	1.3	9.7	4.2	1.2
Maintenance activities (off-road vehicles)	1.6	17.2	<1	<1
Combined maximum Daily emissions	**2.9**	**26.9**	**4.8**	**1.8**
Threshold	55	55	82	N/A
Exceeds threshold?	No	No	No	N/A

Notes: N/A = not applicable.

Total annual ROG estimated to be 0.7 ton and NO_X to be 3 tons, not exceeding de minimis levels of 25 tons per year.

Source: Modeled by Ascent Environmental in 2018

As shown above, maximum daily emissions would not exceed applicable PCAPCD thresholds of significance for any criteria air pollutant or ozone precursor and would not conflict with regional air quality planning efforts. For these reasons, although operation of Alternative 2 would generate some emissions, levels would not exceed applicable thresholds.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from operation under Alternative 2 would be **adverse** because operation would result in emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-9 and AQ-23.

CEQA Determination of Effects

Alternative 2 would involve operational activities that would result in emissions of ROG, NO_X, and PM. However, operational activities would not exceed applicable PCAPCD thresholds of significance for any pollutant. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-9 and AQ-23 would be implemented even though these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-9 and AQ-23 as mitigation measures would reduce the effects of construction-generated emissions but are not necessary to reduce a significant effect.

Impact 4.10-3 (Alt. 2): Mobile-Source CO Concentrations

Under Alternative 2, operations would result in increased vehicle trips and associated CO emissions due to additional visitors traveling to Squaw Valley and Alpine Meadows. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to increases in CO emissions would be **adverse** because the project would result in permanent increases in vehicle traffic and associated CO emissions. However, these effects would not result in substantial pollution concentrations that could expose sensitive receptors to unhealthy levels. There are no applicable RPMs that would reduce this effect. Under CEQA, Alternative 2 would not exceed applicable PCAPCD screening levels for CO emissions and this impact would be **less than significant.**

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO from offsite locations is extremely limited because under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. As a result, it is recommended that CO be analyzed at the local level instead of at the regional level.

PCAPCD has established screening levels to evaluate the potential for CO hotspots from increases in traffic. In accordance with the most recent PCAPCD guidance, projects that do not exceed 550 lb/day of CO from vehicle exhaust would not likely result in CO hotspots. As shown by the modeling conducted, project-generated increases in vehicle CO exhaust emissions would be 25 lb/day during the study days used in the traffic analysis (sixth and seventh busiest weekend days of the 2016/2017 ski season) (Appendix G). In addition, other nearby air districts, such as the Sacramento Metropolitan Air Quality Management District (SMAQMD), have established screening criteria based on vehicle volumes per hour passing through an intersection. According to SMAQMD, a project would result in a less-than-significant CO impact if the project would not result in an affected intersection experiencing more than 31,600 vehicles per hour (SMAQMD 2016). According to the traffic study conducted, the project would result in a total of 703 new trips on a winter Sunday. Thus, no single intersection would experience increases in traffic that could result in CO hotspots. Given that vehicle CO emissions are well below the 550 lb/day screening level and an additional 703 trips would not be substantial, Alternative 2 would not result in CO hotspots at any intersection.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts from increases in CO concentrations under Alternative 2 would be **adverse** because permanent increases in traffic and CO emissions would occur. However, these effects would not result in substantial pollution concentrations that could expose sensitive receptors to unhealthy levels. There are no applicable RPMs that would reduce this effect.

CEQA Determination of Effects

Alternative 2 would result in increases in vehicle trips and associated CO emissions. However, the CO emissions would not exceed applicable PCAPCD screening levels. Under CEQA, and using the CEQA criteria, impacts from increases in CO concentrations would be **less than significant**, and there are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation is required.

4.10.3.3 ALTERNATIVE 3

Impact 4.10-1 (Alt. 3): Short-Term, Construction-Generated Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$

Under Alternative 3, construction activities would result in temporary increases in emissions of ROG, NO_X, and PM. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from construction would be **adverse** because construction would result in temporary emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions). Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because construction emissions would not exceed PCAPCD's threshold of significance for any pollutant. RPMs AQ-1 through AQ-27(excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions) would further reduce potential effects from construction-generated emissions by requiring the construction contractor to submit a dust control plan to PCAPCD, including all standard dust reducing measures, as well as measures to control dust from helicopter use and reduce vehicle exhaust emissions. However, these RPMs would not be necessary to reduce a significant impact to a less-than-significant level.

Primary project components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Construction activities, intensity, and duration would also be the same. Thus, short-term construction-related emissions of ROG, NO_X, and PM would be the same as described for Alternative 2.

As described above for Alternative 2, construction would generate some level of emissions but would not exceed applicable thresholds. RPMs related to air quality (RPMs AQ-1 through AQ-27, excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions) would further reduce the potential for construction to exceed exhaust and dust thresholds by requiring the construction contractor to prepare a dust control plan and comply with all standard PCAPCD requirements to reduce dust and exhaust emissions during construction activities. Specific measures include the use of dust suppressants, covering stockpiles, minimizing travel speed on unpaved surfaces, and limiting idle times of construction vehicles. In addition, RPM AQ-4 specifically requires dust suppressants be used to control dust from helicopter use.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from construction under Alternative 3 would be **adverse** because construction would result in temporary emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions).

CEQA Determination of Effects

Like Alternative 2, Alternative 3 would involve construction activities that would result in emissions of ROG, NO_X, and PM. However, construction activities would be short term and minimal, not exceeded applicable PCAPCD threshold of significance for any pollutant. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions) would further reduce potential effects from construction-generated emissions by requiring the construction contractor to submit a dust control plan to PCAPCD, including all standard dust reducing measures, as well as measures to control dust from helicopter use and reduce vehicle exhaust emissions. However, these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational

emissions) as mitigation measures would reduce the effects of construction-generated emissions but are not necessary to reduce a significant effect.

Impact 4.10-2 (Alt. 3): Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursors

Under Alternative 3, operational activities would result in emissions of ROG, NO_X, and PM. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from operation would be **adverse** because operation would result in permanent increases in emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-9 and AQ-23. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because operational emissions would not exceed PCAPCD's threshold of significance for any pollutant.

Primary project components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Increases in visitors traveling to Squaw Valley and Alpine Meadows would be the same. Thus, long-term operation-related emissions of ROG, NO_X, and PM would be the same as described for Alternative 2.

For the same reasons described above for Alternative 2, maximum daily emissions for Alternative 3 would not exceed applicable PCAPCD thresholds of significance for any criteria air pollutant or ozone precursor and would not conflict with regional air quality planning efforts. For these reasons, although operation of Alternative 3 would generate some emissions, levels would not exceed applicable thresholds.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from operation under Alternative 3 would be **adverse** because operation would result in emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-9 and AQ-23.

CEQA Determination of Effects

Alternative 3 would involve operational activities that would result in emissions of ROG, NO_X, and PM. However, operational activities would not exceed applicable PCAPCD thresholds of significance for any pollutant. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-9 and AQ-23 would be implemented even though these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-9 and AQ-23 as mitigation measures would reduce the effects of construction-generated emissions but are not necessary to reduce a significant effect.

Impact 4.10-3 (Alt. 3): Mobile-Source CO Concentrations

Under Alternative 3, operations would result in increased vehicle trips and associated CO emissions due to additional visitors traveling to Squaw Valley and Alpine Meadows. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to increases in CO emissions would be **adverse** because the project would result in permanent increases in vehicle traffic and associated CO emissions. However, these effects would not result in substantial pollution concentrations that could expose sensitive receptors to unhealthy levels. There are no applicable RPMs that would reduce this effect. Under CEQA, Alternative 3 would not exceed applicable PCAPCD screening levels for CO emissions and this impact would be **less than significant**.

Primary project components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Increases in visitors traveling to Squaw Valley and Alpine Meadows would be the same. Thus, long-term operation-related emissions of CO would be the same as described for Alternative 2. For the same reasons described above for Alternative 2, CO emissions for Alternative 3 would not exceed applicable PCAPCD screening levels.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts from increases in CO concentrations under Alternative 3 would be **adverse** because permanent increases in traffic and CO emissions would occur. However, these effects would not result substantial pollution concentrations that could expose sensitive receptors to unhealthy levels. There are no applicable RPMs that would reduce this effect.

CEQA Determination of Effects

Alternative 3 would result in increases in vehicle trips and associated CO emissions. However, the CO emissions would not exceed applicable PCAPCD screening levels. Under CEQA, and using the CEQA criteria, impacts from increases in CO concentrations would be **less than significant**, and there are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation is required.

4.10.3.4 ALTERNATIVE 4

Impact 4.10-1 (Alt. 4): Short-Term, Construction-Generated Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$

Under Alternative 4, construction activities would result in temporary increases in emissions of ROG, NO_X, and PM. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from construction would be **adverse** because construction would result in temporary emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions). Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because construction emissions would not exceed PCAPCD's threshold of significance for any pollutant. RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions) would further reduce potential effects from construction-generated emissions by requiring the construction contractor to submit a dust control plan to PCAPCD, including all standard dust reducing measures, as well as measures to control dust from helicopter use and reduce vehicle exhaust emissions. However, these RPMs would not be necessary to reduce a significant impact to a less-than-significant level.

Primary project components for Alternative4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Construction activities, intensity, and duration would also be the same. Thus, short-term construction-related emissions of ROG, NO_X, and PM, would be the same as described for Alternative 2.

As described above for Alternative 2, construction would generate some level of emissions but would not exceed applicable thresholds. RPMs related to air quality (RPMs AQ-1 through AQ-27, excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions) would further reduce the potential for construction to exceed exhaust and dust thresholds by requiring the construction contractor to prepare a dust control plan and comply with all standard PCAPCD requirements to reduce dust and exhaust emissions during construction activities. Specific measures include the use of dust suppressants, covering stockpiles, minimizing travel speed on unpaved surfaces, and limiting idle times of construction vehicles. In addition, RPM AQ-4 specifically requires dust suppressants be used to control dust from helicopter use.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from construction under Alternative 4 would be **adverse** because construction would result in temporary emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-1 through AQ-27 (excluding RPM AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions).

CEQA Determination of Effects

Like Alternative 2, Alternative 4 would involve construction activities that would result in emissions of ROG, NO_X, and PM. However, construction activities would be short term and minimal, not exceeded applicable PCAPCD threshold of significance for any pollutant. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions) would further reduce potential effects from construction-generated emissions by requiring the construction contractor to submit a dust control plan to PCAPCD, including all standard dust reducing measures, as well as measures to control dust from helicopter use and reduce vehicle exhaust emissions. However, these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-1 through AQ-27 (excluding RPMs AQ-9, AQ-22, AQ-23, and AQ-26, which relate to operational emissions) as mitigation measures would reduce the effects of construction-generated emissions but are not necessary to reduce a significant effect.

Impact 4.10-2 (Alt. 4): Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursors

Under Alternative 4, operational activities would result in emissions of ROG, NO_X, and PM. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from operation would be **adverse** because operation would result in permanent increases in emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-9 and AQ-23. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because operational emissions would not exceed PCAPCD's threshold of significance for any pollutant.

Primary project components for Alternative 4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Increases in visitors traveling to Squaw Valley and Alpine Meadows would be the same. Thus, long-term operation-related emissions of ROG, NO_X, and PM would be the same as described for Alternative 2.

For the same reasons described above for Alternative 2, maximum daily emissions for Alternative 4 would not exceed applicable PCAPCD thresholds of significance for any criteria air pollutant or ozone precursor and would not conflict with regional air quality planning efforts. For these reasons, although operation of Alternative 4 would generate some emissions, levels would not exceed applicable thresholds.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts occurring from operation under Alternative 4 would be **adverse** because operation would result in emissions of ROG, NO_X, and PM. These effects would be mitigated through implementation of RPMs AQ-9 and AQ-23.

CEQA Determination of Effects

Alternative 4 would involve operational activities that would result in emissions of ROG, NO_X, and PM. However, operational activities would not exceed applicable PCAPCD threshold of significance for any pollutant. Under CEQA, and using the CEQA criteria, this impact would be **less than significant**. RPMs AQ-9 and AQ-23 would be implemented even though these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-9 and AQ-23 as mitigation measures would reduce the effects of construction-generated emissions but are not necessary to reduce a significant effect.

Impact 4.10-3 (Alt. 4): Mobile-Source CO Concentrations

Under Alternative 4, operations would result in increased vehicle trips and associated CO emissions due to additional visitors traveling to Squaw Valley and Alpine Meadows. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to increases in CO emissions would be **adverse** because the project would result in permanent increases in vehicle traffic and associated CO emissions. However, these effects would not result in substantial pollution concentrations that could expose sensitive receptors to unhealthy levels. There are no applicable RPMs that would reduce this effect. Under CEQA, Alternative 4 would not exceed applicable PCAPCD screening levels for CO emissions and this impact would be **less than significant**.

Primary project components for Alternative 4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Increases in visitors traveling to Squaw Valley and Alpine Meadows would be the same. Thus, long-term operation-related emissions of CO would be the same as described for Alternative 2. For the same reasons described above for Alternative 2, CO emissions for Alternative 4 would not exceed applicable PCAPCD screening levels.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts from increases in CO concentrations under Alternative 4 would be **adverse** because permanent increases in traffic and CO emissions would occur. However, these effects would not result substantial pollution concentrations that could expose sensitive receptors to unhealthy levels. There are no applicable RPMs that would reduce this effect.

CEQA Determination of Effects

Alternative 4 would result in increases in vehicle trips and associated CO emissions. However, the CO emissions would not exceed applicable PCAPCD screening levels. Under CEQA, and using the CEQA criteria, impacts from increases in CO concentrations would be **less than significant**, and there are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation is required.

4.10.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.10-7 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Addressing the action alternatives, for Impact 4.10-1 for all action alternatives are adverse for all NEPA indicators. Construction of the project would result in short-term and temporary emissions of ROG, NO_X, and PM, contributing to regional air pollution. RPMs would reduce construction-related emissions associated with vehicle exhaust, but emissions would not be eliminated. Under CEQA, impacts for all alternatives would be less than significant, and no mitigation would be required. Primary project components for Alternatives 2, 3, and 4 (e.g., towers, mid-stations, base terminals) would be the same. Construction activities, intensity, and duration would also be the same. Thus, short-term construction-related emissions of ROG, NO_X, and PM, would be the same for each action alternative.

Addressing the action alternatives, for Impacts 4.10-2 and 4.10-3 for all action alternatives are adverse for all NEPA indicators. Construction of the project would result in permanent increases in emissions of ROG, NO_X, PM, and CO contributing to regional air pollution. RPMs would reduce construction-related emissions associated with vehicle exhaust, but emissions would not be eliminated. Under CEQA, impacts for all alternatives would be less than significant, and no mitigation would be required. Primary project components for Alternatives 2, 3, and 4 (e.g., towers, mid-stations, base terminals) would be the same. Operational characteristics, increased visitation, and increased vehicle traffic would also be the same. Thus, operational emissions of ROG, NO_X, PM, and CO would be the same for each action alternative.

Table 4.10-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.10-1: Short-Term, Construction-Generated Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$	Compliance with local, state, and federal regulations regarding air quality	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Estimated daily increase in number of vehicles associated with increased annual visitation and changes to circulation	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Estimated traffic and emissions associated with construction of the proposed project	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Quantitative estimate of short-term construction-related emissions and long-term operational emissions through California Air Resources Board-approved California Emissions Estimator Model (CalEEMod) with project-specific details, PCAPCD-recommended input parameters, CalEEMod default settings, and specific data from the traffic analysis	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Estimated levels of ozone precursors and particulate matter will be compared to PCAPCD's recommended mass emission thresholds	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Discussion of any emissions reduction actions proposed to apply to the project as part of Squaw Valley's and Alpine Meadow's Environmental Programs	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.10-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Discussion of increases in criteria air pollutants, precursors, and exposure to TACs and odors (if applicable) during construction and operation of the project compared to applicable thresholds, and preparation of mitigation measures, as needed, that clearly identify timing, responsibility, and performance standards	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with or obstruct implementation of the applicable air quality plan	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Violate any air quality standard or contribute substantially to an existing or projected air quality violation	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)—defined as construction-generated criteria air pollutant or precursor emissions that exceed the PCAPCD-recommended threshold of 82 pounds per day (lb/day) for ROG, NO_x, or PM_{10}; operation-related (regional) emissions of ROG or NOX that exceed a mass emission threshold of 55 lb/day; and emissions of PM_{10} that exceed 82 lb/day. (cumulative thresholds are identical)	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Expose sensitive receptors to substantial pollutant concentrations	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
4.10-2: Long-Term, Operation-Related (Regional) Emissions of Criteria Air Pollutants and Precursors	Compliance with local, state, and federal regulations regarding air quality	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Estimated daily increase in number of vehicles associated with increased annual visitation and changes to circulation	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.10-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Quantitative estimate of short-term construction-related emissions and long-term operational emissions through California Air Resources Board-approved California Emissions Estimator Model (CalEEMod) with project-specific details, PCAPCD-recommended input parameters, CalEEMod default settings, and specific data from the traffic analysis	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Estimated levels of ozone precursors and particulate matter will be compared to PCAPCD's recommended mass emission thresholds	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Discussion of any emissions reduction actions proposed to apply to the project as part of Squaw Valley's and Alpine Meadow's Environmental Programs	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Discussion of increases in criteria air pollutants, precursors, and exposure to TACs and odors (if applicable) during construction and operation of the project compared to applicable thresholds, and preparation of mitigation measures, as needed, that clearly identify timing, responsibility, and performance standards	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with or obstruct implementation of the applicable air quality plan	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Violate any air quality standard or contribute substantially to an existing or projected air quality violation	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) —defined as construction-generated criteria air pollutant or precursor emissions that exceed the PCAPCD-recommended threshold of 82 pounds per day (lb/day) for ROG, NO_X, or PM_{10}; operation-related (regional) emissions of ROG or NO_X that exceed a mass emission threshold of 55 lb/day; and emissions of PM_{10} that exceed 82 lb/day. (cumulative thresholds are identical)	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Expose sensitive receptors to substantial pollutant concentrations	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.10-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.10-3: Mobile-Source CO Concentrations	Compliance with local, state, and federal regulations regarding air quality	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Discussion of increases in criteria air pollutants, precursors, and exposure to TACs and odors (if applicable) during construction and operation of the project compared to applicable thresholds, and preparation of mitigation measures, as needed, that clearly identify timing, responsibility, and performance standards	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Violate any air quality standard or contribute substantially to an existing or projected air quality violation	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Expose sensitive receptors to substantial pollutant concentrations	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

4.10.4 Cumulative Effects

4.10.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope for the cumulative effects analysis of air quality is the MCAB. Construction activities and increases in operational emission sources from new development within the MCAB contribute to the regional air quality conditions. Due to the regional effect of air quality pollutants, all projects identified within Chapter 3 would have the potential to generate emissions that could contribute to the regional air quality. The temporal scope for this air quality cumulative effects analysis includes the construction period (6–8 months) as well as the operational life of the gondola. This is the period when PCAPCD cumulative air emissions thresholds for an individual project would be applied to the gondola project.

4.10.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct or indirect impacts and thus by definition no cumulative impacts to air quality.

Alternative 2

Alternative 2 would result in construction and operation-related emissions of ROG, NO_X, CO, and PM. However, as discussed above under Impacts 4.10-1, 4.10-2, and 4.10-3, all project-level impacts would be less than significant. Further, PCAPCD has established cumulative threshold for ROG, NO_X, and PM, which are numerically identical to thresholds discussed above for the project-level analysis. As identified in the discussion of Impact 4.10-3, SMAQMD has identified that a project would result in a less-than-significant CO

impact if the project would not result in an affected intersection experiencing more than 31,600 vehicles per hour (SMAQMD 2016). As shown in Exhibit 4.7-8 in Section 4.7, “Transportation and Circulation”, no study intersection would experience traffic volumes greater than 2,000 vehicles per hour during morning and afternoon peak hours under the cumulative plus project condition. Therefore, no intersections would exceed, under cumulative conditions, the SMAQMD threshold for CO impacts Thus, because Alternative 2 would not exceed any project or cumulative threshold, it would not result in a cumulatively adverse effect.

Alternative 3

Construction and operational emissions for Alternative 3 would be the same as for Alternative 2 and, therefore so would the impacts. Like Alternative 2, Alternative 3 would not result in a cumulatively adverse effect.

Alternative 4

Construction and operational emissions for Alternative 3 would be the same as for Alternative 2 and, therefore so would the impacts. Like Alternative 2, Alternative 3 would not result in a cumulatively adverse effect.

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4.11 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

This section includes a discussion of the current state of climate change science and greenhouse gas (GHG) emission sources in California; a summary of applicable federal, state, and local regulations; and an analysis of GHG- and climate change–related impacts that could occur with implementation of the alternatives.

4.11.1 Affected Environment

4.11.1.1 ENVIRONMENTAL SETTING

Attributing Climate Change—The Physical Scientific Basis

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014:3, 5).

Climate change is a global problem and GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1,000 to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remain stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; suffice it to say, the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or microclimates. From the standpoint of NEPA or CEQA impact analysis, GHG impacts to global climate change are inherently cumulative.

Greenhouse Gas Emission Sources

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural

emissions sectors (California Air Resources Board [CARB] 2017a). In the United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (CARB 2017a). According to the Nevada Division of Environmental Protection (NDEP), the transportation sector in Nevada contributes 33 percent of the GHG emissions in the state (NDEP 2016).

Emissions of CO_2 are byproducts of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Nitrous oxide is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

Effects of Climate Change on the Environment

The IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific view on climate change and its potential effects. According to the IPCC global average temperature is expected to increase relative to the 1986–2005 period by 0.3 to 4.8 degrees Celsius (°C) (0.5 to 8.6 degrees Fahrenheit [°F]) by the end of the 21st century (2081–2100), depending on future GHG emission scenarios (IPCC 2014:SPM-8). According to the California Natural Resources Agency, temperatures in California are projected to increase 2.7°F above 2000 averages by 2050 and, depending on emission levels, 4.1 to 8.6°F by 2100 (California Natural Resources Agency [CNRA] 2012:2).

Physical conditions beyond average temperatures could be indirectly affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Based upon historical data and modeling, the California Department of Water Resources projects that the Sierra snowpack will experience a 25–40 percent reduction from its historic average by 2050 (DWR 2008:4). An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events (CNRA 2012:5). This scenario would place more pressure on California's levee/flood control system.

Alpine settings may be more susceptible to mass wasting (i.e., rock slides) during heavy rain events where soil saturation and erosive forces are more likely to mobilize the downhill movement of rock and other material. Therefore, if more precipitation falls as rain rather than snow as a result of climate change, there could be an increased risk of rock slide.

Another outcome of global climate change is sea level rise. Sea level rose approximately 7 inches during the last century and, assuming that sea level changes along the California coast continue to track global trends, sea level along the state's coastline in 2050 could be 10–18 inches higher than in 2000 and 31–55 inches higher by the end of this century (CNRA 2012:9).

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of natural vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of large wildfires (CNRA 2012:11).

Existing Squaw Valley and Alpine Meadows GHG Emissions Reduction Measures

The Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows) have taken voluntary actions to reduce GHG emissions associated with its existing operations. The resort published the *Environmental & Community Report 2014* outlining actions it has undertaken to reduce GHG emissions (Squaw Valley | Alpine Meadows 2014). All data shown below (including estimated annual reduction in CO_2 emissions) are provided in the resort's report but have not been independently verified in this Final EIS/EIR

and are not used in the GHG emissions modelling. The data is provided for general informational purposes. Squaw Valley and Alpine Meadows (both operated by Squaw Valley Ski Holdings) generated between 9,722 and 13,765 metric tons of CO_2 (equivalent) annually in the years 2010–2013. Actions voluntarily implemented to reduce GHG emissions include:

- upgrade to boiler system and replacement of older heating units at the Village at Squaw Valley (39-ton CO_2 reduction);
- installation of automated heating controls to reduce temperature fluctuations at High Camp (447-metric-ton CO_2 reduction);
- replacement of incandescent and other older bulbs with more efficient bulbs, including LED bulbs (82-metric-ton CO_2 reduction);
- installation of four electric car charging stations (no reduction estimate provided); and
- shuttle buses between Squaw Valley and Alpine Meadows resorts (85-ton CO_2 reduction).

A number of other actions have been implemented by the resort, and several more are planned (e.g., replacement of heating systems, more efficient thermostats, installation of solar panels, payment of fees for carbon-offsetting projects). The resort has previously committed to a 10-percent emissions reduction from 2014 levels by 2020 through the *Sustainable Slopes Initiative* (National Ski Areas Association 2017).

4.11.1.2 REGULATORY SETTING

Federal

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2007, that CO_2 is an air pollutant as defined under the CAA and that EPA has the authority to regulate emissions of GHGs. As a result of the ruling, EPA is taking steps to regulate GHG emissions and lending support to state and local agencies' efforts to reduce GHG emissions.

The Forest Service's Fiscal Year 2015–2020 Strategic Plan provides a framework for considering climate change. The first objective under the goal of sustaining national forests and grasslands is to "foster resilient adaptive ecosystems to mitigate climate change." Our landscapes face a range of growing environmental stressors, including fire, drought, insect and disease infestations, extreme weather events, increasing temperatures, and changes in soil health. Responding to climate change, therefore, is complicated by the enormity, complexity, and interconnectedness of these impacts. Given the importance of forest ecosystems in providing CO_2 sequestration, various plans, policies, and rules (e.g., the 2012 Planning Rule) direct the Forest Service to consider carbon stocks and carbon sequestration in its planning and activities.

National Program to Cut GHG Emissions and Improve Fuel Economy for Cars and Trucks

On August 28, 2014, EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) finalized a new national program that would reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the U.S. (White House Archives 2012). EPA proposed the first national GHG emissions standards under the CAA, and NHTSA proposed Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. This proposed national program allows automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both federal programs and the standards of California and other states. While this program will increase fuel economy to the equivalent of 54.5 miles per gallon for cars and light-duty trucks by Model Year 2025, additional phases are being developed by NHTSA and EPA that address GHG emission standards for new medium- and heavy-duty trucks (White House Archives 2014). This standard is under midterm evaluation by EPA (EPA 2017).

State

Plans, policies, regulations, and laws established by state agencies are generally presented in the order they were established.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those problems, the Executive Order established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

This executive order was the subject of a California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (SANDAG) (November 24, 2014) 231 Cal.App.4th 1056, which was reviewed by the California Supreme Court in January 2017. The case addressed the adequacy of the GHG analysis in the EIR SANDAG prepared for its 2011 Regional Transportation Plan. The Supreme Court decided a singular question in its decision, which was released on July 13, 2017. The California Supreme Court ruled that SANDAG did not abuse its discretion by declining "to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal."

In addition to concluding that an EIR need not use this executive order's goal for determining significance, the court described several principles relevant to CEQA review of GHG impacts, including: (1) EIRs should "reasonably evaluate" the "long-range GHG emission impacts for the year 2050," and (2) the 2050 target is "grounded in sound science" in that it is "based on the scientifically supported level of emissions reduction needed to avoid significant disruption of the climate." The court also ruled that "an EIR's designation of a particular adverse environmental effect as 'significant' does not excuse the EIR's failure to reasonably describe the nature and magnitude of the adverse effect." The court also recognized that the 40-percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emission 80 percent below 1990 levels by the year 2050." Senate Bill (SB) 32 has since defined the 2030 goal in statute (discussed below).

Assembly Bill 32, California Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also states: "(a) The statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (c) The state board [CARB] shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020" (California Health and Safety Code, Division 25.5, Part 3, Section 38551).

Low Carbon Fuel Standard

In January 2007, Executive Order S-01-07 established a Low Carbon Fuel Standard (LCFS). The Order calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that a LCFS for transportation fuels be established for California. The LCFS applies to all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction equipment (Wade pers. comm. 2017). The LCFS is measured on a full fuels cycle basis and may be met through market-based methods by which providers exceeding the performance required by an LCFS receive credits that may be applied to future obligations or traded to Providers not meeting LCFS.

In June 2007, CARB adopted the LCFS as a Discrete Early Action item under AB 32 pursuant to Health and Safety Code Section38560.5, and, in April 2009, CARB approved the new rules and carbon intensity reference values with new regulatory requirements taking effect in January 2011. The standards require providers of transportation fuels to report on the mix of fuels they provide and demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of "credits" earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the "deficits" earned from selling higher intensity fuels.

After some disputes in the courts, CARB re-adopted the LCFS regulation in September 2015, and the LCFS went into effect on January 1, 2016.

Senate Bill 375

SB 375, signed by the governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to develop a sustainable communities strategy (SCS) or alternative planning strategy, showing prescribed land use allocation in each MPO's regional transportation plan. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035.

The Sacramento Area Council of Governments (SACOG) serves as the MPO for Placer, Sacramento, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands located in the Lake Tahoe Basin. The project site is located in Placer County (County) and not within the Lake Tahoe Basin. SACOG adopted its Metropolitan Transportation Plan (MTP)/SCS 2035 in 2012 and subsequently adopted the 2020 MTP/SCS Update in February 2016. SACOG was tasked by CARB to achieve a 9-percent per capita reduction compared to 2012 emissions by 2020 and a 16-percent per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its SCS (CARB 2013). The MTP/SCS forecasted land use development by community types: Center and Corridor Communities, Established Communities, Developing Communities, Rural Residential Communities, and Lands Not Identified for Development in the MTP/SCS Planning Period. Olympic Valley, including the project site, is shown in the Lands Not Identified for Development category, which is defined as areas of the region that are not expected to develop to urban levels by 2035. The MTP/SCS acknowledges that some development may occur in these areas and that it is difficult to estimate where growth may occur on a parcel-by-parcel basis. (SACOG 2016).

Assembly Bill 1504 of 2010, Forest Resources: Carbon Sequestration

AB 1504 requires the Board of Forestry and Fire Protection to adopt district forest practice rules and regulations in accordance with specified policies to, among other things, ensure the continuous growing and harvesting of commercial forest tree species (CARB 2017a:4–5). AB 1504 also requires the Board of Forestry and Fire Protection to ensure that its rules and regulations that govern the harvesting of commercial forest tree species consider the capacity of forest resources to sequester CO_2 emissions sufficient to meet or exceed the sequestration target of 5 million metric tons of CO_2 equivalent per year (MT CO_2e/year) (net), as established in the first Climate Change Scoping Plan.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new

cars and light trucks will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2017b).

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011, and Senate Bill 350, the Clean Energy and Pollution Reduction Act of 2015

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011–2013 compliance period, at least 65 percent for the 2014–2016 compliance period, and at least 75 percent for 2016 and beyond. In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable resources by 2030.

Executive Order B-30-15

On April 20, 2015 Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 sets the next interim step in the state's continuing efforts to pursue the long-term target expressed under Executive Order S-3-05 to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the United States to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050. In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

California Building Efficiency Standards of 2016 (Title 24, Part 6)

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by the California Energy Commission in Title 24, Part 6 of the CCR. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy-efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2017, must follow the 2016 standards (CEC 2015). Energy-efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Climate Change Scoping Plan

In December 2008, CARB adopted its first version of its *Climate Change Scoping Plan*, which contained the main strategies California will implement to achieve the mandate of AB 32 (2006) to reduce statewide GHG emissions to 1990 levels by 2020. In May 2014, CARB released and subsequently adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching the goals of AB 32 (2006) and evaluate the progress made between 2000 and 2012 (CARB 2014). After releasing multiple versions of proposed updates in 2017 CARB adopted the next version titled *California's 2017 Climate Change Scoping*

Plan (2017 Scoping Plan) in December of that same year (CARB 2017a). The 2017 Scoping Plan indicates that California is on track to achieve the 2020 statewide GHG target mandated by AB 32 of 2006 (CARB 2017a:9). It also lays out the framework for achieving the mandate of SB 32 of 2016 to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017a). The 2017 Scoping Plan identifies the GHG reductions needed by each emissions sector.

The 2017 Scoping Plan also states that while achieving "no net increase" in GHG emissions is an appropriate overall objective of projects evaluated under CEQA if conformity with an applicable local GHG reduction plan cannot be demonstrated, it may not be appropriate or feasible for every development project to mitigate its GHG emissions to zero and that an increase in GHG emissions due to a project may not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change (CARB 2017a:101–102). The Scoping Plan further notes that lead agencies have the discretion to develop evidence-based numeric thresholds consistent with the Scoping Plan, the state's long-term GHG goals, and climate change science.

Local

Placer County Air Pollution Control District

In October 2016, the Placer County Air Pollution Control District (PCAPCD) Board of Directors adopted its *Review of Land Use Projects under CEQA Policy* document, establishing thresholds of significance for GHG emissions and criteria air pollutants for projects under CEQA review in the County. The document serves as guidance for lead agencies reviewing GHG impacts associated with a project. In the development of these thresholds, the board considered statewide regulations to accomplish statewide emissions reduction targets for GHGs. PCAPCD has prepared a *CEQA Thresholds of Significance Justification Report*, which contains the rationale, modeling analyses, and factual data to justify the thresholds of significance that have been established (PCAPCD 2016). PCAPCD has established a de minimis level of 1,100 $MTCO_2e$/year for project operations and 10,000 MT CO_2e/year for construction activities. In accordance with PCAPCD, projects that would not exceed these levels would not make a considerable contribution to climate change.

Placer County General Plan

The *Placer County General Plan*, which was originally adopted in 1994 and last updated in 2013, includes the following policy related to addressing GHG emissions and climate change in Placer County (Placer County 2013):

- **Policy 6. F.5**. The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient buildings and site designs and proper storage, use, and disposal of hazardous materials.

4.11.2 Analysis Methods

4.11.2.1 METHODS AND ASSUMPTIONS

All GHG emissions modelling results and supporting data are provided in Appendix G. Short-term construction-generated greenhouse gas emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program as recommended by PCAPCD and other air districts in California. Modeling was based on project-specific information (e.g., structure size, area to be graded, area to be paved), where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location and land use types. Emissions from the use of helicopters and off-road vehicles for construction were estimated using available emission factors and the applicable module in CalEEMod (SCAQMD 2017).

The loss in sequestered carbon associated with anticipated tree removal was estimated in CalEEMod using the vegetation module. The types and amounts of vegetation that would be removed permanently because

of construction were estimated as part of the impact analysis presented in Section 4.12, "Vegetation." A conservative approach was taken for the GHG modelling and it was assumed that 500 trees would be removed (see Appendix G), which is above the number of affected trees identified for each action alternative in Section 4.12, "Vegetation" (the combination of removed trees and trees where canopies could be affected does not exceed 330 trees for any action alternative). Total one-time GHG emissions from the loss in carbon sequestration were attributed to the construction phase of the project as this is when trees would be removed. No additional sequestration benefits were assumed from potential new tree plantings associated with mitigation activities.

Operational GHG emissions were estimated using a variety of sources and models. Mobile-source emissions were estimated using the emission factors provided in CalEEMod (SCAQMD 2017) and estimates of project-generated vehicle trips and vehicle miles traveled (VMT) that were developed as part of the analysis presented in Section 4.7, "Transportation and Circulation." Development of the number of vehicle trips and VMT generated by the project took into account the additional VMT as a result of increases in visitors to Squaw Valley and Alpine Meadows and a reduction in VMT from the elimination of shuttle services, as well as visitor vehicle trips between mountains.

Indirect emissions associated with energy demand from the operation and maintenance of the gondola were estimated using energy intensity of running the system at full capacity for the necessary hours during the winter season as well as running the system for maintenance purposes during the off-season.

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 (CUP). 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, and their implementation would be ensured by the CUP's conditions of approval. All RPMs are considered roughly proportional and have an essential nexus to the impacts they reduce.

4.11.2.2 EFFECT 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 GHG emissions and climate change and could be affected by climate change. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Compliance with local, state and federal regulations regarding GHG emissions (including Assembly Bill 32 recommendations and Placer County Air Pollution Control District thresholds) **(Impact 4.11-1).**

- Quantification of GHG emissions associated with construction and operation of the project, including power generation, as compared with the existing condition **(Impact 4.11-1).**
- Quantification of GHG emissions related to potential changes in traffic volumes **(Impact 4.11-1).**
- Discussion of the impact of climate change on the operations of the proposed project and the potential effects of climate change on the project's environmental impacts **(Impact 4.11-2).**
- Discussion of potential GHG emissions associated with the proposed project and alternatives and potential contributions to climate change **(Impact 4.11-1).**
- Identification of BMPs to reduce GHG emissions **(Impact 4.11-1).**

CEQA Criteria

Based on the Placer County CEQA checklist, Appendix G of the State CEQA Guidelines, and GHG policies and PCAPCD thresholds of significance, implementing any of the alternatives would result in a significant impact related to GHG emissions and climate change if it would:

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant and/or cumulative impact on the environment (i.e., exceed 1,100 MT CO_2e/year during project construction and 1,100 MT CO_2e/year during project operations) **(Impact 4.11-1)**; or
- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gasses **(Impact 4.11-1)**.

4.11.2.3 ISSUES NOT DISCUSSED FURTHER

All issues related to GHG emissions and climate change are analyzed here except for one element of one NEPA indicator. The effects of climate change on the project's environmental impacts are addressed as appropriate within the individual impact sections in Chapter 4 of this EIS/EIR. For example, the effects of climate change on avalanche risk is considered in the evaluation of public safety impacts in Section 4.6, "Public Safety."

4.11.3 Direct and Indirect Environmental Consequences

4.11.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.11-1 (Alt. 1): Greenhouse Gas Emissions

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no construction or operational activities that would result in substantial temporary increases in GHG emissions. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, the Tahoe National Forest (TNF) and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities, continued operation of the winter shuttle service between the Squaw Valley and Alpine Meadows base areas, and continued use of personal vehicles by individuals to move between the two base areas. No increases in long-term energy demand or vehicle trips, relative to existing conditions, would occur. Therefore, there would be no increase or decrease in generation of GHG emissions.

NEPA Effects Conclusion
With no increase or decrease in generation of GHG emissions, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no increase or decrease in generation of GHG emissions, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.11-2 (Alt. 1): Impacts of Climate Change on the Project

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no land development that could be exposed to increased risks and changes in climate patterns. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Changes in future climate patterns would have no new effects as there would be no new development.

NEPA Effects Conclusion
With no new development occurring, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new development occurring, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.11.3.2 ALTERNATIVE 2

Impact 4.11-1 (Alt. 2): Greenhouse Gas Emissions

Under Alternative 2, construction and operation of the new gondola, and associated components, would result in GHG emissions. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to increases in GHG emissions would result in a **minorly adverse** effect because the project would contribute a small amount of net GHG emissions to the cumulative global climate change problem. RPMs AQ-17 and AQ-18 would reduce construction-related GHG emissions and mitigate this effect. Under CEQA, the project would not exceed applicable PCAPCD construction or operational thresholds for GHG emissions and this impact would be **less than significant** for both construction and operational phases. In addition, RPMs AQ-17 and AQ-18 would reduce construction-related GHG emissions by requiring the use of cleaner fuel in construction equipment and limiting idle times for construction vehicles. With implementation of these two RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Construction-related activities that would generate GHG emissions from exhaust include worker commute trips, haul trucks and a helicopter carrying supplies and materials to, from, and within the project site, and off-road construction equipment (e.g., dozers, loaders, excavators, off-highway vehicles). Construction may require an onsite and temporary construction office that would require electricity. Operation of Alternative 2 would result in indirect GHG emissions associated with electricity use required to operate the gondola, vehicle exhaust emissions associated with maintenance personnel during the off-season, and increases in VMT associated with increased visitors during winter months. Emissions estimated for construction and

operational activities are summarized in Table 4.11-1. Emission modelling results and supporting data are provided in Appendix G.

Table 4.11-1 Summary of Project-Generated Greenhouse Gas Emissions

Construction Emissions	GHG Emissions
Helicopter Use	38 MT CO_2e
Tree Removal (loss of sequestered CO_2)	100 MT CO_2e
Other Construction Equipment and construction office	430 MT CO_2e
Construction Total	**568 MT CO_2e**
Operational Emissions	**GHG Emissions**
Gondola Operation (Base Terminals and Mid-Stations)	313 MT CO_2e/year
Mobile-Sources	430 MT CO_2e/year
Maintenance Vehicles	12 MT CO_2e/year
Operational Total	**755 MT CO_2e/year**

Notes: GHG= greenhouse gas; MT CO_2e = metric tons of carbon dioxide equivalents

Source: Modeling conducted by Ascent Environmental in 2018

As shown above, construction would result in one-time emissions of 568 MT CO_2e that would be emitted during the construction phase, anticipated to last one construction season (i.e., 200 days). 100 MT CO_2e of these emissions is attributed to the loss of sequestered CO_2 (i.e., carbon stocks) from the removal of trees during construction. As stated previously in the description of methods and assumptions, the modelling assumed removal of 500 trees, which exceeds the estimated amount of tree removal for each action alternative identified in Section 4.12, "Vegetation." Also as stated previously, no additional sequestration benefits were assumed from potential new tree plantings associated with mitigation activities. The modelling also did not consider that some of the trees that would be removed would be among those identified as being in poor health by the Registered Professional Forester (RPF) during the arborist survey and recommended by the RPF for removal. Removal of these trees could provide an overall benefit to forest health, and thereby increase the growth rate and rate of carbon sequestration by remaining trees. The modelled loss of 100 MT CO_2e sequestration from project implementation would have little to no influence on the overall carbon stocks provided by the thousands of acres of forest land on the TNF.

Considering the combined long-term operational GHG emissions from gondola operation, vehicle exhaust, and maintenance activities, the project would result in emissions of 755 MT CO_2e/year (Table 4.11-1). The 313 MT CO_2e/year of GHG emissions attributed to gondola operations in Table 4.11-1 assumes electricity delivered by Liberty Utilities comes from its existing portfolio of energy sources (including renewable energy sources) and associated GHG emissions per kilowatt hour (kWh) of generation. SVSH is currently pursuing contracts with Liberty Utilities and seeking approval from the CPUC to have 100 percent of the electricity delivered to Squaw Valley and Alpine Meadows come from renewable sources. However, at this time, the appropriate contracts and agreements are not in place. Nonetheless, if SVSH achieves this objective, energy-related GHG emissions (i.e., 313 MT CO_2e/year) would be zero, and total operational GHG emissions would be reduced to 470 MT CO_2e/year.

Considering that the project's GHG emissions would not exceed the PCAPCD adopted threshold of significance of 10,000 MT CO_2e/year for construction emissions or the de minimis level of 1,100 MT CO_2e/year for operations, the project would not result in a substantial cumulative contribution to climate change or conflict with plans or policies in place for the purpose of reducing GHG emissions.

RPMs AQ-17 and AQ-18 would reduce construction-related GHG emissions by requiring the use of cleaner fuel in construction equipment and limiting idle times for construction vehicles. However, emission reductions from these measures are not reflected in the results provided in Table 4.11-1.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to generation of GHG emissions and climate change would result in a **minorly adverse** effect because construction and long-term operations would contribute a small amount of net GHG emissions to the cumulative global climate change problem. These effects would be mitigated through implementation of RPMs AQ-17 and AQ-18.

CEQA Determination of Effects

Alternative 2 would result in an increase in GHG emissions associated with short-term construction and long-term operation of the project. However, emissions would not exceed applicable PCAPCD construction thresholds or operational de minimis levels. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** for project construction and **less than significant** for project operations. RPMs AQ-17 and AQ-18 would further reduce construction-related GHG emissions by requiring the use of cleaner fuel for construction equipment and limiting idle times for construction vehicles. However, these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-17 and AQ-18 as mitigation measures would reduce the effects of GHG emissions from construction vehicles but are not necessary to reduce a significant effect.

Impact 4.11-2 (Alt. 2): Impacts of Climate Change on the Project

Climate change is anticipated to result in changes to local weather patterns in California and within the project area, including increases in average temperatures and decreases in snowpack. These changes may lead to increased risk of wildfires, mass wasting (e.g., rockslides), and avalanche risk. However, fire protection agencies would continue to monitor fire risk and serve the area as needed. Further, the project would not include any new residences or occupied structures, and would not be operational (other than for maintenance and repairs) during the times of the year when fire risk is high or when heavy rain could increase the risk for rockslides. Many of the project structures are also primarily metal (e.g., gondola towers) and are not highly susceptible to fire damage. For these reasons, local changes in weather patterns and associated effects would not pose additional risk on the project. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be a **minorly adverse** effect on the project from climate change because fire and avalanche risk could increase to a small degree in the project area. There are no applicable RPMs that would mitigate this effect. Under CEQA and using the CEQA criteria, this impact would be **less than significant** because climate change would not adversely affect the project. There are no applicable RPMs that would reduce this effect.

As discussed above in Section 4.11.1, "Environmental Setting," global climate change may result in local effects in California and within the project area (i.e., Sierra Nevada). Expected changes in climate patterns affecting the project include:

- increases in average temperatures, extreme heat days and drought, leading to increased frequency of large wildfires;
- decreases in snowfall/snowpack and increases in rain, resulting in fewer snow days and greater risk for landslides (e.g., rockslides, mudslides, rock fall, debris flows) during heavy rain events; and
- increased risk of avalanches associated with changes to precipitation and snowmelt patterns.

The project area is within a California Department of Forestry and Fire Protection–designated very high fire severity zone, thus, prone to increased risk for wildfire, especially if future conditions become more favorable for increases in wildfires. Although much of the project area is designated as a very high fire hazard severity

zone, the project would not result in the placement of housing and other structures that would contain substantial numbers of people in a wildland area. In addition, many project structures are primarily metal (e.g., gondola towers) and are not highly susceptible to fire damage. Further, fire protection in the project area would be provided by the Squaw Valley Fire Department and North Tahoe Fire Protection Agency, who both have an established defensible space program and would subject all structures constructed by the project to all the requirements of the program, including annual physical inspections of every structure in the respective district's jurisdiction for compliance with California's defensible space laws. Fire protection agencies currently responsible for the project area would continue to operate, monitoring and assessing fire risk, to minimize injury and damage to people or structures. Because the project would not result in the placement of structures where people reside, or work on a continuous basis, in a wildland area, fire risk would be minimal. Further, other than for maintenance and repairs, the gondola would only operate during winter months when fire risk is greatly reduced; thus, people using the new gondola, and winter time employees, would not be exposed to higher fire risk.

Given that the project is located within the Sierra Nevada, where snow levels are anticipated to decline in the future, snow-related recreational activities could also decline. However, reductions in snow pack would have no physical effect on the project. Further, with anticipated increases in precipitation as rain and reduction in snowpack, along with increased risk for wildfire, the potential for landslide events (e.g., rockslides, mudslides, rock fall, debris flows) to occur could increase. The risk for landslides currently exists and may increase in the future with changing climate conditions. Human-related causes of landslides typically include substantial excavation of slope, loading of slope, water reservoir drawdown, deforestation, over irrigation, mining, artificial vibration, and water leakage from utilities (U.S. Geological Survey 2004). Of these causes, only excavation is relevant to the project. However, the project would be limited to minor ground disturbance for installation of towers and terminals and would not alter existing slopes or remove substantial amounts of vegetation; thus, it would not result in increased potential for erosion that could lead to landslides. Further, as discussed in Section 4.16, "Soils and Geology," debris flows are not a significant hazard at the project site. The proposed alignment would not be constructed within areas where debris flows typically occur, thus minimizing the potential to expose people or structures to debris flows. The project would not physically alter the existing mountain terrain in a way that would increase the risk of landslide events or result in the placement of people or structures in hazard-prone areas.

Regarding avalanche risk, Squaw Valley and Alpine Meadows already regularly monitor avalanche hazards and implement avalanche forecasting and prevention measures on an ongoing basis, such as triggering small slides to reduce excessive buildup of snow. If climate change were to result in conditions that are more prone to avalanches, the existing avalanche management program would continue to purposely trigger avalanches at smaller sizes to reduce risk from larger avalanches. Thus, avalanche risk would be adequately managed into the future, even with potential climate changes.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to impacts of climate change on the project would result in a **minorly adverse** effect because fire and avalanche risk could increase to a small degree in the project area. However, these effects would not result in increases in risk of injury to people or structures. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

The project would result in a new gondola connecting Squaw Valley and Alpine Meadows that would operate during the winter season only. Impacts from changes in local weather patterns due to climate change could result in increased risk of fire, avalanche, increased potential for rockslides, and reduced snowpack. However, the project would include new technology specifically designed to more efficiently minimize avalanche risk and fire protection activities would continue to occur in the area as they do today. Reductions in snowpack would not result in physical effects on the project. The risk for rockslides currently exists and may increase in the future, but the project would not result in any changes that could increase this risk. Further, the project would not physically alter the existing mountain terrain in a way that would increase the risk of landslide events or result in the placement of people or structures in hazard-prone areas. Under

CEQA, and using the CEQA criteria, impacts from climate change on the project would be **less than significant.** There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.11.3.3 ALTERNATIVE 3

Impact 4.11-1 (Alt. 3): Greenhouse Gas Emissions

Under Alternative 3, construction and operation of the new gondola, and associated components, would result in GHG emissions. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to increases in GHG emissions would result in a **minorly adverse** effect because the project would contribute a small amount of net GHG emissions to the cumulative global climate change problem. RPMs AQ-17 and AQ-18 would reduce construction-related GHG emissions and mitigate this effect. Under CEQA, the project would not exceed applicable PCAPCD construction or operational thresholds for GHG emissions; therefore, this impact would be **less than significant** for both construction and operational phases. In addition, RPMs AQ-17 and AQ-18 would reduce construction-related GHG emissions by requiring the use of cleaner fuel in construction equipment and limiting idle times for construction vehicles. With implementation of these two RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Primary components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, construction activities and duration would also be the same. Further, under Alternative 3, the new gondola would operate in the same manner as for Alternative 2, only with a slightly different alignment. Operational activity and increases in visitation to Squaw Valley and Alpine Meadows would be the same for Alternative 3 as described for Alternative 2. Therefore, GHG emissions were not remodeled and increases in GHG emissions and impacts are considered the same as for Alternative 2.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to generation of GHG emissions and climate change would result in a **minorly adverse** effect because construction and long-term operations would contribute a small amount of net GHG emissions to the cumulative global climate change problem. These effects would be mitigated through implementation of RPMs AQ-17 and AQ-18.

CEQA Determination of Effects

Alternative 3 would result in an increase in GHG emissions associated with short-term construction and long-term operation of the project. However, emissions would not exceed applicable PCAPCD construction thresholds or operational de minimis levels. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** for project construction and **less than significant** for project operations. RPMs AQ-17 and AQ-18 would further reduce construction-related GHG emissions by requiring the use of cleaner fuel for construction equipment and limiting idle times for construction vehicles. However, these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-17 and AQ-18 as mitigation measures would reduce the effects of GHG emissions from construction vehicles but are not necessary to reduce a significant effect.

Impact 4.11-2 (Alt. 3): Impacts of Climate Change on the Project

Climate change would affect Alternative 3 in the same way as described for Alternative 2. Climate change is anticipated to result in changes to local weather patterns in California and within the project area, including increases in average temperatures, decreases in snowpack. These changes may lead to increased risk of wildfires, mass wasting (e.g., rockslides), and avalanche risk. However, fire protection agencies would continue to monitor fire risk through and serve the area as needed. Further, the project would not include any new residences or occupied structures, and would not be operational (other than for maintenance and repairs) during the times of the year when fire risk is high or when heavy rain could increase the risk for rockslides. Many of the project structures are also primarily metal (e.g., gondola towers) and are not highly susceptible to fire damage. For these reasons, local changes in weather patterns and associated effects would not pose additional risk on the project. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be a **minorly adverse** effect on the project from climate change because fire and avalanche risk could increase to a small degree in the project area. There are no applicable RPMs that would mitigate this effect. Under CEQA and using the CEQA criteria, this impact would be **less than significant** because climate change would not adversely impact the project. There are no applicable RPMs that would reduce this effect.

Primary project components for Alternative 3 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Within the scale of changes in weather patterns attributable to climate change, the project location would be the same under Alternative 3 as Alternative 2. Thus, future changes in weather patterns and associated effects would be the same.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to impacts of climate change on the project under Alternative 3 would result in a **minorly adverse** effect because fire and avalanche risk could increase to a small degree in the project area. However, these effects would not result in increases in risk of injury to people or structures. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Like Alternative 2, Alternative 3 would result in a new gondola connecting Squaw Valley and Alpine Meadows that would operate during the winter season only. Impacts from changes in local weather patterns due to climate change could result in increased risk of fire, avalanche, increased potential for rockslides, and reduced snowpack. However, the project would include new technology specifically designed to more efficiently minimize avalanche risk and fire protection activities would continue to occur in the area as they do today. Reductions in snowpack would not result in physical effects on the project. The risk for rockslides currently exists and may increase in the future, but the project would not result in any changes that could increase this risk. Further, the project would not physically alter the existing mountain terrain in a way that would increase the risk of landslide events or result in the placement of people or structures in hazard-prone areas. Under CEQA, and using the CEQA criteria, impacts from climate change on the project would be **less than significant.** There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.11.3.4 ALTERNATIVE 4

Impact 4.11-1 (Alt. 4): Greenhouse Gas Emissions

Under Alternative 4, construction and operation of the new gondola, and associated components, would result in GHG emissions. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to increases in GHG emissions would result in a **minorly adverse** effect because the project would contribute a small amount of net GHG emissions to the cumulative global climate change problem. RPMs AQ-17 and AQ-18 would reduce construction-related GHG emissions and mitigate this effect. Under CEQA, the project would not exceed applicable PCAPCD construction or operational thresholds for GHG emissions; therefore, this impact would be **less than significant** for both construction and operational phases. In addition, RPMs AQ-17 and AQ-18 would reduce construction-related GHG emissions by requiring the use of cleaner fuel in construction equipment and limiting idle times for construction vehicles. With implementation of these two RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Primary components for Alternative 4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Thus, construction activities and duration would also be the same. Further, under Alternative 4, the new gondola would operate in the same manner as for Alternative 2, only with a slightly different alignment. Operational activity and increases in visitation to Squaw Valley and Alpine Meadows would be the same for Alternative 4 as described for Alternative 2. Therefore, GHG emissions were not remodeled and increases in GHG emissions and impacts are considered the same as for Alternative 2.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to generation of GHG emissions and climate change would result in a **minorly adverse** effect because construction and long-term operations would contribute a small amount of net GHG emissions to the cumulative global climate change problem. These effects would be mitigated through implementation of RPMs AQ-17 and AQ-18.

CEQA Determination of Effects

Alternative 4 would result in an increase in GHG emissions associated with short-term construction and long-term operation of the project. However, emissions would not exceed applicable PCAPCD construction thresholds or operational de minimis levels. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** for project construction and **less than significant** for project operations. RPMs AQ-17 and AQ-18 would further reduce construction-related GHG emissions by requiring the use of cleaner fuel for construction equipment and limiting idle times for construction vehicles. However, these RPMs would not be necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs AQ-17 and AQ-18 as mitigation measures would reduce the effects of GHG emissions from construction vehicles but are not necessary to reduce a significant effect.

Impact 4.11-2 (Alt. 4): Impacts of Climate Change on the Project

Climate change would affect Alternative 4 in the same way as described for Alternative 2. Climate change is anticipated to result in changes to local weather patterns in California and within the project area, including increases in average temperatures, decreases in snowpack. These changes may lead to increased risk of wildfires, mass wasting (e.g., rockslides), and avalanche risk. However, fire protection agencies would continue to monitor fire risk through and serve the area as needed. Further, the project would not include any new residences or occupied structures, and would not be operational (other than for maintenance and repairs) during the times of the year when fire risk is high or when heavy rain could increase the risk for rockslides. Many of the project structures are also primarily metal (e.g., gondola towers) and are not highly susceptible to fire damage. For these reasons, local changes in weather patterns and associated effects would not pose additional risk on the project. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be a **minorly adverse** effect on the project from climate change because fire and avalanche risk could increase to a small degree in the project area. There are no applicable RPMs that would mitigate this effect. Under CEQA and using the CEQA criteria, this impact would be **less than significant** because climate change would not adversely impact the project. There are no applicable RPMs that would reduce this effect.

Primary project components for Alternative 4 would be the same as described above for Alternative 2 (e.g., towers, mid-stations, base terminals). Within the scale of changes in weather patterns attributable to climate change, the project location would be the same under Alternative 4 as Alternative 2. Thus, future changes in weather patterns and associated effects would be the same.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect impacts related to impacts of climate change on the project under Alternative 4 would result in a **minorly adverse** effect because fire and avalanche risk could increase to a small degree in the project area. However, these effects would not result in increases in risk of injury to people or structures. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Like Alternative 2, Alternative 4 would result in a new gondola connecting Squaw Valley and Alpine Meadows that would operate during the winter season only. Impacts from changes in local weather patterns due to climate change could result in increased risk of fire, avalanche, increased potential for rockslides and reduced snowpack. However, the project would include new technology specifically designed to more efficiently minimize avalanche risk and fire protection activities would continue to occur in the area as they do today. Reductions in snowpack would not result in physical effects on the project. The risk for rockslides currently exists and may increase in the future, but the project would not result in any changes that could increase this risk. Further, the project would not physically alter the existing mountain terrain in a way that would increase the risk of landslide events or result in the placement of people or structures in hazard-prone areas. Under CEQA, and using the CEQA criteria, impacts from climate change on the project would be **less than significant.** There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

4.11.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.11-2 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Addressing the action alternatives, for Impact 4.1-1, there would be a minorly adverse effect for all applicable NEPA indicators. Construction and operation of the project would result in a small net increase in GHG emissions, contributing to the global climate change problem. Implementing RPMs would reduce the amount of construction-related GHG emissions associated with vehicle exhaust, but emissions would not be eliminated. Under CEQA, impacts for all alternatives would be less than significant, and no mitigation would be required; however, implementation of RPMs would further reduce construction emissions. Primary components for all alternatives would be the same (e.g., towers, mid-stations, base terminals). Thus, construction activities and duration would also generally be the same. Further, the new gondola would operate in the same manner under each alternative, only with a slightly different alignment. Similarly, the action alternatives would require a similar level of electricity, and would not differ in other ways that would affect operational emissions. Therefore, GHG emissions were not remodeled for Alternatives 3 and 4 and increases in GHG emissions and related impacts are considered the same for all action alternatives. It should be noted that conservative assumptions were used for conducting the emissions modelling, that is, assumptions were used that would result in a higher emissions estimate. Therefore, the emissions estimates provided in this analysis are likely higher than those that would actually occur for any of the alternatives.

For Impact 4.1-2, changes to local weather patterns associated with climate change would result in physical effects in the project area, including increased risk of wildfire, mass wasting (i.e., rockslide) and avalanche. Because the alignments of all the action alternatives are located in the same vicinity, effects from climate change would affect all the alternatives equally and there would be a minorly adverse effect for all applicable NEPA indicators. No aspects of any action alternative make it more or less susceptible to, or resilient to, the effects of climate change compared to the other action alternatives. Appropriate fire protection agencies and programs are currently in place, the gondola would not be operational during periods of wildfire and rockslide risk, and the existing avalanche management program would continue to purposely trigger avalanches at smaller sizes to reduce risk from larger avalanches as part of the action alternatives, minimizing this effect. Under CEQA, impacts for all action alternatives would be less than significant, and no mitigation would be required. There are no RPMs that reduce this effect.

Table 4.11-2 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.11-1: Greenhouse Gas Emissions	Compliance with local, state and federal regulations regarding GHG emissions (including Assembly Bill 32 recommendations and Placer County Air Pollution Control District thresholds)	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Quantification of GHG emissions associated with construction and operation of the project, including power generation, as compared with the existing condition	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.11-2 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Quantification of GHG emissions related to potential changes in traffic volumes	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Discussion of potential GHG emissions associated with the proposed project and alternatives and potential contributions to climate change	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Identification of BMPs to reduce GHG emissions	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant and/or cumulative impact on the environment (i.e., exceed 1,100 $MTCO_2e$/year)	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gasses	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
4.11-2: Impacts of Climate Change on the Project	Discussion of the impact of climate change on the operations of the proposed project and the potential effects of climate change on the project's environmental impacts	No effect	Minorly adverse under NEPA; less than significant under CEQA	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Minorly adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

4.11.4 Cumulative Effects

4.11.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR.

4.11.4.2 CUMULATIVE IMPACTS

As indicated in the preceding discussion of project impacts, any analysis of GHG emission–related impacts is inherently a cumulative analysis that considers the project's contribution to the cumulative global climate change problem. For this reason, a separate discussion of cumulative impacts associated with GHG emissions is not included. The conclusions provided in the discussion of Impact 4.11-1, that the GHG emissions from each action alternative would result in a minorly adverse effect under NEPA and a less than significant impact under CEQA, characterize each action alternatives contribution to the cumulative global climate change impact.

The discussion of the impacts of climate change on the project under Impact 4.11-2 concludes that for each action alternative climate change effects on fire risk, rockslide risk, avalanche risk, and snow pack would result in a minorly adverse effect under NEPA and a less than significant impact under CEQA. These effects of changing weather patterns on the project do not interact with other projects in the area. Other projects do not alter the effects of changing weather patterns on the gondola, and the gondola does not alter the effects of changing weather patterns on the project. Without an interaction between the gondola and other projects, there is no potential for a cumulative effect.

4.12 VEGETATION

This section includes a discussion of the vegetation and habitat types known to occur on the project site; a summary of the applicable federal, state, and local regulations; and an analysis of potential impacts on vegetation resources that could result with implementation of the project.

It addresses the effects of ground disturbance on common and sensitive habitat and vegetation types, overstory vegetation (i.e., trees), and sensitive natural communities as defined by California Department of Fish and Wildlife (CDFW) and described further below. Effects on other aspects of biological resources are addressed in subsequent sections of this EIS/EIR. Special-status plants and invasive plant species are evaluated in Section 4.13, "Botany." Wildlife species are evaluated in Section 4.14, "Wildlife and Aquatics." 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.

4.12.1 Affected Environment

4.12.1.1 ENVIRONMENTAL SETTING

Terrestrial Vegetation and Habitat Types

The elevation of the project site ranges from approximately 6,235 feet above mean sea level (AMSL) at the Squaw Valley terminal area to approximately 7,800 feet AMSL atop the ridgeline where the Squaw Valley mid-station locations are being considered, to approximately 6,920 feet above AMSL at the Alpine Meadows Ski Area (Alpine Meadows) base terminal location (see Exhibit 2-1). The project site is a mix of private and public land. Ground disturbance in the area consists mainly of ski resort infrastructure, including buildings, roads, ski trails, and hiking trails.

The site includes long linear alignments crossing small patches of mixed Sierra Nevada coniferous woodland, a mosaic of mixed shrub vegetation (e.g., montane chaparral, bitter cherry thickets, mountain sagebrush/forb vegetation), extensive areas of rock outcrop and talus, ruderal erosion control revegetation, mountain alder thicket, part of a native quaking aspen grove, and very small areas of freshwater emergent wetland and riverine habitat. These features make up the upland habitats, mesic to aquatic habitats, and human-modified habitats that occur on the project site, and general characteristics of these habitats are described in the paragraphs below. Vegetation types were mapped and classified to the group or alliance level, where possible, according to *A Manual of California Vegetation* (Sawyer et al. 2009). Unvegetated and human-modified areas were classified according to the California Wildlife Habitat Relationship (CWHR) system (CDFW 2018a). In addition, some vegetation types were lumped into larger CWHR system habitat categories where vegetation alliances were highly intermixed and difficult to map as separate units (e.g., several conifer tree-dominated vegetation alliances are included in the Sierra Nevada coniferous woodland habitat type). Surveys of the project site, which includes all action alternatives, where vegetation and habitat information was collected were performed in 2015, 2016, and 2017 by staff from EcoSynthesis Scientific & Regulatory Services (EcoSynthesis) (EcoSynthesis 2017), Ascent Environmental, and Hydro Restoration. The results of vegetation/habitat surveys are described in Table 4.12-1, focusing on the occurrence of each habitat/vegetation type in the disturbance area for each action alternative. Where applicable, the corresponding wetland/water category as applied in Section 4.15, "Wetlands," is listed in the vegetation/habitat type description in Table 4.12-1. The locations of the habitat/land cover types are shown in exhibits included in the EcoSynthesis botanical survey report (EcoSynthesis 2017) provided in Appendix H.

Table 4.12-1 Habitat and Vegetation in the Study Area

Habitat/ Vegetation Type	Summary Description	Acres Mapped Within Study Area[1, 3]								
		Alpine Meadows Special Use Permit Area			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 *A 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*), California 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 nonforest vegetation types, and, in one area within the Rock Outcrop land cover type, the woodland understory was generally sparse to nonexistent, 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 nondeciduous, coriaceous-leaved community. Deciduous and soft-leaved shrub vegetation is described in other land cover types. Montane Chaparral includes areas that correspond to more than one vegetation alliance described in Sawyer et al. (2009). For example, *Quercus vacciniifolia* shrubland alliance and *Arctostaphylos patula* shrubland alliance often occur intermixed, so a single, more inclusive cover type is appropriate for the present project. This vegetation type 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 vacciniifolia*); 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 vegetation 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 4.12-1 Habitat and Vegetation in the Study Area

Habitat/ Vegetation Type	Summary Description	Acres Mapped Within Study Area[1, 3]								
		Alpine Meadows Special Use Permit Area			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 nondeciduous species such as tobacco brush. Wildlife values of the deciduous and nondeciduous 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.	0	2.28	3.64	4.91	7.30	3.34	**4.91**	**9.58**	**6.98**
Mountain Sagebrush/ Forb Vegetation	*Artemisia tridentata* 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.), penstemon (*Penstemon* spp.), sulfur buckwheat (*Eriogonum umbellatum* var. *nevadense* and var. *modocense*), lupines (*Lupinus* spp.), and others.	0	0	0	0	0	5.23	**0**	**0**	**5.23**

Table 4.12-1 Habitat and Vegetation in the Study Area

Habitat/ Vegetation Type	Summary Description	Acres Mapped Within Study Area[1, 3]								
		Alpine Meadows Special Use Permit Area			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 1acre 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 project 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, R. roezlii, R. viscosissimum*), elderberry (*Sambucus* spp.), creeping snowberry (*Symphoricarpos mollis*), and serviceberry (*Amelanchier* spp.). Although these riparian vegetation types generally do not meet the parameters to qualify as wetlands as defined under the Clean Water Act, they are subject to state jurisdiction under California Fish and Game Code Section 1602, and *Acer glabrum* and *Rubus parviflorus* shrubland alliances are sensitive natural communities as defined by CDFW.	0	0.48	0.40	0	0.45	6.17	0	**0.93**	**6.57**

Table 4.12-1 Habitat and Vegetation in the Study Area

Habitat/ Vegetation Type	Summary Description	Acres Mapped Within Study Area[1, 3]								
		Alpine Meadows Special Use Permit Area			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 through 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 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*. Mountain alder thickets generally meet the parameters to qualify as wetlands as defined under the Clean Water Act and are included within the palustrine category discussed in Section 4.15, "Wetlands." Mountain alder thickets are also recognized by CDFW as a sensitive natural community.	0.64	0	0	0	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 Alternative 2 study area. Quaking aspen (*Populus tremuloides*) 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 natural community as defined by CDFW. Aspen groves typically do not meet the parameters to qualify as wetlands as defined under the Clean Water Act.	0.13	0	0	0	0	0	**0.13**	**0**	**0**

Table 4.12-1 Habitat and Vegetation in the Study Area

Habitat/ Vegetation Type	Summary Description	Acres Mapped Within Study Area[1, 3]								
		Alpine Meadows Special Use Permit Area			Private			Total[2]		
		Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4
Freshwater Emergent Wetland[3]	Herbaceous wetland vegetation occurs in slight topographic depressions within tributary drainages within the study area. Dominant species include sedges (*Carex leporinella* and *C. heteroneura*), rushes (*Juncus chlorocephalus* or *bufonius*), grasses (*Agrostis exarata* and/or *humilis*), and forbs (e.g., *Oreostemma alpigenus*). In one seasonally 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 freshwater emergent wetland vegetation occur near the Alpine Meadows base lodge, in patches too small to be effectively mapped for the present vegetation study. Freshwater emergent wetlands generally meet the parameters to qualify as wetlands as defined under the Clean Water Act and are included within the palustrine freshwater emergent wetland category discussed in Section 4.15, "Wetlands."	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 are 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. Freshwater ponds may qualify as waters of the state and potential waters of the United States and are addressed in Section 4.15, "Wetlands," under the lacustrine category. Ponds constructed in uplands may not fall within federal jurisdiction but could still qualify as waters of the state.	0	0.52	0.64	0.25	0.51	0.02	**0.25**	**1.03**	**0.66**
Riverine[3]	Several unnamed seasonal 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. Riverine habitats qualify as waters of the state and potential waters of the United States and are addressed in Section 4.15, "Wetlands," under the riverine category, which includes perennial and ephemeral streams and roadside ditches.	0.17	0.40	0.38	0.26	0.30	0.04	**0.44**	**0.70**	**0.42**

Table 4.12-1 Habitat and Vegetation in the Study Area

Habitat/ Vegetation Type	Summary Description	Acres Mapped Within Study Area[1, 3]								
		Alpine Meadows Special Use Permit Area			Private			Total[2]		
		Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4	Alternative 2	Alternative 3	Alternative 4
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 nonnative 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**

Note: CDFW = California Department of Fish and Wildlife.

[1] "Study area" refers to the survey area identified and mapped in the Botanical Survey Report (EcoSynthesis 2017): 50 feet on each side of the centerline of the Alternative 2 gondola alignment and 100 feet on each side of the centerline of the Alternative 3 and Alternative 4 alignments, and 30–50 feet on each side of the locations previously proposed for Gazex facilities. Although the Gazex facilities have been removed from the project (see the first page of Chapter 1, "Introduction," Volume 1), the entire area surveyed is reflected to indicate all locations where field data were collected. A wider gondola 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 locations previously proposed for Gazex facilities.

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

Sierra Nevada Coniferous Woodland

This habitat is an assemblage of conifer and hardwood species that forms a multilayered forest. Forested stands form closed, multilayered canopies with nearly 100 percent overlapping cover. When openings occur, shrubs are common in the understory. Closed canopy stand distribution is both extensive and patchy depending on scale, site, slope, soils, microclimate, and history. 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*).

Montane Chaparral

Montane Chaparral is mostly limited to the nondeciduous, coriaceous-leaved (i.e., leathery leaf texture) community. Deciduous and soft-leaved shrub vegetation is described in other land cover types. Montane Chaparral includes areas that correspond to two vegetation alliances, *Quercus vacciniifolia* (huckleberry oak) Shrubland Alliance and *Arctostaphylos patula* (greenleaf manzanita) Shrubland Alliance; however, these often occur intermixed, so a single more inclusive cover type is appropriate. 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 because the dense shrub canopy 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.).

Bitter Cherry Thickets

This shrubland type, *Prunus emarginata* (bitter cherry) Provisional Alliance, is distinguished from Montane Chaparral by the deciduous habit of the majority of the dominant species within it. 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 nondeciduous species such as tobacco brush (*Ceanothus velutinus*). These mixed species communities may also include a substantial component of subshrub or forb species.

Mountain Sagebrush/Forb Vegetation

This community, *Artemisia tridentata* ssp. *vaseyana* (mountain sagebrush) Shrubland Alliance, occurs 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.

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. 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 plant species could grow. However, talus provides refuge for wildlife species that forage on herbaceous species supported by nearby soil patches.

Mesic and Riparian Shrubland

This land cover types includes *Acer glabrum* (mountain maple) Provisional Shrubland Alliance and *Rubus (parviflorus)* (thimbleberry) Shrubland Alliance and consists of 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). This land cover type occurs almost exclusively on moderate slopes 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.

Mountain Alder Thicket

The distinguishing physical characteristic of Mountain Alder Thicket, *Alnus incana* (mountain alder) Shrubland Alliance, is the presence of saturated soil at or near the ground surface throughout most or all of the year. 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 dominant species is mountain alder (*Alnus incana*), but scattered groups of willow species (*Salix* spp.) may also occur.

Aspen Grove

Mature aspen groves, *Populus tremuloides* (quaking aspen) Forest Alliance, usually have relatively open canopies, often shared with other deciduous trees and a few conifer species, typically pines. 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 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.

Freshwater Emergent Wetland

Freshwater emergent wetland habitats may occur in association with terrestrial habitats or aquatic habitats including riverine, lacustrine, and wet meadows. This habitat type can occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. However, they are most common on level to gently rolling topography. They are found in various landscape depressions or at the edge of rivers or lakes. Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment.

Freshwater Pond

Freshwater ponds can consist of human-constructed ponds and naturally occurring ponds.

Riverine

The riverine habitat can occur in association with many terrestrial habitats. Riparian habitats are found adjacent to rivers and streams and features vary from ephemeral (flowing only during major snowmelt or rain events) to seasonal (flow continuing through summer, with increasing extent of reaches without surface flow as the season proceeds). Riverine habitats are also found contiguous to lacustrine and fresh emergent wetland habitats.

Ruderal Grassland

"Ruderal" refers to vegetation growing in areas disturbed by human activities, usually grading but also applicable to other anthropogenic disturbances. Ruderal vegetation occurs on all aspects and slope gradients from nearly level to steeply sloping. Soil textures and moisture regimes are also highly variable. Weedy ruderal vegetation includes a wide variety of both native and nonnative species.

Urban Land Cover

The structure of urban vegetation varies, with five types of vegetative structure defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Land cover also includes pavement (asphalt or gravel), buildings including ski lift stations and towers, and some other structures such as pond weirs and outfalls.

Sensitive Natural Communities

The California Department of Fish and Wildlife (CDFW) maintains a list of natural communities that are native to California. Within that list, CDFW identifies sensitive natural communities, which they define as communities that are of limited distribution statewide or within a county or region and often vulnerable to environmental effects of projects. Natural communities are ranked at the state and global level on a scale of 1 (very rare and threatened) to 5 (demonstrably secure) based on their rarity and the level of threats to the community. Natural communities with a state rarity ranking of 1–3 are considered sensitive and should be addressed during the CEQA environmental review process (CDFW 2018b). Sensitive natural communities occurring on the project site include aspen grove, *Acer glabrum* and *Rubus parviflorus* shrubland alliances, and mountain alder thickets. Riparian habitats that are not specifically designated as sensitive natural communities by CDFW and are not federally protected wetlands or waters of the state are still protected under California Fish and Game Code Section 1602 as discussed below.

Riparian Habitats

Riparian habitats are in transitional areas between aquatic and upland habitats and consist of vegetation that is dominated by deciduous trees or shrubs and intermediate between upland shrubland types, and the wetland vegetation types that are consistently associated with presence of surface water or saturated soil for a portion of the year. Riparian vegetation grows in areas where groundwater is near to the surface, such as on the banks of streams, lakes, and ponds or in flood plains, meadows, seeps, and springs, but surface water or saturated soils are generally not present for extended periods during the growing season. Riparian habitats are considered sensitive because there is a limited amount of riparian habitat in California and it is declining regionally, and riparian habitats are highly productive and provide important habitat values to common and special-status wildlife species. Although some riparian habitats may meet the CWA definition of wetlands, many do not. Riparian habitats that do not meet the parameters to qualify as federally protected wetlands under the CWA or waters of the state under the Porter-Cologne Act are still considered sensitive habitats and are regulated under Section 1602 of the California Fish and Game Code. Aquatic habitats that meet the definition of waters of the United States and waters of the state, including wetlands, under the CWA and Porter-Cologne Act are addressed in Section 4.15, "Wetlands."

Tree Survey

A survey for each of the three action alternatives was conducted by a Registered Professional Forester (RPF) to identify species, location, and evaluate current condition of all the native trees over 6 inches diameter at breast height (dbh) or greater (Under the Trees 2015, 2016, 2017). The survey area consisted of a corridor of 100 feet from each side of centerline for each gondola action alternative. All evaluated trees within the survey area were geo-referenced by using a Global Positioning System unit; tagged and numbered; and evaluated on health and physical appearance.

Alternative 2

A total of 476 trees over 6 inches dbh were identified within the survey area for Alternative 2. Of the 476 trees surveyed, 14 percent were California red fir (*Abies magnifica*), 37 percent were white fir (*Abies concolor),* 5 percent were Jeffrey pine (*Pinus jeffreyi),* 8 percent were western white pine (*Pinus monticola)*, 16 percent were lodgepole pine (*Pinus contorta* ssp. *murrayana*), 4 percent were mountain hemlock (*Tsuga mertensiana*), 2 percent were quaking aspen (*Populus tremuloide*s), 11 percent were Sierra juniper (*Juniperus grandis*), and 2 percent were black cottonwood (*Populus trichocarpa*).

Alternative 3

A total of 1,090 trees over 6 inches dbh were identified within the survey area for Alternative 3. Of the 1,090 trees surveyed, 33 percent were California red fir, 23 percent white fir*,* 4 percent Jeffrey pine*,* 30 percent lodgepole pine, 1 percent mountain hemlock, 5 percent western white pine, 4 percent Sierra juniper, and less than 1 percent quaking aspen.

Alternative 4

A total of 947 trees over 6 inches dbh were identified within the survey area for Alternative 4. Of the 947 trees surveyed, 31 percent were California red fir, 27 percent white fir*,* 13 percent Jeffrey pine*,* 25 percent

lodgepole pine, less than 1 percent mountain hemlock, 2 percent western white pine, less than 1 percent Sierra juniper, and less than 1 percent quaking aspen.

Species Descriptions

California red fir dominates large areas of high-elevation country, especially in California. For this reason, it has long been an important forest tree. California red fir is a climax species (i.e., once established, the plant community will remain essentially unchanged in terms of species composition for as long as a site remains undisturbed) nearly everywhere it is found. It shares climax status with white fir at the upper limit of the white fir zone.

White fir extends from the mountainous regions of the Pacific coast to central Colorado, and from central Oregon and south-eastern Idaho to northern Mexico. White fir is a large, native, coniferous tree. In the Sierra Nevada, white fir is a major component of mixed conifer forests occurring between 4,100 and 7,200 feet.

Jeffrey pine is a very large pine that lives for up to 500 years. It grows to a height of 180 feet with a trunk up to 7 feet in diameter. Primarily a California species, Jeffrey pine ranges north through the Klamath Mountains into southwestern Oregon, across the Sierra Nevada into western Nevada, and south in the Transverse and Peninsular Ranges into northern Baja California.

Western white pine can reach a height of 150–180 feet and diameter of 30–42 inches at maturity. The tree has a slightly tapering stem that often is free of branches for 70–100 feet. Normally, the species is long lived, frequently reaching ages of 300–400 years. Western white pine is present in a number of habitat types, associations, and communities.

Lodgepole pine is a two-needled pine; it is also called Sierra lodgepole pine or tamarack pine. Lodgepole pine is a ubiquitous species with the ability to survive in a variety of areas. It grows throughout the Rocky Mountain and Pacific coast regions, extending north to the Yukon Territory and south to Baja California, west to the Pacific Ocean, and east to the Black Hills of South Dakota.

Mountain hemlock is usually found on cold, snowy sub-alpine sites where it grows slowly, sometimes attaining more than 800 years in age. Areas occupied by mountain hemlock generally have a cool to cold climate that includes mild to cold winters; a short, warm to cool growing season; and moderate to high precipitation.

Quaking aspen is valued for its white bark and brilliant fall color, especially when clustered. This is a native tree that grows 15–90 feet high, but typically less than 45 feet, with a rounded crown; bark is typically smooth, greenish-white to gray-white, often thin and peeling, becoming thicker and furrowed with age. Quaking aspen is the most widely distributed tree species in North America.

Sierra juniper is found from central California to southeastern Washington. In the Sierra Nevada, Sierra juniper may be found on shallow soils with Jeffrey pine, California red fir, mountain hemlock, or lodgepole pine. This species commonly develops full crowns and heavy limbs at maturity. Sierra juniper is a long-lived species, reaching ages estimated to be more than 1,000 years.

Black cottonwood, also known as western balsam poplar or California poplar, is native to western North America. Black cottonwood is a very fast growing and potentially large tree, easy to establish, and useful for shade and ornament. The aggressive root systems of black cottonwood are effective soil stabilizers and make the species useful in restoration of riparian areas.

Health Assessment

The tree survey included a health assessment. Each tree was inspected, rated one (dead) through five (excellent health); and tree size and form, signs of defect, signs of insect and disease, and mechanical damage were recorded. The findings of the health assessment are summarized in Table 4.12-2.

Table 4.12-2 Tree Health Rating and Frequency of Occurrence for Each Action Alternative

Species	Health Rating						Number of Trees
	1 Dead	2 Poor	3D or 3I Poor to Fair	3 Fair	4 Good	5 Excellent	
California red fir *Abies magnifica*	Alt. 2: 8 Alt. 3: 14 Alt. 4: 0	Alt. 2: 10 Alt. 3: 82 Alt. 4: 7	Alt. 2: 29 Alt. 3: 77 Alt. 4: 225	Alt. 2: 20 Alt. 3: 173 Alt. 4: 63	Alt. 2: 0 Alt. 3: 60 Alt. 4: 2	Alt. 2: 1 Alt. 3: 1 Alt. 4: 0	Alt. 2: 68 Alt. 3: 407 Alt. 4: 297
White fir *Abies concolor*	Alt. 2: 8 Alt. 3: 21 Alt. 4: 0	Alt. 2: 14 Alt. 3: 54 Alt. 4: 15	Alt. 2: 31 Alt. 3: 46 Alt. 4: 204	Alt. 2: 82 Alt. 3: 42 Alt. 4: 34	Alt. 2: 37 Alt. 3: 5 Alt. 4: 1	Alt. 2: 3 Alt. 3: Alt. 4: 0	Alt. 2: 175 Alt. 3: 168 Alt. 4: 254
Jeffrey pine *Pinus jeffreyi*	Alt. 2: 1 Alt. 3: 0 Alt. 4: 0	Alt. 2: 1 Alt. 3: 5 Alt. 4: 1	Alt. 2: 1 Alt. 3: 4 Alt. 4: 51	Alt. 2: 10 Alt. 3: 18 Alt. 4: 66	Alt. 2: 9 Alt. 3: 3 Alt. 4: 1	Alt. 2: 3 Alt. 3: 0 Alt. 4: 0	Alt. 2: 25 Alt. 3: 30 Alt. 4: 119
Western white pine *Pinus monticola*	Alt. 2: 9 Alt. 3: 8 Alt. 4: 0	Alt. 2: 12 Alt. 3: 19 Alt. 4: 0	Alt. 2: 9 Alt. 3: 9 Alt. 4: 12	Alt. 2: 8 Alt. 3: 24 Alt. 4: 11	Alt. 2: 1 Alt. 3: 7 Alt. 4: 1	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 39 Alt. 3: 67 Alt. 4: 24
Lodgepole pine *Pinus contorta* ssp. *murrayana*	Alt. 2: 1 Alt. 3: 30 Alt. 4: 0	Alt. 2: 5 Alt. 3: 65 Alt. 4: 4	Alt. 2: 2 Alt. 3: 67 Alt. 4: 124	Alt. 2: 59 Alt. 3: 204 Alt. 4: 97	Alt. 2: 11 Alt. 3: 23 Alt. 4: 4	Alt. 2: 0 Alt. 3: 1 Alt. 4: 0	Alt. 2: 78 Alt. 3: 390 Alt. 4: 229
Mountain hemlock *Tsuga mertensiana*	Alt. 2: 0 Alt. 3: 1 Alt. 4: 0	Alt. 2: 6 Alt. 3: 2 Alt. 4: 1	Alt. 2: 0 Alt. 3: 3 Alt. 4: 2	Alt. 2: 8 Alt. 3: 2 Alt. 4: 6	Alt. 2: 6 Alt. 3: 0 Alt. 4: 0	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 20 Alt. 3: 8 Alt. 4: 9
Quaking aspen *Populus tremuloides*	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 5 Alt. 3: 0 Alt. 4: 0	Alt. 2: 4 Alt. 3: 2 Alt. 4: 6	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 9 Alt. 3: 2 Alt. 4: 6
Sierra juniper *Juniperus grandis*	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 17 Alt. 3: 2 Alt. 4: 0	Alt. 2: 2 Alt. 3: 2 Alt. 4: 4	Alt. 2: 28 Alt. 3: 10 Alt. 4: 5	Alt. 2: 5 Alt. 3: 4 Alt. 4: 0	Alt. 2: 1 Alt. 3: 0 Alt. 4: 0	Alt. 2: 53 Alt. 3: 18 Alt. 4: 9
Black cottonwood *Populus trichocarpa*	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 1 Alt. 3: 0 Alt. 4: 0	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 8 Alt. 3: 0 Alt. 4: 0	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 0 Alt. 3: 0 Alt. 4: 0	Alt. 2: 9 Alt. 3: 0 Alt. 4: 0
Total	Alt. 2: 27 Alt. 3: 74 Alt. 4: 0	Alt. 2: 66 Alt. 3: 229 Alt. 4: 28	Alt. 2: 79 Alt. 3: 208 Alt. 4: 622	Alt. 2: 227 Alt. 3: 475 Alt. 4: 288	Alt. 2: 69 Alt. 3: 102 Alt. 4: 9	Alt. 2: 8 Alt. 3: 2 Alt. 4: 0	Alt. 2: 476 Alt. 3: 1,090 Alt. 4: 947

Notes:

5 – Healthy (Excellent): No apparent defects
4 - Healthy (Good): Minor defects such as small trunk wounds or broken branches that do not compromise the overall health of the tree.
3 - Healthy pending (Fair): There is physical evidence of injuries agents.
2 – Unhealthy (Poor): Significant defects such as crown, trunk or root decay.
1 – Dead or Dying.

D – Diseased/Rot – A harmful deviation from the normal functioning of physiological processes – usually pathogenic or abiotic in origin, often causing an advanced and obvious stage of decay.

I – Insect Damage – A tree showing signs of insect attack (bore holes, pitch tubes, top kill, etc.)

Sources: Under the Trees 2015, 2016, 2017

Alternative 2

The health assessment concluded that: the average tree diameter within the survey area for Alternative 2 is 18 inches, with a minimum of 6 inches and a maximum of 102 inches; 27 trees are standing dead; 304 trees have health codes of 3 (fair health) or higher; 145 trees have health codes of 3D/3I (fair with disease/insect damage) or 2 (poor) and are recommended for removal by the RPF.

Alternative 3

The health assessment concluded that: the average tree diameter within the survey area for Alternative 3 is 17 inches, with a minimum of 6 inches and a maximum of 64 inches; 74 trees are standing dead; 579 trees have health codes of 3 (fair health) or higher; 437 trees have health codes of 3D/3I (fair with disease/insect damage) or 2 (poor) and are recommended for removal by the RPF.

Alternative 4

The health assessment concluded that: the average tree diameter within the survey area for Alternative 4 is 16 inches, with a minimum of 6 inches and a maximum of 62 inches; 0 trees are standing dead; 297 trees have health codes of 3 (fair health) or higher; 650 trees have health codes of 3D/3I (fair with disease/insect damage) or 2 (poor) and are recommended for removal by the RPF.

4.12.1.2 REGULATORY SETTING

Federal

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

Squaw Valley Ski Holdings' operations carried out on National Forest System (NFS) lands must comply with management direction provided in the Tahoe National Forest Land and Resource Management Plan (LRMP) (U.S. Forest Service 1990) and in the Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA), which amended the LRMP to improve protection of old forests, wildlife habitats, watersheds, and communities (U.S. Forest Service 2004). The LRMP and SNFPA, collectively referred to as the Forest Plan, provide two levels of management direction: (1) forestwide direction and (2) area-specific direction. Forestwide standards and guidelines (S&Gs) apply to the entire national forest, whereas management prescriptions and management area S&Gs are narrower in scope, applying only to specific resources, activities, or areas within the forest. Portions of all action alternatives on NFS lands are located in the Scott Management Area. The Forest Plan includes the following direction for development in the Scott Management Area:

> Development of private sector ski area maintenance, operation, and planning will be emphasized during the planning period. This may include development of bed space at the ski base facility. Project-level planning will coordinate increased capacities with off-site capabilities.

As part of the analysis conducted for this Final EIS/EIR, the project alternatives and purpose and need were evaluated for consistency with specific S&Gs identified in the Forest Plan related to vegetation, including S&Gs for the Scott Management Area.

State

California Forest Practice Rules

The California Forest Practice Rules of 2012 define the timber harvest activities that are regulated under Title 14, CCR, Chapters 4, 4.5, and 10, and under the Z'Berg-Nejedly Forest Practice Act, Division 4, Chapter 8, PRC. The California Department of Forestry and Fire Protection (CAL FIRE) is the primary enforcing agency responsible for ensuring that logging and other forest harvesting activities on private and nonfederal public lands in California are conducted in a manner that preserves and protects fish, wildlife, forests, and streams.

Prior to any harvesting activities occurring on private lands or nonfederal public lands, landowners must prepare a timber harvest plan, which outlines the timber proposed for harvesting, the methods of harvesting, and the steps that will be taken to prevent damage to the environment. Timber harvest plans are required to be prepared by RPFs. When a timberland owner proposes to carry out a project that would result in timberland being converted to a nontimber growing use, the owner must secure a Timberland Conversion Permit from CAL FIRE. Projects that would result in the conversion of less than 3 acres of timberland may qualify for an exemption from this provision.

Section 1602 of the California Fish and Game Code

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 final 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.

Local

Placer County General Plan

The *Placer County General Plan* (Placer County 2013) provides an overall framework for the development of Placer County (County) and protection of its natural and cultural resources. A total of 23 community plans have been adopted under the *Placer County General Plan* to provide a more detailed focus on specific geographic areas within the unincorporated County. Two of them—the *Squaw Valley General Plan and Land Use Ordinance* (SVGPLUO) and *Alpine Meadows General Plan*—are relevant to the project and are discussed below. The goals and policies included within the community plans supplement, but do not supersede, the goals and policies contained within the *Placer County General Plan*.

The Agricultural and Forestry Resources Element contains the following policies that are applicable to the project:

- **Policy 7.E.1.** The County shall encourage the sustained productive use of forest land as a means of providing open space and conserving other natural resources.
- **Policy 7.E.2.** The County shall discourage development that conflicts with timberland management.

The Natural Resources Section of the *Placer County General Plan* (Placer County 2013) outlines policies aimed at protecting natural resources;

- **Policy 6.B.2.** The County shall require new development to mitigate wetland loss in both federal jurisdictional and non-jurisdictional wetlands to achieve "no net loss" through any combination of the following, in descending order of desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation and conservation banking program that provides the opportunity to mitigate impacts to special status, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas. Non-jurisdictional wetlands may include riparian areas that are not federal "waters of the United States" as defined by the Clean Water Act.
- **Policy 6.D.1.** The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides, ridges, and along important transportation corridors.
- **Policy 6.D.3.** The County shall support the preservation of outstanding areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.
- **Policy 6.D.4.** The County shall ensure that landmark trees and major groves of native trees are preserved and protected. In order to maintain these areas in perpetuity, protected areas shall also include younger vegetation with suitable space for growth and reproduction.
- **Policy 6.D.8.** The County shall require that new development preserve natural woodlands to the maximum extent possible.

- **Policy 6.D.13.** The County shall support the preservation of native trees and the use of native, drought-tolerant plant materials in all revegetation/landscaping projects.

- **Policy 6.D.14.** The County shall require that new development avoid ecologically-fragile areas (e.g., areas of special status, threatened, or endangered species of plants, and riparian areas). Where feasible, these areas should be protected through public or private acquisition of fee title or conservation easements to ensure protection.

Placer County Code of Ordinances Article 12.16. Tree Preservation Generally (Countywide)

Article 12.16 of the Placer County Code of Ordinances was established to preserve and protect the remaining native oak and other species of trees within Placer County. The countywide provisions of this article apply to all projects where discretionary permit approvals are required by the County and are applicable to all native, landmark trees, riparian zone trees, and certain commercial firewood operations, except as exempted. Below are elements of this ordinance potentially applicable to the action alternatives:

- Riparian Zone Requirements: (1) Within any riparian zone, in all areas of the county in conjunction with any discretionary project and in any tree preservation zone for all development activity, compliance with this article for any development activity in the protected zone of a protected tree shall be required; (2) No tree permit or discretionary approval for any development activity within a riparian zone shall be approved until environmental impacts within the riparian zone are identified, an environmental determination is made and the mitigation measures identified. Additionally, no development activity shall be permitted until any stream alteration agreement or mitigation agreements required by the California Department of Fish and Wildlife have been completed; (3) Advisory Comment. This is not a categorical prohibition on any tree removal within a riparian zone but rather a requirement for review of proposed development activity and approval of a tree permit or discretionary project prior to such disturbance occurring.

- Removal of More Than Fifty Percent of Trees. Except for developed, single-family residential lots that cannot be subdivided, the removal of more than fifty (50) percent of existing native trees, 6 inches dbh or greater, shall be subject to the issuance of a tree permit. Failure to obtain a permit prior to the removal of more than fifty (50) percent of the existing native trees in these areas may result in the denial or deferral of any application for development of that property for a period of up to ten (10) years.

Placer County Code of Ordinances Article 12.20. Tree Preservation in Area East of Sierra Summit

Article 12.20 of the Placer County Code of Ordinances was established to prevent the wanton and unnecessary cutting of healthy trees in the developed and developable areas of the area east of the Sierra summit, to provide for the conservation of as many healthy trees in the area east of the Sierra summit as possible consistent with permissible development, and to provide for the control of disease and insect infestation in the area east of the Sierra summit. The ordinance provides for the issuance of permits; minimum standards and conditions of approval of permits including restrictions on attachment of appurtenances; provides for removal of diseased, infested or hazardous trees; provides for variances; provides for stop orders; and provides that violations of the provisions of this ordinance shall constitute a misdemeanor.

Squaw Valley General Plan and Land Use Ordinance

The SVGPLUO is the community plan for the approximately 4,700-acre Squaw Valley. Future development in Squaw Valley is required under the SVGPLUO to comply with applicable guidelines (Placer County 2006). 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).

Alpine Meadows General Plan

The *Alpine Meadows General Plan* was approved by the Placer County Board of Supervisors on May 1, 1968. It establishes policies specific to Alpine Meadows that build on the general policies found in the *Placer County General Plan* and *Placer County Zoning Ordinance*, similar to the SVGPLUO. The following basic goals, objectives, and procedures outlined in the *Alpine Meadows General Plan* are applicable to the action alternatives:

- Maintain the open, natural, mountain-recreation character. All aspects of the vast, unique, and outstanding physical beauty of the area must be consciously and continuously preserved.
- Establish and protect various land uses in relation to the estimated need of future populations and economies.
- Create a balanced selection of living environments and recreational outlets, sensitive to the terrain and undisturbed by trafficways, pollution, excessive slopes, scarring, and other deleterious effects.

4.12.2 Analysis Methods

4.12.2.1 METHODS AND ASSUMPTIONS

Potential impacts on vegetation and habitats resulting from implementation of the alternatives were determined by evaluating the project plans in relation to the habitat characteristics of the project site. Vegetation and habitat locations are based on a compilation of data collected during surveys of the alternative alignments conducted in 2015, 2016, and 2017 by Ascent Environmental, EcoSynthesis, and Hydro Restoration. The vegetation and habitat data were entered in a geographic information system (GIS). Potential impacts of each action alternative on vegetation and habitats were identified by overlaying GIS layers of project components and activities on the land cover maps of the study area and the locations of individual trees mapped as part of the tree survey.

Impact acreages are divided into three categories, overstory vegetation removal and permanent and temporary ground disturbance. Overstory vegetation removal is the removal of trees or other vegetation to prevent conflicts with the gondola operations. Locations for overstory vegetation removal would be between gondola towers where trees and other vegetation that could conflict with the gondola travelling overhead would be removed or trimmed. The areas where overstory vegetation removal is anticipated were provided by the applicant and entered into a GIS. Any habitat type that occurred in a location identified for overstory vegetation removal was considered disturbed. Vegetation management (e.g., tree removal or trimming) would continue in these corridors after construction is complete to prevent trees or other vegetation growing tall enough to conflict with the gondola, thereby resulting in a permanent change in the vegetation community from existing conditions as long as the gondola is in operation. For some habitat types, such as a pond, there would not be trees within the habitat type itself that would be removed. However, it was assumed that any trees in the immediate vicinity would be removed, and the removal of the trees could disturb the other nearby habitats. Therefore, a conservative approach was taken, and all acreage of each habitat type within an area designated for overstory vegetation removal was considered disturbed, although actual disturbance would typically be less than indicated in the impact analysis.

Permanent impacts result from a permanent change in land cover under the footprint of a project facility (i.e., conversion of natural vegetation to base stations, mid-stations, and tower footings). Temporary impacts would occur where natural vegetation would be removed during the construction process; however, the disturbance is temporary, and the location would be restored to pre-disturbance vegetation consistent with Resource Protection Measures (RPMs). Any vegetation that overlapped with an area of proposed construction activity was typically considered removed and included in the permanent or temporary impact category based on the construction activity identified for the site.

The tree survey study area (50–100 feet each side of the gondola alignment centerline for each alternative) extends beyond the actual construction disturbance and overstory vegetation removal footprint. Therefore, the actual number of trees removed will be substantially less than the number of trees identified in the tree survey study area. The number of trees removed was calculated by overlaying the tree locations provided in the RPF reports with the overstory vegetation removal, permanent ground disturbance, and temporary ground disturbance GIS layers. Any trees within these project activity areas were considered removed. In addition, if the tree canopy extended into any of the project activity layers, the tree was identified for potential removal or trimming. As identified in Chapter 2, "Description of Alternatives," removal of trees on NFS lands would be authorized using a timber settlement contract where the Forest Service is compensated for the value of removed timber incidental to some lawful use of NFS land. In this case, if one of the gondola alternatives is approved, tree removal is not the intent of the project, but is an outcome incidental to installation of the gondola. The project applicant would then compensate the Forest Service for the value of the trees that are removed on NFS land based on the number, size, type, and quality of the actual trees removed as part of project construction and operation. On private lands, a tree permit would be obtained from Placer County, and the conditions of tree removal, including replacement trees would be established in the tree permit based on the requirements of Articles 12.16 and 12.20 of the Placer County Code of Ordinances.

As described in Section 2.2.6, "Resource Protection Measures," the project incorporates a number of 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.

4.12.2.2 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 vegetation and habitats. The following analytical indicator is used to inform the Forest Service's determination of impacts:

- Quantification (acreage) of proposed ground disturbance and overstory vegetation removal effects by vegetation type **(Impacts 4.12-1 and 4.12-2)**

As stated previously, effects on other aspects of biological resources are addressed in subsequent sections of this EIS/EIR. Special-status plants and invasive plant species are evaluated in Section 4.13, "Botany." Wildlife species are evaluated in Section 4.14, "Wildlife and Aquatics." Section 4.15, "Wetlands," addresses waters of the United States and waters of the state, including wetlands, within the context of the statutes,

regulations, and policies that regulate these resources. NEPA indicators applicable to the impact analysis for each of these resources are identified in each of these sections.

CEQA Criteria

Based on the Placer County CEQA checklist, Appendix G of the State CEQA Guidelines, and vegetation policies and standards in the *Placer County General Plan*, implementing any of the alternatives would result in a significant impact related to vegetation if it would:

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or the U.S. Fish and Wildlife Service (USFWS) **(Impact 4.12-2)**;
- conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance **(Impact 4.12-3)**; or
- threaten to eliminate a plant community **(Section 4.12.2.3)** or reduce the number or restrict the range of a rare or endangered plant **(Section 4.13, "Botany")**.

4.12.2.3 ISSUES NOT DISCUSSED FURTHER

Ground disturbance and removal of vegetation and habitats from project implementation will affect relatively small areas (fractions of an acre) in dispersed locations. No plant communities are so limited in extent in the project vicinity that project implementation could threaten to eliminate a plant community. This issue is not discussed further in this section of the Final EIS/EIR.

4.12.3 Direct and Indirect Environmental Consequences

4.12.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.12-1 (Alt. 1): Ground Disturbance and Overstory Vegetation Removal Effects

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and, therefore, no ground disturbance or overstory vegetation removal. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no ground disturbance or overstory vegetation removal.

NEPA Effects Conclusion

With no ground disturbance or overstory vegetation removal, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no ground disturbance or overstory vegetation removal, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.12-2 (Alt. 1): Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and, therefore, no effect on any riparian habitat or other sensitive natural community. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no effect on any riparian habitat or other sensitive natural community.

NEPA Effects Conclusion
With no effect on any riparian habitat or other sensitive natural community, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no effect on any riparian habitat or other sensitive natural community, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.12-3 (Alt. 1): Conflict with Any Local Policies or Ordinances Protecting Biological Resources

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and, therefore, no conflict with any local policies or ordinances protecting biological resources. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no conflict with any local policies or ordinances protecting biological resources.

NEPA Effects Conclusion
With no conflict with any local policies or ordinances protecting biological resources, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no conflict with any local policies or ordinances protecting biological resources, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.12.3.2 ALTERNATIVE 2

Impact 4.12-1 (Alt. 2): Ground Disturbance and Overstory Vegetation Removal Effects

Alternative 2 would result in the removal or disturbance of up to 13.37 acres of common vegetation and habitat types. These vegetation and habitat types are locally and regionally common and Alternative 2 would not substantially reduce the size, continuity, or integrity of any common vegetation or habitat type. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to vegetation removal would be **adverse** because there would be a reduction in habitat acreage. Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 would mitigate this effect. Under CEQA, and using the CEQA criteria, the effect would be **less than significant** because Alternative 2 would not substantially reduce the size, continuity, or integrity of any common vegetation or habitat type. In addition, RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 would minimize vegetation disturbance and removal and require habitat restoration. This impact would be further reduced with implementation of applicable RPMs, although they are not necessary to reduce the impact to a less-than-significant level.

Aspen grove, mesic and riparian shrubland, and mountain alder thickets are classified as riparian habitats or sensitive natural communities and are discussed below under Impact 4.12-2. Removal of individual trees is addressed under Impact 4.12-3. Ruderal grassland and urban land cover have been disturbed by human development and are not considered in this analysis of project disturbance to natural land covers. Mountain alder thicket, freshwater emergent wetland, some freshwater ponds, and riverine habitats are wetlands or waters, as defined under state or federal statute, and are addressed in Section 4.15, "Wetlands." The remainder of the vegetation and habitat types (Sierra Nevada coniferous woodland, montane chaparral, bitter cherry thickets, mountain sagebrush/forb vegetation, rock outcrop/rock and talus) are considered to be common and are evaluated below.

Construction of Alternative 2 would disturb 2.68 acres of common vegetation/habitat types located in the Alpine Meadows special use permit (SUP) area (on NFS lands) and 10.60 acres of common vegetation communities on private land, for a total of 13.28 acres (see Table 4.12-3). These acreages are divided into disturbance from overstory vegetation removal and permanent and temporary ground disturbance. In areas disturbed by overstory vegetation removal, trees would be removed, but vegetation that does not grow tall enough to interfere with gondola operation would remain. Permanent disturbance areas would be the locations of project facilities where vegetation is removed prior to construction and will not be restored. Temporary disturbance areas would be restored after construction is complete, consistent with applicable RPMs. Total (both NFS and private lands) overstory vegetation removal is anticipated to be 8.73 acres; total permanent vegetation removal is anticipated to be 1.88 acres; and total temporary vegetation removal is anticipated to be 2.68 acres. Acreages of vegetation/habitat loss are relatively small and these vegetation/habitat types are locally and regionally common. Alternative 2 would not substantially reduce the size, continuity, or integrity of any common vegetation or habitat type.

In addition, various RPMs identified in Appendix B would either minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, or require revegetation of temporarily disturbed areas. RPMs MUL-2 and BIO-34 require that work areas and construction exclusion areas are clearly marked in the field to prevent construction disturbance from exceeding designated areas. RPM MUL-3 requires the use of existing roads for access to the maximum extent possible, which would minimize ground disturbance and vegetation removal. RPM BIO-24 requires that the project minimize ground disturbance and vegetation and tree removal to only the areas necessary for construction, especially in riparian areas. RPMs BIO-30 through BIO-32 require preparation and implementation of a restoration plan resulting in the revegetation of temporarily disturbed areas. RPMs BIO-38 and TREE-11 require replacement of native trees that fall under the Placer County Code of Ordinances tree preservation articles. RPM TREE-1 requires that tree removal methods minimize potential effects on nearby aquatic habitats.

Table 4.12-3 Acres of Maximum Common Vegetation Community and Habitat Disturbance Under Alternative 2

Disturbance Type	Vegetation/Land Cover Type						
	Bitter Cherry Thicket	Coniferous Woodland	Montane Chaparral	Mountain Sagebrush Forb	Rock and Talus	Rock Outcrop	Grand Total
Alpine Meadows Special Use Permit Area							
Overstory vegetation removal	0	0.05	1.32	0	0.51	0	**1.88**
Permanent ground disturbance	0	0.03	0.23	0	0.31	0	**0.57**
Temporary ground disturbance	0	0.03	0.05	0	0.16	0	**0.24**
Alpine Meadows special use permit area total	**0**	**0.11**	**1.59**	**0**	**0.98**	**0**	**2.68**
Private Lands							
Overstory vegetation removal	2.87	1.28	0.44	0	1.82	0.44	**6.85**
Permanent ground disturbance	0.06	0.01	0..30	0	0.91	0.03	**1.31**
Temporary ground disturbance	0	0.13	0.51	0	1.80	0	**2.44**
Private lands total	***2.93***	**1.42**	**1.25**	**0**	**4.53**	**0.47**	**10.60**
Alternative 2 total	**2.93**	**1.53**	**2.84**	**0**	**5.51**	**0.47**	**13.28**

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

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects on common vegetation types would be **adverse** because although total acreage losses are relatively small and these vegetation/habitat types are locally and regionally, there would still be a net loss of habitat acreage. These effects would be mitigated through implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11.

CEQA Determination of Effects

Total acreages of disturbance and losses of common vegetation resulting from Alternative 2 are relatively small compared to total extent and distribution of these vegetation types in the project area and region. Under CEQA and using the CEQA criteria, the effect of ground disturbance on common vegetation types and overstory vegetation would be **less than significant** because Alternative 2 would not substantially reduce the size, continuity, or integrity of any common vegetation or habitat type. RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, and require revegetation of temporarily disturbed areas. However, these RPMs would not be necessary to reduce a significant impact 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-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 as mitigation measures would minimize the effects of ground disturbance but is not necessary to reduce a significant effect.

Impact 4.12-2 (Alt. 2): Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community

Alternative 2 would result in the loss or disturbance of aspen grove, freshwater emergent wetland, mesic and riparian shrubland, mountain alder thickets, and riverine. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to sensitive natural communities would be **adverse** because project construction would result in the loss or disturbance of these sensitive natural communities. Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because Alternative 2 would result in the loss or disturbance of sensitive natural communities, Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11, which minimize vegetation disturbance and removal and require habitat restoration and replacement, would reduce the impact to a **less-than-significant** level.

Sensitive natural communities and riparian habitats occurring in the project site include aspen grove, mesic and riparian shrubland, and mountain alder thicket. Mountain alder thicket, freshwater emergent wetland, some freshwater ponds, and riverine habitats are wetlands or waters, as defined under state or federal statute, and are addressed in Section 4.15, "Wetlands." Mountain alder thicket is also addressed here because, in addition to meeting the federal definition of a wetland, it is a riparian habitat and is specifically identified by CDFW as a sensitive natural community.

As shown in Table 4.12-4, there would be approximately 0.08 acre of aspen grove affected by overstory vegetation removal and 0.01 acre removed as part of a result of permanent ground disturbance. Approximately 0.39 acre of mountain alder thicket would be affected by a overstory vegetation. No mesic and riparian shrubland would be affected.

Table 4.12-4 Acres of Riparian Habitat and Sensitive Natural Community Disturbance Under Alternative 2

Disturbance Type	Vegetation/Habitat Type			
	Aspen Grove	Mountain Alder Thicket	Mesic and Riparian Shrubland	Grand Total
Alpine Meadows Special Use Permit Area				
Overstory vegetation removal	0.08	0.39	0	0.47
Permanent ground disturbance	0.01	0	0	0.01
Temporary ground disturbance	0	0	0	0
Alpine Meadows special use permit area total	**0.09**	**0.39**	**0**	**0.48**
Private Lands				
Overstory vegetation removal	0	0	0	0
Permanent ground disturbance	0	0	0	0
Temporary ground disturbance	0	0	0	0
Private lands total	**0**	**0**	**0**	**0**
Alternative 2 total	**0.09**	**0.39**	**0**	**0.48**

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

Various RPMs identified in Appendix B would either minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, or require revegetation of temporarily disturbed areas. As identified above in the discussion of Impact 4.12-1 (Alt. 2), RPMs MUL-2 and BIO-34 require that work areas and construction exclusion areas are clearly marked in the field to prevent construction disturbance from exceeding designated areas. RPM MUL-3 requires the use of existing roads for access to the maximum extent possible, which would minimize ground disturbance and vegetation removal. RPM BIO-24 requires that the project minimize ground disturbance, and vegetation and tree removal, to only the areas necessary for construction, especially in riparian areas. RPMs BIO-30 through BIO-32 require preparation and implementation of restoration plan resulting in the revegetation of temporarily disturbed areas. RPMs BIO-38 and TREE-11 require replacement of native trees that fall under the Placer County Code of Ordinances tree preservation articles. RPM TREE-1 requires that tree removal methods minimize potential effects on nearby aquatic habitats. In addition, RPMs BIO-39 and BIO-40 require the replacement either on-site, or through compensatory mitigation elsewhere, for losses of wetland and riparian habitats.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, the direct and indirect effects on riparian habitat would be **adverse** because although the disturbance area is small, less than 0.5 acre, the communities affected have limited distribution and are particularly vulnerable to environmental effects. These effects would be mitigated through implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11.

CEQA Determination of Effects

Total disturbance and losses of riparian habitat and sensitive natural communities resulting from Alternative 2 would be relatively small (less than 0.5 acre). However, the communities affected have limited distribution and are particularly vulnerable to environmental effects. Under CEQA, and using the CEQA criteria, the effect of ground disturbance on riparian habitat and sensitive natural communities would be significant. However, RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, require revegetation of temporarily disturbed areas, and require replacement of lost wetland and riparian habitats. 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 MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 as mitigation measures reduces this significant impact to a less-than-significant level.

Impact 4.12-3 (Alt. 2): Conflict with Any Local Policies or Ordinances Protecting Biological Resources

Alternative 2 would result in the removal or damage of individual trees for project facilities. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because project construction would remove a resource valued by the County and could conflict with County Ordinances 12.16 and 12.20. Implementation of RPMs REV-3, TREE-10, and TREE-11 would require County tree permits, tree removal in a manner that would preserve and protect surrounding natural resources, and compensation for removal of qualifying trees. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. This impact analysis is specific to a CEQA criteria and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided.

As identified above in Table 4.12-2, 476 trees greater than 6 inches dbh were recorded within the tree survey study area for Alternative 2. This total includes trees of various species and health classes as well as 27 dead or dying trees.

Construction of Alternative 2 is estimated to result in the removal of 42 trees (approximately 10 percent) for installation of project facilities and as part of overstory vegetation removal to prevent trees from conflicting with gondola operations. Additionally, approximately 286 trees were identified with the canopy extending over project activity areas. These trees could be subject to removal if they conflict with project construction or operation. These trees could also experience soil compaction and damage to the root zone from nearby construction activities, potentially leading to declining tree health or mortality. However, some of the trees that would be removed would be among those identified as being in poor health by the RPF and recommended for removal. Removal of these trees could provide an overall benefit to forest health.

A tree removal permit is required by Placer County under the County Tree Preservation Ordinance 12.16 for removal of trees within riparian zones and trees greater than 6 inches dbh in areas where more than 50 percent of trees are removed. A tree cutting permit is also required per County Tree Preservation East of Sierra Summit Ordinance 12.20 for those trees greater than 6 inches dbh removed. If tree removal on private lands is not conducted consistent with these permit requirements, this would result in a conflict with local ordinances protecting a biological resource.

RPMs REV-3, TREE-10, and TREE-11 would reduce impacts resulting from potential conflicts with County ordinances because County tree permits would be obtained consistent with the County ordinances, tree removal would be conducted in a manner that would preserve and protect surrounding natural resources, and qualifying removed trees would be compensated for through new plantings or payment of tree replacement mitigation fees.

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

Implementation Alternative 2 would result in the removal of 42 trees and the possible removal, damage, or mortality to approximately 286 trees. Under CEQA, and using the CEQA criteria, this would conflict with County ordinances protecting biological resources and the effect would be significant. RPMs REV-3, TREE-10, and TREE-11 would reduce effects on trees protected by local ordinances because they would require that County tree permits be obtained consistent with the County ordinances, tree removal would be conducted in a manner that would preserve and protect surrounding natural resources, and qualifying removed trees would be compensated for through new plantings or payment of tree replacement mitigation fees. 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 REV-3, TREE-10, and TREE-11 as mitigation measures reduces this significant impact to a less-than-significant level

4.12.3.3 ALTERNATIVE 3

Impact 4.12-1 (Alt. 3): Ground Disturbance and Overstory Vegetation Removal Effects

Alternative 3 would result in the removal or disturbance of up to 11.18 acres of common vegetation and habitat types. These habitats are locally and regionally common, and Alternative 3 would not substantially reduce the size, continuity, or integrity of any common vegetation or habitat type. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to vegetation removal would be **adverse** because there would be a reduction in habitat acreage. Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 would mitigate this effect. Under CEQA, and using the CEQA criteria, the effect would be **less than significant** because Alternative 3 would not substantially reduce the size, continuity, or integrity of any common vegetation or habitat type**.** This impact would be further reduced with implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11, which would minimize vegetation disturbance and removal and require habitat restoration, although these RPMs are not necessary to reduce the impact to a less-than-significant level**.**

With this alternative, the Alpine Meadows mid-station, would be located further to the east, on private lands; this alteration would reduce the gondola lift from approximately 13,000 feet in length under Alternative 2 to 12,600 feet in length under Alternative 3. For this reason, ground disturbance effects on common vegetation and habitat types under Alternative 3 would be slightly less than those described above for Alternative 2.

As shown in Table 4.12-5, construction of Alternative 3 would disturb 0.41 acre of common vegetation located in the Alpine Meadows SUP area (on NFS lands) and 10.75 acres of common vegetation and habitat types on private land, for a total of 11.16 acres (compared to 2.68, 10.60, and 13.28, respectively, for Alternative 2) of common vegetation types. These acreages are divided into disturbance from overstory vegetation removal and permanent and temporary ground disturbance. In areas disturbed by overstory vegetation removal, trees would be removed, but vegetation that does not grow tall enough to interfere with gondola operation would remain. Permanent disturbance areas would be the locations of project facilities where vegetation is removed prior to construction. Temporary disturbance areas would be restored after construction is complete consistent with applicable RPMs. Total (both NFS and private lands) overstory vegetation removal is anticipated to be 7.76 acres; total permanent vegetation removal is anticipated to be 2.02 acres; and total temporary vegetation removal is anticipated to be 1.07 acres (compared to 8.73, 1.88, and 2.68 acres,

respectively, for Alternative 2). Acreages of habitat loss are relatively small, and these habitats are locally and regionally common. Alternative 3 would not substantially reduce the size, continuity, or integrity of any common vegetation or habitat type.

In addition, various RPMs identified in Appendix B would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, or require revegetation of temporarily disturbed areas. RPMs MUL-2 and BIO-34 require that work areas and construction exclusion areas are clearly marked in the field to prevent construction disturbance from exceeding designated areas. RPM MUL-3 requires the use of existing roads for access to the maximum extent possible, which would minimize ground disturbance and vegetation removal. RPM BIO-24 requires that the project minimize ground disturbance and vegetation and tree removal to only the areas necessary for construction, especially in riparian areas. RPMs BIO-30 through BIO-32 require preparation and implementation of a restoration plan, resulting in the revegetation of temporarily disturbed areas. RPMs BIO-38 and TREE-11 require replacement of native trees that fall under the Placer County Code of Ordinances tree preservation articles. RPM TREE-1 requires that tree removal methods minimize potential effects on nearby aquatic habitats.

Table 4.12-5 Acres of Maximum Common Vegetation and Habitat Disturbance Under Alternative 3

Disturbance Type	Vegetation/Land Cover Type						
	Bitter Cherry Thicket	Coniferous Woodland	Montane Chaparral	Mountain Sagebrush Forb	Rock and Talus	Rock Outcrop	Grand Total
Alpine Meadows Special Use Permit Area							
Overstory vegetation removal	0	0.16	0	0		0	0.16
Permanent ground disturbance	0	0.01	0.05	0	0.01	0	0.07
Temporary ground disturbance	0	0	0	0		0	0
Alpine Meadows special use permit area total	**0**	**0.17**	**0.05**	**0**	**0.01**	**0**	**0.41**
Private Lands							
Overstory vegetation removal	2.81	1.71	1.08	0	2.00	0	7.60
Permanent ground disturbance	0.08	0.56	0.38	0	0.93	0	1.95
Temporary ground disturbance	0	0.03	0.29	0	0.75	0	1.07
Private lands total	**2.90**	**2.30**	**1.74**	**0**	**3.69**	**0**	**10.75**
Alternative 2 total	**2.90**	**2.47**	**1.4**	**0**	**3.70**	**0**	**11.16**

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

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects on common vegetation communities would be **adverse**, because, although total acreage losses are relatively small, and these habitats are locally and regionally common, there would still be a net loss of habitat acreage. These effects would be mitigated through implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11.

CEQA Determination of Effects

Total acreages of disturbance and losses of common plant communities resulting from Alternative 3 are relatively small compared to total extent and distribution of these communities in the area and region. Under CEQA, and using the CEQA criteria, the effect of ground disturbance on common vegetation communities and overstory vegetation would be **less than significant** because Alternative 3 would not substantially reduce the size, continuity, or integrity of any common vegetation community or habitat type. RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, or require revegetation of temporarily disturbed areas. However, these RPMs would not be necessary to reduce a significant impact to

a less-than-significant level. This impact would not differ materially from that under Alternative 2 because both alternatives would result in the same, or very similar, types of vegetation disturbance.

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 minimize the effects of ground disturbance but is not necessary to reduce a significant effect.

Impact 4.12-2 (Alt. 3): Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community

Alternative 3 would result in the loss or disturbance of mesic and riparian shrubland. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to sensitive natural communities would be **adverse** because project construction would result in the loss or disturbance of these riparian habitats. Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because Alternative 3 would result in the loss or disturbance of riparian habitat and sensitive natural communities. Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11, which minimize vegetation disturbance and removal and require habitat restoration and replacement, would reduce the impact to a **less-than-significant** level.

With this alternative, the Alpine Meadows mid-station, would be located further to the east, on private lands; this alteration would reduce the gondola lift from approximately 13,000 feet under the Alternative 2 to 12,600 feet in length under Alternative 3. Effects on riparian habitat or other sensitive natural communities under Alternative 3 would be similar to those described above for Alternative 2.

As shown in Table 4.12-6, there would be 0.09 acre of mesic and riparian shrubland (zero acres under Alternative 2) affected by overstory vegetation removal. No aspen grove or mountain alder thicket would be affected (0.09 and 0.39 acre, respectively, under Alternative 2).

Table 4.12-6 Acres of Riparian Habitat and Sensitive Natural Community Disturbance Under Alternative 3

Disturbance Type	Vegetation/Habitat Type			
	Aspen Grove	Mountain Alder Thicket	Mesic and Riparian Shrubland	Grand Total
Alpine Meadows Special Use Permit Area				
Overstory vegetation removal	0	0	0	0
Permanent ground disturbance	0	0	0	0
Temporary ground disturbance	0	0	0	0
Alpine Meadows special use permit area total	**0**	**0**	**0**	**0**
Private Lands				
Overstory vegetation removal	0	0	0.09	0
Permanent ground disturbance	0	0	0	0
Temporary ground disturbance	0	0	0	0
Private lands total	**0**	**0**	**0.09**	**0**
Alternative 2 total	**0**	**0**	**0.09**	**0**

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

Various RPMs identified in Appendix B would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, or require revegetation of temporarily disturbed areas. As identified above in the discussion of Impact 4.12-1 (Alt. 2), RPMs MUL-2 and BIO-34 require that work areas and construction exclusion areas are clearly marked in the field to prevent construction disturbance from exceeding designated areas. RPM MUL-3 requires the use of existing roads for access to the maximum extent possible, which would minimize ground disturbance and vegetation removal. RPM BIO-24 requires that the project minimize ground disturbance, and vegetation and tree removal, to only the areas necessary for construction, especially in riparian areas. RPMs BIO-30 through BIO-32 require preparation and implementation of a restoration plan resulting in the revegetation of temporarily disturbed areas. RPMs BIO-38 and TREE-11 require replacement of native trees that fall under the Placer County Code of Ordinances tree preservation articles. RPM TREE-1 requires that tree removal methods minimize potential effects on nearby aquatic habitats. In addition, RPMs BIO 39 and BIO-40 require the replacement either on-site, or through compensatory mitigation elsewhere, for losses of wetland and riparian habitats.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, the direct and indirect effects on sensitive natural communities would be **adverse** because although the disturbance area is small (approximately 0.09 acre), the communities affected have limited distribution and are particularly vulnerable to environmental effects. These effects would be mitigated through implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11.

CEQA Determination of Effects

Total disturbance and losses of riparian habitat or sensitive natural communities resulting from Alternative 3 would be relatively small (approximately 0.09 acre). However, the communities affected have limited distribution and are particularly vulnerable to environmental effects. Under CEQA and using the CEQA criteria, the effect of ground disturbance on sensitive natural communities would be significant. RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11 would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, require revegetation of temporarily disturbed areas, and require replacement of lost wetland and riparian habitats. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. This impact would not differ materially from that under Alternative 2 because both alternatives would result in very similar types of disturbance and losses of sensitive natural communities; however, Alternative 3 would result in lesser acreage of disturbance and losses of sensitive natural communities (0.09 acre under Alternative 3 compared with 0.48 acre under Alternative 2).

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 through BIO-40, and TREE-11 as mitigation measures reduces this significant impact to a less-than-significant level.

Impact 4.12-3 (Alt. 3): Conflict with Any Local Policies or Ordinances Protecting Biological Resources

Alternative 3 would result in the removal or damage of individual trees for project facilities. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because project construction would remove a resource valued by the County and could conflict with County Ordinances 12.16 and 12.20. Implementation of RPMs REV-3, TREE-10, and TREE-11 would require County tree permits that would be consistent with the County ordinances, tree removal in a manner that would preserve and protect surrounding natural resources, and compensation for removal of qualifying trees. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. This impact analysis is specific to a CEQA criteria and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided.

With this alternative, the Alpine Meadows mid-station, would be located further to the east, on private lands; this alteration would reduce the gondola lift from approximately 13,000 feet in length under the Alternative 2 to 12,600 feet in length under Alternative 3. Effects on individual trees protected under County ordinances under Alternative 3 would be greater than those described above for Alternative 2.

As identified above in Table 4.12-2, 1,090 trees greater than 6 inches dbh were recorded within the tree survey study area for Alternative 3. This total includes trees of various species and health classes as well as 74 dead or dying trees.

Construction of Alternative 3 is estimated to result in the removal of 104 trees (approximately 10 percent) for installation of project facilities and as part of overstory vegetation removal to prevent trees from conflicting with gondola operations. Additionally, approximately 133 trees (approximately 12 percent) were identified with the canopy extending over project activity areas. These trees could be subject to removal if they conflict with project construction or operation. These trees could also experience soil compaction and damage to the root zone from nearby construction activities, potentially leading to declining tree health or mortality. However, some of the trees that would be removed would be among those identified as being in poor health by the RPF and recommended for removal. Removal of these trees could provide an overall benefit to forest health.

A tree removal permit is required by the Placer County under the County Tree Preservation Ordinance 12.16 for removal of trees within riparian zones and trees greater than 6 inches dbh in areas where more than 50 percent of trees are removed. A tree cutting permit is also required per County Tree Preservation East of Sierra Summit Ordinance 12.20 for those trees greater than 6 inches dbh removed. If tree removal on private lands is not conducted consistent with these permit requirements, this would result in a conflict with local ordinances protecting a biological resource.

RPMs REV-3, TREE-10, and TREE-11 would reduce impacts resulting from potential conflicts with County ordinances because County tree permits would be obtained consistent with the County ordinances, tree removal would be conducted in a manner that would preserve and protect surrounding natural resources, and qualifying removed trees would be compensated for through new plantings or payment of tree replacement mitigation fees.

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

Implementation of Alternative 3 would result in the removal of 104 trees and the possible removal, damage, or mortality to approximately 133 trees. Under CEQA, and using the CEQA criteria, this would conflict with County ordinances protecting biological resources and the effect would be significant. RPMs REV-3, TREE-10, and TREE-11 would reduce effects on trees protected by local ordinances because they would require that County tree permits be obtained consistent with the County ordinances, tree removal would be conducted in a manner that would preserve and protect surrounding natural resources, and qualifying removed trees would be compensated for through new plantings or payment of tree replacement mitigation fees. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. This impact would not differ materially from that under Alternative 2 because both alternatives would result in tree removal and the possible removal, damage, or mortality and losses of sensitive natural communities. More trees would be removed under Alternative 3 (104 trees) compared with Alternative 2 (42 trees); however, under Alternative 2, more trees would be at risk of possible removal, damage, or mortality (286 trees) compared with Alternative 3 (133 trees).

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 REV-3, TREE-10, and TREE-11 as mitigation measures reduces this significant impact to a less-than-significant level.

4.12.3.4 ALTERNATIVE 4

Impact 4.12-1 (Alt. 4): Ground Disturbance and Overstory Vegetation Removal Effects

Alternative 4 would result in the removal or disturbance of up to 7.89 acres of common vegetation communities and habitats. These habitats are locally and regionally common, and Alternative 4 would not substantially reduce the size, continuity, or integrity of any common vegetation community or habitat type. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to vegetation removal would be **adverse** because there would be a reduction in habitat acreage. Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 would mitigate this effect. Under CEQA, and using the CEQA criteria, the effect would be l**ess than significant** because Alternative 4 would not substantially reduce the size, continuity, or integrity of any common vegetation community or habitat type. This impact would be further reduced with implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11, which would minimize vegetation disturbance and removal and require habitat restoration, although they are not necessary to reduce the impact to a less-than-significant level.

Alternative 4 includes a gondola connecting the base areas of Squaw Valley and Alpine Meadows following a different alignment than Alternative 2; the Squaw Valley base terminal would be in a different location and the Squaw Valley and Alpine Meadows mid-stations would be in different locations. This alteration would reduce the gondola lift from approximately 13,000 feet in length under the Alternative 2 to 11,700 feet in length under Alternative 4. Effects on riparian habitat or other sensitive natural communities under Alternative 4 would be slightly less than those described above for Alternative 2.

As shown in Table 4.12-7, construction of Alternative 4 would disturb 1.45 acres of common vegetation communities located in the Alpine Meadows SUP area (on NFS lands) and 6.24 acres of common vegetation communities on private land, for a total of 7.69acres (compared to 2.68, 10.60, and 13.28, respectively, for Alternative 2) of common vegetation and habitat types. These acreages are divided into disturbance from overstory vegetation removal and permanent and temporary ground disturbance. In areas disturbed by overstory vegetation removal, trees would be removed, but vegetation that does not grow tall enough to interfere with gondola operation would remain. Permanent disturbance areas would be the locations of project facilities where vegetation is removed prior to construction and would not be restored. Temporary disturbance areas would be restored after construction is complete consistent with applicable RPMs. Total (both NFS and private lands) overstory vegetation removal is anticipated to be 4.49 acres; total permanent vegetation removal is anticipated to be 1.00 acre; and total temporary vegetation removal is anticipated to be 2.37 acres (compared to 8.73, 1.88, and 2.68 acres, respectively, for Alternative 2). Acreages of habitat loss are relatively small and these habitats are locally and regionally common. Alternative 4 would not substantially reduce the size, continuity, or integrity of any common vegetation community or habitat type.

Table 4.12-7 Acres of Maximum Common Vegetation and Habitat Disturbance Under Alternative 4

Disturbance Type	Vegetation/Land Cover Type						
	Bitter Cherry Thicket	Coniferous Woodland	Montane Chaparral	Mountain Sagebrush Forb	Rock and Talus	Rock Outcrop	Grand Total
Alpine Meadows Special Use Permit Area							
Overstory vegetation removal	0.83	0.18	0	0	0	0	1.01
Permanent ground disturbance	0.01	<0.01	0.09	0	0.03	0	0.13
Temporary ground disturbance	0.27	0.04	0	0	0	0	0.31
Alpine Meadows special use permit area total	**1.11**	**0.22**	**0.09**	**0**	**0.03**	**0**	**1.45**

Table 4.12-7 Acres of Maximum Common Vegetation and Habitat Disturbance Under Alternative 4

Disturbance Type	Vegetation/Land Cover Type						
	Bitter Cherry Thicket	Coniferous Woodland	Montane Chaparral	Mountain Sagebrush Forb	Rock and Talus	Rock Outcrop	Grand Total
Private Lands							
Overstory vegetation removal	0.65	0.26	1.15	0.63	0.79	0	3.48
Permanent ground disturbance	0.11	0.18	003	0.42	0.13	0	0.87
Temporary ground disturbance	0.13	0.23	0.33	0.28	0.92	0	2.06
Private lands total	**0.89**	**0.67**	**1.51**	**1.33**	**1.84**	**0**	**6.24**
Alternative 2 total	**2.0**	**0.89**	**1.60**	**1.33**	**1.87**	**0**	**7.69**

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

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects on common vegetation communities would be **adverse** because although total acreage losses are relatively small and these habitats are locally and regionally, there would still be a net loss of habitat acreage. These effects would be mitigated through implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11.

CEQA Determination of Effects

Total acreages of disturbance and losses of common vegetation and habitat types resulting from Alternative 4 are relatively small compared to total extent and distribution of these communities in the area and region. Under CEQA, and using the CEQA criteria, the effect of ground disturbance on common vegetation or habitat types and overstory vegetation would be **less than significant** because Alternative 4 would not substantially reduce the size, continuity, or integrity of any common vegetation or habitat type. RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38, TREE-1, and TREE-11 would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, or require revegetation of temporarily disturbed areas. However, these RPMs would not be necessary to reduce a significant impact to a less-than-significant level. This impact would not differ materially from that under Alternative 2 because both alternatives would result in the same, or very similar, types of vegetation disturbance.

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 minimize the effects of ground disturbance but is not necessary to reduce a significant effect.

Impact 4.12-2 (Alt. 4): Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community

Alternative 4 would result in the loss or disturbance of mesic and riparian shrubland and mountain alder thicket. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to sensitive natural communities would be **adverse** because project construction would result in the loss of these sensitive natural communities. Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because Alternative 4 would result in the loss or disturbance of riparian habitats and sensitive natural communities. Implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11, which minimize vegetation disturbance and removal and require habitat restoration and replacement, would reduce the impact to a **less-than-significant** level.

Alternative 4 includes a gondola connecting the base areas of Squaw Valley and Alpine Meadows following a different alignment than Alternative 2; the Squaw Valley base terminal would be in a different location and the Squaw Valley and Alpine Meadows mid-stations would be in different locations. Effects on riparian habitat or other sensitive natural communities under Alternative 4 would be greater than those described above for Alternative 2.

As shown in Table 4.12-8, there would be approximately 0.21 acre of mountain alder thicket (0.39 acre under Alternative 2) affected by overstory vegetation removal. Approximately 1.67 acres of mesic and riparian shrubland (zero acres under Alternative 2) would be affected by a combination of overstory vegetation removal, and permanent and temporary ground disturbance. No aspen grove would be affected (0.09 acre under Alternative 2).

Table 4.12-8 Acres of Riparian Habitat and Sensitive Natural Community Disturbance Under Alternative 4

Disturbance Type	Vegetation/Habitat Type			
	Aspen Grove	Mountain Alder Thicket	Mesic and Riparian Shrubland	Grand Total
Alpine Meadows Special Use Permit Area				
Overstory vegetation removal	0	0	0	0
Permanent ground disturbance	0	0	0	0
Temporary ground disturbance	0	0	0	0
Alpine Meadows special use permit area total	**0**	**0**	**0**	**0**
Private Lands				
Overstory vegetation removal	0	015	1.47	1.62
Permanent ground disturbance	0	0	0.03	0.03
Temporary ground disturbance	0	0.06	0.06	0.12
Private lands total	**0**	**0.21**	**1.56**	**1.77**
Alternative 2 total	**0**	**0.21**	**1.56**	**1.77**

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

Various RPMs identified in Appendix B would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, or require revegetation of temporarily disturbed areas. As identified above in the discussion of Impact 4.12-1 (Alt. 2), RPMs MUL-2 and BIO-34 require that work areas and construction exclusion areas are clearly marked in the field to prevent construction disturbance from exceeding designated areas. RPM MUL-3 requires the use of existing roads for access to the maximum extent possible, which would minimize ground disturbance and vegetation removal. RPM BIO-24 requires that the project minimize ground disturbance and vegetation and tree removal to only the areas necessary for construction, especially in riparian areas. RPMs BIO-30 through BIO-32 require preparation and implementation of a restoration plan resulting in the revegetation of temporarily disturbed areas. RPMs BIO-38 and TREE-11 require replacement of native trees that fall under the Placer County Code of Ordinances tree preservation articles or payment of in-lieu fees, with such payment to be used for replacement trees, including the cost of installation, paid to the Placer County Tree Preservation Fund. RPM TREE-1 requires that tree removal methods minimize potential effects on nearby aquatic habitats. In addition, RPMs BIO 39 and BIO-40 require the replacement either on-site, or through compensatory mitigation elsewhere, for losses of wetland and riparian habitats.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, the direct and indirect effects on sensitive natural communities would be **adverse** because although the disturbance area is small (approximately 1.8 acres), the communities affected have limited distribution and are particularly vulnerable

to environmental effects. These effects would be mitigated through implementation of RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11.

CEQA Determination of Effects

Total disturbance and losses of riparian habitats and sensitive natural communities resulting from Alternative 4 would be relatively small (approximately 1.8 acres). However, the communities affected have limited distribution and are particularly vulnerable to environmental effects. Under CEQA, and using the CEQA criteria, the effect of ground disturbance on riparian habitats and sensitive natural communities would be significant. RPMs MUL-2, MUL-3, BIO-24, BIO-30 through BIO-32, BIO-34, BIO-38 through BIO-40, and TREE-11 would minimize adverse effects from vegetation removal, prevent effects from exceeding the acreages identified, require revegetation of temporarily disturbed areas, and require replacement of lost wetland and riparian habitats. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. This impact would not differ materially from that under Alternative 2 because both alternatives would result in very similar types of disturbance and losses of sensitive natural communities; however, Alternative 4 would result in a greater acreage of disturbance and loss (approximately 1.8 acres under Alternative 4 compared with 0.48 acre under Alternative 2).

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 through BIO-40, and TREE-11 as mitigation measures reduces this significant impact to a less-than-significant level.

Impact 4.12-3 (Alt. 4): Conflict with Any Local Policies or Ordinances Protecting Biological Resources

Alternative 4 would result in the removal or damage of individual trees for project facilities. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because project construction would remove a resource valued by the County and could conflict with County Ordinances 12.16 and 12.20. Implementation of RPMs REV-3, TREE-10, and TREE-11 would require County tree permits that would be consistent with the County ordinances, tree removal in a manner that would preserve and protect surrounding natural resources, and compensation for removal of qualifying trees. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. This impact analysis is specific to a CEQA criteria and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided.

Alternative 4 includes a gondola connecting the base areas of Squaw Valley and Alpine Meadows following a different alignment than Alternative 2; the Squaw Valley base terminal would be in a different location and the Squaw Valley and Alpine Meadows mid-stations would be in different locations. This alteration would reduce the gondola lift from approximately 13,000 feet under the Alternative 2 to 11,700 feet in length under Alternative 4. Effects on individual trees protected under County ordinances under Alternative 4 would be slightly less than those described above for Alternative 2.

As identified above in Table 4.12-2, 947 trees greater than 6 inches dbh were recorded within the tree survey study area for Alternative 4. This total includes trees of various species and health classes, and zero dead or dying trees.

Construction of Alternative 4 is estimated to result in the removal of 38 trees (approximately 4 percent) for installation of project facilities and as part of overstory vegetation removal to prevent trees from conflicting with gondola operations. Additionally, approximately 176 trees (approximately 19 percent) were identified with the canopy extending over project activity areas. These trees could be subject to removal if they conflict with project construction or operation. These trees could also experience soil compaction and damage to the root zone from nearby construction activities, potentially leading to declining tree health or mortality.

A tree removal permit is required by the Placer County under the County Tree Preservation Ordinance 12.16 for removal of trees within riparian zones and trees greater than 6 inches dbh in areas where more than 50 percent of trees are removed. A tree cutting permit is also required per County Tree Preservation East of Sierra Summit Ordinance 12.20 for those trees greater than 6 inches dbh removed. If tree removal on private lands is not conducted consistent with these permit requirements, this would result in a conflict with local ordinances protecting a biological resource.

RPMs REV-3, TREE-10, and TREE-11 would reduce impacts resulting from potential conflicts with County ordinances because County tree permits would be obtained consistent with the County ordinances, tree removal would be conducted in a manner that would preserve and protect surrounding natural resources, and qualifying removed trees would be compensated for through new plantings or payment of tree replacement mitigation fees which would be used for new plantings (as discussed in Impact 4.12-2).

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

Implementation of Alternative 4 would result in the removal of 38 trees and the possible removal, damage, or mortality to approximately 176 trees. Under CEQA, and using the CEQA criteria, proposed tree removal under Alternative 4 would conflict with County ordinances protecting biological resources and the effect would be significant. RPMs REV-3, TREE-10, and TREE-11 would reduce effects on trees protected by local ordinances because they would require that County tree permits be obtained consistent with the County ordinances, tree removal would be conducted in a manner that would preserve and protect surrounding natural resources, and qualifying removed trees would be compensated for through new plantings or payment of tree replacement mitigation fees. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. This impact would not differ materially from that under Alternative 2 because both alternatives would result in tree removal and the possible removal, damage, or mortality and losses of sensitive natural communities). Slightly fewer trees would be removed under Alternative 4 (38 trees) compared with Alternative 2 (42 trees) and fewer trees would be at risk of possible removal, damage, or mortality under Alternative 4 (176 trees) compared with Alternative 2 (286 trees).

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 REV-3, TREE-10, and TREE-11 as mitigation measures reduces this significant impact to a less-than-significant level.

4.12.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.12-9 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Addressing the action alternatives, for Impact 4.12-1, the effect would be adverse when considering the NEPA indicator for all three action alternatives. This effect would be less than significant under CEQA for all three action alternatives. Having said that, removal or disturbance of common vegetation communities and habitats would be greatest under Alternative 2 (13.28 acres) compared to Alternative 3 (11.16 acres) and Alternative 4 (7.69 acres). See Tables 4.12-3, 4.12-5, and 4.12-7 for a breakdown of these acreages.

For Impact 4.12-2, the effect would be adverse when considering the NEPA indicator for all three action alternatives. Under CEQA, the effect would be significant, but applicable RPMs would reduce the impact to a less-than-significant level for all three action alternatives. Loss or disturbance of riparian habitat or other

sensitive natural community would be greatest under Alternative 4 (1.77 acres) compared to Alternative 2 (0.48 acre) and Alternative 3 (0.09 acre). See Tables 4.12-4, 4.12-6, and 4.12-8 for a breakdown of these acreages. The action alternatives would differ slightly in terms of the types of sensitive natural communities that they would disturb (e.g., aspen grove, mountain alder thicket, and mesic and riparian shrubland).

For Impact 4.12-3, under CEQA, the effect would be significant, but applicable RPMs would reduce the impact to a less-than-significant level, for all three action alternatives. The analysis provided for Impact 4.12-3 is specific to a CEQA criteria and is not responsive to a NEPA analytical indicator. No NEPA determination of effect is provided. Removal of individual trees would be greatest under Alternative 3 (104 trees) compared to Alternative 2 (42 trees) and Alternative 4 (38 trees); however, more trees would be at risk of possible removal, damage, or mortality under Alternative 2 (286 trees) compared to Alternative 3 (133 trees) and Alternative 4 (176 trees).

Table 4.12-9 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.12-1: Ground Disturbance and Overstory Vegetation Removal Effects	Quantification (acreage) of proposed ground disturbance and overstory vegetation removal effects by vegetation type	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Slightly less than under Alternative 2	Adverse under NEPA; less than significant under CEQA Slightly less than under Alternatives 2 and 3
4.12-2: Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community	Quantification (acreage) of proposed ground disturbance and overstory vegetation removal effects by vegetation type	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Slightly less than Alternative 2	Adverse under NEPA; less than significant under CEQA Greater than under Alternatives 2 and 3
	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Similar to Alternative 2	Adverse under NEPA; less than significant under CEQA Greater than under Alternatives 2 and 3
4.12-3: Conflict with Any Local Policies or Ordinances Protecting Biological Resources	Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance	No effect	Less than significant under CEQA	Less than significant under CEQA Greater than under Alternative 2	Less than significant under CEQA Slightly less than under Alternative 2 and less than under Alternative 3

4.12.4 Cumulative Effects

4.12.4.1 METHODS AND APPROACH

The spatial scope of cumulative impacts for vegetation, sensitive natural communities, and tree resources that occur in the project area is generally the Tahoe-Truckee region. This spatial scope is sufficient to include potential effects of the gondola project to the vegetation and habitat types 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 vegetation and habitat types.

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 Tahoe-Truckee Region) 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 vegetation in the Tahoe-Truckee Region include logging, grazing, fuels management, recreational development and activities, urban and commercial development, and right-of-way maintenance and operation activities.

The temporal scope typically includes the construction period (6–8 months) as well as the operational period of the gondola (winter season); however, for vegetation, the temporal scope for reasonably foreseeable future actions is more broadly defined because disturbance and/or loss of groundcover, overstory vegetation, sensitive natural communities, and tree resources 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 vegetation and habitat and landscape patterns that may influence the distribution and abundance of vegetation within the gondola project area and surrounding region.

The common vegetation community issues relevant to cumulative impacts, where the project has the potential to contribute to impacts generated by other projects, are effects related to groundcover, overstory vegetation, sensitive natural communities, and tree resources. Past and present activities have already altered common vegetation communities in the project area. Past, present, and foreseeable future activities that have affected or may affect biological resources in the project area include logging, grazing, fuels management, recreational development and activities, urban and commercial development, and right-of-way maintenance and operation activities. The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR (Table 3-3). With the exception of the transportation-related projects, all of the present and reasonably foreseeable future projects listed in Chapter 3 could affect common vegetation communities. Potential impacts associated with these projects include ground disturbance, overstory vegetation removal, loss or disturbance of riparian habitat or other sensitive natural community, and tree removal.

4.12.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct and indirect impacts, and thus by definition no cumulative impacts on vegetation.

Alternative 2

Implementation of Alternative 2 would result in removal and disturbance of the aspen grove and mountain alder thicket sensitive natural communities. Decades of growth and development, Comstock-era logging, hydrologic modification, livestock grazing, and fire suppression activities in the project area have resulted in an overall adverse cumulative condition for riparian habitat and sensitive natural communities. Considering only past and present projects, the cumulative condition is adverse. However, different from the conditions under which many past projects were implemented, there are multiple laws and regulations requiring the avoidance of sensitive habitats, minimization of effects, and compensation for effects when they cannot be fully avoided.

Impacts of Alternative 2 on sensitive natural communities would be permanent, resulting from direct removal and disturbance of sensitive habitats during construction activities. Projects whose effects on

sensitive natural communities would overlap in time and space with this project include Alpine Meadows Master Development Plan, Village at Squaw Valley Specific Plan, Northstar Mountain Master Plan, White Wolf Development, Alpine Sierra Subdivision, Martis Valley West Parcel, Big Jack East Forest Restoration Project, and Tahoe West Project. The project proponent would be required to comply with existing federal, state, and local regulations and permitting requirements that protect wetland, riparian, and other sensitive habitats. Various RPMs identified in Appendix B would reduce significant impacts on sensitive natural communities because they would ensure that sensitive habitat is avoided to the extent feasible, and that sensitive habitats that cannot be avoided are restored following construction or compensated for in a manner that results in no net loss of these habitats. Based on the no net loss standard required by state and federal laws, Alternative 2 would not have a considerable contribution to the overall adverse cumulative effect on sensitive habitats in the project area.

Past and existing projects in the project area have resulted in the conversion of forest land to nonforest uses, as well as small scale removal of individual trees, through activities such as residential and commercial development, utility and infrastructure development, and habitat conversions. Other compounding factors, such as lack of forest regeneration, wildfire, pressures from invasive species, and pest and disease infestations have contributed to a further decline in forest extent. Due to these combined factors, there is an existing adverse cumulative condition associated with loss of trees and forest land.

Depending on their location, construction of reasonably foreseeable future projects listed in Table 3-3 may require tree removal to clear areas for construction and/or to promote the establishment of defensible space and reduction of hazardous fuels. However, tree removal proposed as part of these projects would typically require assessment and mitigation, including compliance with the Placer County Tree Preservation Ordinance, which requires compensation through new plantings or payment of tree replacement mitigation fees for qualifying removed trees, reducing the project's overall contribution to cumulative tree removal effects.

Construction of Alternative 2 would result in the removal of trees and the possible removal, damage, or mortality of trees, some of which are protected by local ordinances and state regulations. However, RPMs REV-3, TREE-10, and TREE-11 would reduce significant impacts on trees to a less-than-significant level because impacts on trees requiring County tree permits would be minimized consistent with the County ordinances, tree removal would be conducted in a manner that would preserve and protect surrounding natural resources, and qualifying removed trees would be compensated for through new plantings or payment of tree replacement mitigation fees. Because the magnitude of tree removal is expected to be low relative to the distribution and availability of forest land in the region; most tree removal would be limited to common vegetation types; many of the trees that would be removed are within, or along the edges of existing developed areas; and compensation for removed trees would be implemented; tree removal as a result of Alternative 2 is not expected to contribute to changes in the composition, abundance, or regional patterns of forest resources in the region. Therefore, Alternative 2 would not make a considerable contribution to any cumulative effect related to tree removal in the region.

Alternatives 3 and 4

Cumulative impacts resulting from Alternatives 3 and 4 would be essentially the same as those discussed above for Alternative 2, although project-specific contributions to riparian habitats and sensitive natural communities and tree removal would be slightly less because of the difference in the proposed gondola alignments. Removal or disturbance of common vegetation communities and habitats would be greatest under Alternative 2 (13.28 acres) compared to Alternative 3 (11.16 acres) and Alternative 4 (7.69 acres). Therefore, Alternative 2 would make the greatest contribution to the cumulative effect. With regard to sensitive natural communities, Alternative 3 would affect mesic and riparian shrubland as opposed to aspen grove and mountain alder thicket. Alternative 4 would affect mountain alder thicket and mesic and riparian shrubland, but not aspen grove. Adverse effects to riparian habitats and sensitive natural communities would be greatest under Alternative 4 (1.77 acres) compared to Alternative 2 (0.48 acre) and Alternative 3 (0.09 acre). Although there are some differences in the acreages of affect across alternatives, and therefore the level of contribution to cumulative effects, none of the alternatives would make a considerable contribution to a cumulative effect.

4.13 BOTANY

This section describes the special-status botanical species, sensitive plant communities, and invasive plant species that are known or have the potential to occur in the project study area. Federal, state, and local regulations related to botanical resources are summarized, and the potential for botanical resources to be affected by the action alternatives is assessed.

The following analysis is based partly on information provided in a botanical survey report prepared by EcoSynthesis (EcoSynthesis 2017) and provided in Appendix H. For the project area that includes National Forest System (NFS) lands, this section summarizes detailed analysis and conclusions presented in the following specialist reports prepared for the project:

- Biological Evaluation-Biological Assessment of Botanical Species: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019a); and
- Non-Native Invasive Plant Risk Assessment: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019b).

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

- Tahoe National Forest Truckee Ranger District Office, 10811 Stockrest Springs Road, Truckee, CA 96161;
- Tahoe National Supervisors 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.

Tree removal and effects of project implementation on common vegetation types and sensitive natural communities are analyzed in Section 4.12, “Vegetation.” Potential disturbance or loss of habitats that could qualify as waters of the United States, waters of the state, or wetlands are addressed separately in Section 4.15, “Wetlands.”

4.13.1 Affected Environment

4.13.1.1 ENVIRONMENTAL SETTING

To describe and map botanical resources in the project area, existing data were reviewed, and protocol-level botanical surveys and habitat assessments were conducted in the study area by botanist Adrian Juncosa (EcoSynthesis 2017). The surveys were conducted on multiple dates in 2015, 2016, and 2017. Full descriptions of survey methods and results are provided in the Botanical Survey Report prepared for the project (EcoSynthesis 2017) and provided in Appendix H.

In this analysis, the botanical study area for the project corresponds with the survey area identified and mapped in the Botanical Survey Report: 50 feet on each side of the Alternative 2 gondola alignment and 100 feet on each side of the Alternative 3 and Alternative 4 alignments, and 30–50 feet on each side of the locations previously proposed for Gazex facilities (Since publication of the Draft EIS/EIR, Gazex were removed from the project. This modification is described more fully on the first page of Chapter 1, “Introduction.”). 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.

Land cover/habitat types in the study area are described in Section 4.12, "Vegetation," and maps of the locations of the land cover/habitat types are provided in the Botanical Survey Report in Appendix H. The survey report also includes common and scientific names of all botanical species found during the surveys. The following sections summarize the special-status botanical species, sensitive natural communities, and invasive plants known or with potential to occur in the study area.

Special-Status Botanical Species

Special-status botanical species are vascular plants, lichen, and fungi that are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. In this analysis, special-status species are defined as botanical species in the following categories:

- listed or proposed for listing as threatened, rare, or endangered under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA);
- considered as candidates for listing under the ESA or CESA;
- designated as sensitive by the Forest Service Regional Forester in Region 5;
- plants considered by the California Department of Fish and Wildlife (CDFW) to be "rare, threatened, or endangered in California" (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California and not known to occur elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California, but more common elsewhere and 2B, considered rare or endangered in California but more common elsewhere);
- considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA Section15125 [c]) or is so designated in local or regional plans, policies, or ordinances (State CEQA Guidelines, Appendix G); and
- otherwise meets the definition of rare or endangered under CEQA Section 15380(b) and (d).

No federally threatened, endangered, or proposed botanical species have potential to occur in the project area because the project area is outside of the known range of these species. There is also no designated critical habitat for listed plant species in the project area.

The project area contains potentially suitable habitat for 28 special-status botanical species: Galena creek rock-cress, three-tip sagebrush, Austin's astragalus (marginal habitat), upswept moonwort (marginal habitat), scalloped moonwort (marginal habitat), common moonwort (marginal habitat), Mingan moonwort (marginal habitat), western goblin, Bolander's bruchia, starved daisy, Davy's sedge, woolly-fruited sedge, mud sedge, Donner Pass buckwheat, Blandow's bog-moss (marginal habitat), Santa Lucia dwarf rush, Kellogg's lewisia, Hutchison's lewisia, broad-nerved hump moss, Hiroshi's flapwort, whitebark pine (marginal habitat), Nuttall's pondweed, Robbins's pondweed, alder buckthorn, marsh skullcap, Munro's desert mallow, slender-leaved pondweed, and felt-leaved violet (marginal habitat). The state and federal regulatory status, scientific names, and habitat associations of these species are provided in tables and narratives in the Botanical Survey Report (EcoSynthesis 2017) and the Botanical Biological Evaluation prepared for the project. See Table 1 in the Botanical Survey Report provided in Appendix H for the scientific name, legal status, and other information for each species listed above. Table 1 also identifies all special-status species considered in the botanical evaluation, including those with no potential habitat in the project area.

Although potential habitat is present in the study area, no special-status botanical species were observed during the protocol-level surveys. Therefore, it is assumed that most of these species are not present in the study area. However, as described in the Botanical Biological Evaluation, the *Botrychium* species with potential to occur (scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, and western goblin) are difficult to detect reliably during surveys, because they do not send up aboveground parts (sporophytes) every year. Additionally, although Santa Lucia dwarf-rush, Bolander's bruchia (candle moss), and Blandow's bog-moss were not found in the study area during project-level botanical surveys, these species can be difficult to detect because they are very small and inconspicuous and can grow

scattered among grasses and other vegetation. Therefore, although unlikely, these eight species may be present in small numbers, but undetected, in riparian/mesic habitats in the study area. All of these species are designated as sensitive by Forest Service Region 5, and these species have a CRPR of 1B or 2B, except for Bolander's bruchia (CRPR 4.2).

Invasive Plants

Invasive species are those that are not native to the region, persist without human assistance, and once established, quickly reproduce and spread and have serious impacts on the native environment. The term "invasive" differs from the classification terms "nonnative," "exotic," or "introduced" because it is (when applied correctly) used to describe only those nonnative species that displace native species on a large enough scale to alter habitat functions and values.

Invasive plant species known or with potential to occur in the study area are described in the Botanical Survey Report provided in Appendix H and the Non-Native Invasive Plant Risk Assessment (U.S. Forest Service 2019b) prepared for the project. The following summarizes the known occurrences of invasive plants in the study area.

Three species of invasive weeds were observed in the study area during protocol-level botanical surveys: perennial pepperweed (*Lepidium latifolium*), diffuse knapweed (*Centaurea stoebe*), and hoary cress (*Berteroa incana*).

Perennial pepperweed was found in two locations. One of these occurrences consisted of a very small number of plants observed in 2015 (but is likely many more plants now), in the lower part of the northern segment of the Alternative 2 gondola alignment, within the Squaw Valley Ski Area (Squaw Valley) (see Exhibit 4.13-1). The estimated acreage of this infestation is approximately 0.45 acre. The second occurrence is surrounding and within an abandoned building just west of the KT-22 top terminal, within the Alternative 4 alignment and surrounding study area (see Exhibit 4.13-2). This infestation covers approximately 0.08 acre.

Diffuse knapweed was found in one location just south of the existing Alpine Meadows lodge and within the estimated disturbance footprint for the Alpine meadows base terminal for all three action alternatives (see Exhibit 4.13-3). The total area of this infestation is approximately 0.01 acre.

Hoary cress was found in two locations in moist vegetation adjacent to the Alpine Meadows base area (see Exhibit 4.13-3). One of these locations is outside the project disturbance area. The total acreage of hoary cress infestation area is approximately 0.3 acre. When the botanical survey began in 2015, the southern occurrence consisted of only a few plants extending uphill toward the area behind the maintenance buildings. In 2017, at least 20 plants were present, which were uprooted and removed from the site. However, there is likely now a substantial seed bank in that area, perhaps spreading elsewhere.

4.13.1.2 REGULATORY SETTING

Federal

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (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 (i.e., some element of federal agency authorization or funding) the process for ESA compliance is accomplished through consultation with USFWS 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. Information within the biological assessment is used by USFWS to prepare the biological opinion. Federal agencies must ensure that any action authorized, funded, or carried out by the agency is not likely to (a) jeopardize the continued existence of any listed species or (b) result in the destruction or adverse modification of a listed species' designated critical habitat. However, as stated above, no ESA-listed plant species are known or expected to occur in the project area and there is no designated critical habitat for listed plant species in the project area.

Exhibit 4.13-1 Occurrence #1 of Perennial Pepperweed (*Lepidium latifolium*)

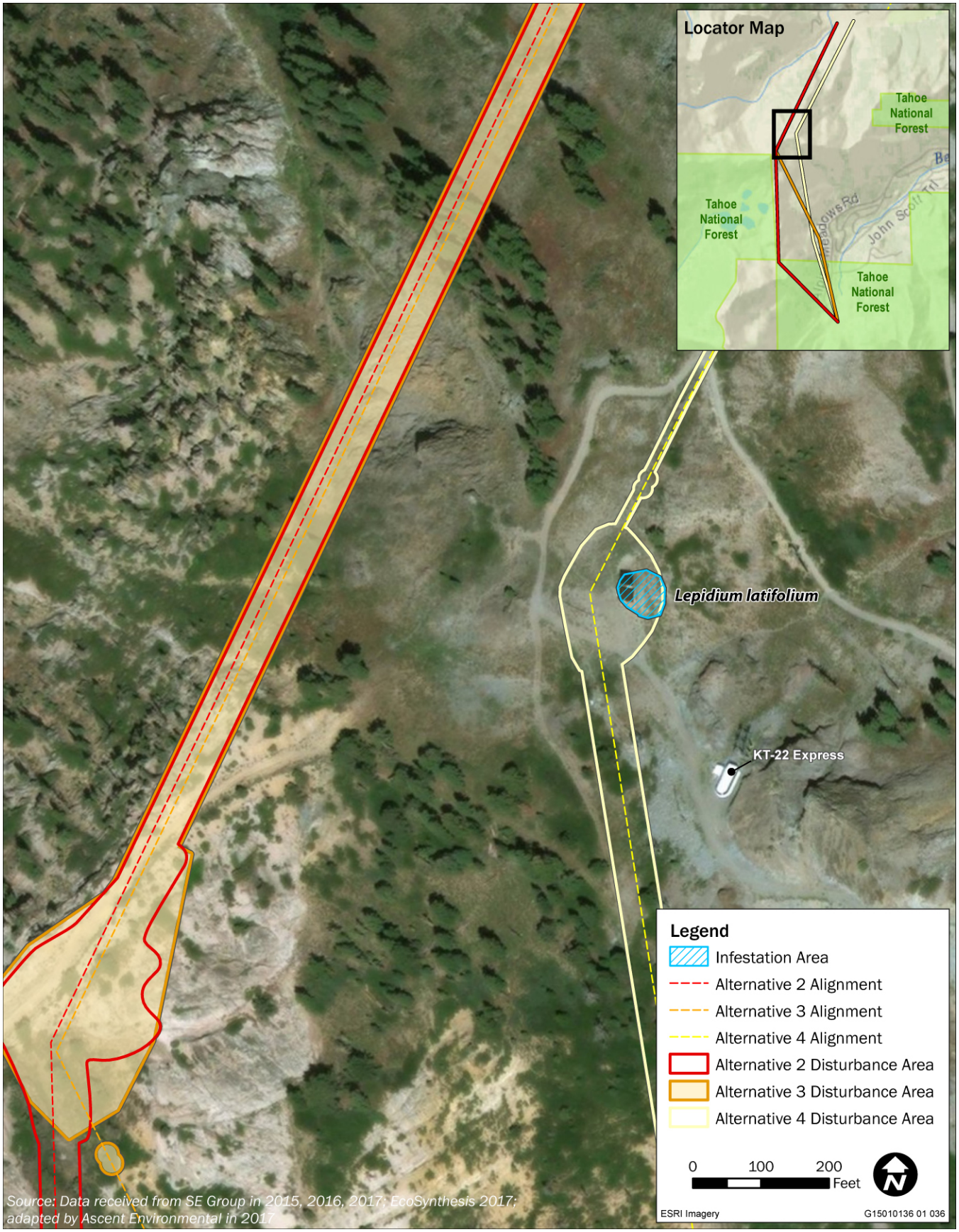

Exhibit 4.13-2 Occurrence #2 of Perennial Pepperweed (*Lepidium latifolium*)

Exhibit 4.13-3 Occurrences of Diffuse Knapweed (*Centaurea stoebe*) and Hoary Cress (*Berteroa incana*)

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.

Tahoe National Forest

Forest Service Manual

Section 2670 of the Forest Service Manual provides policies for the protection of sensitive species and calls for the development and implementation of management practices to ensure that species do not become threatened or endangered because of Forest Service actions. It requires a review of all activities or programs that are planned, funded, executed, or permitted for possible effects on federally listed or Forest Service sensitive species (FSM 2672.4, U.S. Forest Service 2005).

A biological evaluation provides a means to conduct this review, analyze the significance of potential adverse effects, and determine how negative impacts will be minimized or avoided for those species whose viability has been identified as a concern. The objectives of a biological evaluation are to:

- ensure that Forest Service actions do not contribute to loss of viability of any native or desired nonnative plant or animal species;
- ensure that Forest Service actions do not jeopardize or adversely modify critical habitat of Federally listed species; and
- provide a process and standard through which rare plant species receive full consideration throughout the planning process, reducing negative impacts on species and enhancing opportunities for mitigation.

These objectives also align with the impact analysis provided in this joint EIS/EIR prepared in compliance with the requirements of NEPA and CEQA.

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

The Tahoe National Forest (TNF) Land and Resource Management Plan (LRMP) (U.S. Forest Service 1990) directs the TNF to manage the viability of sensitive botanical species and to ensure that these species do not become threatened or endangered because of Forest Service activities. The primary purpose of the direction is to ensure that existing habitat of these species is adequately protected and that additional habitat is provided to perpetuate the species. This direction implements the protections legislated in the National Forest Management Act and the ESA. The Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA) (U.S. Forest Service 2004) amended the LRMP in 2004. The LRMP and SNFPA, collectively referred to as the Forest Plan, established standards and guidelines pertaining to the protection and consideration of sensitive plants, including conducting field surveys, minimizing or eliminating direct and indirect impacts from management activities, and adhering to the regional native plant policy. As part of the analysis conducted for this Final EIS/EIR, specific standards and guidelines identified in the Forest Plan related to botanical resources were applied and evaluated for consistency. Standards and guidelines related to Riparian Conservation Objectives (RCOs) are evaluated in Section 4.17, “Hydrology and Water Quality.”

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. As stated above, No CESA-listed plant species are known or expected to occur in the project area.

California Native Plant Protection Act

In addition to CESA, the California Native Plant Protection Act provides protection to endangered and rare plant species, subspecies, and varieties of wild native plants in California. The California Native Plant Protection Act definitions of "endangered" and "rare" closely parallel the CESA definitions of endangered and threatened plant species. Special-status botanical species discussed in Section 4.13.1, "Affected Environment," and identified in Table 1 of the Botanical Survey Report (provided in Appendix H of this EIS/EIR) meet the criteria for protection under the California Native Plant Protection Act.

Local

Placer County General Plan

The Natural Resources Section of the *Placer County General Plan* (Placer County 2013) outlines several goals, policies and implementation programs aimed at protecting natural resources, including special-status plants and sensitive habitats. The goals, policies, and programs that are applicable to botanical resources in the project area are summarized below.

GOAL 6.B: To protect wetland communities and related riparian areas throughout Placer County as valuable resources.

- **Policy 6.B.2.** The County shall require new development to mitigate wetland loss in both federal jurisdictional and non-jurisdictional wetlands to achieve "no net loss" through any combination of the following, in descending order of desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation and conservation banking program that provides the opportunity to mitigate impacts to special status, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas. Non-jurisdictional wetlands may include riparian areas that are not federal "waters of the United States" as defined by the Clean Water Act.

GOAL 6.D: To preserve and protect the valuable vegetation resources of Placer County.

- **Policy 6.D.2.** The County shall require developers to use native and compatible nonnative species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permits or for project mitigation.

- **Policy 6.D.5.** The County shall establish procedures for identifying and preserving special-status, threatened, and endangered plant species that may be adversely affected by public or private development projects.

- **Policy 6.D.10.** The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well adapted plants are maintained.

- **Policy 6.D.13.** The County shall support the preservation of native trees and the use of native, drought-tolerant plant materials in all revegetation/landscaping projects.

- **Policy 6.D.14.** The County shall require that new development avoid ecologically-fragile areas (e.g., areas of special status, threatened, or endangered species of plants, and riparian areas). Where feasible, these areas should be protected through public or private acquisition of fee title or conservation easements to ensure protection.

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 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). Setbacks and protections from construction along the stream environment zone (100-year floodplain) are described in Section 115.18 through 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).

Alpine Meadows General Plan

The *Alpine Meadows General Plan* was approved by the Placer County Board of Supervisors on May 1, 1968. It establishes policies specific to Alpine Meadows that build on the general policies found in the *Placer County General Plan* and *Placer County Zoning Ordinance*. There are no policies in the *Alpine Meadows General Plan* that apply directly to special-status species or their habitat.

4.13.2 Analysis Methods

4.13.2.1 METHODS AND ASSUMPTIONS

The analysis of potential impacts on botanical resources resulting from implementation of the action alternatives is based on the data review and project-specific surveys described previously in Section 4.13.1.1, "Environmental Setting," and analyses and conclusions provided in the Botanical Survey Report (EcoSynthesis 2017) and the Botanical Biological Evaluation (U.S. Forest Service 2019a) and Non-Native Invasive Plant Risk Assessment (U.S. Forest Service 2019b) prepared for the project.

Potential impacts of each action alternative on botanical resources were initially identified by overlaying geographic information system (GIS) layers of project components and activities on the land cover maps of the study area and the locations of known invasive plant infestations. Project impact areas identified in the GIS were divided into three categories: overstory vegetation removal and permanent and temporary ground disturbance. Overstory vegetation removal is the removal of trees or other vegetation to prevent conflicts with future gondola operation. Locations for overstory vegetation removal would be around and between gondola towers where trees and other vegetation that could conflict with the gondola travelling overhead would be removed or trimmed. The areas where overstory vegetation removal are anticipated were provided by the applicant and entered into a GIS. Any habitat type that occurred in a location identified for overstory vegetation removal was considered disturbed and therefore a mechanism for potential adverse effects related to special-status botanical species and invasive plants. Vegetation management (e.g., tree removal or trimming) would continue in these corridors after construction is complete to prevent trees or other vegetation growing tall enough to conflict with the gondola; thereby resulting in a permanent change in the vegetation community from existing conditions as long as the gondola is in operation.

Permanent ground disturbance impacts result from a permanent change in land cover under the footprint of a project facility (i.e., conversion of natural vegetation to base stations, mid-stations, and tower footings). Temporary ground disturbance impacts would occur where natural vegetation would be removed during the construction process; however, the disturbance is temporary, and the location would be restored to pre-disturbance vegetation consistent with Resource Protection Measures (RPMs). Both these activities were considered mechanisms for potential adverse effects related to special-status botanical species and invasive plants.

As described in Section 2.2.6, "Resource Protection Measures," the project incorporates a number of 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.

4.13.2.2 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 special-status botanical species and result in adverse effects related to invasive plant species. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Identify and disclose impacts to any federally listed threatened and endangered species, Forest Service Region 5 sensitive species, and species of local concern present in the study area **(Impact 4.13-1).**

- Identify design criteria and BMPs (including noxious weed design features) to avoid the spread of noxious or other undesirable weed species and to manage existing populations toward eradication or acceptable levels when eradication is not realistic **(Impact 4.13-2).**

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 botanical resources 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 **(Impact 4.13-1)**;

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS **(Section 4.13.2.3, "Issues Not Discussed Further")**;

- 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 4.13.2.3, "Issues Not Discussed Further")**; or

- threaten to eliminate a plant community **(Section 4.12, "Vegetation")** or reduce the number or restrict the range of a rare or endangered plant **(Impact 4.13-1)**.

4.13.2.3 ISSUES NOT DISCUSSED FURTHER

Sensitive natural communities in the study area consist of mesic (wet) and aquatic habitats, including freshwater emergent wetland, aspen grove, riparian, and tributary/stream. Descriptions and analyses of these habitats in the context of their designation as sensitive natural communities are provided in Section 4.12, "Vegetation." Therefore, this issue is not discussed further in this section.

As discussed in the Initial Study prepared for the project (Appendix A), Placer County has applied to receive approval from the federal wildlife agencies (USFWS and National Marine Fisheries Service [NMFS]) for a comprehensive natural community conservation plan known as the *Placer County Conservation Plan* (PCCP). When approved and implemented, the PCCP would 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 PCCP; 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 Final EIS/EIR.

The portion of the CEQA criteria stating "threaten to eliminate a plant community" is addressed in Section 4.12, "Vegetation." As identified in Section 4.12.2.3, ground disturbance and removal of vegetation and habitats from project implementation will affect relatively small areas (fractions of an acre) in dispersed locations. No plant communities are so limited in extent in the project vicinity that project implementation could threaten to eliminate a plant community. This issue is not discussed further in this Final EIS/EIR.

4.13.3 Direct and Indirect Environmental Consequences

4.13.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.13-1 (Alt. 1): Disturbance or Loss of Federally Listed, Forest Service Sensitive, and Other Special-Status Botanical Species

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and, therefore, no project-related disturbance to vegetation or special-status botanical species. There would be **no effect** 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no project-related disturbances or loss of special-status botanical species.

NEPA Effects Conclusion
With no project-related disturbances to vegetation or special-status botanical species, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no project-related disturbances to vegetation or special-status botanical species, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.13-2 (Alt. 1): Result in the Introduction or Spread of Invasive Plant Species

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction and, therefore, no project-related mechanism to introduce or spread invasive plant species. There would be **no effect** under NEPA. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a 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 a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no project-related mechanism to introduce or spread invasive plant species.

NEPA Effects Conclusion

With no project-related mechanism to introduce or spread invasive plant species, there would be **no effect** related to this issue.

CEQA Determination of Effects

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

Mitigation Measures

No mitigation measures are required.

4.13.3.2 ALTERNATIVE 2

Impact 4.13-1 (Alt. 2): Disturbance or Loss of Federally Listed, Forest Service Sensitive, and Other Special-Status Botanical Species

No botanical species listed under ESA or CESA would be affected by implementation of Alternative 2, as none occur in the project area. No special-status plant species of any type were identified in the project area during botanical surveys and most are not expected to occur. Implementation of Alternative 2 could disturb or remove a small amount of potentially suitable habitat for eight special-status species that are difficult to detect during surveys and may be present in mesic (wet) habitats (scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss). Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to vegetation removal and ground disturbance would be **adverse** because a small amount of potentially suitable habitat for botanical species could be disturbed or removed under Alternative 2. Implementing Alternative 2 **may impact individuals but is not likely to cause a trend toward federal listing or loss of viability** for any of these eight species. Implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would mitigate this effect. Under CEQA, and using the CEQA criteria, the impact would be **less than significant** because of the small potential for these species to be affected. In addition, RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would require further botanical surveys, resulting in the identification and avoidance of these species if present, implementation of mitigation actions for known plant occurrences that cannot be avoided, and minimization of disturbance in potential habitat for these species. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Protocol-level botanical surveys and habitat assessments were conducted in the study area on multiple dates in 2015, 2016, and 2017 (EcoSynthesis 2017). No special-status botanical species were observed during the protocol-level surveys. Further, the project area is outside of the known range of federal or state listed threatened, endangered, or proposed species.

The project area does contain potentially suitable habitat for 28 special-status botanical species, as identified above in Section 4.13.1.1. It is assumed that most of these species are not present in the study area and implementation of Alternative 2 would not affect them. However, as described in Section 4.13.1.1, the *Botrychium* species with potential to occur (scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, and western goblin) are difficult to detect reliably during surveys because they do not send up aboveground parts (sporophytes) every year. Additionally, although Santa Lucia dwarf-rush, Bolander's bruchia (candle moss), and Blandow's bog-moss were not found in the study area during project-level botanical surveys, these species can be difficult to detect because they are very small and inconspicuous and can grow scattered among grasses and other vegetation. Therefore, although unlikely, these eight species may be present but undetected in a small amount of riparian/mesic habitats in the study area. As identified in the discussion of Impact 4.12-2 (Alt. 2) in Section 4.12, "Vegetation," less than 0.5 acre of riparian and mesic habitats would be disturbed under Alternative 2. All of these species are designated as sensitive by Forest Service Region 5, and these species have a CRPR of 1B or 2B, except for Bolander's bruchia (CRPR 4.2).

If scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss are present in the project site for Alternative 2, construction-related disturbances to suitable mesic habitats could result in the disturbance or removal of these species occurrences. However, as stated above, these species were not detected during protocol-level botanical surveys, and potentially suitable habitat is very limited in amount and quality. Therefore, any potential disturbances to these species, if they are present, would be minor locally and regionally. Therefore, implementing Alternative 2 **may impact individuals but is not likely to cause a trend toward federal listing or loss of viability** for any of these eight species. In addition, the project includes RPMs that would further reduce potential project impacts on these species and their habitats. Specifically, RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 require additional botanical surveys in the growing season immediately preceding construction, biological monitors on-site during construction, establishment of protective buffers around special-status plant occurrences, compensation for any unavoidable disturbances to occurrences (e.g., salvaging seed and soil, relocating individuals), avoidance of habitats that may be suitable for these special-status species, and revegetation and restoration following construction. (The full text of all RPMs is provided in Appendix B.) Consequently, implementing Alternative 2 would have a very low potential to affect individuals of scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, Blandow's bog-moss, or any other special-status botanical species, and would not substantially affect the abundance or distribution of any of these species, either directly or through habitat modifications.

NEPA Effects Conclusion

No federally listed botanical species would be affected by implementation of Alternative 2. Implementation of Alternative 2 could disturb or remove a small amount (less than 0.5 acre) of potentially suitable habitat for scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss, which could disturb or remove individuals if they are present. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, the direct and indirect effects on special-status botanical species would be **adverse** because a small amount of potentially suitable habitat for botanical species could be disturbed or removed under Alternative 2. These effects would be mitigated through implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26.

CEQA Determination of Effects

No federally listed or state-listed botanical species would be affected by implementation of Alternative 2. Implementing Alternative 2 would have a very low potential to affect individuals of scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, Blandow's bog-moss, or any other special-status botanical species, and would not substantially affect the local or regional abundance, distribution, or viability, either directly or through habitat modification. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because of the small potential for these species to be affected. Implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would further reduce the potential for adverse effects on special-status botanical species by requiring additional botanical surveys before construction, and subsequent avoidance and compensation for effects on any identified plants that cannot be avoided. With implementation of these

RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 as mitigation measures limits the potential for disturbance of special-status botanical species but is not necessary to reduce a significant effect.

Impact 4.13-2 (Alt. 2): Result in the Introduction or Spread of Invasive Plant Species

Alternative 2 could result in the introduction of invasive plant species in the project area if seeds or other propagules are carried on construction equipment or materials. Vehicle movement and ground disturbance during construction could spread seeds and propagules from existing infestations in the project area. Ground disturbance and habitat modification during construction could make areas more susceptible to invasive plant infestations both during construction and after construction is complete. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to the increased potential for the spread of invasive plant species would be **adverse** because project implementation could introduce or spread seeds or propagules of invasive plant species. Implementation of RPMs BIO-2 through BIO-8, BIO-30, and BIO-31 would mitigate this effect. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criteria. No CEQA determination of effect is provided.

Under Alternative 2, the construction process would involve the delivery of equipment and materials to the project site. If vehicles, construction equipment, or erosion control materials, for example, carry seeds or propagules of invasive plant species, the construction process could provide a means of introducing invasive plant species to the project area. If construction equipment or personnel enter or disturb existing invasive plant infestations, seeds or propagules from these infestations could be spread to other areas. As identified above in Section 4.13.1.1, "Environmental Setting," there are four known infestations within, or near (within 500 feet) the identified Alternative 2 disturbance area. Construction would cause ground disturbance both through overstory vegetation removal, installation of permanent project features, and temporary ground disturbance near these features and for access ways and other temporary project elements. Many invasive plant species establish in areas of ground disturbance. Areas of temporary construction disturbance may provide suitable conditions for invasive plant infestations for several years after construction is complete. Topsoil would be salvaged and re-spread following construction and construction sites would be revegetated to help minimize habitat alteration. Depending on the conditions where the topsoil is salvaged and the source of seed for revegetation, both of these activities could result in the introduction or spread of invasive plant seeds or propagules.

Alternative 2 would result in removal or disturbance of approximately 21 acres of combined native land covers, ruderal vegetation, and urban areas. Depending on the type and extent of disturbance, all land cover types could be made more susceptible to invasive species infestations from construction related ground disturbance.

Multiple RPMs are included in the project that would reduce the potential for the introduction and spread of invasive plant species. RPM BIO-2 provides for implementation of pre-construction floristic surveys, which would include identification of invasive plant infestations. RPM BIO-3 requires treatment/eradication of existing invasive plant infestations in the project area and infestations found during and after construction. This RPM also requires that post-construction monitoring for noxious weeds be conducted annually for 3 years after construction is complete. RPM BIO-4 requires that construction equipment arrive to the project site clean and weed free. RPM BIO-5 requires the ongoing cleaning of construction equipment to prevent the spread of invasive plants. RPMs BIO-6 and BIO-7 relate to the use of weed-free materials during project implementation. RPM BIO-8 provides guidance on invasive plant eradication methods. RPMs BIO-30 and BIO-31 address revegetation of temporarily disturbed areas. Prompt and successful revegetation would make disturbed areas less susceptible to invasive plant infestations.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to the potential introduction and spread of invasive plant species from Alternative 2 would be **adverse** because project implementation could introduce or spread seeds or propagules of invasive plant species. These effects would be mitigated through implementation of RPMs BIO-2 through BIO-8, BIO-30, and BIO-31.

CEQA Determination of Effects

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

Mitigation Measures

No mitigation measures are required.

4.13.3.3 ALTERNATIVE 3

Impact 4.13-1 (Alt. 3): Disturbance or Loss of Federally Listed, Forest Service Sensitive, and Other Special-Status Botanical Species

No botanical species listed under ESA or CESA would be affected by implementation of Alternative 3, as none occur in the project area. No special-status plant species of any type were identified in the project area during botanical surveys and most are not expected to occur. Implementation of Alternative 3 could disturb or remove a small amount of potentially suitable habitat for eight special-status species that are difficult to encounter/observe during surveys and may be present in mesic (wet) habitats (scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss). Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to disturbance or removal of these species would be **adverse** because a small amount of potentially suitable habitat for botanical species could be disturbed or removed under Alternative 3. Implementing Alternative 3 **may impact individuals but is not likely to cause a trend toward federal listing or loss of viability** for any of these eight species. Implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would mitigate this effect. Under CEQA, and using the CEQA criteria, the impact would be **less than significant** because of the small potential for these species to be affected. In addition, RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would require further botanical surveys, resulting in the identification and avoidance of these species if present, implementation of mitigation actions for known plant occurrences that cannot be avoided, and minimization of disturbance in potential habitat for these species. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Impact 4.13-1 (Alt. 3) would be similar to Impact 4.13-1 (Alt. 2). As identified in the discussion of Impact 4.12-2 (Alt. 3) in Section 4.12, "Vegetation," less than 0.5 acre of riparian and mesic habitats would be disturbed under Alternative 3. This is similar to the acreage of effect under Alternative 2.

The project includes RPMs that would further reduce potential project impacts on these species and their habitats. Specifically, RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 require additional botanical surveys in the growing season immediately preceding construction, biological monitors on site during construction, establishment of protective buffers around special-status plant occurrences, compensation for any unavoidable disturbances to occurrences (e.g., salvaging seed and soil, relocating individuals), avoidance of habitats that may be suitable for these special-status species, and revegetation and restoration following construction. Consequently, implementing Alternative 3 would have a very low potential to affect individuals of scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, Blandow's bog-moss, or any other special-status botanical species, and would not substantially affect the abundance or distribution of any of these species, either directly or through habitat modifications. Implementing Alternative 3 **may impact individuals but is not likely to cause a trend toward federal listing or loss of viability** for any of these eight species.

NEPA Effects Conclusion

No federally listed botanical species would be affected by implementation of Alternative 3. Implementation of Alternative 3 could disturb or remove a small amount (less than 0.5 acre) of potentially suitable habitat for scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss, which could disturb or remove individuals if they are present. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, the direct and indirect effects on special-status botanical species would be **adverse** because a small amount of potentially suitable habitat for botanical species could be disturbed or removed under Alternative 3. These effects would be mitigated through implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26. The RPMs would be equally effective under Alternative 3 as under Alternative 2.

CEQA Determination of Effects

No federally listed or state-listed botanical species would be affected by implementation of Alternative 3. Implementing Alternative 3 would have a very low potential to affect individuals of scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, Blandow's bog-moss, or any other special-status botanical species, and would not substantially affect the local or regional abundance, distribution, or viability, either directly or through habitat modifications. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because of the small potential for these species to be affected. Implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would further reduce the potential for adverse effects on special-status botanical species by requiring additional botanical surveys before construction and subsequent avoidance and compensation for effects on any identified plants that cannot be avoided. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level. These RPMs would be equally effective under Alternative 3 as under Alternative 2.

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-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 as mitigation measures limits the potential for disturbance of special-status botanical species but is not necessary to reduce a significant effect.

Impact 4.13-2 (Alt. 3): Result in the Introduction or Spread of Invasive Plant Species

Alternative 3 could result in the introduction of invasive plant species in the project area if seeds or other propagules are carried on construction equipment or materials. Vehicle movement and ground disturbance during construction could spread seeds and propagules from existing infestations in the project area. Ground disturbance and habitat modification during construction could make areas more susceptible to invasive plant infestations both during construction and after construction is complete. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation measures, direct and indirect effects related to the increased potential for the spread of invasive plant species would be **adverse** because project implementation could introduce or spread seeds or propagules of invasive plant species. Implementation of RPMs BIO-2 through BIO-8, BIO-30, and BIO-31 would mitigate this effect. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criteria. No CEQA determination of effect is provided.

The mechanisms for the introduction and spread of invasive plant species identified above for Alternative 2 would be the same for Alternative 3.

Alternative 3 would result in removal or disturbance of approximately 18 acres of combined native land covers, ruderal vegetation, and urban areas, which is less than the 21 acres identified for Alternative 2. Depending on the type and extent of disturbance, all land cover types could be made more susceptible to invasive species infestations from construction related ground disturbance.

Multiple RPMs are included in the project that would reduce the potential for the introduction and spread of invasive plant species. RPM BIO-2 provides for implementation of pre-construction floristic surveys, which

would include identification of invasive plant infestations. RPM BIO-3 requires treatment/eradication of existing invasive plant infestations in the project area and infestations found during and after construction. This RPM also requires that post-construction monitoring for noxious weeds be conducted annually for 3 years after construction is complete. RPM BIO-4 requires that construction equipment arrive to the project site clean and weed free. RPM BIO-5 requires the ongoing cleaning of construction equipment to prevent the spread of invasive plants. RPMs BIO-6 and BIO-7 relate to the use of weed free materials during project implementation. RPM BIO-8 provides guidance on invasive plant eradication methods. RPMs BIO-30 and BIO-31 address revegetation of temporarily disturbed areas. Prompt and successful revegetation would make disturbed areas less susceptible to invasive plant infestations.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to the potential introduction and spread of invasive plant species from Alternative 3 would be **adverse** because project implementation could introduce or spread seeds or propagules of invasive plant species. The potential for these effects would be slightly less than for Alternative 2 because of the reduced disturbance acreage under Alternative 3. These effects would be mitigated through implementation of RPMs BIO-2 through BIO-8, BIO-30, and BIO-31. These RPMs would be equally effective under Alternative 3 as under Alternative 2.

CEQA Determination of Effects

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

Mitigation Measures

No mitigation measures are required.

4.13.3.4 ALTERNATIVE 4

Impact 4.13-1 (Alt. 4): Disturbance or Loss of Federally Listed, Forest Service Sensitive, and Other Special-Status Botanical Species

No botanical species listed under ESA or CESA would be affected by implementation of Alternative 4, as none occur in the project area. No special-status plant species of any type were identified in the project area during botanical surveys and most are not expected to occur. Implementation of Alternative 4 could disturb or remove a small amount of potentially suitable habitat for eight special-status species that are difficult to encounter/observe during surveys and may be present in mesic (wet) habitats (scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss). Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to disturbance or removal of these species would be **adverse** because a small amount of potentially suitable habitat for botanical species could be disturbed or removed under Alternative 4. Implementing Alternative 4 **may impact individuals but is not likely to cause a trend toward federal listing or loss of viability** for any of these eight species. Implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would mitigate this effect. Under CEQA, and using the CEQA criteria, the impact would be **less than significant** because of the small potential for these species to be affected. In addition, RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would require further botanical surveys, resulting in the identification and avoidance of these species if present, implementation of mitigation actions for known plants that cannot be avoided, and minimization of disturbance in potential habitat for these species. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Impact 4.13-1 (Alt. 4) would be similar to Impact 4.13-1 (Alt. 2). As identified in the discussion of Impact 4.12-2 (Alt. 4) in Section 4.12, "Vegetation," slightly less than 2 acres of riparian and mesic habitats would be disturbed under Alternative 4. This is greater than the 0.5 acre of effect under both Alternatives 2 and 3.

The project includes RPMs that would further reduce potential project impacts on these species and their habitats. Specifically, RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 require additional botanical surveys in the growing season immediately preceding construction, biological monitors on site during construction, establishment of protective buffers around special-status plant occurrences, compensation for any unavoidable disturbances to occurrences (e.g., salvaging seed and soil, relocating individuals), avoidance of habitats that may be suitable for these special-status species, and revegetation and restoration following construction). Consequently, implementing Alternative 4 would have a very low potential to affect individuals of scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, Blandow's bog-moss, or any other special-status botanical species, and would not substantially affect the abundance or distribution of any of these species, either directly or through habitat modifications. Implementing Alternative 4 **may impact individuals but is not likely to cause a trend toward federal listing or loss of viability** for any of these eight species.

NEPA Effects Conclusion

No federally listed botanical species would be affected by implementation of Alternative 4. Implementation of Alternative 4 could disturb or remove a small amount (less than 2 acres) of potentially suitable habitat for scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss, which could disturb or remove individuals if they are present. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, the direct and indirect effects on special-status botanical species would be adverse because a small amount of potentially suitable habitat for botanical species could be disturbed or removed under Alternative 4. These effects would be mitigated through implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26. These RPMs would be equally effective under Alternative 4 as under Alternative 2.

CEQA Determination of Effects

No federally listed or state-listed botanical species would be affected by implementation of Alternative 4. Implementing Alternative 4 would have a very low potential to affect individuals of scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, Blandow's bog-moss, or any other special-status botanical species, and would not substantially affect the local or regional abundance, distribution, or viability, either directly or through habitat modifications of any of these species. Under CEQA, and using the CEQA criteria, this impact would be **less than significant** because of the small potential for these species to be affected. Implementation of RPMs BIO-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 would further reduce the potential for adverse effects on special-status botanical species by requiring additional botanical surveys before construction and subsequent avoidance and compensation for effects on any identified plants that cannot be avoided. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level. These RPMs would be equally effective under Alternative 4 as under Alternative 2.

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-1, BIO-2, BIO-9 through BIO-11, BIO-25, and BIO-26 as mitigation measures limits the potential for disturbance of special-status botanical species but is not necessary to reduce a significant effect.

Impact 4.13-2 (Alt. 4): Result in the Introduction or Spread of Invasive Plant Species

Alternative 4 could result in the introduction of invasive plant species in the project area if seeds or other propagules are carried on construction equipment or materials. Vehicle movement and ground disturbance during construction could spread seeds and propagules from existing infestations in the project area. Ground disturbance and habitat modification during construction could make areas more susceptible to invasive plant infestations both during construction, and after construction is complete. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, the increased potential for the spread of invasive plant species would be **adverse** because project implementation could introduce or spread seeds or propagules of invasive plant species. Implementation of RPMs BIO-2 through BIO-8, BIO-30, and BIO-31 would mitigate this effect. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criteria. No CEQA determination of effect is provided.

The mechanisms for the introduction and spread of invasive plant species identified above for Alternative 2 would be the same for Alternative 4.

Alternative 4 would result in removal or disturbance of approximately 15 acres of combined native land covers, ruderal vegetation, and urban areas, which is less than the 21 acres identified for Alternative 2. Depending on the type and extent of disturbance, all land cover types could be made more susceptible to invasive species infestations from construction related ground disturbance.

Multiple RPMs are included in the project that would reduce the potential for the introduction and spread of invasive plant species. RPM BIO-2 provides for implementation of pre-construction floristic surveys, which would include identification of invasive plant infestations. RPM BIO-3 requires treatment/eradication of existing invasive plant infestations in the project area and infestations found during and after construction. This RPM also requires that post-construction monitoring for noxious weeds be conducted annually for 3 years after construction is complete. RPM BIO-4 requires that construction equipment arrive to the project site clean and weed free. RPM BIO-5 requires the ongoing cleaning of construction equipment to prevent the spread of invasive plants. RPMs BIO-6 and BIO-7 relate to the use of weed free materials during project implementation. RPM BIO-8 provides guidance on invasive plant eradication methods. RPMs BIO-30 and BIO-31 address revegetation of temporarily disturbed areas. Prompt and successful revegetation would make disturbed areas less susceptible to invasive plant infestations.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to the potential introduction and spread of invasive plant species from Alternative 4 would be **adverse** because project implementation could introduce or spread seeds or propagules of invasive plant species. The potential for these effects would be slightly less than for Alternative 2 because of the reduced disturbance acreage under Alternative 4. These effects would be mitigated through implementation of RPMs BIO-2 through BIO-8, BIO-30, and BIO-31 that would minimize the potential for the introduction and spread of seeds and propagules of invasive plant species and require the eradication of invasive plant infestations where they are found. These RPMs would be equally effective under Alternative 4 as under Alternative 2.

CEQA Determination of Effects

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

Mitigation Measures

No mitigation measures are required.

4.13.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.13-1 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

For Impact 4.13-1, the effect would be adverse for all action alternatives when considering the NEPA indicators and each action alternative may impact individuals but is not likely to cause a trend toward federal listing or loss of viability for any of the eight special-status botanical species that could be present. Impact 4.13-1 is less than significant under CEQA for all three action alternatives. The potential for adverse effects would be slightly greater for Alternative 4 than for Alternatives 2 and 3 because of greater disturbance of land covers considered potential habitat for the special-status plant species evaluated (slightly less than 2 acres for Alternative 4 versus less than 0.5 acre for Alternatives 2 and 3), but there would be no substantial difference in effects across the action alternatives.

For Impact 4.13-2, the effect would be adverse when considering the NEPA indicator for all three action alternatives. This impact is specific to a NEPA analytical indicator and is not responsive to a CEQA criteria. No CEQA determination of effect is provided. The potential for adverse effects associated with the introduction and spread of invasive plants would be slightly greater for Alternative 2 because of the greater total construction disturbance area, approximately 21 acres, versus approximately 18 acres for Alternative 3 and 15 acres for Alternative 4.

Table 4.13-1 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.13-1: Disturbance or Loss of Federally Listed, Forest Service Sensitive, and Other Special-Status Botanical Species	Identify and disclose impacts to any federally listed threatened and endangered species, Forest Service Region 5 sensitive species, and species of local concern present in the study area	No effect	Adverse under NEPA; may impact individuals but is not likely to cause a trend toward federal listing or loss of viability; less than significant under CEQA	Adverse under NEPA; may impact individuals but is not likely to cause a trend toward federal listing or loss of viability; less than significant under CEQA Similar to Alternative 2	Adverse under NEPA; may impact individuals but is not likely to cause a trend toward federal listing or loss of viability; less than significant under CEQA Greater than under Alternatives 2 and 3
	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 Similar to Alternative 2	Adverse under NEPA; less than significant under CEQA Greater than under Alternatives 2 and 3
	Threaten to eliminate a plant community or reduce the number or restrict the range of a rare or endangered plant	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Similar to Alternative 2	Adverse under NEPA; less than significant under CEQA Greater than under Alternatives 2 and 3
4.13-2: Result in the Introduction or Spread of Invasive Plant Species	Identify design criteria and BMPs (including noxious weed design features) to avoid the spread of noxious or other undesirable weed species and to manage existing populations toward eradication or acceptable levels when eradication is not realistic	No effect	Adverse under NEPA	Adverse under NEPA Less than under Alternative 2	Adverse under NEPA Less than under Alternatives 2 and 3

4.13.4 Cumulative Effects

4.13.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative effects analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope used for this analysis of cumulative effects on botanical resources is the Bear Creek Watershed, Squaw Creek hydrologic unit code (HUC) 12, and the portion of upper middle Truckee River HUC-12 near where Bear Creek and Squaw Creek flow into the Truckee River. A HUC is a U.S. Geological Survey (USGS) developed designation for watersheds and provides a mechanism to split larger watersheds into smaller units. The larger the HUC number, the smaller the portion of a watershed area included in the HUC. The complete Squaw Creek and middle Truckee River watersheds cover a larger area than would be appropriate for this cumulative impact analysis. Use of the HUC-12 designations encompasses a portion of the larger Squaw Creek and middle Truckee River watersheds appropriate for evaluating past, present, and reasonably foreseeable future projects with a reasonable potential to interact with the action alternatives on a cumulative basis related to effects on botanical resources. This is the same spatial scope used for the analysis of cumulative wetland impacts (see Section 4.15, "Wetlands"), which is appropriate given that the eight special-status botanical species that might occur in the project area are associated with riparian and mesic habitats. This is also a reasonable area to assess the potential for the cumulative spread of invasive plant species. Current resource conditions are used to represent the composite of past actions. The area encompassing the cumulative spatial scope of the analysis 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 botanical resources in cumulative analysis area include logging, grazing, fuels management, recreational development and activities, urban and commercial development, and right-of-way maintenance and operation activities.

The temporal scope typically includes the construction period (6–8 months) as well as the operational period of the gondola (winter season); however, for botanical resources, the temporal scope for reasonably foreseeable future actions is more broadly defined because disturbance and/or loss of vegetation or special-status botanical species 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 botanical species habitat and landscape patterns that may influence the distribution and abundance of botanical species, including special-status plants and invasive plants, within the gondola project area and surrounding watersheds.

Any present or reasonably foreseeable future projects within the spatial scope of the analysis that have the potential to affect botanical resources are listed below. Potential impacts associated with these projects to botanical resources include disturbance or loss of individuals or populations of special-status botanical species and contributing to the spread of invasive plant species.

Project	Potential impacts
Alpine Meadows Master Development Plan	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
Village at Squaw Valley Specific Plan	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
Squaw Valley Red Dog Lift Replacement	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
Timberline Twister	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
Alpine Meadows Hotwheels Lift Replacement	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
Caldwell property (White Wolf) development	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
General development in Olympic Valley	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
General development in Alpine Meadows	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
Alpine Sierra subdivision	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species
Truckee River Corridor Access Plan	Possible disturbance/loss of special-status botanical species and contribution to the spread of invasive plant species

Alternative 1 – No Action Alternative

Under Alternative 1 – No Action Alternative, there would be no new construction, and therefore, no project-related disturbance to vegetation or special-status botanical species. There would be no contribution to an existing cumulative effect on special-status botanical species.

Alternative 2

Given the rarity of many of the special-status botanical species in the region, the existing cumulative condition is adverse. The gondola project only has the potential to affect scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss. These species are all associated with riparian and mesic habitats and are the only special-status botanical species with potential to occur in the project study area. Therefore, only reasonably foreseeable future projects that would also affect these species or their habitat would have the potential to interact on a cumulative basis with the gondola project. All the reasonably foreseeable future projects listed above, except the two lift replacement projects, have some potential to affect riparian and mesic habitats, and therefore could affect potential habitat for the eight special-status botanical species considered. It is assumed that the lift replacement projects would have sufficient flexibility in project design to avoid effects on riparian and mesic habitats. Implementation of the reasonably foreseeable future

projects considered here would all be subject to environmental review and laws and regulations limiting effects on special-status botanical species. Although past projects may have had an adverse effect on special-status botanical species, as evidenced by the rarity of many of these species and the limited availability of potential habitat, reasonably foreseeable future projects would be subject to laws and regulations such as NEPA, CEQA, ESA, CESA, and Section 404 of the CWA. Reasonably foreseeable future projects would be expected to avoid and/or compensate for effects on special-status botanical species consistent with these laws, minimizing the potential for an ongoing adverse cumulative effect. As described above in the discussions of Impact 4.13-1 (Alt. 2), with implementation of applicable RPMs, Alternative 2 would have little to no effect on special-status botanical species. Therefore, Alternative 2 would not make a considerable contribution to any cumulative effect related to special-status botanical species.

Past projects and activities have resulted in the introduction and spread of various invasive plant species in the project region, resulting in habitat degradation and other adverse effects on biological resources. The current presence and spread of invasive plant species in the project region reflects an adverse cumulative condition resulting from past projects. All of the reasonably foreseeable future projects in the spatial scope of this cumulative analysis have the potential to continue this trend by introducing and spreading invasive plant species during project construction and making project sites more susceptible to invasive plant infestations because of construction related ground disturbance. However, there are current policies, regulations, and programs in place that would minimize the potential for the further spread of invasive plant species and the introduction of new species. Implementing Alternative 2 also has the potential to introduce and spread invasive plant species during project construction and through ground disturbance. Nearby source populations could passively colonize disturbed ground or attach to personnel or equipment and be transported to the site from an infested area. Soil, vegetation, and other materials transported to the project area from off-site sources for BMP, revegetation, or fill for project construction could contain invasive weed seeds or plant material that could become established in the project area. Additionally, invasive plant species currently present in or near the project area have the potential to be spread by construction disturbances. However, RPMs included in the project design would be implemented to avoid and minimize the introduction and spread of invasive species. As described above in the discussions of Impact 4.13-2 (Alt. 2), with implementation of these RPMs, Alternative 2 would have little to no effect on the introduction and spread of invasive plant species. Therefore, Alternative 2 would not make a considerable contribution to any existing cumulative effect related to invasive plant species.

Alternatives 3 and 4

Potential effects of Alternatives 3 and 4 related to special-status botanical species and invasive plant species would be similar to those described for Alternative 2. As described above, the potential for adverse effects would be slightly greater for Alternative 4 than for Alternatives 2 and 3 because of greater disturbance of land covers considered potential habitat for scalloped moonwort, common moonwort, upswept moonwort, Mingan moonwort, western goblin, Santa Lucia dwarf-rush, Bolander's bruchia, and Blandow's bog-moss (slightly less than 2 acres for Alternative 4 versus less than 0.5 acre for Alternatives 2 and 3). The potential for adverse effects associated with the introduction and spread of invasive plants would be slightly greater for Alternative 2 because of the greater total construction disturbance area, approximately 21 acres, versus approximately 18 acres for Alternative 3 and 15 acres for Alternative 4. The potential for adverse effects for each alternative also reflects the degree to which that alternative would contribute to cumulative effects. Overall, for the same reasons discussed for Alternative 2, Alternatives 3 and 4 would not make a considerable contribution to an existing cumulative effect related to special-status botanical species or invasive plant species in the spatial-scope for the cumulative analysis.

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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 2019a);
- Aquatic Resources: Biological Evaluation for Fish, Amphibians, Reptiles, and Their Habitat (U.S. Forest Service 2019b);
- Biological Evaluation for Terrestrial Wildlife: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019c);
- Biological Evaluation-Biological Assessment of Botanical Species: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019d);
- Management Indicator Species Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019e);
- Migratory Landbird Conservation Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019f); and
- Riparian Conservation Objectives Report: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019g).

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 the locations originally proposed for each Gazex tube, shelter, and gas transfer pipe (HDPE pipe). (Note, as discussed in greater detail in Chapter 1"Introduction" of this Final EIS/EIR, after the release of the Draft EIS/EIR the applicant removed all Gazex components from the project. The land areas studied for the Gazex, however, are still shown on the exhibits and acreages associated with survey areas in this chapter to indicate all locations where field data were collected.) 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**

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		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 tremuloide*s 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 locations previously proposed for Gazex facilities. Although the Gazex facilities have been removed from the project (see the first page of Chapter 1, "Introduction," Volume 1), the entire area surveyed is reflected to indicate all locations where field data were collected. A wider gondola 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 locations previously proposed for 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.

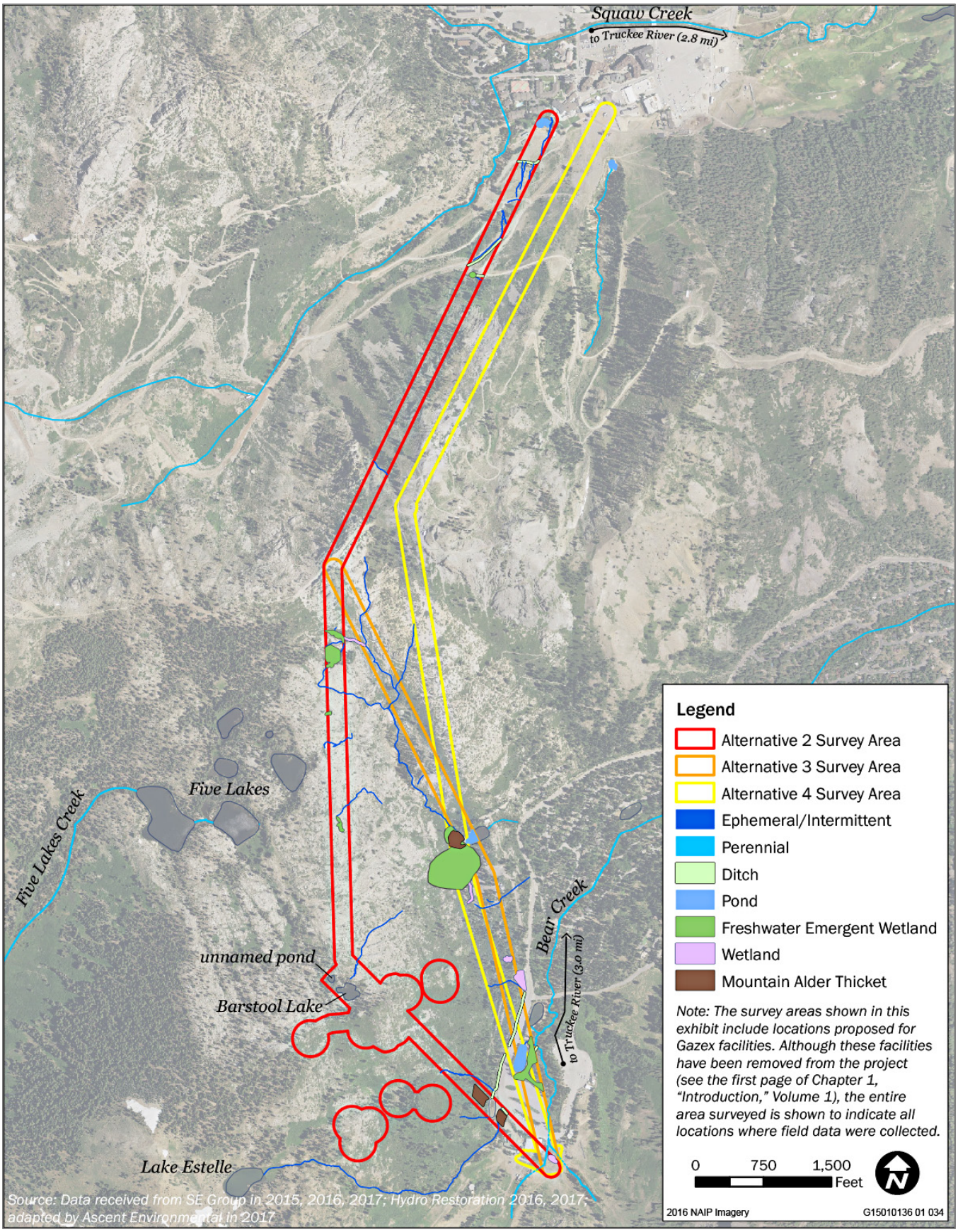

Exhibit 4.14-1 Aquatic Resources in the Study Area

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 2019g).

Management Indicator Species

The MIS report prepared for the project (U.S. Forest Service 2019e) 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 2019e

Critical Habitat

Sierra Nevada yellow-legged frog (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" (PCEs). 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.

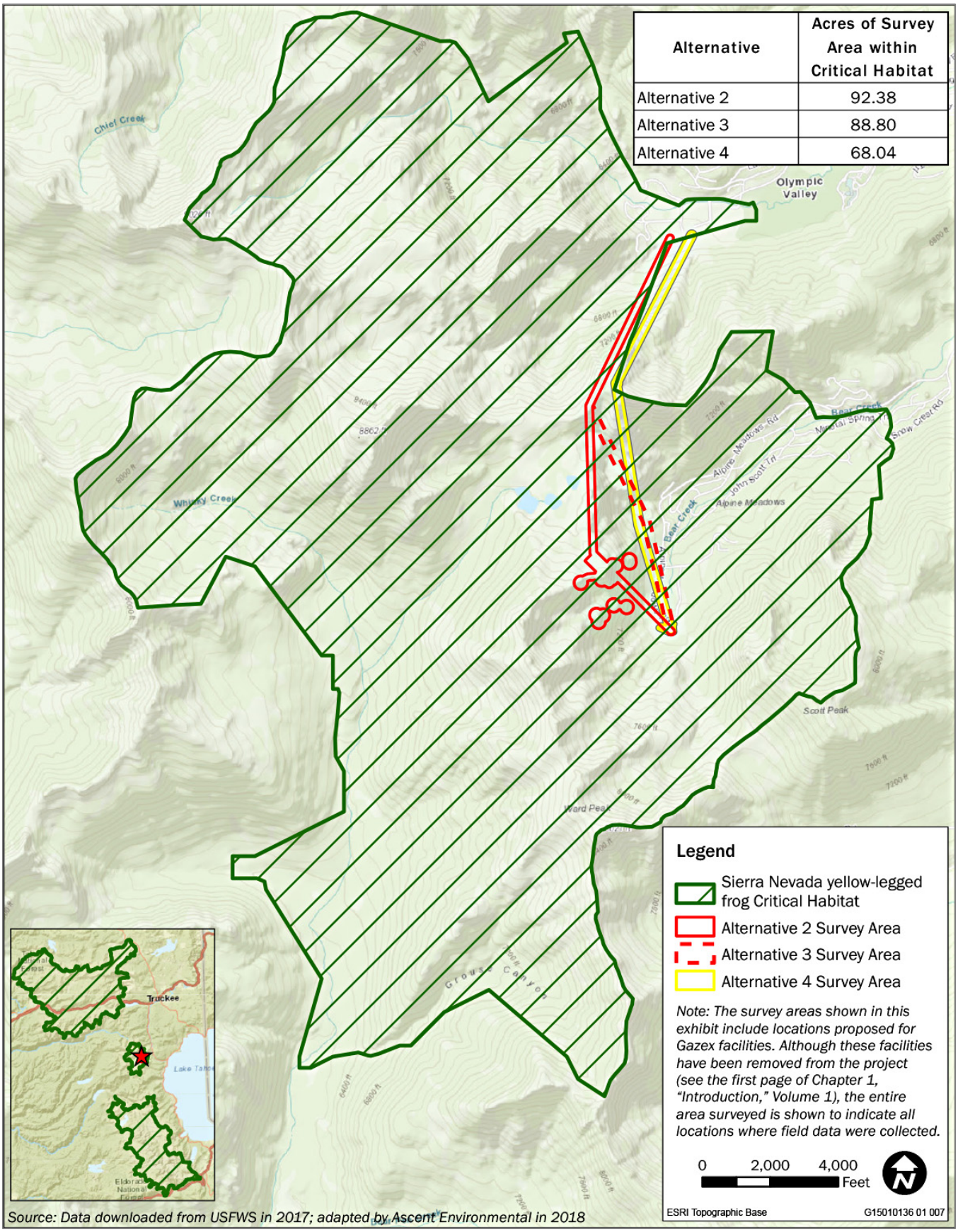

Exhibit 4.14-2 Sierra Nevada Yellow-Legged Frog Critical Habitat in the Study Area

(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 and are not expected to occur (for more information on these species and the potential to occur on the project site, see the Biological Evaluation for Terrestrial Wildlife: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019c) and the Biological Evaluation-Biological Assessment of Botanical Species: Squaw Valley-Alpine Meadows Base-to-Base Gondola Project (U.S. Forest Service 2019d)):

- 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, and mid-stations 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						0.20				0.28		0.99		0.90	2.37
	Temporary Ground Disturbance			0.03			0.05				0.16					0.24
	Alt 2 Total	*0.08*		*0.11*			*1.59*	*0.39*		*0.15*	*0.98*		*1.42*	*0.02*	*1.69*	*6.45*
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			<0.01			0.09				0.03		1.20		0.34	1.66
	Temporary Ground Disturbance		0.27	0.04									0.08			0.39
	Alt 4 Total		*1.11*	*0.22*	*0.11*		*0.09*			*0.30*	*0.03*		*1.39*		*0.57*	*3.82*

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						0.28			0.25	0.72	0.02	0.74		0.52	2.53
	Temporary Ground Disturbance			0.13	0.11		0.51				1.80				0.61	3.15
	Alt 2 Total		*2.93*	*1.42*	*0.32*		*1.25*			*0.34*	*4.53*	*0.47*	*2.19*		*1.62*	*15.08*
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			0.32			0.25	0.82		0.74		0.86	3.51
	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*	*1.74*			*0.42*	*3.69*		*2.22*		*1.41*	*14.80*
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			<0.01		0.37		<0.01				0.65	1.24
	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*	*1.51*	*0.21*	*1.33*		*1.84*		*1.12*	*0.04*	*1.41*	*10.71*

*Totals may not sum because of independent rounding, Acreages reflect adjustments for the removal of Gazex from the project between the Draft and Final EIS/EIRs.

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 on wildlife, particularly the Sierra Nevada yellow-legged frog, including noise impacts (helicopters, ATVs), 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 Final 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 Final 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. 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. 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. 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. 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. 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. 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-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-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 3.95 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 1.14 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	0.11	0.21
		Rock and Talus	0.01	0.29	0.30
		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***	***0.61***	***1.14***
Alt 2 Total			***2.25***	***2.61***	***4.86***
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
	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***

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 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

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 105-millimeter (mm) Howitzer cannon. Installation of the proposed gondola would necessitate changes to Alpine Meadows' snow safety and avalanche hazard mitigation program. Alpine Meadows has seven 105-mm Howitzer targets along *The Buttress.* Under Alternative 2, direct artillery or fragmentation associated with use of these targets has the potential to damage new gondola infrastructure. Operation of the gondola under Alternative 2 therefore would require the removal of these artillery targets. Without these targets, avalanche mitigation would still be accomplished with the use of hand charges and Avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan.

Shrapnel, associated with artillery, was found within the survey area, including Barstool Lake and the surrounding area. With the removal of the seven target sites in *The Buttress* area, there would be a reduction in shrapnel in the 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).

Under Alternative 2, the removal of the seven 105 mm Howitzer targets would result in only minor changes from existing conditions, with the primary difference being that in these areas, one explosive delivery system that generates metal shrapnel (105 mm Howitzer) would be replaced by another explosive delivery system (hand charges and Avalaunchers) that does not.

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 3.95 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 1.14 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-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-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-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 primary constituent element (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-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-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 3.85 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 1.14 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 3.85 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 1.14 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-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-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-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-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 3.95 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-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-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-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 2019e) 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 2019e]). 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 Final 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. 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 2, 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 2019e).

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 3.95 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, and rock blasting. 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 seven 105 mm Howitzer targets that would be removed under Alternative 2 are in an area where these species are not expected to occur. Regardless, the removal of these seven Howitzer targets would result in only minor changes from existing conditions, with the primary difference being that in these areas, one explosive delivery system that generates metal shrapnel (105 mm Howitzer) would be replaced by another explosive delivery system (hand charges and Avalaunchers) that does not.

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.

Any changes in avalanche mitigation operations would occur only during the winter months, outside of the typical nesting season, and thus would not have an effect on nursery or breeding activity. 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-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-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 of Alternative 3 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 during surveys conducted on July 20, August 10–11, and September 30, 2017. 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 4.21 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.

Installation of the proposed gondola would necessitate changes to Alpine Meadows' snow safety and avalanche hazard mitigation program. Currently, avalanche mitigation at Alpine Meadows is managed using remote artillery (105-mm Howitzer), Avalaunchers, and hand shot placements. Alpine Meadows has several 105-mm Howitzer targets along *The Buttress.* Under Alternative 3, indirect shrapnel from two of the targets has the potential to damage new gondola infrastructure. Operation of the gondola under Alternative 3 therefore would require the removal of these artillery targets. Without these targets, avalanche mitigation would be accomplished with the use of hand charges and Avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. Although two targets would be removed, the snow safety and avalanche hazard mitigation program would be similar to existing conditions. For these two target locations, one explosive delivery system that generates metal shrapnel (105 mm Howitzer) would be replaced by another explosive delivery system (hand charges and Avalaunchers) that does not.

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 4.21 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 1.14 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 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 (4.21 acres) compared to Alternative 2 (3.95 acres) 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-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-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-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-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-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 4.11 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 4.11 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 acre) than Alternative 2 (0.43 acre), 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-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-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-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-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-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 4.21 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-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-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-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 2019e) 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 2019e]).

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. 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 2019e).

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 4.21 acres of upland land cover habitat due to the construction of the project elements (Alternative 2 removes up to 3.95 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.

The two 105 mm Howitzer targets that would be removed under Alternative 3 are in an area where these species are not expected to occur. Regardless, the removal of these two Howitzer targets would result in only minor changes from existing conditions, with the primary difference being that in these areas, one explosive delivery system that generates metal shrapnel (105 mm Howitzer) would be replaced by another explosive delivery system (hand charges and Avalaunchers) that does not.

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.

Any changes in avalanche mitigation operations would occur only during the winter months, outside of the typical nesting season, and thus would not have an effect on nursery or breeding activity. 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 could potentially 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 to 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-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-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 these 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 2.29 acres of upland land cover habitat due to the construction of the project elements. Alternative 4 would directly affect 10.26 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 acre), but less than Alternative 3 (0.53 acre). 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.

Installation of the proposed gondola would necessitate changes to Alpine Meadows' snow safety and avalanche hazard mitigation program. Currently, avalanche mitigation at Alpine Meadows is managed using remote artillery (105-mm Howitzer), Avalaunchers, and hand shot placements. Alpine Meadows has seven 105-mm Howitzer targets along *The Buttress*. Under Alternative 4, indirect shrapnel from two of the targets has the potential to damage new gondola infrastructure. Operation of the gondola under Alternative 4 therefore would require the removal of these artillery targets. Without these targets, avalanche mitigation could still be accomplished with the use of hand charges and Avalaunchers, which are authorized under the current Ski Area Permit and the Alpine Meadows Operating Plan. Although two targets would be removed, the snow safety and avalanche hazard mitigation program would be similar to existing conditions. For these two target locations, one explosive delivery system that generates metal shrapnel (105 mm Howitzer) would be replaced by another explosive delivery system (hand charges and Avalaunchers) that does not.

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 2.29 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 10.26 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 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 (2.29 acres) compared to Alternative 2 (3.95 acres) or Alternative 3 (4.21 acres) and has a short-term alteration or degradation of upland cover habitat of 10.26 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-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-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-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-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-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

2.06 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 2.06 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 0.46 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-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-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-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-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-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 2.29 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 10.26 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-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-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-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 2019e) 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 2019e]) 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. 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 2019e).

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 2.29 acres of upland land cover habitat due to the construction of the project elements (Alternative 2 removes up to 3.95 acres and Alternative 3 removes up to 4.21 acres). Alternative 4 would also directly affect these land cover types due to short-term changes in habitat quality affecting 10.26 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.

The two 105 mm Howitzer targets that would be removed under Alternative 4 are in an area where these species are not expected to occur. Regardless, the removal of these two Howitzer targets would result in only minor changes from existing conditions, with the primary difference being that in these areas, one explosive delivery system that generates metal shrapnel (105 mm Howitzer) would be replaced by another explosive delivery system (hand charges and Avalaunchers) that does not.

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 4 alignment is located at the edge of the ECA, toward one of the end points. Implementing Alternative 4 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 4 is further east than Alternative 2 and thus also further to Barstool Lake and the Five Lakes. Alternative 4 is not expected to have an effect on these lakes that provide suitable breeding habitat for SNYLF. Alternative 4 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 4 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.

Any changes in avalanche mitigation operations would occur only during the winter months, outside of the typical nesting season, and thus would not have an effect on nursery or breeding activity. 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 4 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 4 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 4 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 4 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 4 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 4 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 4 would not prohibit the passage of wildlife between the forested areas west and east of KT-22.

Without proper implementation of RPMs, Alternative 4 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).

Significance after Mitigation

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	10.26
Permanent ground disturbance	3.95	4.21	2.29
Total	**18.23**	**15.38**	**12.55**
Land Cover Disturbance or Loss in Critical Habitat			
Temporary construction disturbance	14.03	10.87	6.85
Permanent ground disturbance	3.85	4.11	2.06
Total	**17.88**	**14.98**	**8.91**
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**
Upland Habitat Disturbance[3]			
Short-term change in habitat quality	3.72	3.11	1.34
Permanent loss in habitat quantity	1.14	0.42	0.26
Total	**4.86**	**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 Final EIS/EIR for a detailed breakdown of land cover disturbance and loss.

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

[3] See Table 4.14-8 in this Final 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
	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 gondola infrastructure) on wildlife, particularly the Sierra Nevada yellow-legged frog, including noise impacts (helicopters, ATVs), 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

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
4.14-2: 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
	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 gondola infrastructure) on wildlife, particularly the Sierra Nevada yellow-legged frog, including noise impacts (helicopters, ATVs), 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

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
	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 gondola infrastructure) on wildlife, particularly the Sierra Nevada yellow-legged frog, including noise impacts (helicopters, ATVs), 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
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.

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
	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.
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 gondola infrastructure) on wildlife, including noise impacts (helicopters, ATVs), 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

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
	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) 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
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 3.95 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 1.14 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 2019e) 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 2019e). 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 3.95 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 3.95 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 3.95 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 4.21 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 3.95 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 1.14 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 2019e) 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 2019e). 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 4.21 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 3.95 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 4.21 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 3.95 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 4.21 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 3.95 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 2.29 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 10.26 acres of land cover,

Implementation of Alternative 3 would result in conversion of up to 4.21 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 3.95 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 2.06 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 1.14 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 2019e) 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 2019e). 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 2.29 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 10.26 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 4.21 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 3.95 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 2.29 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 10.26 acres of upland land cover associated with temporary disturbances such as vegetation clearing and other temporary ground disturbances.

Alternative 3 would remove up to 4.21 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 3.95 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 2.29 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 10.26 acres of land cover.

Implementation of Alternative 3 would result in conversion of up to 4.21 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 3.95 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.

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4.15 WETLANDS

This section describes waters of the United States and waters of the state, including wetlands, within the context of the statutes, regulations, and policies that regulate these resources. Section 4.12, "Vegetation," discusses mesic and aquatic land cover types as vegetation and habitat types and as sensitive natural communities. Section 4.14, "Wildlife and Aquatics," discusses aquatic land cover types as habitats for common and special-status species. Federal, state, and local regulations related to waters are summarized. The potential for waters to be affected by the action alternatives is fully assessed.

4.15.1 Affected Environment

4.15.1.1 ENVIRONMENTAL SETTING

The project area is characterized by high altitude granitic bedrock demarcated by ephemeral headwater drainages, primarily conveying seasonal snowmelt. The survey area for wetlands and other waters consists of a 100-foot-wide area on either side of the centerline of each action alternative. Waters in the survey area were mapped by Hydro Restoration 2016 and 2017 and supplemented by Ascent Environmental during field surveys (Exhibit 4.15-1). Waters in the survey area are categorized as lacustrine, palustrine, and riverine features (Table 4.15-1) (Hydro Restoration 2016, 2017). As described below, the wetlands and waters identified in Exhibit 4.15-1 differ from maps of habitats referenced in other sections, such as Section 4.12, "Vegetation," which classifies vegetation to the group or alliance level according to *A Manual of California Vegetation* (Sawyer et al. 2009) and, for unvegetated and human-modified areas, or vegetation assemblages that could not be refined to the alliance level, classifies habitat types according to the California Wildlife Habitat Relationship system (CDFW 2018). Wetlands were delineated based on wetland indicators of hydrophytic vegetation, hydric soils, and wetland hydrology, and waters were delineated based on their ordinary high-water mark. In accordance with U.S. Army Corps of Engineers (USACE) standards, wetlands and waters are classified according to the national wetland classification system (FGDC 2013). Therefore, the classifications and nomenclature used in Section 4.12, "Vegetation," and this section are not consistent in every instance. Additionally, this section relies on data provided by Hydro Restoration during its wetland assessment, whereas Section 4.12 relies on vegetation mapping data provided by EcoSynthesis. These are different datasets that serve different objectives. Exhibit 4.15-1 identifies locations of 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 4.15.2.2, "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 mesic or aquatic habitat 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. Exhibit 4.15-1, and acreage values provided in Table 4.15-1 and elsewhere in this section, correspond to an initial estimate of the portions of aquatic habitats in the survey 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.

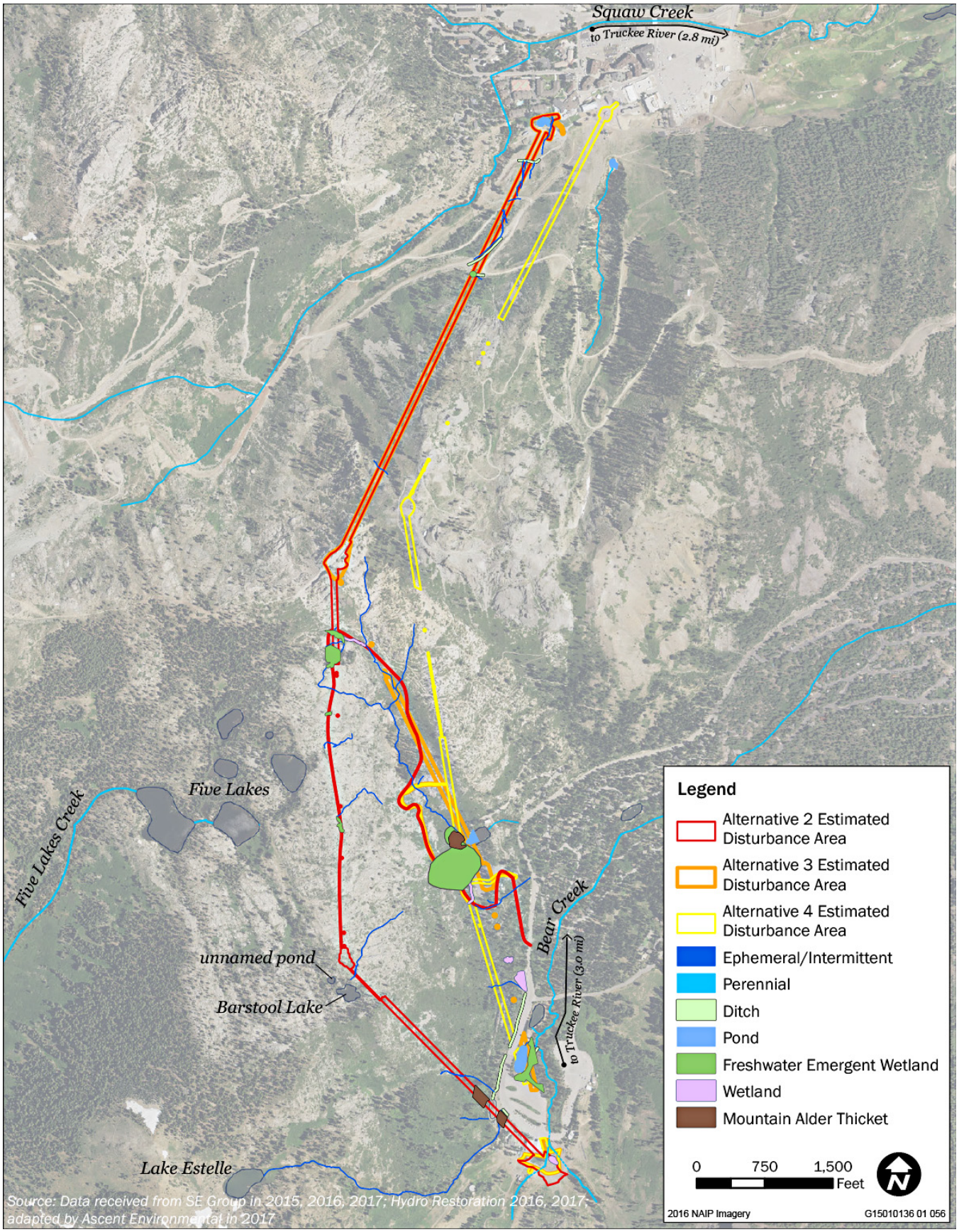


Exhibit 4.15-1 Wetland Habitats

Table 4.15-1 Initial Estimate of Wetlands and Other Waters in the Project Study Area

Action Alternative	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	0.04	0.25	0	0	0.89	1.40
	Alpine Meadows SUP Area	0.10	0.07	0	0	0.64	0.07	0	0.89
	Total*	0.10	0.30	0.04	0.25	0.64	0.07	0.89	2.29
3	Private	0	0.26	0.04	0.51	0.14	0.88	0.16	1.98
	Alpine Meadows SUP Area	0.35	0.01	0.04	0.52	0	0.16	0.71	1.78
	Total*	0.35	0.27	0.08	1.03	0.14	1.04	0.87	3.76
4	Private	0	0.04	0	0.02	0.48	2.53	0.07	3.14
	Alpine Meadows SUP Area	0.35	0.01	0.02	0.64	0	0.07	0.37	1.47
	Total*	0.35	0.05	0.02	0.66	0.48	2.60	0.44	4.61

*Totals may not sum because of independent rounding.

**Acreages reflect results of wetlands and waters surveys (rather than separate vegetative habitat mapping) as described above in the first paragraph of Section 4.15.1.1.

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

Riverine Features

The Squaw Valley Ski Area (Squaw Valley) and Alpine Meadows Ski Area (Alpine Meadows), being separated by a mountainous ridge, are hydrologically separate entities. Streams in the Squaw Valley area drain into Squaw Creek, which is a tributary to the Truckee River. Streams in the Alpine Meadows area drain to either Bear Creek, which is a tributary to the Truckee River, or Ward Creek, which is a tributary to Lake Tahoe. However, no part of the project area is within the Ward Creek watershed.

Riverine features in the survey area consist of ephemeral, intermittent, and perennial streams, and ditches. Several unnamed seasonal (ephemeral and intermittent) tributary streams cross the survey 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 survey area includes areas of cover by mosses (and non vascular plants) growing on sand or bedrock, and areas of hydrophytic vascular plants (EcoSynthesis 2017).

Perennial streams cross the lower portion of the northern face of the alignments on Squaw Valley and southern face along Alpine Meadows Road. Several roadside ditches were also mapped as riverine features near existing roadways. Many of the features are ditches dug in uplands that concentrate flow off roadways.

Lacustrine Features

Lacustrine habitats within the study area consist of constructed open water ponds. The constructed ponds include Cushing Pond at Squaw Valley, Caldwell Pond on private property, and a detention pond near the base of Alpine Meadows. Although it is unlikely that constructed ponds, particularly Cushing Pond, would fall under the jurisdiction of Section 404 of the CWA or the Porter-Cologne Water Quality Control Act, they are included in this section out of an abundance of caution and because they also could fall under the jurisdiction of Section 1602 of the California Fish and Game Code. Naturally occurring ponds occur adjacent to, but not within the wetlands study area and are not included in Table 4.15-1. Adjacent natural ponds include Barstool Lake, which is located northwest of the base of Alpine Meadows, and just south of the Alpine Meadows mid-station proposed under Alternative 2, and an unnamed pond adjacent to Barstool Lake. Other naturally occurring lacustrine features in the project vicinity include Five Lakes, which is a cluster of

five small lakes located west of the Alternative 2 alignment. Naturally occurring ponds are addressed in Section 4.14, "Wildlife and Aquatics," as habitat for Sierra Nevada yellow-legged frog and long-toed salamander. Lacustrine features are classified as "freshwater ponds" in Section 4.12, "Vegetation."

Palustrine Features

Palustrine features consist of mountain alder thicket (a palustrine scrub-shrub habitat), freshwater emergent wetland, a generic 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. Areas mapped as "wetland" in this section are not addressed in Section 4.12, "Vegetation," because they were smaller than the minimum mapping unit used in the vegetation mapping effort and could not be clearly separated into distinct vegetation alliances. Therefore, they were included within the surrounding vegetation type. Palustrine features in the project area are generally located along topographic benches in seasonal streams and at the edges of ponds and perennial streams (Hydro Restoration 2016, 2017).

Palustrine scrub-shrub habitat dominated by mountain alder (*Alnus incana*), adjacent to Bear Creek, was identified within the study area, on the southern segment of the gondola alignments prior to the Alpine Meadows base terminal. This palustrine scrub-shrub habitat is classified as mountain alder thicket shrubland alliance in Section 4.12, "Vegetation." Areas adjacent to Bear Creek exhibit typical alpine riparian floodplain scrub-shrub vegetation dominated by mountain alder with some willow (Hydro Restoration 2016, 2017). Some areas of riparian scrub habitat include vegetation that is intermediate between upland shrubland types, and the mountain alder thickets that are consistently associated with presence of surface water or saturated soil for a portion of the year. These vegetation types occur in riparian habitats but are not wetlands because they lack hydric soils, lack wetland hydrology, and are not dominated by hydrophytic plant species. These areas are identified as mesic and riparian shrubland in Section 4.12, "Vegetation."

Freshwater emergent wetlands are characterized by herbaceous wetland vegetation. Dominant species include sedges (*Carex leporinella* and *heteroneura*), rushes (*Juncus chlorocephalus* or *J. bufonius*), grasses (*Agrostis exarata* and/or *humilis*), and forbs (e.g. *Oreostemma alpigenus*). In one seasonally ponded area, some woody species are also present (*Salix eastwoodiae*, *Vaccinium* sp.). Freshwater emergent wetlands occur in slight topographic depressions in tributary drainages in the study area. A *Carex* wetland is present at the fringe of a perennial pond near the southern end of the central segment.

4.15.1.2 REGULATORY SETTING

Federal

Section 404 of the Clean Water Act

Section 404 of the federal CWA requires 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. Fill material is material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land or changing the bottom elevation of any portion of a water of the United States. Waters of the United States include navigable waters of the United States; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; relatively permanent tributaries to any of these waters, and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of CWA pending USACE verification.

Section 401 Water Quality Certification

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

Executive Order 11990, Protection of Wetlands

Executive Order (EO) 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.

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

The *Tahoe National Forest Land and Resource Management Plan* (LRMP) (U.S. Forest Service 1990) came into effect in 1990 and was amended by the Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA) in 2004 (U.S. Forest Service 2004). The LRMP and SNFPA are collectively referred to as the Forest Plan. Forest-wide direction is presented in goals and objectives and in standards and guidelines (S&Gs) in the Forest Plan. Area-specific direction is detailed in the management direction guides for each of the 106 management areas of TNF. As part of the analysis conducted for this Final EIS/EIR, specific S&Gs identified in the Forest Plan related to wetlands were applied and evaluated for consistency.

State

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 California Department of Fish and Wildlife (CDFW) under Sections 1600 et seq. of the California Fish and Game Code (FGC). 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 final 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.

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

- **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.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.6.** 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.7.** 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.8.** 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.

Wetland

- **Policy 6.B.1.** The County shall support the "no net loss" policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

- **Policy 6.B.2.** The County shall require new development to mitigate wetland loss in both regulated and nonregulated wetlands to achieve "no net loss" through any combination of the following, in descending order of desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation banking program that provides the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.

- **Policy 6.B.3.** The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.

- **Policy 6.B.5.** The County shall require development that may affect a wetland to employ avoidance, minimization, and/or compensatory mitigation techniques. In evaluating the level of compensation to be required with respect to any given project, (a) on-site mitigation shall be preferred to off-site, and in-kind mitigation shall be preferred to out-of-kind; (b) functional replacement ratios may vary to the extent necessary to incorporate a margin of safety reflecting the expected degree of success associated with the mitigation plan; and (c) acreage replacement ratios may vary depending on the relative functions and values of those wetlands being lost and those being supplied, including compensation for temporal losses. The County shall continue to implement and refine criteria for determining when an alteration to a wetland is considered a less than significant impact under CEQA.

Squaw Valley General Plan and Land Use Ordinance

The *Squaw Valley General Plan and Land Use Ordinance* (SVGPLUO) was adopted in 1983 as part of Placer County code.

Section V, "Environmental Resources Element," Subsection F, "Streams and Waterways," establishes goals to restore already disturbed drainage areas and to prevent further disturbance and maintenance of riparian areas that have a direct effect on the ecology of streams, specifically relating to Sections 110, 115, 118, 121, and 139 of the SVGPLUO listed below.

Section 110 of the SVGPLUO addresses protection of watercourses, requiring that development not adversely affect the stream environment zone.

Section 115 of the SVGPLUO addresses drainage/water quality, including Section 115.14 requiring drainage systems to prevent water quality degradation; limiting work within the 100-year floodplain aside from actions to restore areas previously modified by channelization, fill, or other human activities (Section 115.20); and Section 115.23 that adds additional beneficial function requirements on restoration.

Section 118 of the SVGPLUO addresses erosion control and requires a sedimentation and erosion control plan (Section 118.12) including both construction and long-term measures (Section 118.14) as part of grading, drainage, or improvement plans reviewed by the County DPW. It does not specify the types of measures to be used but recommends suitable measures and requires revegetation of all disturbed surfaces that will not be part of the approved final impervious surfaces (Section 118.18).

Section 121 of the SVGPLUO, requires that adequate space be provided for storage of snow, and considers that a functional area be 20 percent of the clearable area not including storage along public roads, and that storage may not be within the 100-year floodplain.

Section 139 of the SVGPLUO addresses setbacks, specifically requiring that all structures be located outside of the stream environment zone and 100-year floodplain, except as provided in Section 115.23. In areas where the floodplain has not been established, structures shall not be located within 100 feet of the center line of a stream or waterway (Section 139.14).

Alpine Meadows General Plan

The *Alpine Meadows General Plan* was approved by the Placer County Board of Supervisors on May 1, 1968. It establishes policies specific to Alpine Meadows that build on the general policies found in the *Placer County General Plan* and *Placer County Zoning Ordinance*, similar to the SVGPLUO. There are no specific objectives in the *Alpine Meadows General Plan* that are applicable to this section.

4.15.2 Analysis Methods

4.15.2.1 METHODS AND ASSUMPTIONS

Potential impacts on wetlands and waters resulting from project construction were determined by evaluating the project plans provided by the applicant in relation to the habitat characteristics of the project site, quantifying potential loss of mapped aquatic resources, and evaluating potential effects on wetlands and waters that could result from this loss.

Potential impacts of each action alternative on wetlands and waters were identified by overlaying GIS layers of proposed project components on the map of aquatic features identified by Hydro Restoration (2016 and 2017) in the study area. Any aquatic feature that overlapped with an area of proposed modification was considered to be directly affected by project construction. Temporary construction impacts would occur where waters would be disturbed, modified, or filled to construct new features but restored after construction to pre-project conditions. Permanent impacts on waters would occur when the project feature involves permanent fill or modification of aquatic features.

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.

4.15.2.2 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 habitats that may qualify as waters or wetlands. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Area of wetlands and other waters of the U.S. existent within the project area (acres/linear feet) **(Section 4.15.1.1, "Environmental Setting")**
- Disclosure of wetland functions and values within the project area **(Section 4.15.1.1, "Environmental Setting," and Impact 4.15-1)**

- Narrative description of wetland communities, classifications and disclosure of anticipated temporary and/or permanent impacts (acres/linear feet) **(Section 4.15.1.1, "Environmental Setting," and Impact 4.15-1)**

- Description of compliance with EO 11990, Protection of Wetlands **(Impact 4.15-1)**

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 waters and wetlands if it would:

- have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means **(Impact 4.15-1)**.

4.15.2.3 ISSUES NOT DISCUSSED FURTHER

All issues related to waters and wetlands are analyzed here.

4.15.3 Direct and Indirect Environmental Consequences

4.15.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.15-1 (Alt. 1): Loss and Degradation of Wetlands and Other Waters

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction, and therefore, no direct or indirect effects on wetlands or other waters of the United States, waters of the state, or areas regulated under FGC Section 1602. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, the Tahoe National Forest (TNF) and Placer County would not provide necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation and operation of new facilities. Therefore, there would be no fill, modification, or degradation of wetlands or other waters of the United States, waters of the state, or areas subject to FGC Section 1602.

NEPA Effects Conclusion

With no fill or degradation of waters, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no fill or degradation of waters, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.15.3.2 ALTERNATIVE 2

Impact 4.15-1 (Alt. 2): Loss and Degradation of Wetlands and Other Waters

Under Alternative 2, project implementation would result in the removal or fill of jurisdictional waters of the United States, including wetlands subject to USACE jurisdiction under the CWA, waters of the state, and areas subject to FGC Section 1602. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects would be **adverse** because loss of federally protected wetlands and waters would occur. Implementation of RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, and WQ-5 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because loss of federally protected wetlands and waters would occur. RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-34 through BIO-36, BIO-39, and BIO-40 would require that aquatic habitats are avoided to the extent feasible; an aquatic resources delineation report is verified by USACE and CDFW; compensatory mitigation is provided for unavoidable losses of wetlands and riparian habitats; and an MMRP is prepared, approved, and implemented. RPMs BIO-33 and WQ-5 would require that permits are obtained from the appropriate regulatory agency and all permit conditions are implemented. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Under Alternative 2, construction of the project would result in direct loss (through permanent fill) of approximately 0.05 acre of wetlands (wetlands category in Table 4.15-2), 0.25 acre of pond habitat (Cushing Pond), and 0.13 acre of riverine habitat consisting of perennial and ephemeral stream and roadside ditch (Table 4.15-2). It is important to note that many of the ditch features were originally created to distribute water safely adjacent to roadways (Hydro Restoration 2016, 2017).

Table 4.15-2 Alternative 2 Impacts on Habitats Currently Identified as Wetlands and Other Waters

Ownership	Impact Duration	Feature Type (acre)							Total*
		Riverine			Lacustrine	Palustrine			
		Perennial	Ephemeral	Roadside Ditch	Pond	Mountain Alder Thicket	Wetland	Freshwater Emergent Wetland	
Alpine Meadows SUP Area	Temporary	0.05	0.03	0	0	0.39	0	0	0.46
	Permanent	0.10	<0.01	0	0	0.0	0.05	0	0.15
Private	Temporary	0	0.07	0.01	0.09	0	<0.01	0.45	0.63
	Permanent	0	0.03	0	0.25	0	0	0	0.28
Total	**Temporary**	**0.05**	**0.10**	**0.01**	**0.09**	**0.39**	**<0.00**	**0.45**	**1.09**
	Permanent	**0.10**	**0.03**	**0**	**0.25**	**0**	**0.05**	**0**	**0.43**
	Grand Total*	**0.14**	**0.13**	**0.01**	**0.34**	**0.39**	**0.06**	**0.45**	**1.52**

*Totals may not sum because of independent rounding.

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

In addition to these direct losses, approximately 1.09 acres of wetlands and other waters would be temporarily disturbed during construction activities but would be restored to original contour and revegetated after construction, so there would be no loss of wetland functions following restoration. Implementation of RPMs to protect water quality, as described in Sections 4.16, "Soils, Geology, and Seismicity," and 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 revegetated. RPM BIO-30 also requires a plan that includes long-term erosion and sediment control measures, slope stabilization, and monitoring procedures to prevent indirect effects on wetlands following construction.

RPM BIO-26 requires that aquatic habitats are avoided to the extent feasible, and if they cannot be avoided, a delineation report be prepared to quantify the aquatic habitats in the area to be disturbed. All permanent impacts will be mitigated according to USACE's no-net-loss policy (i.e., no net loss in both function, value, and quantity). RPM BIO-35 also requires that a wetland report is submitted to USACE and CDFW for verification. RPM BIO-36 requires that compensation for loss of wetlands shall be provided by purchase of mitigation credits at a qualified mitigation bank, or constructed and/or restored at an off-site location acceptable to the regulatory agencies, or a combination thereof, and such that the constructed or restored wetland meets the no-net-loss requirement. The success of the replacement of the wetlands and riparian habitat shall be monitored according to RPM BIO-39 and achieve a no-net loss standard (RPM WQ-5). RPM WQ-5 also requires that permits shall be obtained from the appropriate agency and all permit conditions are implemented. A permit for fill of waters of the United States and water quality certification under CWA Sections 404 and 401 shall be obtained before any ground-disturbing activities. Waters that may be considered isolated and not subject to USACE jurisdiction may be regulated under the Porter Cologne Act and subject to water discharge requirement by the RWQCB. In addition, the streams and ponds, as well as the associated wetland and riparian habitats, may be regulated by CDFW under FGC Section 1602. A lake and streambed alteration agreement shall be obtained for any substantial diversion or obstruction to natural flow or alteration of the bed, channel, or bank.

Because the RPMs identified in this analysis consider protections for wetlands and minimize the destruction, loss, or degradation of wetlands to preserve and enhance their natural and beneficial values, Alternative 2 complies with EO 11990.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to wetlands and other waters under Alternative 2 would be **adverse** because construction activities would permanently fill 0.15 acre of potential waters and wetlands and would temporarily affect 0.46 acre of potential wetlands and waters on NFS lands. These effects would be mitigated through implementation of RPMs BIO-1, BIO-23 through BIO-26, BIO-33 through BIO-36, BIO-39, BIO-40, and WQ-5, which are related to protection of wetlands and riparian habitats, water quality, and soils. These RPMs require avoidance of aquatic habitats to the degree feasible, restoration of temporarily disturbed areas and compensation for unavoidable losses of wetlands and riparian habitats. They also require annual monitoring of restored or replacement habitats for the first 3 years then every 2 years for up to 10 years following revegetation/restoration. RPMs to protect water quality, as described in Sections 4.16, "Soils, Geology, and Seismicity," and 4.17, "Hydrology and Water Quality," (SOILS-1 through SOILS-12, WQ-1 through WQ-20) 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 revegetated. RPM BIO-30 also requires a plan that includes long-term erosion and sediment control measures, slope stabilization, and monitoring procedures to prevent indirect effects on wetlands following construction.

CEQA Determination of Effects

Alternative 2 would result in the permanent fill of 0.43 acre of potential waters and wetlands and would temporarily affect 1.09 acres of potential waters and wetlands. Under CEQA, and considering the CEQA criteria, this would be a significant impact. RPMs BIO-1, BIO-23 through BIO-26, BIO-33 through BIO-36, BIO-39, BIO-40, and WQ-5 would, among other actions, provide compensation at a no-net-loss standard for wetland and riparian habitats and require implementation of an MMRP and coordination with the appropriate regulatory agencies. RPMs to protect water quality, as described in Sections 4.16, "Soils, Geology, and Seismicity," and 4.17, "Hydrology and Water Quality," (SOILS-1 through SOILS-12, WQ-1 through WQ-20) 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 revegetated. RPM BIO-30 also requires a plan that includes long-term erosion and sediment control measures, slope stabilization, and monitoring procedures to prevent indirect effects on wetlands following construction. 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-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, SOILS-1 through SOILS-12, and WQ-1 through WQ-20 as mitigation measures reduces this significant impact to a less-than-significant level.

4.15.3.3 ALTERNATIVE 3

Impact 4.15-1 (Alt. 3): Loss and Degradation of Wetlands and Other Waters

Under Alternative 3, project implementation would result in the removal or fill of jurisdictional waters of the United States, including wetlands subject to USACE jurisdiction under the CWA, waters of the state, and areas subject to FGC Section 1602. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects would be **adverse** because loss of federally protected wetlands and waters would occur. Implementation of RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, and WQ-5 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because loss of federally protected wetlands and waters would occur. RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-34 through BIO-36, BIO-39, and BIO-40 would require that aquatic habitats are avoided to the extent feasible; a wetlands report is verified by USACE and CDFW; compensatory mitigation is provided for unavoidable losses of wetlands and riparian habitats; and an MMRP is prepared, approved, and implemented. RPMs BIO-33 and WQ-5 would require that permits are obtained from the appropriate regulatory agency and all permit conditions are implemented. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Under Alternative 3, the Alpine Meadows mid-station would be located further to the east, on private lands; this alteration would reduce the length of the gondola lift from approximately 13,000 feet under Alternative 2 to 12,600 feet under Alternative 3. Alternative 3 would result in permanent fill of more acreage of wetlands and waters than Alternative 2 and Alternative 4 (0.53 acre compared to 0.43 acre and 0.46 acre, respectively). Slightly more acreage of potential wetland and perennial stream habitat would be permanently lost because of the change in the project alignment for Alternative 3. Permanent impacts on ephemeral streams and ponds, however, would be the same under Alternative 2 and Alternative 3. Construction of Alternative 3 would result in direct loss (through permanent fill) of approximately 0.12 acre of palustrine wetlands, 0.25 acre of pond (Cushing Pond), and 0.16 acre of riverine habitats consisting of perennial and ephemeral stream and roadside ditch habitats (Table 4.15-3). None of the action alternatives would result in permanent loss of mountain alder thicket.

Table 4.15-3 Alternative 3 Impacts on Habitats Currently Identified as Wetlands and Other Waters

Ownership	Impact Duration	Feature Type (acre)							Total*
		Riverine			Lacustrine	Palustrine			
		Perennial	Ephemeral	Roadside Ditch	Pond	Mountain Alder Thicket	Wetland	Freshwater Emergent Wetland	
Alpine Meadows SUP Area	Temporary	0.06	<0.01	0.01	0.16	0	0	0.17	0.40
	Permanent	0.13	0	0	0	0	0.07	0	0.20
Private	Temporary	<0.01	0.07	0.01	0.17	0	<0.01	0.25	0.50
	Permanent	0	0.03	0	0.25	0	0	0.05	0.33
Total	**Temporary**	**0.06**	**0.07**	**0.02**	**0.33**	**0**	**<0.01**	**0.42**	**0.91**
	Permanent	**0.13**	**0.03**	**0**	**0.25**	**0**	**0.07**	**0.05**	**0.53**
	Grand Total*	**0.19**	**0.10**	**0.02**	**0.58**	**0**	**0.07**	**0.47**	**1.44**

*Totals may not sum because of independent rounding.

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

Temporary effects on wetlands and waters would total 0.91 acre under Alternative 3 as compared to 1.09 acres under Alternative 2 and 1.28 acres under Alternative 4. Alternative 3 would temporarily affect a greater amount of pond habitat and a similar amount of freshwater emergent wetland compared to Alternative 2. Alternative 3 would not affect mountain alder thicket, whereas Alternative 2 would temporarily disturb 0.39 acre of mountain alder thicket, and Alternative 4 would temporarily disturb 0.21 acre. Temporarily disturbed wetlands and waters would be restored to original contours and revegetated after construction so there would be no loss of wetland functions following restoration.

The same RPMs identified for Alternative 2 would be applied to Alternative 3 and would reduce the adverse effect of loss and degradation of wetlands and other waters by minimizing indirect effects of runoff and erosion and compensating for direct loss of habitat.

Alternative 3 likewise considers protections for wetlands and minimizes the destruction, loss, or degradation of wetlands to preserve and enhance their natural and beneficial values and, therefore, complies with EO 11990.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to wetlands and other waters under Alternative 3 would be **adverse** because construction activities would permanently fill approximately 0.53 acre of potential waters and wetlands and would temporarily affect 0.91 acre of potential waters. These effects would be mitigated through implementation of RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, SOILS-1 through SOILS-12, and WQ-1 through WQ-20, which are related to protection of wetlands and riparian habitats, water quality, and soils. These RPMs require avoidance of aquatic habitats to the degree feasible, restoration of temporarily disturbed areas, and compensation for unavoidable losses of wetlands and riparian habitats. They also require annual monitoring of restored or replacement habitats for the first 3 years then every 2 years for up to 10 years following revegetation/restoration.

CEQA Determination of Effects

Alternative 3 would result in the permanent fill of approximately 0.53 acre of potential waters and wetlands and would temporarily affect approximately 0.91 acre of potential waters and wetlands. Under CEQA, and considering the CEQA criteria, this would be a significant impact. This impact is slightly greater than that under Alternative 2, but the impacts are not materially different. RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, and WQ-5 would, among other actions, provide compensation at a no-net-loss standard for wetland and riparian habitats and require implementation of an MMRP and coordination with the appropriate regulatory agencies. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. The RPMs would be equally effective under Alternative 3 as under Alternative 2.

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-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, SOILS-1 through SOILS-12, and WQ-1 through WQ-20 as mitigation measures reduces this significant impact to a less-than-significant level.

4.15.3.4 ALTERNATIVE 4

Impact 4.15-1 (Alt. 4): Loss and Degradation of Wetlands and Other Waters

Under Alternative 4, project implementation would result in the removal or fill of jurisdictional waters of the United States, including wetlands subject to USACE jurisdiction under the CWA, waters of the state, and areas subject to FGC Section 1602. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects would be **adverse** because loss of federally protected wetlands and waters would occur. Implementation of RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, and WQ-5 would mitigate this effect. Under CEQA, and using the CEQA criteria, this impact would be **significant** prior to consideration of RPMs because loss of federally protected wetlands and waters would occur. RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-34 through BIO-36, BIO-39, and BIO-40 would require that aquatic habitats are avoided to the extent feasible; a wetlands report is verified by USACE and CDFW; compensatory mitigation is provided for unavoidable losses of wetlands and riparian habitats; and an MMRP is prepared, approved, and implemented. RPMs BIO-33 and WQ-5 would require that permits are obtained from the appropriate regulatory agency and all permit conditions are implemented. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Under Alternative 4, the gondola alignment connecting the base areas of Squaw Valley and Alpine Meadows would differ from that under Alternative 2; the Squaw Valley base terminal would be in a different location, and the Squaw Valley and Alpine Meadows mid-stations would be in different locations. Alternative 4 would result in permanent fill of slightly more wetlands and other waters than Alternative 2 and slightly less than Alternative 3. Approximately 0.34 acre of palustrine wetlands and 0.13 acre of other waters would be filled under Alternative 4 (Table 4.12-4). The amount of perennial stream lost under Alternatives 2 and 4 are similar, but Alternative 4 would permanently affect the greatest amount of palustrine habitat (wetland and freshwater emergent wetland) while avoiding pond habitat and affecting less ephemeral stream habitat. None of the action alternatives would result in permanent loss of mountain alder thicket.

Table 4.15-4 Alternative 4 Impacts on Habitats Currently Identified as Wetlands and Other Waters

Ownership	Impact Duration	Feature Type (acre)							Total*
		Riverine			Lacustrine	Palustrine			
		Perennial	Ephemeral	Roadside Ditch	Pond	Mountain Alder Thicket	Wetlands/ Seeps	Freshwater Emergent Wetland	
Alpine Meadows SUP Area	Temporary	0.03	<0.01	<0.01	0.26	0	0	0.11	0.40
	Permanent	0.13	0	0	0	0	0.07	0	0.20
Private	Temporary	0	0.01	0	0	0.21	0	0.65	0.87
	Permanent	0	<0.01	0	0	0	<0.01	0.26	0.27
Total	**Temporary**	**0.03**	**0.01**	**<0.01**	**0.26**	**0.21**	**0**	**0.76**	**1.28**
	Permanent	**0.13**	**<0.01**	**0**	**0**	**0**	**0.08**	**0.26**	**0.46**
	Grand Total*	**0.16**	**0.01**	**<0.01**	**0.26**	**0.21**	**0.08**	**1.02**	**1.75**

*Totals may not sum because of independent rounding.

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

Temporary effects on wetlands and waters would total 1.28 acres under Alternative 4 as compared to 1.09 acres under Alternative 2 and 0.91 acre under Alternative 3. Alternative 4 temporarily affects more freshwater emergent wetland compared to Alternatives 2 or 3, and less perennial and ephemeral streams and roadside ditches compared to Alternatives 2 or 3. Alternative 4 would temporarily affect less mountain alder thicket than Alternative 2, but more than Alternative 3, which would have no effects on mountain alder thicket. The temporary effects of Alternative 4 to pond habitat is less than Alternative 3, but more than

Alternative 2. Temporarily disturbed wetlands and waters would be restored to original contours and revegetated after construction, so there would be no loss of wetland functions following restoration.

The same RPMs identified for Alternatives 2 and 3 would be applied to Alternative 4 and would reduce the adverse effect of loss and degradation of wetlands and other waters by minimizing indirect effects of runoff and erosion and compensating for direct loss of habitat.

Similarly, Alternative 4 also considers protections for wetlands and minimizes the destruction, loss, or degradation of wetlands to preserve and enhance their natural and beneficial values and, therefore, complies with EO 11990.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to wetlands and other waters under Alternative 4 would be **adverse** because construction activities would permanently fill approximately 0.46 acre of potential waters and wetlands and would temporarily affect 1.07 acres of potential waters and wetlands. These effects would be mitigated through implementation of RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, SOILS-1 through SOILS-12, and WQ-1 through WQ-20, which are related to protection of wetlands and riparian habitats, water quality, and soils. These RPMs require avoidance of aquatic habitats to the degree feasible, restoration of temporarily disturbed areas, and compensation for unavoidable losses of wetlands and riparian habitats. They also require annual monitoring of restored or replacement habitats for the first 3 years then every 2 years for up to 10 years following revegetation/restoration.

CEQA Determination of Effects

Alternative 4 would result in the permanent fill of approximately 0.46 acre of potential waters and wetlands and would temporarily affect approximately 1.28 acres of potential waters and wetlands. Under CEQA, and considering the CEQA criteria, this would be a significant impact. This impact is slightly greater than that under Alternative 2 and avoids permanent impacts on pond habitat. RPMs BIO-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, SOILS-1 through SOILS-12, and WQ-1 through WQ-20 would, among other actions, provide compensation at a no-net-loss standard for wetland and riparian habitats and require implementation of an MMRP and coordination with the appropriate regulatory agencies. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level. The RPMs would be equally effective under Alternative 4 as under Alternative 2.

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-1, BIO-23 through BIO-26, BIO-30, BIO-33 through BIO-36, BIO-39, BIO-40, SOILS-1 through SOILS-12, and WQ-1 through WQ-20 as mitigation measures reduces this significant impact to a less-than-significant level.

4.15.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.15-5 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Loss of wetlands and waters (Impact 4.15-1) under all action alternatives is considered an adverse effect that is mitigated with RPMs under NEPA and a less-than-significant impact with the RPMs incorporated under CEQA. Alternatives 2 and 4 have similar total permanent impacts on potential waters of the United States and waters of the state (0.43 and 0.46 acre, respectively). Alternative 3 affects a greater amount of potential waters, with a total of 0.53 acre of permanent fill. The effect on pond habitat is less under Alternative 4, but greater on freshwater emergent wetland habitat than Alternatives 2 and 3.

Table 4.15-5 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.15-1: Loss and Degradation of Wetlands and Other Waters	Disclosure of wetland functions and values within the project area	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Slightly greater impact than under Alternative 2	Adverse under NEPA; less than significant under CEQA Slightly greater impact than under Alternative 2 and slightly lesser impact than under Alternative 3
	Narrative description of wetland communities, classifications and disclosure of anticipated temporary and/or permanent impacts (acres/linear feet)	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Slightly greater impact than under Alternative 2	Adverse under NEPA; less than significant under CEQA Slightly greater impact than under Alternative 2 and slightly lesser impact than under Alternative 3
	Description of compliance with EO 11990, Protection of Wetlands	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Slightly greater impact than under Alternative 2	Adverse under NEPA; less than significant under CEQA Slightly greater impact than under Alternative 2 and slightly lesser impact than under Alternative 3
	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Slightly greater impact than under Alternative 2	Adverse under NEPA; less than significant under CEQA Slightly greater impact than under Alternative 2 and slightly lesser impact than under Alternative 3

4.15.4 Cumulative Effects

4.15.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this Cumulative Analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope used for this analysis of cumulative effects on wetlands and waters is the Bear Creek Watershed, Squaw Creek hydrologic unit code (HUC) 12, and the portion of upper middle Truckee River HUC-12 near where Bear Creek and Squaw Creek flow into the Truckee River. A HUC is a U.S. Geological Survey (USGS) developed designation for watersheds and provides a mechanism to split larger watersheds into smaller units. The larger the HUC number, the smaller the portion of a watershed area included in the HUC. The complete Squaw Creek and middle Truckee River watersheds cover a larger area than would be appropriate for this cumulative impact analysis. Use of the HUC-12 designations encompasses a portion of the larger Squaw Creek and middle Truckee River watersheds appropriate for evaluating past, present, and reasonably foreseeable future projects with a reasonable potential to interact with the action alternatives on a cumulative basis related to effects on wetlands.

Current resource conditions are used to represent the composite of past actions. The area encompassing the cumulative spatial scope of the analysis 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 wetlands and other waters in the Squaw Creek, Bear Creek, and middle Truckee River 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) as well as the operational period of the gondola (winter season); however, for wetlands and waters, the temporal scope for reasonably foreseeable future actions is more broadly defined because disturbance and/or loss of aquatic 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 wetlands and other waters within the gondola project area and surrounding watersheds.

Any present or reasonably foreseeable future projects within the spatial scope of the analysis that have the potential to affect waters or wetlands are listed below. Potential impacts associated with these projects to waters and wetlands include the potential for direct fill and permanent loss of these features and temporary disturbance or removal.

Project	Potential impacts
Alpine Meadows Master Development Plan	Possible permanent and/or temporary disturbance of waters and wetlands
Village at Squaw Valley Specific Plan	Possible permanent and/or temporary disturbance of waters and wetlands
Squaw Valley Red Dog Lift Replacement	Possible permanent and/or temporary disturbance of waters and wetlands
Timberline Twister	Possible permanent and/or temporary disturbance of waters and wetlands
Alpine Meadows Hotwheels Lift Replacement	Possible permanent and/or temporary disturbance of waters and wetlands
Caldwell property (White Wolf) development	Possible permanent and/or temporary disturbance of waters and wetlands
General development in Olympic Valley	Possible permanent and/or temporary disturbance of waters and wetlands
General development in Alpine Meadows	Possible permanent and/or temporary disturbance of waters and wetlands
Alpine Sierra subdivision	Possible permanent and/or temporary disturbance of waters and wetlands
Truckee River Corridor Access Plan	May contain activities that could result in permanent and/or temporary disturbance of waters and wetlands

4.15.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct and indirect effects, and thus by definition no cumulative impacts to wetlands and other waters.

Alternative 2

Decades of growth and development, Comstock-era logging, hydrologic modification, and livestock grazing in the Tahoe-Truckee region in general, and also within the more limited spatial scope of this cumulative impact analysis, have resulted in an overall adverse cumulative effect on wetlands and waters. Past and present actions, taken together, have adversely affected hydrology, water quality, and habitat functions within the local watersheds. These actions have led to soil erosion and sedimentation, increased turbidity of local water bodies, and loss and degradation of aquatic habitats.

The reasonably foreseeable future projects identified above may result in temporary and permanent impacts to wetlands and waters. However, different from the conditions under which many past projects were implemented, there are multiple laws and regulations requiring the avoidance of wetlands, minimization of effects, and compensation for effects when they cannot be fully avoided; these include Sections 404 and 401 of the CWA, the Porter-Cologne Water Quality Control Act, California Fish and Game Code Section 1602 — Lake and Streambed Alteration, and local policies and regulations specifically directed towards these resources. Although the reasonably foreseeable future projects may have varying temporary and permanent effects on wetlands and waters, to comply with applicable laws, these projects must minimize those effects and compensate for effects that cannot be fully avoided in a manner that results in no net loss of aquatic functions, values, and quantity of wetlands and waters. If there is any cumulative reduction in waters or wetlands, or functions and values of these resources of these resources within the spatial scope of this analysis, it would be minor. Projects whose effects on wetlands and waters may overlap in time and space with this project include Alpine Meadows Master Development Plan, Village at Squaw Valley Specific Plan, Northstar Mountain Master Plan, White Wolf Development, Alpine Sierra Subdivision, Martis Valley West Parcel, Big Jack East Forest Restoration Project, and Tahoe West Project.

Impacts on wetlands and waters resulting from implementation of Alternative 2 would be permanent, resulting from direct fill of waters of the United States and waters of the state, and temporary, related to activities during construction. Construction activities would be required to comply with existing federal, state, and local regulations and permitting requirements that protect wetland, riparian, and other waters. RPMs BIO-24 through BIO-26, BIO-34 through BIO-36, and BIO-39 would reduce significant impacts on wetlands and waters because they would require that aquatic habitat is avoided to the extent feasible, and that aquatic habitats that cannot be avoided are restored following construction or compensated for in a manner that results in no net loss of these habitats or loss of ecological function. Based on the no net loss standard required by state and federal laws, Alternative 2 would not have a considerable contribution to the overall adverse cumulative effect on waters and wetlands in the spacial scope of this analysis.

Alternatives 3 and 4

Cumulative impacts resulting from Alternatives 3 and 4 would be essentially the same as those discussed above for Alternative 2, although project-specific contributions to fill of wetlands and other waters would be slightly less for Alternative 4 (0.46 acre) than Alternative 3 (0.53 acre), and Alternatives 3 and 4 would each contribute slightly more to fill of wetlands and other waters than Alternative 2 (0.43 acre). Although there are some differences in the acreages of affect across alternatives, and therefore the level of contribution to cumulative effects, none of the alternatives would make a considerable contribution to a cumulative effect.

4.16 SOILS, GEOLOGY, AND SEISMICITY

This section analyzes and evaluates the potential impacts associated with the implementation of the project pertaining to soils, geology, and seismicity. The analysis includes a description of existing conditions and applicable regulations relating to soils, geology, and seismicity. The study area for the assessment is the same as the action alternative footprints described in Chapter 2, "Description of Alternatives."

4.16.1 Affected Environment

4.16.1.1 ENVIRONMENTAL SETTING

Physiography

The Alpine Meadows Ski Area (Alpine Meadows) is located in the Bear Creek Valley, and the Squaw Valley Ski Area (Squaw Valley) is located in the Olympic Valley. The Bear Creek and Olympic Valleys are classic alpine glacial valleys. Both are southeastern-facing and located northwest of Lake Tahoe. They rise from elevations between 6,200 feet and 6,900 feet above sea level (asl) to mountain peaks that rise to over 9,000 feet asl. The alternatives are proposed across a roughly 2-mile span through the steep, mountainous terrain between the two valleys (Exhibit 4.16-1).

The steep topography, geology, mountain climate, geomorphic processes, historic land use, and vegetation cover conditions in the Bear Creek watershed in Bear Creek Valley and the Squaw Creek watershed in Olympic Valley have contributed to erosion and sedimentation problems including stream channel instability and sedimentation impacts to water quality. Water quality impacts are discussed in detail in Section 4.17, "Hydrology and Water Quality." Sediment source estimates from the Squaw Creek watershed total maximum daily load (TMDL) studies (Lahontan Regional Water Quality Control Board 2006:2) indicate that approximately 60 percent of the sedimentation affecting the creek is related to human disturbances. Most of the sediment originates from upslope natural and disturbed areas (Undisturbed [37 percent], Dirt Roads [25 percent], and Graded Ski Runs [24 percent]).

Geology

The project is located in the northern portion of the Sierra Nevada geomorphic province of California, in the northwestern block of the Lake Tahoe Basin that extends from the lake northward to Truckee. The geology of the eastern Sierra Nevada, including the project area, is composed of primarily Cretaceous-age intrusive granitic rocks and Late Tertiary-age basaltic andesite and pyroclastic volcanic rocks (Saucedo 2005). Sylvester et al. (2012:24) interpret the complex assemblage of faults, intrusive bodies, and remnants of lava flows and pyroclastic rocks exposed in the vicinity of Squaw Valley to be Pliocene age stratovolcanoes from volcanic vents on Squaw Peak and KT22 (Exhibit 4.16-2).

The project vicinity was largely shaped by alpine glaciers that resulted in classic U-shaped valleys with steep side walls and a flat valley floors. Quaternary age geologic units include abundant glacial deposits (outwash and moraine deposits), talus deposits, and colluvial and alluvial fan deposits at the junction of the valley side slopes and valley floors (Saucedo 2005). Several generations of glaciation are characterized by terrace deposits within the Truckee area, north of the site (Holdrege & Kull 2015:5). From youngest to oldest, these glaciations are the Tioga, Tahoe, Donner, and Hobart glaciations. The Tioga and Tahoe glaciations peaked approximately 20,000 and 70,000 years ago, respectively. Tioga till is extensive at the surface in the Bear Creek and Olympic Valleys, extending from cirque headwalls at elevations of over 8,000 feet, all the way down the valleys to their confluence with the Upper Truckee River.

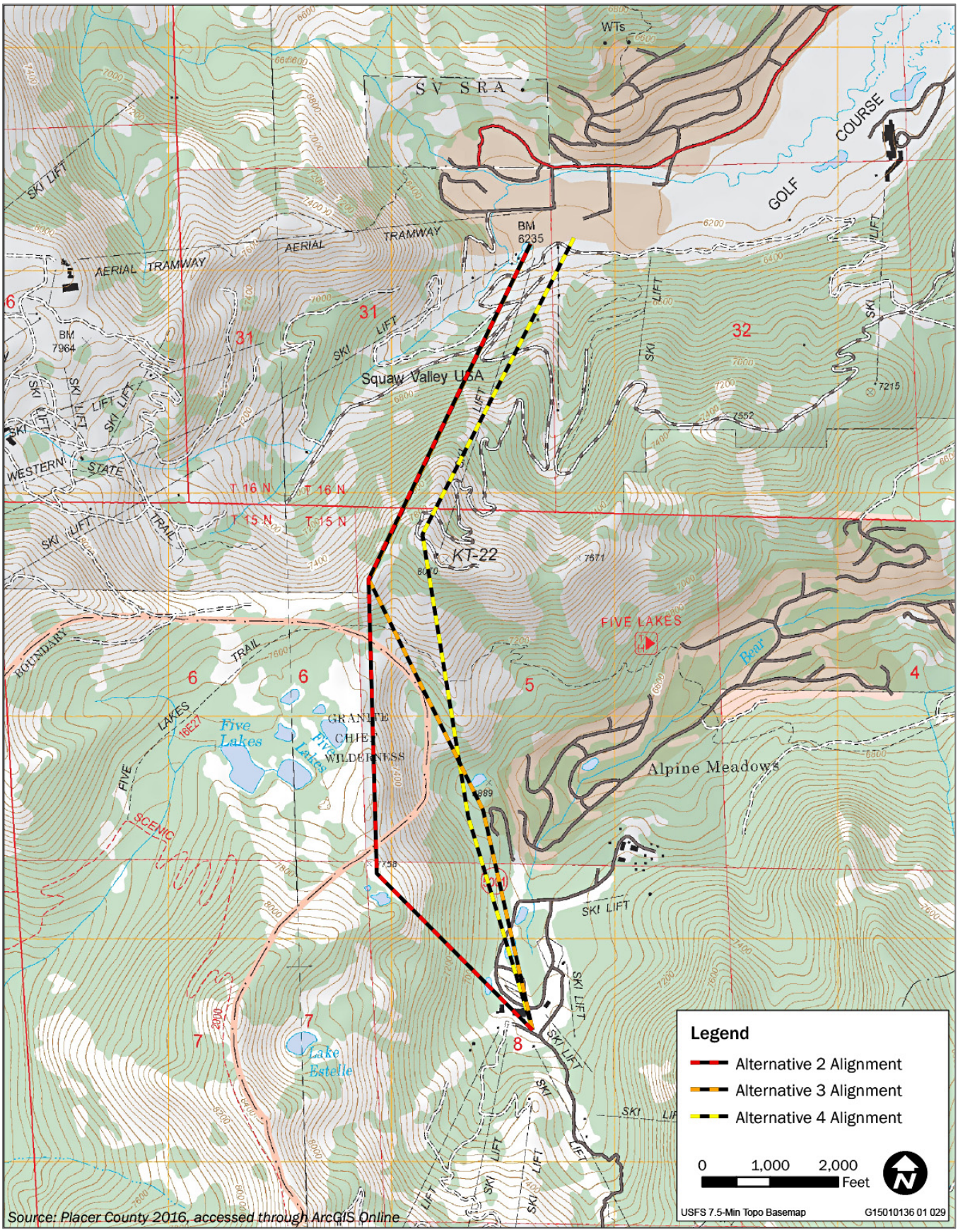
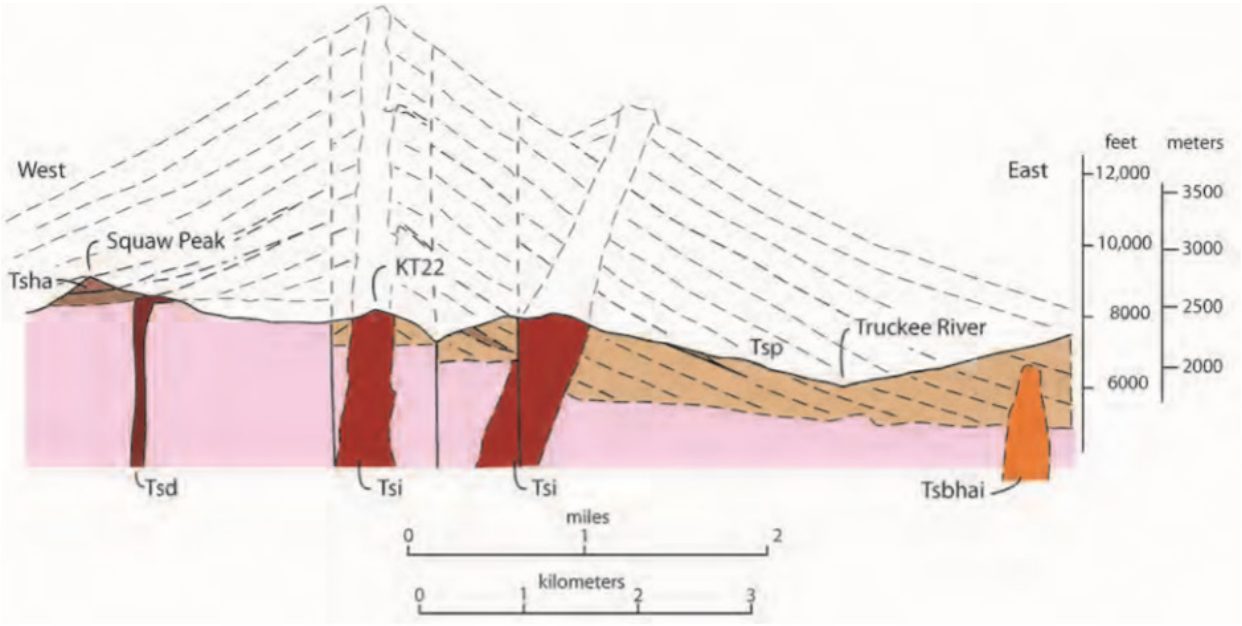


Exhibit 4.16-1 Topography of Project Area



Source: Sylvester et al. 2012:24

Exhibit 4.16-2 Interpretation of Faults, Intrusive Bodies, and Remnants of Lava Flows and Pyroclastic Rocks in the Vicinity of Squaw Valley

The Squaw Valley base station locations under all action alternatives would be located on Holocene/Pleistocene alluvial fan deposits (Qf) and Quaternary till (Qt) (Saucedo 2005) (Exhibit 4.16-3). The upper unit is about 10–20 feet thick, consisting of unconsolidated stream channel sands and fine (clay/silt) overbank deposits associated with the post-glacial meadow processes. The alignments for Alternatives 2 and 3 then head southwest over Pliocene basalt and andesite intrusive rocks (Pib/Pia) toward Cretaceous/Jurassic granite and granodiorite (KJgd/KJgr). The Squaw Valley mid-station under Alternatives 2 and 3 is located within these units. Under Alternative 4, the Squaw Valley mid-station is located farther northeast within Pliocene volcanic units (andesite). The alignment for Alternative 2 then heads directly south to the Alpine Meadows mid-station which is also located on Cretaceous and/or Jurassic granodiorite. Alternatives 3 and 4 take a more southeastern trajectory over Cretaceous and/or Jurassic granite and granodiorite (KJgr) to the Alpine Meadows mid-station. The Alpine Meadows base terminal is also proposed in Quaternary till (Qt).

Faulting and Seismicity

Seismic Conditions

The Donner Pass region and the north end of Lake Tahoe lie in a tectonically active area. Eastern Placer County is in the seismically active border with the Basin and Range province (Placer County 2016:4-66). Within this region is the Tahoe-Sierra Frontal Fault Zone (Howle et al. 2012:1087). This zone of faults stretches north northwestward across the west part of the Tahoe basin from Carson Pass through Donner Pass and continues north (Schweickert et al. 2004:311). A U.S. Geological Survey study concluded that faults in the Tahoe-Sierra frontal fault zone pose a substantial seismic hazard for the Lake Tahoe region and could generate earthquakes with magnitudes ranging from 6.3 to 6.9 (Geological Society of America 2012:1). There is a high potential for the project area to be subject to at least moderate shaking from earthquake activity one or more times over the next century. The probability of earthquake shaking in the next 50 years in eastern Placer County along the State Route 89 corridor between Lake Tahoe and Truckee is estimated to be 21–30 percent (Placer County 2016:4-74).

The project site is not located in a designated Alquist-Priolo active fault zone (Holdrege & Kull 2015:14).

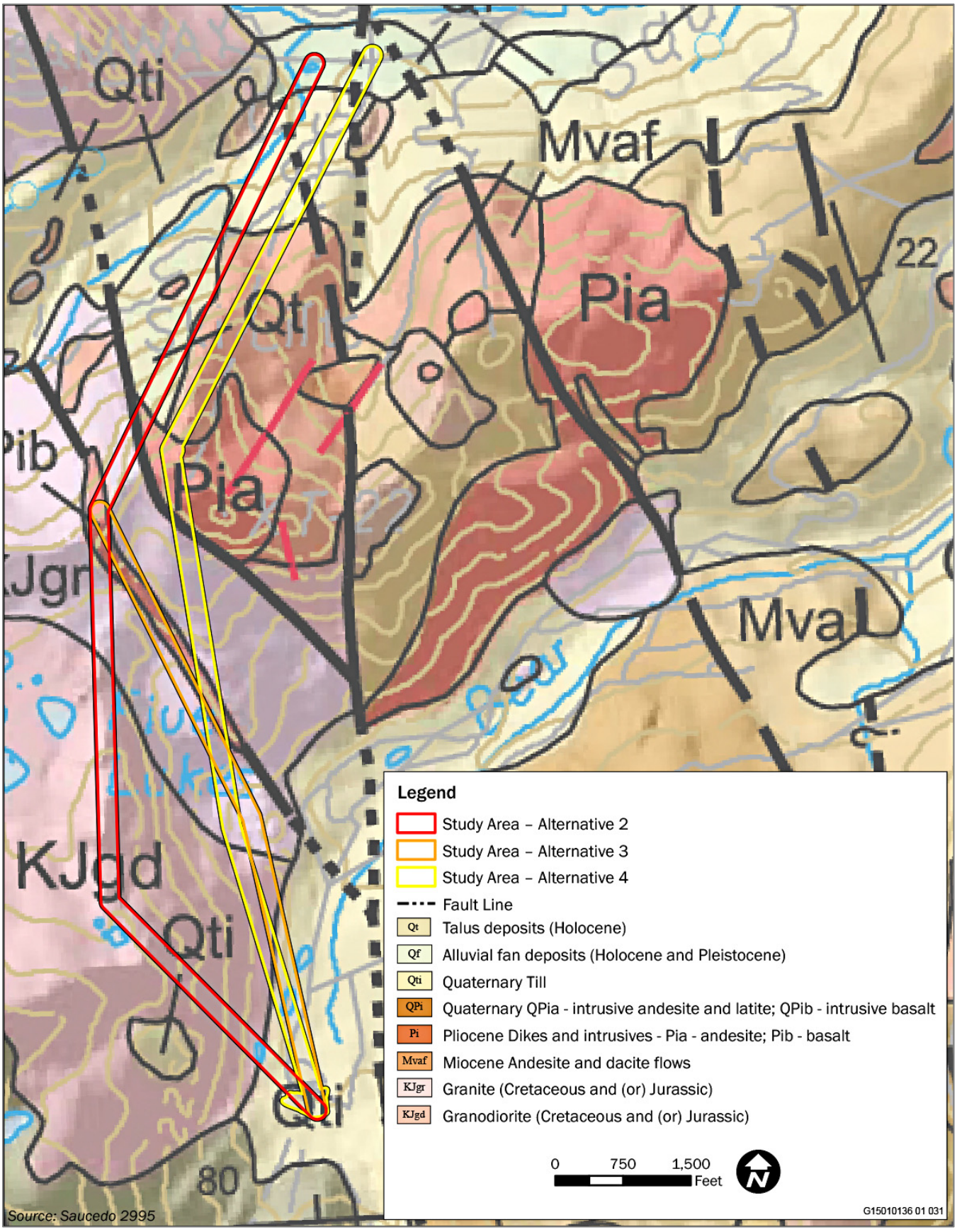


Exhibit 4.16-3 Geology of Project Area

Faults and Fault Rupture

Geologic maps show several active and potentially active faults located near the project area. Several fault strands have been mapped on the floor of Lake Tahoe (Schweickert et al. 2004:303), three of which extend onto land at the north end of the lake: The West Tahoe-Dollar Point Fault and two splays from it termed the Carnelian Bay and Agate Bay faults. The Dog Valley fault, approximately 4.6 miles northeast; a group of unnamed faults approximately 6.5 to 8 miles northeast; and the Polaris fault, approximately 10 miles northeast, are other potentially active faults in the vicinity. Earthquakes associated with these faults may cause strong ground shaking in the project area.

In addition to damage from ground shaking, rupture of one or more faults in the vicinity could result in damage to structures; however most of the fault traces in the project area appear to be inactive and represent joint patterns in rock formations rather than active faults (Holdrege & Kull 2015:14).

Ground Failure/Liquefaction

Secondary seismic hazards can result from ground shaking and may include liquefaction and ground failure. Liquefaction is a phenomenon wherein loose, saturated, granular soil deposits lose shear strength because of excess pore water pressure. Cyclic loading, such as what could occur during an earthquake, typically causes the increase in pore water pressure and subsequent liquefaction. Based on the results of a site assessment conducted by Holdrege & Kull (2015:14), the near-surface soil near the base stations of the gondola consist of medium dense to dense granular soil types. The sloping portions of the site are rock with little to no overlying soil. These soil profiles have a low potential for liquefaction and related ground failure (Holdrege & Kull 2015:14).

Subsidence

Land surface subsidence can be induced by tectonic deformations and seismically induced settlements. Lateral spreading is the horizontal movement of fractured rock or soil toward an open face, such as a streambank or the open side of fill embankments, resulting from liquefaction of adjacent materials. The potential for failure from subsidence and lateral spreading is highest in areas where there is a high groundwater table, where there are relatively soft and recent alluvial deposits, and where creek banks are relatively high. The project area does not generally contain areas of recent alluvial deposits, high ground water, or creek banks; therefore, there is a low potential for subsidence or lateral spreading in the proposed gondola alignments.

Soils

Several different soil types are mapped by the Natural Resources Conservation Service (NRCS) across the project area, including units from the Rock Outcrop, Ledford, Meiss, Tallac, and Tinker Series (NRCS 2014) (Exhibit 4.16-4).

Soil throughout most of the project area is very thin and those mapped in the Rock Outcrop Series include Rock outcrop, granitic (GRG); Rock outcrop, volcanic (VRG); and Ledford variant-Rock outcrop complex, 30- to 75-percent slopes (WRG). The Rock Outcrop soil units are described as unweathered bedrock with an average thickness of 0–4 inches. The Ledford variant-Rock outcrop complex (WRG) soil unit is formed on mountain slopes, is excessively drained, has a high permeability rate, and is typically underlain by bedrock at shallow depths. The Meiss-Rock Outcrop complex (MIG3) is also is underlain by bedrock at shallow depths.

The Tallac Series soil units (TAE, TAF, TBE, TBF, THF) are mapped in the area of the base stations and along the slopes immediately adjacent to the valley floor within Squaw Valley. The Tallac soil units generally form on glacial moraines, are moderately well drained, have a moderately low to moderately high permeability rate and an average depth to the water table of 42–60 inches.

The Tinker Series soil unit is mapped along the slopes above Alpine Meadows near the south segment of the gondola alignments (TIE, TIG). This unit typically forms on glacial moraines, is well drained, has a very low to moderately low permeability rate and an average depth to the water table exceeding 80 inches.

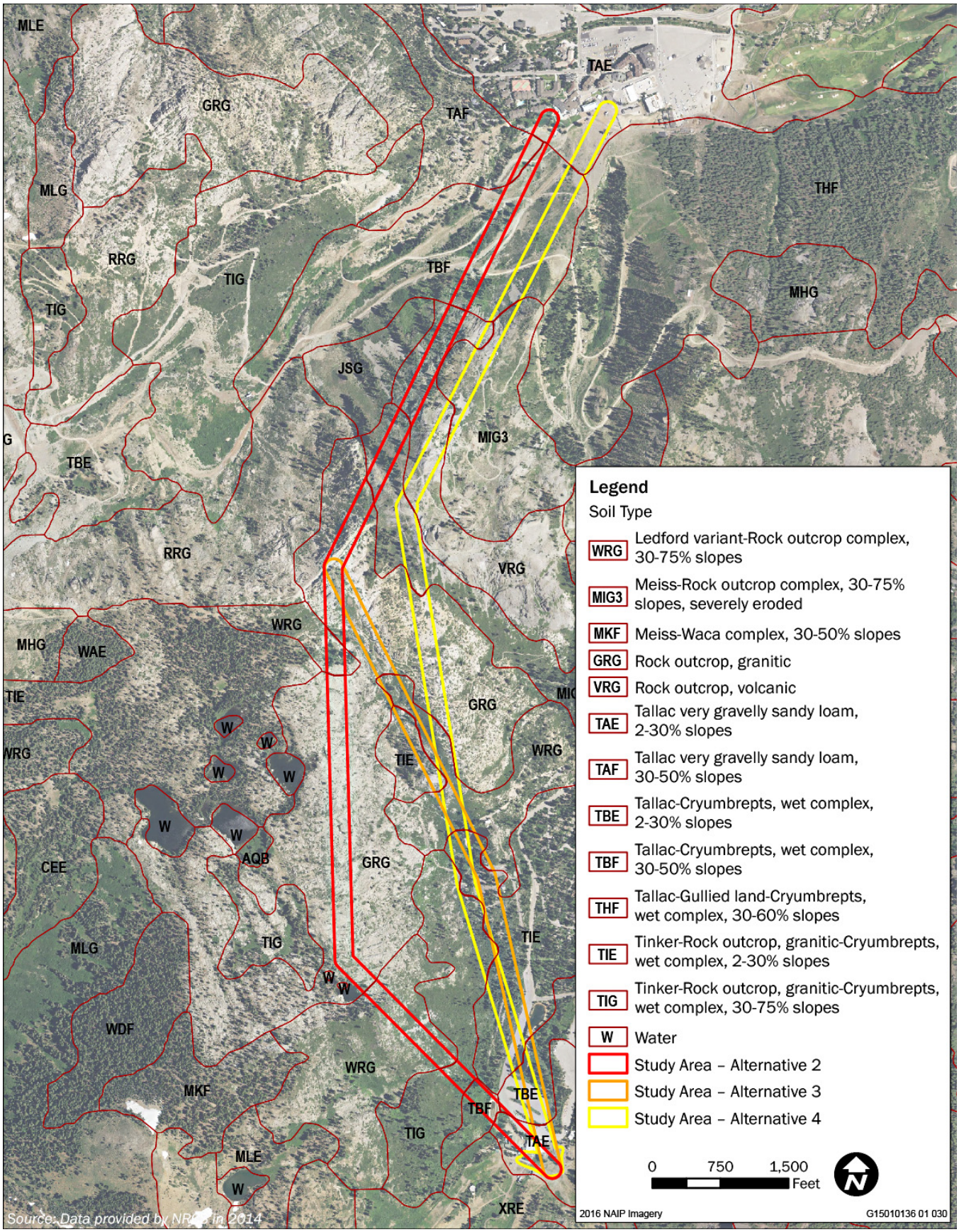


Exhibit 4.16-4 Soils of Project Area

The corridors along which the gondola would be installed under the action alternatives contain soils within Tahoe National Forest (TNF) Soil Groups A and C. Soil Group A consists of highly erodible, granite-derived parent material. These soils are generally thin and poorly developed and are easily detached from the granitic substrate below. The central segment (between the Alpine Meadows mid-station and the Squaw Valley mid-station) is principally bald-faced granite outcroppings with an occasional thin veneer of this coarse soil. These soils are highly susceptible to erosion with even light disturbance; therefore, movement of equipment over this terrain, and installation of towers could result in loss of soil. Because soils in Soil Group A are not effective at propagating and maintaining vegetative cover, maintenance of soil productivity requires a much higher level of soil coverage than that which is currently present over this area. On slopes greater than 35 percent, the minimum soil coverage required for soils in Group A is 70 percent, and as high as 90 percent on slopes over 50 percent.

Soil Group C soils comprise the rest of the action alternative corridors. Group C soils in the project area include Tallac, Tinker, and Ledford. If left undisturbed, these soils are not prone to excessive sedimentation because of their hydrologic characteristics. These soils, however, have a deeper profile relative to other soils within the TNF, and are more supportive of forest vegetation, especially relative to Group A soils. To maintain soil productivity, Group C soils require 40-percent coverage at slopes greater than 35 percent, and 65-percent coverage at slopes greater than 50 percent.

Common limitations for project area soil types are discussed below.

Erosion Potential

Erosion is the process by which soil and rock are broken down and transported to a different location. Erosive processes include rainfall, surface runoff, glacial activity, wind abrasion, chemical dissolution, and gravity in the form of mass wasting. Human activities can accelerate the rate of erosion, causing a wide variety of detrimental effects including sedimentation of waterways, slope instability, and loss of productivity. The primary erosive forces present within the plan area are water and wind erosion.

Factors that influence the erosion potential of a soil include vegetative cover; soil properties such as soil texture, structure, rock fragments and depth; steepness and slope length; and climatic factors such as the amount and intensity of precipitation. The NRCS soil surveys provide an erosion hazard rating (NRCS 2014). This rating is based on slope and soil erosion factor (K). The predicted soil loss is caused by sheet or rill erosion (which happens when shallow flows of water causing sheet erosion are concentrated into rills and increase both in speed and scouring capacity) areas where 50–75 percent of the surface has been exposed by disturbance. The hazard is described as “slight,” “moderate,” “severe,” or “very severe.” A rating of “slight” indicates that erosion is unlikely under ordinary conditions; “moderate” indicates that some erosion is likely and that erosion-control measures may be needed; “severe” indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and “very severe” indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical (NRCS 2014).

The erosion potential of soils within the project area generally range between 0.10 and 0.15 (NRCS 2014), which are low erodibility ratings. Ratings are low because of the low runoff potential of the soil. Because the soils allow for the free and unimpeded transmission of water through the soil when fully saturated, less water flows over the soil, reducing the amount of soil that would be eroded by water action.

As identified above, soil throughout most of the central part of the action alternative alignments is very thin and mapped as Rock outcrop, granitic (GRG), Rock outcrop, volcanic (VRG), and Ledford variant-Rock outcrop complex, 30- to 75-percent slopes (WRG). The GRG and VRG units are not rated for erosion hazard. However, the off-trail/off-road, and trail erosion hazard for the WRG unit is classified as very severe. Although the erosion hazard is high, the depth to bedrock is shallow and therefore there is minimal soil available to erode.

The Tallac Series soil units (TAE, TAF, TBE, TBF, THF) occupy the area of the base stations and along the slopes immediately adjacent to the valley floor within Squaw Valley. The Tallac soil units generally have a

moderate erosion hazard for both off-trail/off-road and trail; however, the soils with slopes greater than 30 percent have a severe soil hazard rating.

The Tinker Series soil unit (TIE, TIG) occurs along the slopes above Alpine Meadows near the south segment of action alternative alignments. The erosion hazard is classified as moderate except where slopes exceed 30 percent, where it is classified as very severe. Though the erosion hazard can be high, the depth to bedrock is shallow and therefore and therefore there is minimal soil available to erode.

Depth to Bedrock

Depth to bedrock is a potentially limiting feature of soils depending on the planned land use and relative depth to a restrictive soil horizon. If excavation is required for construction or development activities, bedrock can pose challenges to engineering design. Depth to bedrock or duripan (cemented soil horizon) in the project area is between zero and 41 inches, depending on the soil type (NRCS 2014).

Expansive Soils

Expansive soils (also known as shrink-swell soils) contain expansive clay minerals that can absorb significant amounts of water and are prone to large changes in volume in response to changes in water content. When an expansive soil becomes wet, water is absorbed, and it increases in volume, and as the soil dries it contracts and decreases in volume. This (often-repeated) change in volume can produce enough force and stress on buildings and other structures to damage foundations and walls.

One measure of the shrink-swell potential of a soil is linear extensibility. Linear extensibility is a measure of the change in volume of a soil dried from a completely saturated state in a laboratory setting. Generally, it is reported as a percent change. Soils with less than 3-percent volume change are classified as having a low shrink-swell potential. The soils within the project area do not contain a significant amount of clay, and as a result have a low linear extensibility of approximately 1.5 percent.

Mass Wasting

Slope Stability

Slope instability includes landslides, debris flows, and rock fall. The project area is located on the steep slopes of Squaw Valley and Alpine Meadows, which have potential for landslides, debris flows, and rock fall. No landslides are located within the areas of the alignments and the potential for them to occur in the site area is low because of the relatively competent nature of underlying and adjacent materials (Holdrege & Kull 2015:6). There is one small scar from a small landslide east of Alternatives 3 and 4 (Holdrege & Kull 2013:6). The slide is located in volcanic soil, is only about 100 square feet in area, and about 1 foot deep. It appears to be a small translational slide that was saturated and failing on the shallow rock surface. Small debris flows and flash floods have occurred in the past in the east and/or west gullies in the vicinity of the Alternative 3 and 4 alignments extending down to Alpine Meadows Road. However, because of the lack of or very thin soil at and above the site, debris flows cannot be very large. Debris flows and flash floods at the site are confined to small channels and are not a significant hazard (Holdrege & Kull 2013).

A debris flow occurred in the south fork of Squaw Creek during the 1997 New Year storm event (Holdrege & Kull 2015:6). It was a high energy event that carried a significant amount of sand and cobbles and caused damage to structures. Although storms as large as the 1997 event are uncommon, rain-on-snow events are common, and there is the potential for similar debris flow events to occur in the project area from seismic activity or during large storm events.

Rock falls are relatively rare and unpredictable events. Because of the relatively gentle topography at the end terminals, potential damage because of rock falls in these locations is low. The planned alignment, although generally near ridge tops, traverses across talus slopes that may be prone to rock fall. The volcanic rock is closely fractured into relatively small irregular-shaped clasts that would have relatively low energy during a rock fall event. The granitic rock is strong, competent rock and rock falls are uncommon. The potential damage because of rock fall is low. In the event of a forest fire, the risk of landslide, debris flow,

and rock fall may increase (Holdrege & Kull 2015:6). The increased occurrence of large wildfires in the western United States has increased the importance of understanding potential hazards posed by debris flows produced by burned watersheds (Cannon et al. 2010:127). The variables most strongly correlated with the occurrence of debris flow after wildfire are relief ratio (high relief ratios indicate steep slopes); basin ruggedness; percent of area burned (and at what severity); and soil characteristics, such as the sorting of the burned soil grain-size distribution, available water capacity, percent clay, soil thickness, and soil permeability (Cannon et al. 2010:132). The percent of the basin burned at a combination of high and moderate severities and the average storm intensity were significantly correlated with debris-flow occurrence after a wildfire. Soil properties, including the percent clay, percent organic matter, hydrologic group, liquid limit, and sorting of the burned soil grain-size distribution, were also identified as significant factors with debris flow occurrence after wildfire (Cannon et al. 2010:132).

Avalanches

Snow avalanches are a natural phenomenon resulting from the interaction of site-specific terrain, weather, and snowpack conditions. Because these factors are highly variable in any given year, determining return probabilities for potentially destructive avalanches is imprecise. In the 1980s, Placer County commissioned studies of avalanche hazard zones and produced maps delineating avalanche hazard areas. These hazard areas were divided into four categories displaying the anticipated probability of avalanche. The resulting avalanche hazard maps became the basis for Placer County's Potential Avalanche Hazard Area (PAHA) maps, which designate areas that are subject to potential avalanche danger with an occurrence probability of more than 1 in 100 per year. In determining land uses within these areas, the greatest concern is the determination of the maximum size avalanche that individual paths can produce (design avalanche) and the return period (e.g., 1 in 100 per year) of the design avalanche for individual avalanche paths. The PAHA maps were incorporated into the Placer County Avalanche Ordinance, which provides specifications for development within the PAHAs (Heywood 2013:1)

As noted above, Squaw Valley and Alpine Meadows are in a steep mountainous area that is subject to high energy mass movements including snow avalanches. Portions of the project area are within potential avalanche run out zones. Snow instability and avalanches in the Sierra Nevada predominately occur during or immediately after heavy precipitation. Specific meteorological conditions can increase the risk that an avalanche will occur. The Sierra Nevada and Alpine Meadows are located in a maritime climate with a maritime snowpack which tends to be deep, warm, and strong (Heywood 2013:5). Some of the characteristics of a maritime climate and snowpack include deep snowpacks (over 3 meters), warm temperatures (20–40°F), high-density snow (10–20 percent ice by volume), and frequent storms with high precipitation rates. Under these conditions, most avalanches occur as "direct action" avalanches (i.e., the avalanche is directly caused by precipitation or wind), and they tend to occur during or immediately following storms (Heywood 2013:5). Midwinter rain events are common and wet avalanches can occur throughout winter (Heywood 2013:5).

Current avalanche management is described on pages 4.6-1 and 4.6-2 of Section 4.6, "Public Safety" (under the heading "Existing Avalanche Control Protocol"). At Squaw Valley, mountain operations personnel use hand-charges, Avalaunchers, and Gazex facilities for avalanche mitigation; at Alpine Meadows, mountain operations personnel use hand-charges, Avalaunchers, Gazex facilities, and 105-millimeter (mm) howitzer artillery. Each of these avalanche risk reduction methods is described in Section 4.6, "Public Safety."

Based on a review of the Wilson 1982 Placer County Avalanche Ordinance PAHA Map, Heywood 2014 PAHA Map, and Mears 1987 Placer County Avalanche Map, avalanche paths are mapped in the three proposed gondola alignments (Exhibit 4.16-5). Based on the Heywood report (2014:24), a portion of the north segment of Alternatives 2 and 3 gondola alignment is in the Powder Horn Avalanche path. This avalanche path is a large complex path that has produced large destructive avalanches. A portion of the north segment of the proposed gondola alignment for Alternative 4 is in the Exhibition Gully Avalanche Path. The southern portion of all three gondola alignments pass through a mapped PAHA. The Alpine Meadows mid-stations for Alternatives 3 and 4 are located within a mapped PAHA. The gondola alignment near the Alpine Meadows base terminal also passes through the path of a massive avalanche that occurred on the slopes west and north of the Alpine Meadows Lodge in 1982, which resulted in significant property damage and deaths.

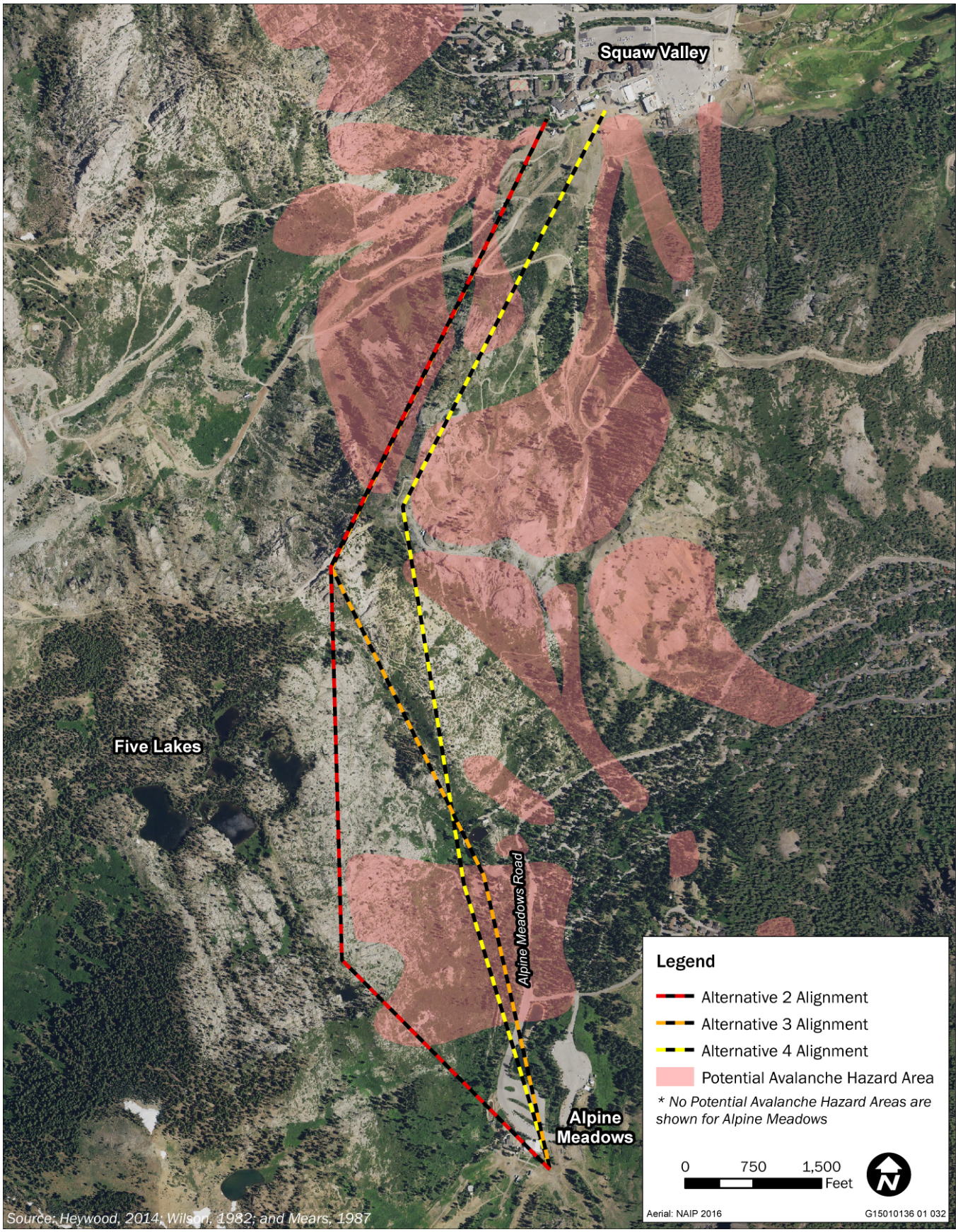


Exhibit 4.16-5 Avalanche Paths

4.16.1.2 REGULATORY SETTING

Federal

Federal Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States. To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). The mission of NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and, accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation,

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

The *Tahoe National Forest Land and Resource Management Plan* (LRMP) (U.S. Forest Service 1990) came into effect in 1990 and was amended by the Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA) in 2004 (U.S. Forest Service 2004). The LRMP and SNFPA are collectively referred to as the Forest Plan. Forest-wide direction is presented in goals and objectives and in standards and guidelines (S&Gs) in the Forest Plan. Area-specific direction is detailed in the management direction guides for each of the 106 management areas of TNF. The following forest goals are applicable to this discussion of soils, geology, and seismicity:

- maintain or improve soil productivity and prevent excessive, cumulative watershed impacts, and
- conserve soil and water resources and prevent activities that will significantly or permanently impair the productivity of the land.

Forest Plan S&Gs are outlined to maintain effective soil cover. Soil is described as being in acceptable condition after land disturbance activity when

> the effective soil cover on an activity area is (1) the minimum amount shown in [Table 4.16-1], or (2) the minimum amount prescribed for a specific site by a qualified earth science specialist after on-site investigation…. Effective soil cover includes all materials that will dissipate the energy of falling raindrops. Included are plant litter and forest duff (which can be intact, displaced, or disturbed), woody material in contact with the soil, living vegetation, and rock fragments of a diameter of 0.5 to 3 inches.

The LRMP places emphasis on riparian and streamside guidelines and soil and water improvement projects to maintain and improve the watershed conditions. Soil resource management and monitoring are encouraged in forest practices to reduce and assess soil impacts, respectively.

As part of the analysis conducted for this Draft EIS/EIR, specific S&Gs identified in the Forest Plan related to soils, geology, and seismicity were applied and evaluated for consistency.

State

Seismic Hazards Mapping Act

The intention of the Seismic Hazards Mapping Act of 1990 (PRC Section 2690–2699.6) is to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. The act's provisions are similar in concept to those of the Alquist-Priolo Act: The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate

development within mapped Seismic Hazard Zones. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for projects in Seismic Hazard Zones until appropriate site- specific geologic or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (PRC Section 2621–2630) intends to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors and prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive and establishes a process for reviewing building proposals in Earthquake Fault Zones. Because no designated Alquist-Priolo fault zones are located in the project area, this issue is not discussed further.

California Building Code

The California Building Code (CBC) (California Code of Regulations, Title 24) is based on the International Building Code (IBC). The IBC Seismic Zone Map of the United States designates Placer County, including the project area, within Seismic Hazard Zone III, which corresponds to an area that may experience damage because of earthquakes having moderate intensities of V or more on Modified Mercalli Scale, which corresponds to maximum momentum magnitudes of 4.9 or greater. The CBC has been modified for California conditions with more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J regulates grading activities, including drainage and erosion control.

Local

Placer County General Plan

The relevant policies of the *Placer County General Plan* (Placer County 2013) with respect to seismic and geologic hazards and avalanche hazards are listed below:

- **Policy 8.A.1.** The County shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., groundshaking, landslides, liquefaction, critically expansive soils, and avalanche).
- **Policy 8.A.2.** The County shall require submission of a preliminary soils report, prepared by a registered civil engineer and based upon adequate test borings, for every major subdivision and for each individual lot where critically expansive soils have been identified or are expected to exist.
- **Policy 8.A.4.** The County shall ensure that areas of slope instability are adequately investigated and that any development in these areas incorporates appropriate design provisions to prevent landsliding.
- **Policy 8.A.5.** In landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.
- **Policy 8.A.6.** The County shall require the preparation of drainage plans for development in hillside areas that direct runoff and drainage away from unstable slopes.
- **Policy 8.A.7.** In areas subject to severe groundshaking, the County shall require that new structures intended for human occupancy be designed and constructed to minimize risk to the safety of occupants.

- **Policy 8.A.9.** The County shall require that the location and/or design of any new buildings, facilities, or other development in areas subject to earthquake activity minimize exposure to danger from fault rupture or creep.
- **Policy 8.A.10.** The County shall require that new structures permitted in areas of high liquefaction potential be sited, designed, and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.
- **Policy 8.A.11.** The County shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.
- **Policies 8.A.12 and 8.H.3 [the same language is in each policy].** The County shall not issue permits for new development in potential avalanche hazard areas (PAHA) as designated in the Placer County Avalanche Management Ordinance unless project proponents can demonstrate that such development will be safe under anticipated snow loads and conditions of an avalanche.
- **Policy 8.H.2.** The County shall require new development in areas of avalanche hazard to be sited, designed, and constructed to minimize avalanche hazards.

Placer County Grading Ordinance

Grading is subject to the Placer County Code, Chapter 15, Article 15.48 (Grading, Erosion and Sediment Control), which addresses when a permit is required and when grading is exempt from permit requirements. The most common activities requiring a grading permit include fill or excavation greater than 250 cubic yards; cuts or fills exceeding 4 feet in depth; structural retaining walls exceeding 4 feet in total height, as measured from bottom of footing to the top of the wall and/or supporting a surcharge; soil or vegetation disturbances exceeding 10,000 square feet; grading within or adjacent to a drainage course or wetland; or grading within a floodplain.

Placer County Avalanche Management Ordinance

Article 12.40 of the Placer County Code addresses Avalanche Management Areas and establishes the Placer County Avalanche Management Ordinance. The article describes PAHAs as those areas where, after investigation and study, the county finds that an avalanche potential exists because of steepness of slope, exposure, snow pack composition, wind, temperature, rate of snowfall, and other interacting factors. PAHA zones are established to identify those areas with avalanche potential and include areas where the annual probability of avalanche occurrence is greater than 1 in 100 based on the results of approved studies, or where avalanche damage is documented.

Placer County limits construction in PAHAs and will not issue a building permit for construction in a PAHA without certifying that the structure will be safe under the anticipated snow loads and conditions of an avalanche.

Squaw Valley General Plan and Land Use Ordinance

The Squaw Valley General Plan and Land Use Ordinance (SVGPLUO) addresses risks from snow avalanche that could affect development and incorporates County policies related to seismic safety (Placer County 2006). When adopted in 1983, the SVGPLUO included designated geologic hazard zones), including:

- high hazard zones (subject to frequent and powerful avalanches) and
- potential hazard zones (a transition area).

In high hazard zones (terrain exposed to frequent and powerful avalanches), no buildings or winter parking facilities should be permitted. In potential hazard zones (a transition area), some structures may be designed to withstand the potential avalanche forces. Lodges, schools, residences, or any buildings that encourage a gathering of people should not be constructed in either of these areas. Summer-only recreation facilities could be considered.

The SVGPLUO also requires that tree removal within avalanche zones be carefully planned to avoid the creation of long continuous openings that could enhance avalanche movement. Further, site-specific study and review is necessary for any developments on sites in potential avalanche hazard areas to determine the most appropriate type of development, if any, and the most effective protective systems for the site.

Other, less serious, considerations of the snow environment in the SVGPLUO include design of structures to withstand snow loads, placement of facilities to avoid snow drifting problems and icing conditions, and provision of convenient snow clearing services.

Highly erosive soils and their vegetative cover should not be disturbed by construction activity. Extensive disruption of soils through development activities in both the uplands and lowlands of the valley have caused the degradation of the quality of water in Squaw Creek in the past.

Alpine Meadows General Plan

The Alpine Meadows General Plan was written in 1968 with the long-term objective of including the greatest attainable convenience, prosperity, beauty, health, safety, and decency for the present and future inhabitants of the area and the areas directly related to it. Geology and soils are not specifically addressed in the plan but generally contains the goal of creating a balanced selection of living environments and recreational outlets, sensitive to the terrain and undisturbed by trafficways, pollution, excessive slopes, scarring and other deleterious effects.

4.16.2 Analysis Methods

4.16.2.1 METHODS AND ASSUMPTIONS

Evaluation of geologic, soil, and seismicity impacts was based on a review of documents pertaining to the project study area, including the California Geological Survey, U.S. Geological Survey, and the NRCS 2007 Soil Conservation Survey; geotechnical investigations; the Initial Study prepared for Alternative 2; EIRs; background reports prepared for plans and projects in the vicinity; and other geologic literature. The information obtained from these sources was reviewed and summarized to understand existing conditions and to identify potential environmental effects, based on the thresholds of significance. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, state, and local laws, regulations, and ordinances.

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 (CUP). 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, and their implementation would be ensured by the CUP’s conditions of approval. All RPMs are considered roughly proportional and have an essential nexus to the impacts they reduce.

4.16.2.2 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 have an impact on soils, geology, and seismicity. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Identification and estimated quantification (acres) of temporary and permanent ground disturbance according to high/moderate/low erodibility soils classes, site geology and subsurface conditions, and slope stability concerns **(Impact 4.16-4).**
- Identification of seismicity and faulting concerns and the potential susceptibility of the proposed project to be impacted by or exacerbate these risks **(Section 4.16.2.3, "Issues Not Discussed Further").**
- Analysis of increased erosion hazard because of temporary and permanent ground disturbance **(Impact 4.16-4).**
- Inventory of erodible soils by soil map unit and field verification of these properties **(Impacts 4.16-3 and 4-16-4).**
- Identify best management practices (BMPs) to reduce soil erosion **(Impact 4.16-4).**

CEQA Criteria

Based on the Placer County CEQA checklist, Appendix G of the State CEQA Guidelines, and soils, geology, and seismicity policies and standards in the Placer County General Plan, implementing any of the alternatives would result in a significant impact related to soils, geology, and seismicity if it would:

- expose people or structures to unstable earth conditions or changes in geologic substructures **(Impact 4.16-1)**;
- result in significant disruptions, displacements, compaction, or overcrowding of the soil **(Section 4.16.2.3, "Issues Not Discussed Further")**;
- result in substantial change in topography or ground surface relief features **(Section 4.16.2.3, "Issues Not Discussed Further")**;
- result in the destruction, covering, or modification of any unique geologic or physical features **(Section 4.16.2.3, "Issues Not Discussed Further")**;
- result in any significant increase in wind or water erosion of soils, either on or off the site **(Impact 4.16-4)**;
- result in changes in deposition or erosion or changes in siltation which may modify the channel of a river, stream, or lake **(Section 4.16.2.3, "Issues Not Discussed Further")**;
- result in exposure of people or property to geologic and geomorphological (i.e., avalanches) hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards **(Impacts 4.16-1 and 4.16-2)**;

- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse **(Impact 4.16-3)**; or

- be located on expansive soil, as defined in Table 18 of the Uniform Building Code (1994, as updated), creating substantial risks to life or property **(Impact 4.16-3)**.

4.16.2.3 ISSUES NOT DISCUSSED FURTHER

As discussed in the Initial Study prepared for the project (Appendix A), there are several resource areas that do not require further discussion. The project would not expose people or structures to potential adverse effect in the following resource areas:

Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Several unnamed fault traces are mapped in the project vicinity, and the exact location and nature of these faults has not been determined. However, the project area is not located within an Alquist-Priolo active fault zone. The gondola would be designed to withstand high winds and ice loads, and the flexibility inherent in the gondola line would readily tolerate horizontal and vertical displacements in excess of the magnitudes anticipated from a fault rupture (Holdrege & Kull 2015:14). In addition, the proposed project would not involve construction of habitable structures. Therefore, this impact is considered less than significant and will not be evaluated further in this Draft EIS/EIR.

Strong seismic ground shaking /Identification of seismicity and faulting concerns and the potential susceptibility of the proposed project to be impacted by or exacerbate these risks. As described above, several active and potentially active faults are located near the project area. Earthquakes associated with these faults may cause strong ground shaking in the project area. The extent of damage would depend on soil characteristics, groundwater depth, and duration and intensity of the earthquake. The majority of the project area is underlain by granite rock which has a low potential for strong ground shaking. In addition, the gondola would be designed with flexibility that would readily tolerate ground shaking. The project design and construction would also conform to the standards contained within CBC Title 24, which identifies specific design requirements to reduce damage from strong seismic ground shaking, ground failure, landslides, soil erosion, and expansive soils. Therefore, this impact is considered less than significant and will not be evaluated further in this Draft EIS/EIR.

Seismic-related ground failure, including liquefaction. Liquefaction is the sudden temporary loss of strength in saturated, loose to medium dense, granular sediments subjected to ground shaking. Liquefaction can cause structure failure because of the reduction of foundation bearing strength. During a seismic event, the extent of damage from ground failure including liquefaction would depend on the soil characteristics, groundwater depth, and duration and intensity of the earthquake. The project site is primarily underlain by granite, with many locations having no overlying soil, and other areas having overlying soil of varying depth. The Preliminary Geotechnical Engineering and Geologic Review (Holdrege & Kull 2015:14) conducted for the project determined that the soils found within the project area have a low potential for liquefaction or lateral spreading because the project area is generally underlain by little to no soil overlying near surface rock. Although the Squaw Valley base terminal would be built in the current site of Cushing Pond, this is a constructed water body and the presence of the pond is not indicative of saturated soils. Project design and construction would conform to CBC Title 24, which identifies specific design requirements to further reduce damage from seismic-related ground failure, including liquefaction. Therefore, this impact is considered less than significant and will not be evaluated further in this Draft EIS/EIR.

Geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse/Result in significant disruptions, displacements, compaction, or overcrowding of the soil. As described above, significant adverse effects associated with landslide and liquefaction are considered unlikely. In addition, all

new facilities would be designed to meet all applicable CBC engineering requirements to ensure that the facilities would not be affected by potential landslide, lateral spreading, subsidence, liquefaction, or collapse. The temporary access road associated with Alternative 2 will be constructed in compliance with the RPMs and BMPs and will be completely restored following construction activities. Therefore, this impact is considered less than significant and will not be evaluated further in this Draft EIS/EIR.

Expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property. Expansive soils are soils that are high in expansive clays or silts and that swell and shrink with wetting and drying, respectively. This shrinking and swelling can result in differential ground movement, which can cause damage to foundations. However, proper fill selection, moisture control, and compaction during construction can prevent these types of soils from causing significant damage.

The Preliminary Geotechnical Engineering and Geologic Review (Holdrege & Kull 2015:4) conducted for the project determined that the project area is generally underlain by little to no soil overlying near surface rock. Granitic rock is not considered an expansive soil. In addition, all construction and design would comply with the CBC, which has specific site development and construction standards by soil type to prevent expansive soil hazards. Therefore, this impact is considered less than significant and will not be evaluated further in this Draft EIS/EIR.

Result in changes in deposition or erosion or changes in siltation which may modify the channel of a river, stream, or lake. Erosion during construction of the base-to-base gondola is described in this section. Refer to Section 4.17, "Hydrology and Water Quality," for a discussion of erosion, sedimentation, and the loss of topsoil during project construction and operation including potential modification to rivers, streams, or lakes.

Soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water. The proposed project would not involve the use of septic tanks or alternative wastewater disposal systems that could be affected by poor soils. Therefore, no impact would occur related to the adequate support of such facilities.

Substantial change in topography or ground surface relief features. The proposed project would involve a change in topography at the Alpine Meadows base terminal to facilitate access to the terminal, but it would not be substantial. No other substantial changes in topography or ground surface relief are proposed.

Destruction, covering, or modification of any unique geologic or physical features. Although there would be blasting to construct the two mid-stations and some of the towers, it would not alter the character of granitic outcroppings or any unique geologic or physical feature.

4.16.3 Direct and Indirect Environmental Consequences

4.16.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.16-1 (Alt. 1): Exposure of People and Structures to Mass Wasting Events

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction, and therefore it would not expose people or structures to mass wasting events. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation nor operation of new facilities. Therefore, there would be no change in exposure of people and structures to mass wasting events.

NEPA Effects Conclusion
With no new construction and no installation nor operation of new facilities, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction and no installation nor operation of new facilities, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.16-2 (Alt. 1): Exposure of People and Structures to Avalanches

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction, and therefore no change in the exposure of people or structures to avalanches. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation nor operation of new facilities. Therefore, there would not be a change in exposure of people or structures to avalanches because there would be no change to existing conditions.

NEPA Effects Conclusion
With no new construction and no installation nor operation of new facilities, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction and no installation nor operation of new facilities, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.16-3 (Alt. 1): Risks Associated with Soil Limitations

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction, and therefore no exposure of people or structures to risks associated with soil limitations. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation nor operation of new facilities. Therefore, there would be no new exposure of people or structures to risks associated with soil limitations.

NEPA Effects Conclusion
With no new construction and no installation nor operation of new facilities, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new construction and no installation nor operation of new facilities, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.16-4 (Alt. 1): Excessive Erosion during Construction

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no new construction, and therefore no excessive erosion or sedimentation. There would be **no effect** under NEPA.

Under Alternative 1 – No Action Alternative, the TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, with no new construction and no installation nor operation of new facilities. Therefore, there would be no potential for excessive erosion or sedimentation during construction because there would be no change to existing conditions.

NEPA Effects Conclusion

With no new construction and no installation nor operation of new facilities, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new construction and no installation nor operation of new facilities, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

4.16.3.2 ALTERNATIVE 2

Impact 4.16-1 (Alt. 2): Exposure of People and Structures to Mass Wasting Events

Mass wasting events include landslides, debris flows, and rock fall. The steep terrain in the project area and areas of relatively unconsolidated geologic materials indicate that mass wasting events that might affect people and structures are possible. However, mass wasting events in the area are rare and the potential for mass wasting events to affect project facilities is low. Rock blasting would likely be required to construct components of Alternative 2, which has the potential to trigger mass wasting events. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to mass wasting events would be **adverse** because of the potential for mass wasting to be triggered by rock blasting during construction of Alternative 2. RPM NOI-4 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to mass wasting events would be **potentially significant** because construction of Alternative 2 would require rock blasting, which has the potential to trigger mass wasting events. RPM NOI-4 would reduce this effect, but not to a less-than-significant level. Under CEQA, this impact would remain **potentially significant.**

According to a geotechnical report prepared for the project, no historic landslides are located within the Alternative 2 gondola alignment and the potential for them to occur in the area is low because of the relatively competent nature of underlying and adjacent materials (Holdrege & Kull 2015:6).

A high energy debris flow occurred within the south fork of Squaw Creek during the 1997 New Year storm event. Although storms as large as the 1997 event are uncommon, there is the potential for similar debris flow events to occur in the project area from seismic activity or during large storm events. A debris flow path typically follows existing drainages. Infrastructure associated with Alternative 2 would not be constructed within drainages resulting in a low potential of exposure of people and structures because of debris flow.

Because of the relatively gentle topography at the end terminals, potential damage because of rock fall at the end terminals is low. The planned alignment, although generally near ridge tops, traverses across talus slopes that may be prone to rock fall. The volcanic rock is closely fractured into relatively small irregular shaped clasts that would have relatively low energy during rock fall. The granitic rock is strong competent rock and rock fall is an uncommon event (Holdrege & Kull 2015:6). Therefore, the potential damage to people or structures because of rock fall is low.

It is anticipated that rock blasting would be potentially required as part of construction of some of the towers as well as the Squaw Valley and Alpine Meadows mid-stations. The explosion associated with the rock blasting has the potential to trigger mass wasting events.

RPM NOI-4 requires the project applicant to submit a proof of contract with a state-licensed contractor if blasting is required for the installation of site improvements, comply with applicable County ordinances that relate to blasting, and use only state-licensed contractors to conduct these operations.

NEPA Effects Conclusion

Construction of Alternative 2 could expose people or structures to mass wasting events triggered by blasting. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to mass wasting events and rockfall from Alternative 2 would be **adverse** These effects would be mitigated through implementation of RPM NOI-4 and Mitigation Measure 4.16-1 (Alt. 2).

CEQA Determination of Effects

According to a geotechnical report prepared for the project (Holdrege & Kull 2015), no historic landslides are located within the Alternative 2 gondola alignment and the potential for them to occur in the site area is low; however, rock blasting would likely be required and has the potential to trigger mass wasting events. Under CEQA, and using the CEQA criteria, effects related to mass wasting events would be **potentially significant** because construction of Alternative 2 could expose people or structures to mass wasting events due to rock blasting. RPM NOI-4 requires the project applicant to submit a proof of contract with a state-licensed contractor if blasting is required for the installation of site improvements, comply with applicable County ordinances that relate to blasting, and use only state-licensed contractors to conduct these operations. Implementation of this RPM would reduce this potentially significant impact, but not to a less-than-significant level because to prevent mass wasting events, a combination of geology and blasting knowledge is required, the latter of which may not be addressed in RPM NOI-4. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPM NOI-4 as a mitigation measure reduces this potentially significant impact, but not to a less-than-significant level because to prevent mass wasting events, a combination of geology and blasting knowledge is required, the latter of which may not be addressed in RPM NOI-4. Therefore, this impact would remain potentially significant.

Mitigation Measure 4.16-1 (Alt. 2): Develop and Implement a Rock Blasting Plan

To minimize the risk of mass wasting because of rock blasting during construction activities, a rock blasting plan shall be prepared by the contractor and submitted to the County at least 30 days prior to the blasting addressed in the plan. The blasting plan shall be site-specific, based on the locations of required blasting, and based on the results of a project-specific geotechnical investigation. The blasting plan shall include a description of the planned blasting methods, an inventory of receptors potentially affected by the planned blasting, calculations to determine the area affected by the planned blasting, and a description of measures that have been taken to minimize the risk of triggering mass wasting events by the blasting. The blasting plan shall meet criteria established in Chapter 3 (Control of Adverse Effects) in the Blasting Guidance Manual of the U.S. Department of Interior Office of Surface Mining Reclamation and Enforcement.

Significance after Mitigation
Implementation of Mitigation Measure 4.16-1 (Alt. 2) would reduce the risk of mass wasting because of rock blasting to a **less-than-significant** level because the rock blasting plan would evaluate site specific conditions and minimize the potential for the blast to cause mass wasting events.

Impact 4.16-2 (Alt. 2): Exposure of People and Structures to Avalanches

Implementation of Alternative 2 would include construction of gondola towers within areas currently designated as PAHAs. Project implementation would also increase the frequency and number of persons present in PAHAs. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to avalanche hazards would be **adverse** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to avalanche hazards would be **potentially significant** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would reduce this impact.

The existing Squaw Valley Avalanche Mitigation Program that has maintained a high level of public safety would continue to operate for Alternative 2. The Program has been very effective in minimizing the avalanche risk to skiers and other members of the public. The avalanche plan used to control avalanche hazards in Squaw Valley would continue to be implemented under the Alternative 2.

Alternative 2 does cross several PAHAs including one on the Alpine Meadows side of the ridge, and the Powderhorn path on the Squaw Valley side. The Squaw Valley base terminal and both mid-stations are not located in a mapped PAHA. The Avalanche Mitigation Plan is intended to address the potential avalanche risks in outdoor public areas that are part of the project infrastructure.

Towers will be constructed in the PAHAs but will be constructed to withstand the design avalanche. All buildings must comply with the Placer County Code (Article 12.40, Avalanche Management Areas) specifications for ensuring that the building can withstand the design avalanche.

There are continuing conditions that are outside of the County's or the project applicant's control that affect future avalanche risk related to management of the mountain slopes. The active management of ski slopes and implementation of avalanche hazard mitigation contributes beneficial effects related to the magnitude and frequency of future avalanches, but it is possible that vegetation management and tree clearing could produce adverse effects, such as if trees clearing is initiated in identified avalanche runout zones. There are also uncertainties about future avalanche conditions, including runout distances. Other uncertainties include climate change effects that could lessen direct factors (e.g., snowfall) or, conversely, increase vulnerabilities (e.g., fire vegetation clearing).

NEPA Effects Conclusion
Alternative 2 would involve construction of gondola towers in PAHAs. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to avalanche hazards from Alternative 2 would be **adverse** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would mitigate this effect. These effects would be mitigated, however, through implementation of Mitigation Measure 4.16-2 (Alt.2).

CEQA Determination of Effects
Implementation of Alternative 2 would include the construction of gondola towers within PAHAs. Under CEQA, and using the CEQA criteria, effects related to avalanche hazards would be **potentially significant** because implementation of Alternative 2 would increase the number of persons and structures at risk in the event of an avalanche. There are no applicable RPMs that would reduce this impact. Therefore, this impact would remain potentially significant.

Mitigation Measure 4.16-2 (Alt. 2): Develop and Implement an Avalanche Hazard Mitigation Plan

Prior to issuance of permits, the project applicant shall provide the Forest Service and Placer County with a complete Avalanche Hazard Mitigation Plan for the project. The plan shall be subject to review and approval by the Forest Service and County, and permit approval will be conditioned based on ongoing implementation of the plan. The plan shall include, but shall not be limited to, the following elements:

- Prior to opening of the gondola, the project applicant shall develop avalanche notification protocols in consultation with the Squaw Valley Fire Department (SVFD), North Tahoe Fire Protection District (contracted through Alpine Springs County Water District), Squaw Valley, and Alpine Meadows operations. The protocols shall specify conditions that warrant consultation with these agencies regarding potential avalanche risks.
- If there is a substantial risk of avalanche, then the gondola and any public areas within the PAHA shall be closed to the public, and signs erected that explain that the closures are because of the avalanche risk. These areas shall be secured from entry until the risk of avalanche has abated.
- On-site structures: The Building Services Division shall review building permit applications for structures within or near moderate PAHAs to confirm that they incorporate the structural specifications to address avalanche risk.
- Up-slope conditions: Policy procedures and necessary agreements and permissions shall be included to ensure that operations on the ski terrain of Squaw Valley and Alpine Meadows continue to implement avalanche mitigation programs and that slope development and management avoids the creation of new long continuous openings that could increase the potential for avalanche release and movement that could affect the gondola. No new large openings shall be created on slopes steeper than 30 degrees that could influence avalanche runouts leading to the gondola.

Significance after Mitigation

Implementation of Mitigation Measure 4.16-2 (Alt. 2) would provide a plan to operate Alternative 2 that minimizes avalanche risk; and would provide a more complete and comprehensive mitigation program to identify, inform, and instruct persons that would potentially be at additional risk because of the project. While these measures would not eliminate the risks of snow avalanche, these measures would lower the magnitude and probability of the impact to an acceptable level. This impact would therefore be reduced to a **less-than-significant** level.

Impact 4.16-3 (Alt. 2): Risks Associated with Soil Limitations

Implementation of Alternative 2 would include construction of structures in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. While all towers and buildings would be constructed in accordance with seismic standards of the CBC, implementation of the project may include buildings on specific locations with varied soil conditions and a range of risks. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to the depth to bedrock and expansion soil limitations**,** whereas effects related to erosion potential would be **adverse** during project construction and after remediation under episodic hydrological events. Implementation of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to soil limitations would be potentially significant prior to the consideration of RPMs because project construction would occur in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would require the implementation of BMPS that reduce the risk of erosion. These measures include slope protection, locating roads, trails, or disturbed areas away from unstable slopes, cut/fill slope construction limitations, revegetation, and ground cover requirements. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level both during construction and after remediation under episodic hydrological events.

Soil limitation ratings are usually based on hazards, risks, or obstructions presented by the natural, undisturbed soil, and are presented in terms of severity from slight to severe. Common limitations for the soil types in the project area include erosion potential, depth to bedrock, and expansion. Risks associated with soil limitations exist in the short term, during construction, and in the long term.

There are several soil types mapped by NRCS on the Alternative 2 alignment. Field verification of soils took place through the preparation of the geotechnical report (Holdrege & Kull 2015). Soil throughout most of the central part of Alternative 2 is very thin and mapped as Rock outcrop, granitic (GRG), Rock outcrop, volcanic (VRG), and Ledford variant-Rock outcrop complex, 30- to 75-percent slopes (WRG). The Rock Outcrop soil units are described as unweathered bedrock with an average thickness of 0–4 inches. The Rock Outcrop units are not rated for erosion hazard because of the lack of soil on these geologic units. The Ledford variant-Rock outcrop complex (WRG) soil unit is typically underlain by bedrock at shallow depths (28 to 32 inches) but the off trail-off road, and trail erosion hazard is very severe. Though the erosion hazard is very severe, the depth to bedrock is shallow and therefore construction of isolated towers would not cause significant risk associated with erosion during construction or in the long term.

The Tallac Series soil units (TAE, TAF, TBF) are mapped in the area of the north and south end terminals and along the slopes immediately adjacent to the valley floor within Squaw Valley. The Tallac soil units generally forms on glacial moraines and have a moderate erosion hazard for both off trail off road and trail except where slopes exceed 30 percent and the erosion hazard is classified as severe, which could present a risk of erosion both during construction and in the long term.

The Tinker Series soil units (TIE, TIG) are mapped along the slopes above Alpine Meadows near the south segment of the gondola. This unit typically forms on glacial moraines. The erosion hazard associated with the soil is classified as moderate except where slopes exceed 30 percent and is classified as very severe. Though the erosion hazard is very severe, the depth to bedrock is shallow; therefore, construction of isolated towers would not cause significant risk associated with short-term or long-term erosion.

The erosion potential of soils within the project area range between 0.10 and 0.15 (NRCS 2014), which are low erodibility ratings. The erosion potential indicates the susceptibility of a soil to sheet and rill erosion by water. These low erodibility factors are because of the low runoff potential of the soil, even though these soils are composed of large particle sandy material that is easily detached from the substrate.

Depth to bedrock or duripan for soils underlying the project alternatives is generally between zero and 41 inches, depending on the soil type. Granitic outcroppings occur over the central portions of the Alternative 2 project site, near the Squaw Valley mid-station, where there is no soil cover for practical purposes.

The soils within the project area do not contain a significant amount of clay, and as a result have a low linear extensibility of approximately 1.5 percent.

In general, much of Alternative 2 is underlain by near-surface granitic and volcanic rock with thin soil cover that should provide suitable support for tower and terminal foundations (Holdrege & Kull 2015:16). The bottom terminals at each end appear to be underlain by alluvial fan and glacial till deposits that should also provide suitable support for planned structures on conventional shallow spread foundations. The Preliminary Geotechnical Engineering and Geologic Review (Holdrege & Kull 2015:14) conducted for the project determined that the soils found within the project area have a low potential for liquefaction or lateral spreading because the project area is generally underlain by little to no soil overlying near surface rock. Although the Squaw Valley base terminal would be built in the current site of Cushing Pond, this is a constructed water body and the presence of the pond is not indicative of saturated soils. As discussed in Section 4.17, “Hydrology and Water Quality,” the pond is currently drained by a 36-inch pipe that conveys water into Squaw Creek. As part of Alternative 2, a drainage plan would be developed for the area.

Project design and construction would conform to CBC Title 24, which identifies specific design requirements to further reduce damage from seismic-related ground failure, including soil limitations.

NEPA Effects Conclusion

Alternative 2 would involve construction in soils with limitations. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to the depth to bedrock and expansion soil limitations. Alternative 2 would not directly increase the risks associated with these soil limitations. However, there could be an **adverse** effect because of the erosion potential soil limitation from the construction of Alternative 2 and in the long term. These effects would be mitigated through implementation of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12.

CEQA Determination of Effects

Alternative 2 is underlain by near-surface granitic and volcanic rock with thin soil cover that should provide suitable support for tower and terminal foundations (Holdrege & Kull 2015). The bottom terminals at each end appear to be underlain by alluvial fan and glacial till deposits that should also provide suitable support for planned structures on conventional shallow spread foundations. The Preliminary Geotechnical Engineering and Geologic Review (Holdrege & Kull 2015:14) conducted for the project determined that the soils found within the project area have a low potential for soil limitations such as expansion because the project area is generally underlain by little to no soil overlying near surface rock. Under CEQA, and using the CEQA criteria, effects related to soil limitations would be potentially significant because project construction would occur in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would require the implementation of BMPS that reduce the risk of erosion. These measures include slope protection, locating roads, trails, or disturbed areas away from unstable slopes, cut/fill slope construction limitations, revegetation, and ground cover requirements. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level both during construction and in the long term.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 as mitigation measures reduces this potentially significant impact to a **less-than-significant** level.

Impact 4.16-4 (Alt. 2): Excessive Erosion during Construction

Depending on wind and rain conditions, grading activities associated with Alternative 2 could result in the potential for erosion of site soils during construction. During construction, graded, excavated, and stockpiled soil could be exposed to erosion via wind and water runoff, which could flow into and degrade nearby water bodies including Squaw and Bear Creek. Standard erosion control measures would be employed to prevent soil erosion, the overall construction disturbance area is relatively small, and portions of the construction would take place on exposed rock where there is no erosion potential. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to soil erosion would be **adverse** because of the erosion potential from project construction and the steep topography in much of the project area. Implementation of RPMs SOILS-1 through SOILS-12 and MUL-3 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to soil erosion would be potentially significant prior to the consideration of RPMs because of the erosion potential from project construction and the steep topography in much of the project area. RPMs SOILS-1 through SOILS-12 include best management practices to address any impacts from excessive erosion during construction of Alternative 2. These RPMs include implementation all practicable sediment and erosion control best management practices; maintenance of ground cover; revegetation after construction; implementation of a construction management plan; and adherence to all regulations from Forest Service Region 5, Lahontan Regional Water Quality Control Board, and Placer County. RPM MUL-3 requires Forest Service and County approval of a grading plan and layout prior to approval of the temporary access road alignment. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

During construction activities, disturbed, graded, excavated, and stockpiled soil could be exposed to erosion via wind and surface water runoff especially when construction occurs in soil susceptible to erosion. The risk of sedimentation and operation of Alternative 2 is discussed in Section 4.17, "Hydrology and Water Quality."

General construction activities that will take place to construct Alternative 2 would include grubbing/clearing of on-site vegetation, skidding of trees, excavation and relocation of soil on the site, backfilling and compaction of soils, and construction of proposed facilities. It is anticipated that helicopters and construction access roads would be used during construction to transport personnel and equipment to the project area during installation of lift infrastructure. Site soil would be moderately to highly susceptible to erosion, particularly on steep, unprotected slopes during construction (Holdrege & Kull 2015:22).

The applicant would be required to submit project grading/improvement plans to the County for review. Additionally, the applicant would be required to develop and implement a stormwater pollution prevention plan (SWPPP) as part of its National Pollution Discharge Elimination System permit for construction activities administered by the State Water Resources Control Board. The SWPPP would include a description of construction activities and would identify the BMPs that would be employed to prevent soil erosion that could contaminate nearby water resources. A monitoring program is required to ensure that BMPs are implemented according to the SWPPP and are effective at controlling discharges of stormwater-related pollutants.

Construction of Alternative 2 is estimated to result in the removal of 42 trees for installation of project facilities and as part of overstory vegetation removal to prevent trees from conflicting with gondola operations. Additionally, approximately 286 trees were identified with the canopy extending over project activity areas. These trees could be subject to removal if they conflict with project construction or operation. The timber removal/skidding activities in the project area could loosen and disturb soils; remove ground surface litter in some areas, exposing the soil surface and facilitating erosion; and compact soils such that runoff can no longer infiltrate or be filtered by the soil.

Overall, the base terminals and mid-stations would disturb approximately 5 acres. Tower footings would disturb a maximum of 0.5 acre (35 towers x 600 square feet maximum disturbance each, including temporary disturbance). A temporary construction access road would disturb 2.5 acres. In total, gondola construction would disturb up to approximately 7.9 acres. Table 4.16-1 describes disturbance by soil type, erosion hazard, and geologic unit.

Table 4.16-1 Alternative 2 Disturbance by Soil Type and Geologic Unit

Component	Number	Soil Type (grouped by NRCS erosion hazard)	Geologic Unit	Area Disturbed during Construction (acres)
Alpine Meadows base terminal	1	Moderate (100%) **TAE**, Tallac very gravelly sandy loam, 2–30% slopes	**Qti**, Quaternary till	1.9
Alpine Meadows mid-station	1	Not Rated (100%) **GRG**, rock outcrop, granitic	**KJgd**, Cretaceous/Jurassic granodiorite	0.5
Temporary construction access road (length not yet determined but assumed to be 7,100 feet)	1	Not Rated (80%) **GRG**, Rock outcrop, granitic Moderate (5%) **TIE**, Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 2–30% slopes Very Severe (15%) (mostly on existing gravel road) **WRG**, Ledford variant-Rock outcrop complex, 30–75% slopes	**Qti**, Quaternary till; **KJgd**, Cretaceous/Jurassic granodiorite	2.5[a]
Towers	35	Not Rated (49.4% of alignment) **GRG**, Rock outcrop, granitic; **VRG**, Rock outcrop, volcanic Moderate (9.6% of alignment) **TAE**, Tallac very gravelly sandy loam, 2–30% slopes Severe (18. 7% of alignment) **TBF**, Tallac-Cryumbrepts, wet complex, 30–50% slopes	**Qf**, Holocene/Pleistocene alluvial fan deposits; **Qti**, Quaternary till; **Qt**, Holocene talus deposits; **Mvaf**, Miocene andesite and dacite flow; **Pia**, Pliocene andesite	0.5

Table 4.16-1 Alternative 2 Disturbance by Soil Type and Geologic Unit

Component	Number	Soil Type (grouped by NRCS erosion hazard)	Geologic Unit	Area Disturbed during Construction (acres)
		TAF, Tallac very gravelly sandy loam, 30–50% slopes Very Severe (22.3% of alignment) **MIG3,** Meiss-Rock outcrop complex, 30–75% slopes, severely eroded**; TIG**, Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 30–75% slopes; **WRG**, Ledford variant-Rock outcrop complex, 30–75% slopes	dike/intrusive; **Pib**, Pliocene basalt dike/intrusive; **KJgr**, Cretaceous/Jurassic granite and granodiorite; **KJgd,** Cretaceous/Jurassic granodiorite	
Squaw Valley mid-station	1	Not Rated (100%) **GRG**, Rock outcrop, granitic	**Pib**, Pliocene basalt dike/intrusive	1.5
Squaw Valley base terminal	1	Moderate (100%) **TAE**, Tallac very gravelly sandy loam, 2–30% slopes	**Qf**, Holocene/Pleistocene alluvial fan deposits	1
TOTAL				7.9

Note: [a] 15 feet x 7,170 feet = 107,550 square feet, or approximately 2.5 acres.

Sources: NRCS 2014, Saucedo 2005; adapted by Ascent Environmental in 2018

Under Alternative 2, the Alpine Meadows base terminal is proposed southeast of the Alpine Meadows base lodge between the Roundhouse Express and Hot Wheels chairlifts and would disturb 1.9 acres. The base terminal would be built on an elevated foundation and no material would be excavated or removed to construct the terminal. Minimal soil disturbance would occur to construct the foundation footers. Additionally, 7,500 cubic yards of fill material would be added between the lodge and the lifts to reduce the slope in that area. This will have a minor change on the topography of the area. Fill material would be imported from off-site locations, and the area would be revegetated using appropriate Forest Service approved seed mixes and consistent with applicable RPMs provided in Appendix B.

The Alpine Meadows mid-station would be located about 650 feet north-northwest of *The Buttress* on NFS lands. This mid-station would be elevated above a granite outcropping, requiring minimal excavation and material export for the terminal and foundations. Some rock blasting may be required, and this material would be scattered on site. The overall disturbance area would be approximately 0.5 acre. Materials for this station would be transported to the site primarily via helicopter. Additionally, a temporary construction access route is proposed primarily on private lands but also on approximately 480 linear feet of NFS lands to access this mid-station during construction. The access road would be located primarily on bedrock and on an existing gravel road. It would be used in the winter months by snowmobiles and snow cats but would not be used in the snow-free months. The temporary construction access route is estimated to be 15 feet wide and approximately 7,100 feet long. It would be restored to its previous condition after construction is complete to the extent possible. Prior to approval of the temporary access road alignment, a grading plan and layout would need to be approved by Placer County and the Forest Service in accordance with RPM MUL-3.

The Squaw Valley mid-station would be located on private lands approximately 1,100 feet southwest of the KT-22 lift terminal. It is anticipated that grading, earth moving, and potentially rock blasting would be required as part of construction of the Squaw Valley mid-station. Overall ground disturbance for the Squaw Valley mid-station would be approximately 1.5 acres. The mid-station would be accessed via an existing road that extends from the Squaw Valley base area to the upper KT-22 terminal. No new access routes are proposed as part of the Squaw Valley side of the project.

The Squaw Valley base terminal would be located on private lands between the bottom terminals of the KT-22 and Squaw One express lifts adjacent to Cushing Pond. Overall ground disturbance for all elements of the Squaw Valley base terminal would be approximately 1 acre. This terminal would also include a deck connecting to the Olympic House and a cabin storage facility.

A total of 35 towers would be installed along the gondola alignment, with 25 on private land and 10 on NFS land. The exact locations and designs for each tower associated with Alternative 2 have not been determined. Helicopters would be used to set most towers. Access and construction methods for each tower would vary depending on site conditions and location. Disturbance for each tower would vary based on its location; towers accessible to an excavator could result in a total disturbance of 600 square feet (including spoil storage) if site conditions allow for a hole to be dug. For towers with more limited construction access, spider excavators could be used to dig a hole for the foundation resulting in approximately 300 square feet of disturbance (including spoil storage). Towers located on granite outcroppings could require some drilling/blasting, but would likely be secured directly to the rock, or anchored to concrete poured directly on the rock, and would not result in excavated ground disturbance. Approximately two towers are proposed on NFS lands and are proposed to be constructed with a spider excavator, which would walk up the proposed gondola alignment from the Alpine Meadows base area. The spider excavator path would need to be approved by Placer County and the Forest Service in accordance with RPM MUL-3 before use. Any disturbance would be restored to pre-project conditions to the extent possible. The anticipated disturbance area for all towers combined would not exceed 0.5 acre.

Alternative 2 would result in disturbance of 7.9 acres during construction. Disturbance would take place primarily in soils with a Moderate or Not Rated Soil Erosion Hazard (NRCS 2014) (Table 4.16-2). The only temporary disturbance associated with Alternative 2 is the construction access road (2.6 acres), which would be recontoured and revegetated after construction.

Table 4.16-2 Alternative 2 Temporary and Permanent Disturbance by Soil Erosion Hazard

NRCS Erosion Hazard	Area Disturbed by Construction (Acres)	% of Total Disturbance
Not Rated	4.24 (2 temporary)	54
Moderate	3.07 (0.13 temporary)	39
Severe	0.09 (0 temporary)	1
Very Severe	0.54 (0.37 temporary)	6

Source: NRCS 2014; adapted by Ascent Environmental in 2018

NEPA Effects Conclusion

Alternative 2 would involve construction in potentially erodible soils. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to excessive erosion during construction of Alternative 2 would be **adverse**. These effects would be mitigated through implementation of RPMs SOILS-1 through SOILS-12 and MUL-3.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to excessive erosion during construction of Alternative 2 would be potentially significant because even with strict adherence to BMPs identified in the SWPPP, there would still be some level of disturbance-related erosion during construction relative to existing conditions. RPMs SOILS-1 through SOILS-12 include best management practices to address any impacts from excessive erosion during construction of Alternative 2. These RPMs include implementation all practicable sediment and erosion control best management practices; maintenance of ground cover; revegetation after construction; implementation of a construction management plan; and adherence to all regulations from Forest Service Region 5, Lahontan Regional Water Quality Control Board, and Placer County. RPM MUL-3 requires Forest Service and County approval of a grading plan and layout prior to approval of the temporary access road alignment. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs

SOILS-1 through SOILS-12 and MUL-3 as mitigation measures reduces this potentially significant impact to a **less-than-significant** level.

4.16.3.3 ALTERNATIVE 3

Impact 4.16-1 (Alt. 3): Exposure of People and Structures to Mass Wasting Events

Mass wasting events include landslides, debris flows, and rock fall. The steep terrain in the project area and areas of relatively unconsolidated geologic materials indicate that mass wasting events that might affect people and structures are possible. However, mass wasting events in the area are rare and the potential for mass wasting events to affect project facilities is low. Rock blasting which have the potential to trigger mass wasting events would likely be required to construct components of Alternative 3. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to mass wasting events would be **adverse** because of the potential for mass wasting to be triggered by rock blasting during construction of Alternative 3. RPM NOI-4 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to mass wasting events would be **potentially significant** because construction of Alternative 3 would require rock blasting, which has the potential to trigger mass wasting events. RPM NOI-4 would reduce this effect, but not to a less-than-significant level. Under CEQA, this impact would remain **potentially significant.**

Impact 4.16-1 would be very similar between Alternative 3 and Alternative 2 because the proposed gondola has the same alignment from the Squaw Valley base terminal to the Squaw Valley mid-station. Alternative 3 then diverges from Alternative 2 to a more eastern alignment. Similar to Alternative 2, Alternative 3 is located in a steep, alpine, high-energy geologic environment that may be subject to landslides, debris flows, and rock fall. There is one small scar from a small landslide east of Alternative 3 (Holdrege & Kull 2013:6). The slide is located in volcanic soil, is only about 100 square feet in area, and is about 1 foot deep. It appears to be a small translational slide that was saturated and failing on the shallow rock surface. Small debris flows and flash floods have occurred in past history in the east and/or west gullies in the vicinity of the Alternative 3 alignment extending down to Alpine Meadows Road. However, because of the lack of or very thin soil at and above the site, debris flows cannot be very large. There is no significant source of material. Debris flows and flash floods at the site are confined to small channels and are not a significant hazard (Holdrege & Kull 2013).

It is anticipated that rock blasting would be potentially required as part of construction of some of the towers as well as the Squaw Valley and Alpine Meadows mid-stations. The explosion associated with the rock blasting has the potential to trigger mass wasting events.

NEPA Effects Conclusion

Construction of Alternative 3 could expose people and structures to mass wasting events triggered by blasting. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to mass wasting events and rockfall from Alternative 3 would be **adverse**. These effects would be mitigated through implementation of RPM NOI-4 and implementation of Mitigation Measure 4.16-1 (Alt. 3).

CEQA Determination of Effects

Under Alternative 3, the potential for landslides, debris flow, and rock fall are low because of the relatively competent nature of underlying and adjacent materials (Holdrege & Kull 2015:6). Additionally, the potential for mass wasting events and rock fall are low because there is no significant source of material. Debris flows and flash floods at the site are confined to small channels and are not a significant hazard (Holdrege & Kull 2013:6). However, rock blasting would likely be required and has the potential to trigger mass wasting events. Under CEQA, and using the CEQA criteria, effects related to mass wasting events would be **potentially significant** because construction of Alternative 3 could expose people or structures to mass wasting events due to rock blasting. RPM NOI-4 requires the project applicant to submit a proof of contract with a state-licensed contractor if blasting is required for the installation of site improvements, comply with applicable County ordinances that relate to blasting, and use only state-licensed contractors to conduct these operations. Implementation of this RPM would reduce this potentially significant impact, but not to a less-than-significant level because to prevent mass wasting events, a combination of geology and blasting

knowledge is required, the latter of which may not be addressed in RPM NOI-4. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPM NOI-4 as a mitigation measure reduces this potentially significant impact, but not to a less-than-significant level because to prevent mass wasting events, a combination of geology and blasting knowledge is required, the latter of which may not be addressed in RPM NOI-4. Therefore, this impact would remain potentially significant.

Mitigation Measure 4.16-1 (Alt. 3): Develop and Implement a Rock Blasting Plan

Implement Mitigation Measure 4.16-1 (Alt. 2).

Significance after Mitigation

Implementation of Mitigation Measure 4.16-1 (Alt. 3) would reduce the risk of mass wasting because of rock blasting to a **less-than-significant** level because the rock blasting plan would evaluate site specific conditions and minimize the potential for the blast to cause mass wasting events.

Impact 4.16-2 (Alt. 3): Exposure of People and Structures to Avalanches

Implementation of Alternative 3 would include construction of the Alpine Meadows mid-station and gondola towers within areas currently designated as PAHAs. Project implementation would also increase the frequency and number of persons present in PAHAs. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to avalanche hazards would be **adverse** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to avalanche hazards would be **potentially significant** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would reduce this impact.

Impact 4.16-2 would be very similar between Alternative 3 and Alternative 2 because the proposed gondola has the same alignment from the Squaw Valley base terminal to the Squaw Valley mid-station. Alternative 3 then diverges from Alternative 2 to a more eastern alignment. The proposed location for the Alpine Meadows mid-station is located in a mapped PAHA. Additionally, several of the towers between the Alpine Meadows mid-station and base terminal are also proposed in a mapped PAHA. The entire cliff band is considered a continuous potential avalanche starting zone where avalanches have been observed nearly every winter. There are several fall line profiles that suggest lines of typical flow for avalanche debris (Caldwell et al. 2009:19). There are numerous benches and rock outcrops along the entire length of the cliff band that act to hold, slow or divert debris flow, but these are not substantial enough to significantly anchor snow, or alter flow patterns for large destructive avalanche events. Any structures built within the study area be engineered and built to withstand design avalanche impact forces specific to the building sites. These forces should be calculated on a site-by-site basis by a qualified and reputable avalanche engineer familiar with or working closely with someone familiar with snow and avalanche conditions in the Alpine Meadows area (Caldwell et al. 2009:22).

NEPA Effects Conclusion

Alternative 3 would involve construction in a PAHA. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to avalanche hazards from Alternative 3 would be **adverse** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would mitigate this effect. These effects would be mitigated, however, through implementation of Mitigation Measure 4.16-2 (Alt. 3).

CEQA Determination of Effects

Implementation of Alternative 3 would include the construction of the Alpine Meadows mid-station and gondola towers within PAHAs. Under CEQA, and using the CEQA criteria, effects related to avalanche hazards

would be **potentially significant** because implementation of Alternative 3 would increase the number of persons and structures at risk in the event of an avalanche. There are no applicable RPMs that would reduce this impact. Therefore, this impact would remain potentially significant.

Mitigation Measure 4.16-2 (Alt. 3): Develop and Implement an Avalanche Hazard Mitigation Plan

Implement Mitigation Measure 4.16-2 (Alt. 2).

Significance after Mitigation

Implementation of Mitigation Measure 4.16-2 (Alt. 3) would provide a plan to continue mountain operations that minimizes avalanche risk; and would provide a more complete and comprehensive mitigation program to identify, inform, and instruct persons that would potentially be at additional risk because of the project. While these measures would not eliminate the risks of snow avalanche, these measures would lower the magnitude and probability of the impact to an acceptable level. This impact would be reduced to a **less-than-significant** level.

Impact 4.16-3 (Alt. 3): Risks Associated with Soil Limitations

Implementation of Alternative 3 would include construction of structures in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. While all towers and buildings would be constructed in accordance with seismic standards of the CBC, implementation of the project may include buildings on specific locations with varied soil conditions and a range of risks. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to the depth to bedrock and expansion soil limitations, whereas effects related to erosion potential would be **adverse** during project construction and after remediation under episodic hydrological events. Implementation of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to soil limitations would be potentially significant prior to the consideration of RPMs because project construction would occur in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would require the implementation of BMPS that reduce the risk of erosion. These measures include slope protection, locating roads, trails, or disturbed areas away from unstable slopes, cut/fill slope construction limitations, revegetation, and ground cover requirements. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level both during construction and after remediation under episodic hydrological events.

Impact 4.16-1 would be very similar between Alternative 3 and Alternative 2 because the proposed gondola has the same alignment from the Squaw Valley base terminal to the Squaw Valley mid-station. Alternative 3 then diverges from Alternative 2 to a more eastern alignment which crosses through two additional soil types: Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 2- to 30-percent slopes (TIE) and Tallac-Cyrumbrepts, wet complex 2- to 30-percent slopes (TBF). The Alternative 3 alignment does not cross through the steeper versions of these soil types which are present in the Alternative 2 alignment (TIG and TBF). Because of the lesser slopes of these soil units, the erosion hazard associated with these soils is slightly less than the hazard in Alternative 2. Field verification of soil types took place during the preparation of the geotechnical report (Holdrege & Kull 2013, 2015).

Project design and construction would conform to CBC Title 24, which identifies specific design requirements to further reduce damage from seismic-related ground failure, including soil limitations.

NEPA Effects Conclusion

Alternative 3 would involve construction in soils with limitations. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to the depth to bedrock and expansion soil limitations. Alternative 3 would not directly increase the risks associated with these soil limitations. However, there could be an **adverse** effect because of the erosion potential soil limitation from

the construction of Alternative 3 and in the long term. These effects would be mitigated through implementation of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12.

CEQA Determination of Effects

The preliminary Geotechnical Engineering and Geologic Review (Holdrege & Kull 2015:14) conducted for the project determined that the soils found within the project area have a low potential for soil limitations such as expansion because the project area is generally underlain by little to no soil overlying near surface rock. However, the erosion hazard associated with some of the deeper and steeper soils ranges from moderate to very severe within Alternative 3. Under CEQA, and using the CEQA criteria, effects related to soil limitations would be potentially significant because project construction would occur in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would require the implementation of BMPS that reduce the risk of erosion. These measures include slope protection, locating roads, trails, or disturbed areas away from unstable slopes, cut/fill slope construction limitations, revegetation, and ground cover requirements. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level both during construction and in the long term.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 as mitigation measures reduces this potentially significant impact to a **less-than-significant** level.

Impact 4.16-4 (Alt. 3): Excessive Erosion during Construction

Depending on wind and rain conditions, grading activities associated with Alternative 3 could result in the potential for erosion of site soils during construction. During construction, graded, excavated, and stockpiled soil could be exposed to erosion via wind and water runoff, which could flow into and degrade nearby water bodies including Squaw and Bear Creek. Standard erosion control measures would be employed to prevent soil erosion, the overall construction disturbance area is relatively small, and portions of the construction would take place on exposed rock where there is no erosion potential. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to soil erosion would be **adverse** because of the erosion potential from project construction and the steep topography in much of the project area. Implementation of RPMs SOILS-1 through SOILS-12 and MUL-3 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to soil erosion would be potentially significant prior to the consideration of RPMs because of the erosion potential from project construction and the steep topography in much of the project area. RPMs SOILS-1 through SOILS-12 include best management practices to address any impacts from excessive erosion during construction of Alternative 3. These RPMs include implementation all practicable sediment and erosion control best management practices; maintenance of ground cover; revegetation after construction; implementation of a construction management plan; and adherence to all regulations from Forest Service Region 5, Lahontan Regional Water Quality Control Board, and Placer County. RPM MUL-3 requires Forest Service and County approval of a grading plan and layout prior to approval of the temporary access road alignment. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Impact 4.16-4 would be very similar between Alternative 3 and Alternative 2 because the proposed gondola has the same alignment from the Squaw Valley base terminal to the Squaw Valley mid-station. Alternative 3 then diverges from Alternative 2 to a more eastern alignment. Under Alternative 3, the Alpine Meadows mid-station would be in a different location, on private lands approximately 900 feet north of the Alpine Meadows SUP boundary. The Alpine Meadows mid-station design and disturbance would be similar to the mid-stations described for Alternative 3. Under Alternative 3, the fill required for the grading proposed at the Alpine Meadows base area would be generated from the Alpine Meadows mid-station site. Construction access to this site would not require any new temporary or permanent roads.

The Squaw Valley mid-station would be in the same location as described for Alternative 2, but the angle of the terminal would be slightly different. The mid-station design and access would be similar to the Squaw Valley mid-station included in Alternative 2.

Construction of Alternative 3 is estimated to result in the removal of 104 trees for installation of project facilities and as part of overstory vegetation removal to prevent trees from conflicting with gondola operations—more than twice the number of trees that would be removed under Alternative 2. Additionally, approximately 133 trees were identified with the canopy extending over project activity areas. These trees, approximately half the number identified for Alternative 2, could be subject to removal if they conflict with project construction or operation. The timber removal/skidding activities in the project area could loosen and disturb soils; remove ground surface litter in some areas, exposing the soil surface and facilitating erosion; and compact soils such that runoff can no longer infiltrate or be filtered by the soil.

Table 4.16-3 represents the disturbance by soil type and geologic unit associated with Alternative 3. There would be no temporary disturbance for this alternative, compared to Alternative 2, which would involve temporary disturbance to construct a temporary construction access road.

Table 4.16-3 Alternative 3 Disturbance by Soil Type and Geologic Unit

Component	Number	Soil Type (Grouped by NRCS erosion hazard)	Geologic Unit	Area Disturbed during Construction (acres)
Alpine Meadows base terminal	1	Moderate (100%) **TAE**, Tallac very gravelly sandy loam, 2–30% slopes	**Qti**, Quaternary till	1.9
Alpine Meadows mid-station	1	Moderate (50%) **TIE**, Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 2–30% slopes Very Severe (50%) **WRG**, Ledford variant-Rock outcrop complex, 30–75% slopes	**KJgd**, Cretaceous/Jurassic granodiorite	0.5
Towers	35	Not Rated (26% of alignment) **GRG**, Rock outcrop, granitic; **VRG**, Rock outcrop, volcanic Moderate (44% of alignment) **TA**E, Tallac very gravelly sandy loam, 2–30% slopes; **TBE**, Tallac-Cryumbrepts, wet complex, 2–30% slopes; **TIE**, Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 2–30% slopes Severe (16% of alignment) **TAF**, Tallac very gravelly sandy loam, 30–50% slopes Very Severe (14% of alignment) **WRG**, Ledford variant-Rock outcrop complex, 30–75% slopes	**Qf**, Holocene/Pleistocene alluvial fan deposits; **Qti**, Quaternary till; **Qt**, Holocene talus deposits; **Mvaf**, Miocene andesite and dacite flow; **Pia**, Pliocene andesite dike/intrusive; **Pib**, Pliocene basalt dike/intrusive; **KJgr**, Cretaceous/Jurassic granite and granodiorite; **KJgd** Cretaceous/Jurassic granodiorite	0.5
Squaw Valley mid-station	1	Not Rated (100%) **GRG**, Rock outcrop, granitic	**Pib**, Pliocene basalt dike/intrusive	1.5
Squaw Valley base terminal	1	Moderate (100%) **TAE**, Tallac very gravelly sandy loam, 2–30% slopes	**Qf**, Holocene/Pleistocene alluvial fan deposits	1
TOTAL				5.4

Sources: NRCS 2014, Saucedo 2005; adapted by Ascent Environmental in 2018

Alternative 3 would result in less overall disturbance than Alternative 2 (which would disturb 7.9 acres; see Table 4.16-1) because no temporary construction access road would need to be constructed. Alternative 3 disturbs less area with a moderate or severe or very severe erosion hazard rating than Alternative 2 (Table 4.16-4).

Table 4.16-4 Alternative 3 Permanent Disturbance by Soil Erosion Hazard

NRCS Erosion Hazard	Area Disturbed by Construction (Acres)	% of Total Disturbance
Not Rated	1.63	30
Moderate	3.37	62
Severe	0.08	1
Very Severe	0.37	7

Source: NRCS 2014; adapted by Ascent Environmental in 2018

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to excessive erosion during construction of Alternative 3 would be **adverse** because Alternative 3 would involve construction in potentially erodible soils. These effects would be mitigated through implementation of RPMs SOILS-1 through SOILS-12 and MUL-3.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to excessive erosion during construction of Alternative 2 would be potentially significant because even with strict adherence to BMPs identified in the SWPPP, there would still be some level of disturbance-related erosion during construction relative to existing conditions. RPMs SOILS-1 through SOILS-12 include best management practices to address any impacts from excessive erosion during construction of Alternative 3. These RPMs include implementation all practicable sediment and erosion control best management practices; maintenance of ground cover; revegetation after construction; implementation of a construction management plan; and adherence to all regulations from Forest Service Region 5, Lahontan Regional Water Quality Control Board, and Placer County. RPM MUL-3 requires Forest Service and County approval of a grading plan and layout prior to approval of the temporary access road alignment. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SOILS-1 through SOILS-12 and MUL-3 as mitigation measures reduces this potentially significant impact to a **less-than-significant** level.

4.16.3.4 ALTERNATIVE 4

Impact 4.16-1 (Alt. 4): Exposure of People and Structures to Mass Wasting Events

Mass wasting events include landslides, debris flows, and rock fall. The steep terrain in the project area and areas of relatively unconsolidated geologic materials indicate that mass wasting events that might affect people and structures are possible. However, mass wasting events in the area are rate and the potential for mass wasting events to affect project facilities is low. Rock blasting will likely be required to construct components of Alternative 4, which has the potential to trigger mass wasting events. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to mass wasting events would be **adverse** because of the potential for mass wasting to be triggered by rock blasting during construction of Alternative 4. RPM NOI-4 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to mass wasting events would be **potentially significant** because construction of Alternative 4 would require rock blasting, which has the potential to trigger mass wasting events. RPM NOI-4 would reduce this effect, but not to a less-than-significant level. Under CEQA, this impact would remain **potentially significant**.

Impact 4.16-1 would be very similar between Alternative 4 and Alternative 3 because of the similar alignment in the southern portion and parallel alignment of the gondola in the northern portion. The potential for landslides, debris flow, and rock fall are low because of the relatively competent nature of underlying and adjacent materials in the northern portion of Alternative 4 (Holdrege & Kull 2015:6). Additionally, the impacts of landslides, debris flow, and rock fall are low because there is no significant source of material in the southern portion of Alternative 4. Debris flows and flash floods at the site are confined to small channels and are not a significant hazard (Holdrege & Kull 2013:6). However, it is anticipated that rock blasting would be potentially required as part of construction of some of the towers as well as the Squaw Valley and Alpine Meadows mid-stations. The explosion associated with the rock blasting has the potential to trigger mass wasting events.

NEPA Effects Conclusion

Construction of Alternative 4 could expose people and structures to mass wasting events triggered by blasting. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to mass wasting events and rockfall from Alternative 4 would be **adverse**. These effects would be mitigated through implementation of RPM NOI-4 and Mitigation Measure 4.16-1 (Alt. 4).

CEQA Determination of Effects

According to a geotechnical report prepared for the project (Holdrege & Kull 2015), no historic landslides are located within the proposed gondola alignment and the potential for them to occur in the site area is low; however, rock blasting would likely be required and has the potential to trigger mass wasting events. Under CEQA, and using the CEQA criteria, effects related to mass wasting events would be **potentially significant** because construction of Alternative 4 could expose people or structures to mass wasting events due to rock blasting. RPM NOI-4 requires the project applicant to submit a proof of contract with a state-licensed contractor if blasting is required for the installation of site improvements, comply with applicable County ordinances that relate to blasting, and use only state-licensed contractors to conduct these operations. Implementation of this RPM would reduce this potentially significant impact, but not to a less-than-significant level because to prevent mass wasting events, a combination of geology and blasting knowledge is required, the latter of which may not be addressed in RPM NOI-4. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPM NOI-4 as a mitigation measure reduces this potentially significant impact, but not to a less-than-significant level because to prevent mass wasting events, a combination of geology and blasting knowledge is required, the latter of which may not be addressed in RPM NOI-4. Therefore, this impact would remain potentially significant.

Mitigation Measure 4.16-1 (Alt. 4): Develop and Implement a Rock Blasting Plan

Implement Mitigation Measure 4.16-1 (Alt. 2).

Significance after Mitigation

Implementation of Mitigation Measure 4.16-1 (Alt. 4) would reduce the risk of mass wasting because of rock blasting to a **less-than-significant** level because the rock blasting plan would evaluate site specific conditions and minimize the potential for the blast to cause mass wasting events.

Impact 4.16-2 (Alt. 4): Exposure of People and Structures to Avalanches

Implementation of Alternative 4 would include construction of the Alpine Meadows mid-station and gondola towers within areas currently designated as PAHAs. Project implementation would also increase the frequency and number of persons present in PAHAs. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to avalanche hazards would be **adverse** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to avalanche hazards would be **potentially significant** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would reduce this impact.

Impact 4.16-2 is similar between Alternative 4 and Alternative 2 because of the similar alignment in the southern portion and parallel alignment in the northern portion of the gondola. In Alternative 4, the Squaw Valley base terminal is located further east than any other alternative, at the same location as the existing Red Dog base terminal. It is located outside of a mapped PAHA, but the area is commonly blocked off if there is a potential avalanche danger. The Alpine Meadows mid-station is located slightly west of the location for Alternative 3 but is still located within a PAHA.

NEPA Effects Conclusion

Alternative 4 would involve construction in a PAHA. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to avalanche hazards from Alternative 4 would be **adverse** because the project could increase the number of people and structures at risk in the event of an avalanche. There are no applicable RPMs that would mitigate this effect. These effects would be mitigated, however, through implementation of Mitigation Measure 4.16-2 (Alt. 4).

CEQA Determination of Effects

Implementation of the Alternative 4 would include the construction of the Alpine Meadows mid-station and gondola towers within PAHAs. Under CEQA, and using the CEQA criteria, effects related to avalanche hazards would be **potentially significant** because implementation of Alternative 4 would increase the number of persons and structures at risk in the event of an avalanche. There are no applicable RPMs that would reduce this impact. Therefore, this impact would remain potentially significant.

Mitigation Measure 4.16-2 (Alt. 4): Develop and Implement an Avalanche Hazard Mitigation Plan

Implement Mitigation Measure 4.16-2 (Alt. 2).

Significance after Mitigation

Implementation of Mitigation Measure 4.16-2 (Alt. 4) would provide a plan to operate Alternative 4 that minimizes avalanche risk; and would provide a more complete and comprehensive mitigation program to identify, inform, and instruct persons that would potentially be at additional risk because of the project. While these measures would not eliminate the risks because of snow avalanche, these measures would lower the magnitude and probability of the impact to an acceptable level. This impact would therefore be reduced to a **less-than-significant** level.

Impact 4.16-3 (Alt. 4): Risks Associated with Soil Limitations

Implementation of Alternative 4 would include construction of structures in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. While all towers and buildings would be constructed in accordance with seismic standards of the CBC, implementation of the project may include buildings on specific locations with varied soil conditions and a range of risks. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to the depth to bedrock and expansion soil limitations would have **no effect** whereas effects related to erosion potential would be **adverse** during project construction and after remediation under episodic hydrological events. Implementation of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to soil limitations would be potentially significant prior to the consideration of RPMs because project construction would occur in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would require the implementation of BMPS that reduce the risk of erosion. These measures include slope protection, locating roads, trails, or disturbed areas away from unstable slopes, cut/fill slope construction limitations, revegetation, and ground cover requirements. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level both during construction and after remediation under episodic hydrological events.

Impact 4.16-1 would be very similar between Alternative 4 and Alternative 2 because most of the affected soils are the same units. Alternative 4 crosses two soil types that are also present in the Alternative 2 alignment: Meiss-Rock outcrop complex, 30- to 75-percent slopes, severely eroded (MIG3) and Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 30- to 75-percent slopes (TIG). Both of these soils have a severe erosion hazard, which makes the erosion risk based on soil limitation for Alternative 4 similar to the risk for Alternative 2. Alternative 4 does not cross the Tallac very gravelly sandy loam, 30- to 50-percent slopes that is present in Alternative 2 and also has a severe erosion hazard. Field verification of soil types took place during the preparation of the geotechnical report (Holdrege & Kull 2013, 2015).

Project design and construction would conform to CBC Title 24, which identifies specific design requirements to further reduce damage from seismic-related ground failure, including soil limitations.

NEPA Effects Conclusion

Alternative 4 would involve construction in soils with limitations. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to the depth to bedrock and expansion soil limitations would have **no effect**. Alternative 4 would not directly increase the risks associated with these soil limitations. However, there could be an **adverse** effect because of the erosion potential soil limitation from the construction of Alternative 4 and in the long term. These effects would be **mitigated** through implementation of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12.

CEQA Determination of Effects

The Preliminary Geotechnical Engineering and Geologic Review (Holdrege & Kull 2015:14) conducted for the project determined that the soils found within the project area have a low potential for soil limitations such as expansion because the project area is generally underlain by little to no soil overlying near surface rock. However, the erosion hazard associated with some of the deeper and steeper soils ranges from moderate to severe within Alternative 4. Under CEQA, and using the CEQA criteria, effects related to soil limitations would be potentially significant because project construction would occur in an area with subsurface materials subject to limitations that could produce instability, structural damage, or risks of injury to persons if not properly anticipated and addressed. RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 would require the implementation of BMPS that reduce the risk of erosion. These measures include slope protection, locating roads, trails, or disturbed areas away from unstable slopes, cut/fill slope construction limitations, revegetation, and ground cover requirements. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level both during construction and in the long-term.

Mitigation Measures

All RPMs provided in Appendix B are adopted by Placer County as mitigation measures and are included in the Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SOILS-1, SOILS-7, SOILS-9, SOILS-11, and SOILS-12 as mitigation measures reduces this potentially significant impact to a **less-than-significant** level.

Impact 4.16-4 (Alt. 4): Excessive Erosion during Construction

Depending on wind and rain conditions, grading activities associated with Alternative 4 could result in the potential for erosion of site soils during construction. During construction graded, excavated, and stockpiled soil could be exposed to erosion via wind and water runoff which could flow into and degrade nearby water bodies including Squaw and Bear Creek. Standard erosion control measures would be employed to prevent soil erosion, the overall construction disturbance area is relatively small, and portions of the construction would take place on exposed rock where there is no erosion potential. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to soil erosion would be **adverse** because of the erosion potential from project construction and the steep topography in much of the project area. Implementation of RPMs SOILS-1 through SOILS-12 and MUL-3 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to soil erosion would be potentially significant prior to the consideration of RPMs because of the erosion potential from project construction and the steep topography in much of the project area. RPMs SOILS-1 through SOILS-12 include best management practices to address any impacts from excessive erosion during construction of Alternative 4. These RPMs include implementation all practicable sediment and erosion control best management practices; maintenance of ground cover; revegetation after construction; implementation of a construction management plan; and adherence to all regulations from Forest Service Region 5, Lahontan Regional Water Quality Control Board, and Placer County. RPM MUL-3 requires Forest Service and County approval of a grading plan and layout prior to approval of the temporary access road alignment. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Under Alternative 4, the Squaw Valley base terminal, the Squaw Valley mid-station, and the Alpine Meadows mid-stations would be in different locations than any of the other alternatives. The base terminal at Alpine Meadows would be in the same location as described for the other alternatives. The Alpine Meadows mid-station design and disturbance would be similar to the mid-stations described for Alternative 2. Construction of this mid-station would require approximately 25,000 cubic yards of excavation, of which approximately 5,000 cubic yards would remain onsite. Access to this site would require a new permanent road. The Squaw Valley mid-station would be located on the Olympic Ridge, east of the top terminal of the existing Olympic Lady lift. Under Alternative 4, the Squaw Valley mid-station would be located slightly to the east of the Squaw Valley mid-station location proposed for Alternatives 2 and 3. The mid-station design and access would be similar to the Squaw Valley mid-station included in Alternative 2. The alignment of the existing Red Dog lift may need to be altered to accommodate the gondola. Under Alternative 4, fill required for the grading proposed at the Alpine Meadows base area would be generated from the Alpine Meadows mid-station site.

Construction of Alternative 4 is estimated to result in the removal of 38 trees for installation of project facilities and as part of overstory vegetation removal to prevent trees from conflicting with gondola operations—the least amount identified for any of the action alternatives. Additionally, approximately 176 trees were identified with the canopy extending over project activity areas. These trees, substantially fewer than under Alternative 2 and somewhat greater than under Alternative 3, could be subject to removal if they conflict with project construction or operation. The timber removal/skidding activities in the project area could loosen and disturb soils; remove ground surface litter in some areas, exposing the soil surface and facilitating erosion; and compact soils such that runoff can no longer infiltrate or be filtered by the soil.

Table 4.16-5 represents the disturbance by soil type and geologic unit associated with Alternative 4.

Table 4.16-5 Alternative 4 Disturbance by Soil Type and Geologic Unit

Component	Number	Soil Type (grouped by NRCS erosion hazard)	Geologic Unit	Area Disturbed during Construction (acres)
Alpine Meadows base terminal	1	Moderate (100%) **TAE**, Tallac very gravelly sandy loam, 2–30% slopes	**Qti**, Quaternary till	1.9
Alpine Meadows mid-station	1	Moderate (100%) **TIE**, Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 2–30% slopes	**KJgd**, Cretaceous/Jurassic granodiorite	0.5
Towers	35	Not Rated (20%) **GRG**, Rock outcrop, granitic **VRG**, Rock outcrop, volcanic Moderate (32%) **TAE**, Tallac very gravelly sandy loam, 2–30% slopes; **TBE**, Tallac-Cryumbrepts, wet complex, 2–30% slopes; **TIE**, Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 2–30% slopes Severe (20%) **TBF**, Tallac-Cryumbrepts, wet complex, 30–50% slopes Very Severe (28%) **TIG**, Tinker-Rock outcrop, granitic-Cryumbrepts, wet complex, 30–75% slopes; **WRG**, Ledford variant-Rock outcrop complex, 30–75% slopes; **MIG3**, Meiss-Rock outcrop complex, 30–75% slopes, severely eroded	**Qf**, Holocene/Pleistocene alluvial fan deposits; **Qti**, Quaternary till; Qt, Holocene talus deposits; **Pia**, Pliocene andesite dike/intrusive; **KJgr**, Cretaceous/Jurassic granite and granodiorite; **Pib**, Pliocene basalt dike/intrusive; **KJgd,** Cretaceous/Jurassic granodiorite	0.5
Squaw Valley mid-station	1	Not Rated (50%) **VRG**, Rock outcrop, volcanic Very Severe (50%) **MIG3**, Meiss-Rock outcrop complex, 30–75% slopes, severely eroded	**Pia**, Pliocene andesite dike/intrusive	1.5
Squaw Valley base terminal	1	Moderate (100%) **TAE**, Tallac very gravelly sandy loam, 2–30% slopes	**Qf**, Holocene/Pleistocene alluvial fan deposits	1
TOTAL				**5.4**

Sources: NRCS 2014, Saucedo 2005; adapted by Ascent Environmental in 2018

There would be no temporary disturbance associated with Alternative 4 compared to Alternative 2 because no temporary access road would be constructed. Alternative 4 has a lower overall disturbance area than Alternative 2 (which would disturb 7.9 acres; see Table 4.16-1) and the same disturbance area as Alternative 3 (which would disturb 5.4 acres; see Table 4.16-3). Alternative 4 has a slightly higher impact in soils with a severe or very severe erosion hazard than Alternatives 2 and 3 (Table 4.16-6).

Table 4.16-6 Alternative 4 Permanent Disturbance by Soil Hazard Rating

NRCS Erosion Hazard	Area Disturbed by Construction (Acres)	% of Total Disturbance
Not Rated	0.85	16
Moderate	3.56	65
Severe	0.1	2
Very Severe	0.94	17

Source: NRCS 2014; adapted by Ascent Environmental in 2018

NEPA Effects Conclusion

Alternative 4 would involve construction in potentially erodible soils. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to excessive erosion during construction of Alternative 4 would be **adverse** because Alternative 4 would involve construction in potentially erodible soils. These effects would be mitigated through implementation of RPMs SOILS-1 through SOILS-12 and MUL-3.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to excessive erosion during construction of Alternative 4 would be potentially significant because even with strict adherence to BMPs identified in the SWPPP, there would still be some level of disturbance-related erosion during construction relative to existing conditions. RPMs SOILS-1 through SOILS-12 include best management practices to address any impacts from excessive erosion during construction of Alternative 4. These RPMs include implementation all practicable sediment and erosion control best management practices; maintenance of ground cover; revegetation after construction; implementation of a construction management plan; and adherence to all regulations from Forest Service Region 5, Lahontan Regional Water Quality Control Board, and Placer County. RPM MUL-3 requires Forest Service and County approval of a grading plan and layout prior to approval of the temporary access road alignment. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SOILS-1 through SOILS-12 and MUL-3 as mitigation measures reduces this potentially significant impact to a **less-than-significant** level.

4.16.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.16-7 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Addressing the action alternatives, for Impact 4.16-1, NEPA effects are adverse and CEQA impacts are potentially significant for all three action alternatives. However, with implementation of RPM NOI-4 and Mitigation Measure 4.16-1, effects under NEPA would be mitigated, and impacts under CEQA would be reduced to a less-than-significant level for all action alternatives. There is no meaningful difference in effects across the three action alternatives.

For Impact 4.16-2, NEPA effects are adverse and CEQA impacts are potentially significant for all three action alternatives. However, with implementation of Mitigation Measure 4.16-2, effects under NEPA would be mitigated, and impacts under CEQA would be reduced to a less-than-significant level for all action alternatives. Alternative 2 would include construction of gondola towers within areas currently designated as PAHAs. In addition to the gondola towers, under Alternatives 3 and 4, the Alpine Meadows mid-station would also be constructed within a mapped PAHA. Under Alternative 4, the Squaw Valley mid-station would be located outside of a mapped PAHA.

For Impact 4.16-3, NEPA effects are adverse and CEQA impacts are potentially significant for all three action alternatives. However, with implementation of RPMs, effects under NEPA would be mitigated, and impacts under CEQA would be reduced to a less-than-significant level for all action alternatives. Alterative 4 proposes more ground disturbance in very severe erosion hazard soils than Alternatives 2 and 3.

For Impact 4.16-4, NEPA effects are adverse and CEQA impacts are potentially significant for all three action alternatives. However, with implementation of RPMs, effects under NEPA would be mitigated, and impacts under CEQA would be reduced to a less-than-significant level for all action alternatives. Alternative 2 proposes the most ground disturbance (up to 7.9 acres compared with 5.4 acres under both Alternatives 3 and 4), which could result in erosion during construction. Alternative 4 proposes the most ground disturbance in soils with very severe erosion hazard soils compared with Alternatives 2 and 3.

Table 4.16-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Impact 4.16-1: Exposure of People and Structures to Mass Wasting Events	Expose people or structures to unstable earth conditions or change in geologic substructures	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Similar to Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Similar to Alternatives 2 and 3
	Result in exposure of people or property to geologic and geomorphological (i.e., avalanches) hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Similar to Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Similar to Alternatives 2 and 3
Impact 4.16-2: Exposure of People and Structures to Avalanches	Result in exposure of people or property to geologic and geomorphological (i.e., avalanches) hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards	No effect	Adverse under NEPA; less than significant with mitigation under CEQA	Adverse under NEPA; less than significant with mitigation under CEQA Similar to Alternative 2	Adverse under NEPA; less than significant with mitigation under CEQA Similar to Alternatives 2 and 3
Impact 4.16-3: Risks Associated with Soil Limitations	Inventory of erodible soils by soil map unit and field verification of these properties	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Similar to Alternative 2	Adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Similar to Alternative 2	Adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Be located on expansive soil, as defined in Table 18 of the Uniform Building Code (1994, as updated), creating substantial risks to life or property	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Similar to Alternative 2	Adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
Impact 4.16-4: Excessive Erosion during Construction	Identification and estimated quantification (acres) of temporary and permanent ground disturbance according to high/moderate/low erodibility soils classes, site geology and subsurface conditions, and slope stability concerns	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less ground disturbance than under Alternative 2	Adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Analysis of increased erosion hazard because of temporary and permanent ground disturbance	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less ground disturbance than under Alternative 2	Adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Inventory of erodible soils by soil map unit and field verification of these properties	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less ground disturbance than under Alternative 2	Adverse under NEPA; less than significant under CEQA Similar to Alternatives 3 and 4.

Table 4.16-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Identify best management practices (BMPs) to reduce soil erosion	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less ground disturbance than under Alternative 2	Adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3
	Result in any significant increase in wind or water erosion of soils, either on or off the site	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA: less than significant under CEQA Less ground disturbance than under Alternative 2	Adverse under NEPA; less than significant under CEQA Similar to Alternatives 2 and 3

4.16.4 Cumulative Effects

4.16.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Draft EIS/EIR. The geographic scope for analyzing cumulative effects for soils, geology, and seismicity is the immediate project vicinity.

The temporal scope typically includes the construction period (6–8 months) as well as the operational period of the gondola (winter season); however, for geology, soils, and seismicity, the temporal scope for reasonably foreseeable future actions is more broadly defined because actions that could result in adverse effects related to geology, soils, and seismicity could contribute to the cumulative condition no matter when they occur. 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 potential changes related to geology, soils, and seismicity that could occur from the construction and operation of the gondola and reasonably foreseeable future projects.

Any present or reasonably foreseeable future projects in the immediate project vicinity have the potential to create impacts to soils, geology, and seismicity. Potential impacts associated with these projects include significant increases in exposure of people or structures to mass wasting, avalanche, soil limitations, and/or cause excessive erosion during construction. The following is a list of present and reasonably foreseeable future projects that could affect soils, geology, and seismicity in the immediate project vicinity.

Project	Potential Impacts
Alpine Meadows Master Development Plan	Increased exposure to mass wasting, avalanche, soil limitations, and/or excessive erosion during construction.
Squaw Valley Red Dog Lift Replacement	Increased exposure to mass wasting, avalanche, soil limitations, and/or excessive erosion during construction.

Project	Potential Impacts
Alpine Meadows Hot Wheels Lift Replacement	Increased exposure to mass wasting, avalanche, soil limitations, and/or excessive erosion during construction.
White Wolf development	Increased exposure to mass wasting, avalanche, soil limitations, and/or excessive erosion during construction.
General development in Olympic Valley	Increased exposure to mass wasting, avalanche, soil limitations, and/or excessive erosion during construction.
General development in Alpine Meadows	Increased exposure to mass wasting, avalanche, soil limitations, and/or excessive erosion during construction.
Alpine Sierra subdivision	Increased exposure to mass wasting, avalanche, soil limitations, and/or excessive erosion during construction.
Tahoe National Forest Land and Resource Management Plan	Regulatory changes
Sierra Nevada Forest Plan Amendment	Regulatory changes

4.16.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct and indirect impacts and thus by definition no cumulative impacts to soils, geology, or seismicity.

Alternative 2

Geotechnical and seismic impacts tend to be site-specific rather than cumulative in nature. For example, seismic events may affect a project-related structure, but the construction of the project components (towers and terminals) would not cause any adjacent parcels to become more or less susceptible to seismic events. The related future projects listed in Table 3-3 as well as Alternative 2 would be required to be designed and constructed in accordance with the State earthquake protection law (California Health and Safety Code Section 19100 et seq.), which requires that all new structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. Therefore, Alternative 2 would not have a considerable contribution to an overall adverse cumulative effect related to seismicity.

The Squaw Valley and Alpine Meadows area has steep slopes that are vulnerable to mass wasting and avalanche. Construction of the proposed gondola associated with Alternative 2 has the potential to result in adverse effects on structures and human life as a result of mass wasting and avalanche both of which are primarily local, site-specific impacts. Alternative 2 would not significantly alter topography which could increase the risk of mass wasting or avalanche and would not cause any adjacent parcels or projects to be more vulnerable to these events. Therefore, Alternative 2 would not have a considerable contribution to an overall adverse cumulative effect related to mass wasting or avalanche.

The Squaw Valley and Alpine Meadows area is also vulnerable to soil limitations such as depth to bedrock, expansion, and erosion potential. Much of the project area for Alternative 2 is generally underlain by little to no soil overlying near surface rock and soils within the project area do not contain a significant amount of clay, and as a result have a low linear extensibility. Thus Alternative 2 would not result in a cumulative effect to soil limitations regarding depth to bedrock or soil expansion. Related future projects listed in Table 3-3 as well as Alternative 2 would be required to minimize soil erosion effects by limiting surface disturbance to the grading seasons prescribed by Placer County and the Lahontan Regional Water Quality Control Board; include project design features or mitigation measures; comply with regulatory permitting requirements and conditions; develop a SWPPP; and implement BMPs that are expected to offset each project's short-term (construction) and long-term (operational) effects such as exposed soils, unstable earthworks, or groundwater interference. Specifically, Alternative 2 would include implementation of Mitigation Measures 4.16-1 and 4.16-2. Therefore, Alternative 2 would not have a considerable contribution to an overall adverse cumulative effect related to grading and soil erosion that could not be addressed by BMPs and standard engineering practices.

Alternatives 3 and 4

Cumulative impacts resulting from Alternatives 3 and 4 would be very similar to those discussed above for Alternative 2. For example, exposure of people and structures to mass wasting events and avalanches would be similar across the action alternatives. There would be a difference among the action alternatives in terms of risks associated with soil limitations because of the number of structures proposed within areas currently designated as PAHAs; Alternative 3 proposes the most structures in these areas, followed by Alternative 4 and then Alternative 2. Another difference is regarding excessive erosion during construction; Alternative 2 proposes the most ground disturbance (up to 7.9 acres compared with 5.4 acres under both Alternatives 3 and 4), which could result in erosion during construction. Alternative 4 proposes the most ground disturbance in soils with very severe erosion hazard soils compared with Alternatives 2 and 3.

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4.17 HYDROLOGY AND WATER QUALITY

This section describes the physical characteristics of the project area, focused on surface hydrology, drainage, flooding, groundwater, and water quality; identifies laws and regulations related to these resources; and presents an analysis of the environmental effects associated with implementation of the alternatives. Section 4.15, "Wetlands," describes waters of the United States and waters of the state within the context of the statutes, regulations, and policies that regulate wetland resources. Section 4.12, "Vegetation," discusses mesic and aquatic land cover types as vegetation and habitat types and as sensitive natural communities. Section 4.14, "Wildlife and Aquatics," discusses aquatic land cover types as habitats for common and special-status species.

4.17.1 Affected Environment

The study area for hydrology and water quality for the Base-to-Base Gondola project alternatives includes the geographic area encompassing the following three scales of potential impact areas: (1) the immediate area where project components would be installed, (2) the extended area around those components where disturbance from installation activities is likely, and (3) the broader hydrological environment originating at the first geographic intersection of project implementation activities and hydrological features, continuing all the way downstream to the point where dilution renders any perceivable environmental effect immeasurable. This third area specifically encompasses the receiving watersheds of Squaw Creek, Bear Creek, and the first reach of the middle Truckee River from the confluence with Bear Creek to the town of Truckee.

A portion of the Alternative 2 alignment passes along the ridge crest that separates the Truckee River watershed and the Five Lakes Creek watershed. Components of the alignment between the Alternative 2 mid-stations, including part of the area of temporary vegetation removal, the temporary access road, and gondola towers, may cross the watershed divide. The environment in this area consists primarily of granitic outcrop, and hydrological features are limited to ephemeral drainages that convey winter snowmelt. Because the disturbance area within the Five Lakes Creek watershed would be extremely small, and because the drainages in that area represent a small contribution to the watershed, effects on the watershed from implementation of Alternative 2 would be immeasurable. In addition, Resource Protection Measures (RPMs) and avoidance of aquatic features through the use of setbacks would result in minimal activity in this area. Therefore, the Five Lakes Creek watershed is not included in the study area for the Base-to-Base Gondola project.

4.17.1.1 ENVIRONMENTAL SETTING

Physiography and Climate

The project site is located in a portion of Placer County high in the Sierra Nevada mountain range. It is typical of the high alpine environment of the upper Sierra mountains, characterized by steep, predominantly igneous mountain slopes, thin soil cover, and craggy, uneven drainage patterns. The proposed gondola would follow a linear alignment of land between the base of the Alpine Meadows Ski Area (Alpine Meadows) (approximately 6,900 feet above sea level [asl]) and the base of the Squaw Valley Ski Area (Squaw Valley) (approximately 6,275 feet asl), spanning, and connecting, the mountainous terrain between the two resorts.

The project area is characterized by a typical montane climate, with cool, wet winters, and mild, dry summers. Local meteorological conditions are recorded by more than one source. Average temperatures range from daytime highs of 42°F in January to 82°F in July. Precipitation data (collected as inches of rain or water equivalent snow) for Olympic Valley is collected at the Squaw Valley Fire Station gage; snow accumulation is collected at the Squaw Valley Ski Area SNOTEL site; and temperature is collected at the Truckee Station National Oceanic and Atmospheric Administration weather gage. Conditions representing Olympic Valley serve as an excellent proxy for conditions at Alpine Meadows, as both valleys experience

similar seasonal weather conditions. The nearly 3,000-foot elevation difference between the valley floor (~6,200 feet) and ridge crests (~9,000 feet) produces local climate diversity.

The average total annual precipitation on the valley floor is 47 inches snow in water equivalent (meaning the inches of water both as rain and if all snow were melted), while the average for surrounding mountains is 263 inches snow in water equivalent. The year-to-year variability in total precipitation for the valley is large relative to its average, while the variability of total precipitation (including snow in water equivalent) on the mountain is extreme (a minimum around 120 inches and a maximum over 500 inches). Because the pattern of years with high versus low precipitation is not consistent for the mountain and valley locations, there are mixed effects on surface runoff production and groundwater recharge potential. In addition, while historically most of the area's precipitation comes in the form of snow, in recent years the snowline has been trending to higher elevations, resulting in a mix of precipitation that is more heavily rain-dominated than in the past. The pattern of precipitation, with winters of heavy snowfall, followed by rapidly warming temperatures in the late spring and early summer, is the main driver of the hydrologic cycle for creeks and rivers within the project area, and regionally. Observations on snowpack in the Sierra Nevada have been made year-round, with snowpack observed as late as July, which can drive heavy runoff periods well into summer.

Hydrology

Truckee River and Truckee River Basin

The project alternatives are located within the Truckee River basin, a basin which encompasses an area of approximately 3,060 square miles (1,958,400 acres) across California and Nevada (NDEP 1997). Approximately 25 percent of the basin is in California and 75 percent in Nevada. The middle Truckee River originates at Lake Tahoe, in California, and flows northeast over a distance of 105 miles to terminate at Pyramid Lake in the desert of northwestern Nevada. Pyramid Lake is an evaporative topographic sink with no outlet, a remnant of the ancient Lake Lahontan that covered vast portions of the modern-day state of Nevada. There are five recognized reaches of the Truckee River system: (1) the 15-mile reach beginning at the Truckee River's origin at the Lake Tahoe Dam in Tahoe City, California; (2) the 20-mile reach that cuts through the Carson Range of the Sierra Nevada mountains, flowing through the upper Truckee River canyon between Truckee, California, and Verdi, Nevada; (3) the 15-mile reach through the Truckee Meadows and the Cities of Reno and Sparks, Nevada, to Vista, Nevada; (4) the 30-mile reach from Vista, Nevada to Wadsworth, Nevada, through the lower Truckee River canyon, cutting through the Virginia Range; and (5) the 25-mile reach below Wadsworth, Nevada, traversing a broad alluvial valley to Pyramid Lake" (NDEP 1997). The watershed between Lake Tahoe and Pyramid Lake includes 1,190 square miles within portions of Nevada; Placer and Sierra Counties in California; and portions of Washoe, Storey, and Lyon Counties and Carson City in Nevada. In California, the watershed includes the drainage areas surrounding the Truckee River between Lake Tahoe and the Town of Truckee, the Donner Creek drainage area west of Truckee, the Martis Creek drainage south and east of Truckee, the Prosser Creek and Little Truckee River drainage areas north and east of Truckee, and the upper Truckee River canyon below Hirschdale to the Nevada state line in Verdi. The project alternatives occur upstream of two minor tributaries to the middle Truckee River, Squaw Creek and Bear Creek (described in detail below).

Squaw Creek and Squaw Creek Watershed

Squaw Valley and Alpine Meadows, being separated by a mountainous ridge, are hydrologically separate entities (Exhibit 4.17-1), with Squaw Valley draining into Squaw Creek, in what is known as Olympic Valley. Average monthly precipitation is highest in the winter and spring, with little to no precipitation in July, August, and September. Most of the precipitation occurs as snow between December and March, while a small percentage is received as rain in the spring and early summer.

The project site is located within the low-elevation portion of the approximately 8-square-mile Squaw Creek watershed, a tributary to the middle reach of the Truckee River (hydrologically downstream of Lake Tahoe). The main Squaw Valley village area is at the west end of the valley floor, at the transition where steep headwater tributaries become flat, meandering flow. The proposed base-terminal for the gondola on the

Squaw Valley side would be near the main Squaw Valley village, approximately 0.5 mile southwest from Squaw Creek's confluence with the Truckee River.

Squaw Creek is a small (approximately 8.2 square miles), subalpine and alpine watershed located about 6 miles northwest of Lake Tahoe, between the towns of Tahoe City and Truckee in California. Ephemeral drainages feeding Squaw Creek headwaters originate high in the surrounding mountains, at elevations as high as 8,900 feet above mean sea level (amsl), and flow down to the main stem and on to the Truckee River at approximately 6,200 feet amsl. The main stem of the creek, at the west end, is divided into north and south subwatersheds, which converge at the base of Squaw Valley, west of the main village area (Exhibit 4.17-1). The northern portions of the action alternatives occur in the south subwatershed. This western end of the creek, with the north and south subwatersheds, is the focus of analysis as the remainder of the creek flows away from the project area, with the lower portions of the creek several miles from the nearest proposed facility.

Both branches of Squaw Creek have similar relief, although the south fork is generally smaller, steeper, and has a higher mean elevation than the north fork. Despite differences in size, existing data indicate that the smaller south fork contributes approximately twice as much runoff per unit area. Watershed geology is dominated by andesitic and granitic rocks and glacial deposits. Land use in the watershed is mostly recreational, commercial, and residential. Over the past 50 years, natural vegetation has been removed from hillslopes in the south fork, and these areas have been developed into ski slopes and maintenance roads. A small amount of Ski Area development has also occurred in the north fork. Removal of vegetation for ski slopes has vastly increased the amount of sediment discharged into the watershed, chiefly affecting the south fork where the majority of disturbance has occurred.

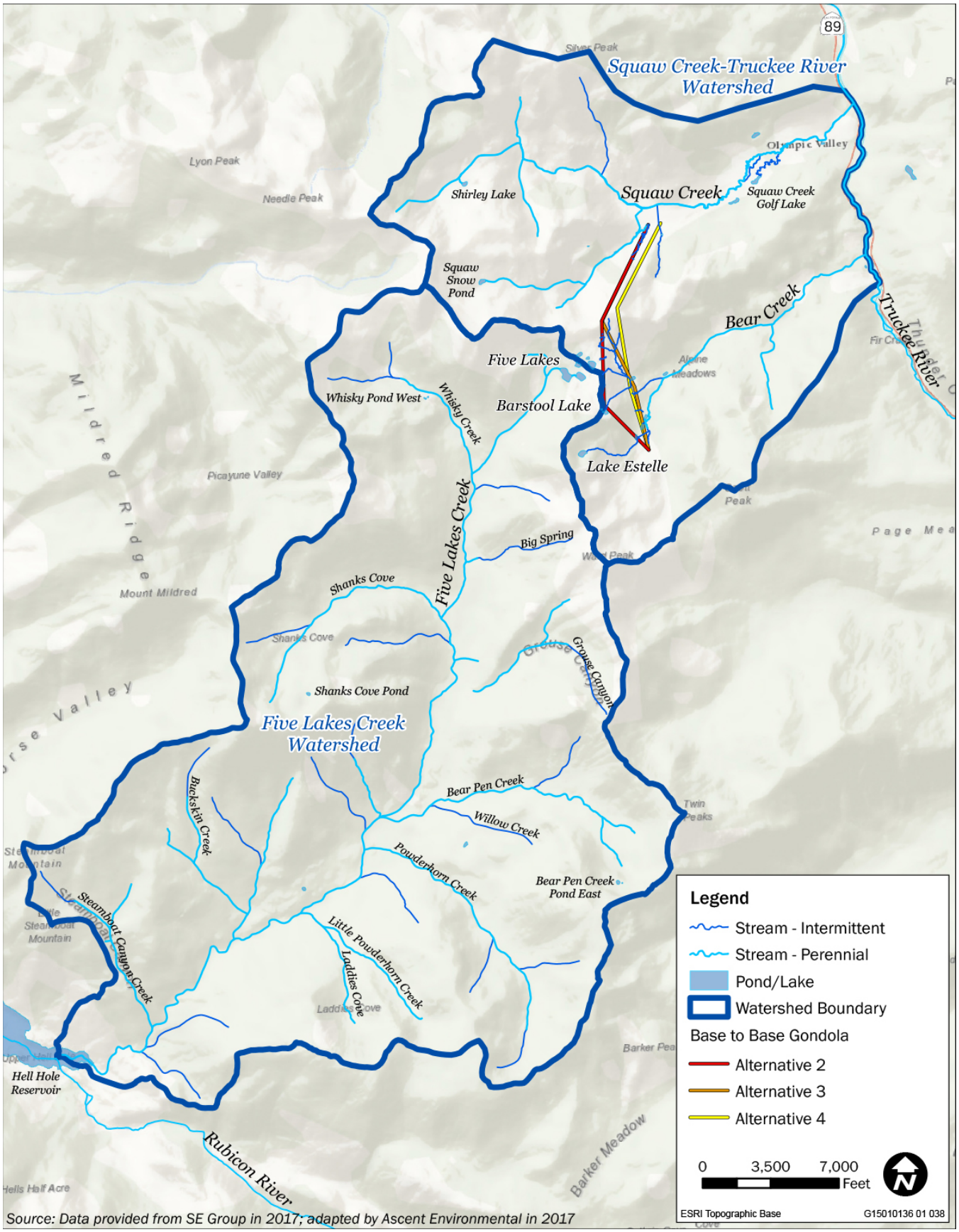
Roads in the Squaw Creek watershed produce both sediment and accelerated runoff and contribute sediment load to the stream network. Nearly all roads connect either directly or indirectly with streams and therefore act as extensions of stream networks and effectively increase watershed drainage density. The increase in effective drainage density has caused sediment from hillslopes to be transported more rapidly to streams. Roads can circumvent natural hillslope sediment transport processes and accelerate erosion, produce sediment through rills and gullying, and alter the magnitude, timing, and peak discharge of streams.

Bear Creek and the Bear Creek Watershed

Like Squaw Valley, the hydrology at Alpine Meadows is primarily influenced by snowmelt runoff, with summer thunderstorms playing an important role in influencing increased flow rates. Alpine Meadows averages around 370 inches of annual snowfall at the base, and over 450 inches at the upper elevations. Snowmelt occurs rapidly and drains on the north side of the resort to Bear Creek and to Ward Creek on the south side. Ward Creek is a tributary to Lake Tahoe. Bear Creek is a tributary to the Truckee River. Some percolation of snowmelt into soil layers occurs. Wetland and riparian areas are found along drainages, springs, and in valley areas north of the base lodge.

Bear Creek, also a tributary to the Truckee River in Placer County, is located 6 miles northwest of Tahoe City. The watershed is approximately 9 square miles, encompassing National Forest System (NFS), California Tahoe Conservancy, and private land holdings. The southern portion of all project alternatives is located in the Bear Creek watershed. The upper reaches of this watershed primarily consist of bedrock with wide bowls of alluvial deposits that are volcanically derived. Bear Creek drains Alpine Meadows and flows southeast from its headwaters to its confluence with the Truckee River approximately 3 miles downstream. Tributaries to Bear Creek originate in Alpine Meadows at elevations of approximately 8,600 feel amsl. Flow rates in Bear Creek are highly variable throughout the year, with peak flows during freshet and significant precipitation events in fall and winter. Almost all peak flow events take place between late fall and early spring.

Alpine Meadows, surrounding the headwaters of Bear Creek, on NFS and California Tahoe Conservancy land, is one of the principal land users of the upper Bear Creek watershed. Alpine Meadows has 14 lifts in operation, 2,000 acres of skiable terrain, three snowmaking ponds, a base lodge development, and two parking areas that are connected by development. At the mid-stream location, private land holdings and housing developments span more than half the reach of Bear Creek.



Source: Data provided from SE Group in 2017; adapted by Ascent Environmental in 2017

Exhibit 4.17-1 Watershed

Aquatic Resources Survey

An aquatic resources survey was carried out in the Bear Creek and Squaw Creek watersheds to identify hydrological resources that could be affected by the various Base-to-Base Gondola alignment alternatives. The survey area consisted of a 100-foot-wide area on either side of the centerline of each of the action alternatives. Resources were mapped by Hydro Restoration (Hydro Restoration 2016, 2017) and supplemented by Ascent Environmental through later field surveys and review of available materials to confirm the locations of features and establish connectivity with existing hydrologic datasets. Aquatic resources identified within the survey area include lacustrine, palustrine, and riverine features.

A total of 1.65 acres of aquatic resources were mapped in the survey area for Alternative 2, 3.62 acres in the survey area for Alternative 3, and 4.13 acres for the survey area for Alternative 4 (Table 4.17-1). 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. (For a description of the CWA and the Porter-Cologne Water Quality Control Act, see Section 4.17.1.2, "Regulatory Setting," below; for information on the California Fish and Game Code Section 1602, see Section 4.15, "Wetlands.")

Table 4.17-1 Aquatic Resources in the Study Area

Action Alternative	Ownership	Feature Type (acres)							Total
		Riverine			Lacustrine	Palustrine			
		Perennial	Ephemeral	Roadside Ditch	Pond	Mountain Alder Thicket	Wetlands	Freshwater Emergent Wetland	
2	Private	0	0.22	0.04	0.25	0	0	0.89	1.40
	Alpine Meadows SUP Area	0.10	0.07	0	0	0.64	0.07	0	0. 89
	Total	0.10	0.30	0.04	0.25	0.64	0.07	0.89	2.29
3	Private	0	0.26	0.04	0.51	0.14	0.088	0.16	1.98
	Alpine Meadows SUP Area	0.35	0.01	0.04	0.52	0	0.16	0.71	1.78
	Total	0.35	0.27	0.08	1.03	0.14	1.04	0.87	3.76
4	Private	0	0.04	0	0.02	0.48	2.53	0.07	3.14
	Alpine Meadows SUP Area	0.35	0.01	0.02	0.64	0	0.07	0.37	1.47
	Total	0.35	0.05	0.02	0.66	0.48	2.60	0.44	4.61

Notes: SUP = special use permit.

Totals may not equal sum of numbers because of independent rounding.

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

The acreage values provided in Table 4.17-1 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 exact 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.

Mapped aquatic resources features are presented in Exhibit 4.17-2. Riverine features in the survey area consist of ephemeral, intermittent, and perennial streams, and ditches. Several unnamed seasonal (ephemeral and intermittent) tributary streams cross the survey 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

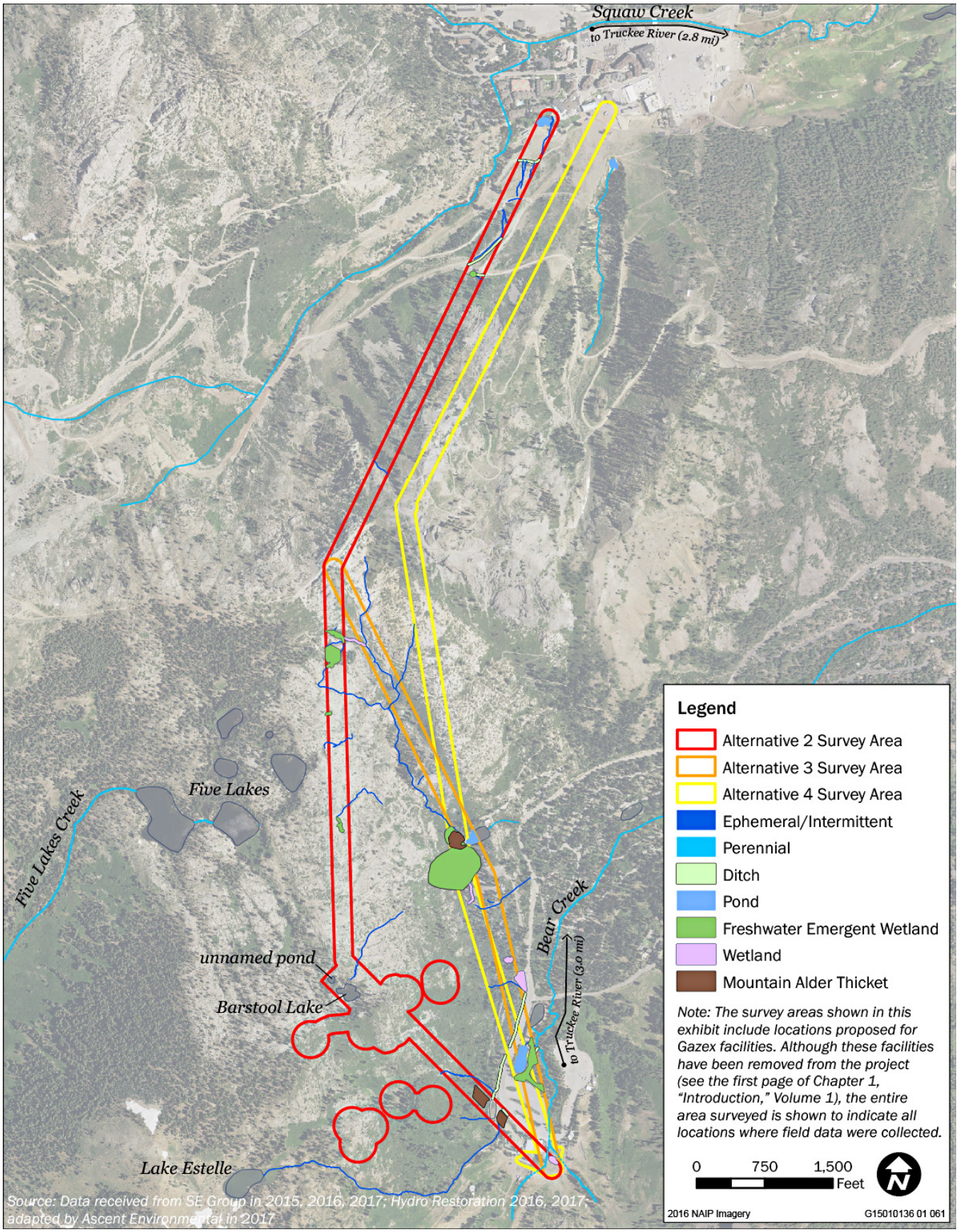


Exhibit 4.17-2 Hydrology Features

riverine habitat within the survey area includes areas of cover by mosses (and nonvascular plants) growing on sand or bedrock, and areas of hydrophytic vascular plants (EcoSynthesis 2017). Perennial streams cross the lower portion of the northern face of the alignments on Squaw Valley and southern face along Alpine Meadows Road. Several roadside ditches were also mapped as riverine features near existing roadways. Many of the features are ditches dug in uplands that concentrate flow off roadways. Bear Creek, a perennial stream that flows from Alpine Meadows to the Truckee River, is near the Alpine Meadows base area. Riparian scrub habitat, adjacent to Bear Creek was mapped within the study 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.

Lacustrine habitats within the study area consist of constructed open water ponds. The constructed ponds include Cushing Pond at Squaw Valley, Caldwell Pond on private property, and a detention pond near the base of Alpine Meadows. Naturally occurring ponds occur adjacent to, but not within the wetlands study area and are not included in Table 4.17-1. Adjacent natural ponds include Barstool Lake, which is located northwest of the base of Alpine Meadows, and just south of the Alpine Meadows mid-station proposed under Alternative 2, and an unnamed pond adjacent to Barstool Lake. Other naturally occurring lacustrine features in the project vicinity include Five Lakes, which is a cluster of five small lakes located west of the Alternative 2 alignment. Naturally occurring ponds are addressed in Section 4.14, "Wildlife and Aquatics," as habitat for Sierra Nevada yellow-legged frog and long-toed salamander. Lacustrine features are classified as "freshwater ponds" in Section 4.12, "Vegetation."

Palustrine habitats exist along topographic benches in the ephemeral drainages and at the edges of lakes and streams. A small fen exists on the southern exposure of Skunk Rock (near the northern mid-station for Alternatives 2 and 3), where several ephemeral tributaries convene. The southern portion of the project descends over a mountain flank spring seep, typical of alpine wetland features. The determination of wetland hydrology was based on observed inundation and saturation in the upper 12–24 inches of soil, watermarks on nearby banks of canals, drift lines on vegetation, and sediment deposits. The natural hydrology of the site consists of the unnamed ephemeral tributaries, recognizable primarily from deposits of transported sand and from "water staining" (blackish growth of cyanobacteria and/or deposition of orange oxidized iron compounds) on bedrock and boulders but also occasionally from the presence of hydrophytic plant species (Hydro Restoration 2017).

Groundwater

The alluvial aquifer underlying Olympic Valley is the Olympic Valley Groundwater Basin as designated by the California Department of Water Resources (DWR) (DWR basin No. 6-108). It has a surface area of slightly over 1 square mile (700 acres). The geohydrology of the basin has been characterized multiple times by several investigators over the decades and these data have been integrated in the *Squaw Valley Public Service District Olympic Valley Groundwater Management Plan* (HydroMetrics WRI 2007).

The bedrock beneath Olympic Valley forms a trough that trends generally east of northeast, carved in igneous bedrock that is not porous, but may hold some groundwater in vertical fractures. The unconsolidated sediments filling the bedrock trough were deposited by a combination of glacial, fluvial, and lacustrine processes and have varied composition and extent. The lateral and vertical variation in materials has complicated mapping and correlation of rock formations (Farr West Engineering et al. 2014). Recent analyses characterize three hydrogeologic units:

- Unit 1 is the surface unit approximately the 5–25 feet of soil/sediment closest to the ground surface), comprised of fine sands and silts in the west with increasing fines (clay, silts, peaty organics) to the east;
- Unit 2 is the underlying layer, which has a wide range of depth and thickness but is the primary water-bearing unit of sands and gravels, with increasing silt and clay to the east; and
- Unit 3 is the base layer, comprised of fine materials and occasional sand and gravel, occurring primarily in the east and having low production capacity.

Generally, materials in the western portions of the basin are coarser and have higher groundwater storage and transmission capability. Groundwater in the Olympic Valley Groundwater Basin generally flows from west to east, with some flow towards the center of the basin off the north and south side slopes. Flow patterns are also affected by local depressions around production wells during pumping. While complex and not fully mapped or quantified, the existing groundwater recharge conditions are not pristine. Historical development on the valley floor may have reduced direct infiltration opportunities where soils have been covered by impervious surfaces. Conversely, vegetation and soil cover management on ski slopes may have increased potential hill slope or mountain front infiltration. Groundwater is the major source of domestic and irrigation water supply in Olympic Valley, with an existing network of nine vertical wells in the alluvial aquifer and five horizontal wells into fractured bedrock.

The Alpine Springs County Water District provides potable water within the Bear Creek subwatershed. Water supplies for the Alpine Springs County Water District are provided by seven groundwater wells, six of which are suitable for potable water, with a combined production capacity of 567 gallons per minute (Placer County 2017).

Storm Drainage

Olympic Valley

About 5.3 square miles (approximately 88 percent) of the 6.0-square-mile watershed draining to Squaw Creek at the downstream end of the main Village area lacks any engineered stormwater drainage systems. The remaining 0.73-square-mile area has been modified for recreation, commercial, residential, and related developed land uses and is served by a drainage system comprised of various open channels, pipes, and culverts that discharge to the stream channels, and were installed by several parties over many decades.

Cushing Pond drain conveys mountain runoff along with runoff from existing commercial areas through a 36-inch pipe to an outfall downstream of the confluence. The Intrawest Drain System serves the existing developed uses in the Village complex and conveys runoff via pipes under a portion of the east parking lot to underground filtration systems (but these are of uncertain sizing, type, efficiency or maintenance status) before discharging to Squaw Creek upstream of the East Village Bridge.

Existing snow storage practices and locations may have an influence on the volume and peak runoff during snow melt. Field observations suggest that the south margin of the west parking lot along Squaw Creek and the east margin of the east parking lot along the Olympic Channel are active snow storage areas. However, little information documents the existing locations and/or methods of snow storage, or its relationship to the existing plow areas (MacKay & Somps 2014).

Bear Creek Valley

The Alpine Meadows portion of the project site drains into Bear Creek, which drains into the Truckee River. There are a series of artificial ditches that collect runoff at the bottom of the ski area, all of which ultimately convey drainage to Bear Creek. Ditches line all sides of the ski area parking lots, and culverts help convey runoff around the lodge, visitor facilities, and some of the base lifts. Although a portion of the Alpine Meadows Ski Area drains to Ward Creek, which is a tributary to Lake Tahoe, no part of the project area is within the Ward Creek watershed.

Water Quality and Impairment

Truckee River

The Truckee River total maximum daily load (TMDL) for sediment establishes sediment load allocations for subwatersheds and intervening areas along the Middle Truckee River, from Tahoe City to the California-Nevada state line (Lahontan RWQCB 2008). The total sediment load allocation for the entire Middle Truckee River watershed is set at 40,329 tons per year (Lahontan RWQCB 2008). The total load allocation for Squaw Creek is 2,228 tons/year. The TMDL consists of several indirect indicators and target values for each indicator. The only direct indicator is suspended sediment concentration in the Truckee River, with a target

of less than or equal to 25 milligrams per liter as an annual 90th percentile loading, as measured in the Truckee River at Farad (USGS Station 10346000). Additional indirect indicators include successful implementation and maintenance of best management practices (BMPs) for road sand application, BMPs for ski runs, and restoration activities such as decommissioning of dirt roads and repair of legacy sites. It is important to highlight the distinction between the Truckee River and Squaw Creek TMDL requirements. While the Squaw Creek TMDL specifically targets sediment that is deposited on the river bed, the Truckee River TMDL targets finer sediment that moves in suspension to downstream areas.

Squaw Creek

Squaw Creek is listed as impaired by the Lahontan Regional Water Quality Control Board (RWQCB) because of sediment (Lahontan RWQCB 2012). The TMDL for sediment recognizes ski-runs and dirt roads as primary controllable sediment sources, with urban runoff and road sand as secondary sources. The necessary percent load reductions and load allocations have been designated by source category. Implementation of the TMDL focuses on tracking compliance with existing regulatory actions, and monitoring channel bed conditions in the meadow reach of Squaw Creek (downstream of the trapezoidal channel). Target instream conditions include an increase in perennial flow, relative decrease in fines and sand, increased size of bed material, and higher scores on bioassessments. The numeric targets are reflected in updates of monitoring programs in WDRs issued by the Lahontan RWQCB in the watershed

Bear Creek

Bear Creek was formerly listed on the Section 303(d) List for sedimentation/siltation but was recommended for delisting in 2006 and has not since been relisted for sedimentation or any other chemical constituents or parameters (Lahontan RWQCB 2012).

4.17.1.2 REGULATORY SETTING

Federal

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

The purpose of the *Tahoe National Forest Land and Resource Management Plan* (LRMP) is to "direct the management of the Tahoe National Forest (TNF) for the next 10 to 15 years. Its goals are to ensure the wise use and protection of TNF resources, fulfill legislative requirements, and address local, Regional, and National issues" (U.S. Forest Service 1990). The Sierra Nevada Forest Plan Amendment Record of Decision (SNFPA) amended the LRMP in 2004 to improve protection of old forests, wildlife habitats, watersheds, and communities in the Sierra Nevada (U.S. Forest Service 2004). The LRMP and SNFPA, collectively referred to as the Forest Plan, provide protection of water quality through policies, standards, and guidelines that maintain water quality where it meets or exceeds state objectives and improve water quality where it does not meet state objectives. Water quality standards established in the Forest Plan are intended to meet the goals of the Clean Water Act and Safe Drinking Water Act and to preserve beneficial uses. As part of the analysis conducted for this Final EIS/EIR, specific standards and guidelines identified in the Forest Plan related to hydrology and water quality were applied and evaluated for consistency.

Forest Service Handbook

Best Hydrologic Management Practices are provided in the Forest Service Region 5 (R5) Forest Service Handbook (FSH) 2509.22 – Soil and Water Conservation Handbook (Handbook) (U.S. Forest Service 2011). Those BMPs that are applicable to the project are identified in Appendix B, which also identifies the RPMs that are part of the project (see Section 4.17.2.1, "Methods and Assumptions," for additional details related to RPMs). These BMPs will be implemented with the RPMs. The BMPs are associated with the particular RPMs because the RPM itself satisfies all or part of the applicable elements of the BMP, or the RPM and BMP address similar resources. The Soil and Water Conservation Handbook provides BMPs for a broad range of activities undertaken on R5 forests, such as grazing, timber harvests, and facility development. Implementation of the BMPs that are applicable to the project are required to meet R5 policies and to be consistent with the provisions of the 1981 Management Agency Agreement between the State Water

Resources Control Board (SWRCB) and the Forest Service as the designated Water Quality Management Agency on NFS lands.

Clean Water Act

The U.S. Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The CWA is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. These are discussed below.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 of the CFR. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the waterbody in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, the SWRCB and its nine RWQCBs have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of waterbodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of the pollutant that the waterbody can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. EPA must either approve a TMDL prepared by the state or disapprove the state's TMDL and issue its own. National Pollutant Discharge Elimination System (NPDES) permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

CWA Section 404

In accordance with Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the United States. Waters of the United States and their lateral limits are defined in Title 33, Part 328.3(a) of the CFR to 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. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the project will uphold water quality standards. Wetland protection elements of the CWA administered by USACE are further discussed in Section 4.15, "Wetlands."

CWA Section 401 and 402 National Pollutant Discharge Elimination System

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits.

"Nonpoint source" pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in

municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of the state regulatory setting, below).

National Toxics Rule

In 1992, EPA issued the National Toxics Rule (NTR) (40 CFR 131.36) under the CWA to establish numeric criteria for priority toxic pollutants in 14 states and jurisdictions, including California, to protect human health and aquatic life. The NTR established water quality standards for 42 pollutants for which water quality criteria exist under CWA Section 304(a) but for which the respective states had not adopted adequate numeric criteria. EPA issued the California Toxics Rule (CTR) in May 2000. The CTR establishes numeric water quality criteria for 130 priority pollutants for which EPA has issued Section 304(a) numeric criteria that were not included in the NTR.

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses of waters and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- existing instream uses and the water quality necessary to protect those uses shall be maintained and protected;
- where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and
- where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from and mitigating against disasters. Formed in 1979 to merge many of the separate disaster related responsibilities of the federal government into one agency, FEMA is responsible for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters and providing disaster assistance to states, communities and individuals. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that provide assistance for mitigating future damages from natural hazards. Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. Placer County participates in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary maximum contaminant levels (MCLs). MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in

1986 established an accelerated schedule for setting drinking water MCLs. EPA has delegated responsibility for California's drinking water program to the California Department of Health Services. The California Department of Health Services is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

Truckee River Operating Agreement

The Olympic Valley Groundwater Basin is located within the Truckee River basin or watershed. In 1990, to resolve litigation involving claims to the Truckee River, Congress passed the Truckee-Carson-Pyramid Lake Water Rights Settlement Act (the Settlement Act). The Settlement Act mandated that the States of Nevada and California negotiate an agreement for Truckee River operations, and that the resulting operating agreement be promulgated as a federal regulation. After almost 20 years of negotiations between the states and Truckee River stakeholders, the Truckee River Operating Agreement (TROA) was executed in September 2008. The TROA was first published in December 2008 and its promulgation as a federal regulation became final in January 2009. However, due to ongoing litigation, tribal considerations, and a requirement to extend TROA, the TROA is not yet effective.

If the TROA becomes effective, two elements of the Settlement Act and the TROA are relevant to new groundwater production and uses within the Truckee River Basin. First, the Settlement Act allocates 32,000 acre-feet annually of total water diversions from all sources—both surface water and groundwater—to California for use in the Truckee River basin. In its analysis of predicted water usage in California through 2033, the EIS/EIR for the TROA included water use projections from DWR. The TROA EIS/EIR analysis predicted that California's Truckee River basin total water usage (surface water and groundwater) would not exceed 22,700 acre-feet annually by 2033 (Reclamation et al. 2008). Second, the TROA, when effective, would include specifications for new wells constructed in the Truckee River basin. New wells would need to be designed to minimize any short-term surface water streamflow reductions to the maximum extent possible. To that end, TROA designates "special zones" and criteria for each of those zones that, if observed, will lead to a presumption of compliance with the Settlement Act's mandate. Special zones include the Alpine Meadows Special Zone, and the Squaw Valley Special Zone. Criteria for those zones require that any well to be constructed within the watershed be drilled more than 500 feet from the centerline of the Truckee River or any Truckee River lake, and comply with specific, defined setbacks from other waterbodies.

To ensure that all new wells comply with the Settlement Act, TROA requires that a "Notice of Intent to Construct a Well" to be filed with the TROA Administrator prior to drilling. If the Notice is properly filed, it will operate to provide presumptive compliance with the TROA and the Settlement Act, and the well may be drilled once the County issues a permit pursuant to local regulations. Although the TROA is not yet in effect, DWR has developed a well notice form to be used during the interim period before the TROA is implemented. Parties who plan to drill a well in the TROA coverage area could complete the form and submit it to DWR and the TROA parties to confirm compliance with TROA terms. If no objections are raised by the TROA signatories within 90 days, the documentation is submitted to the TROA Administrator, and the well is presumed to be in compliance when the TROA comes into effect. If such a pre-TROA Notice of Intent is not filed before the TROA becomes effective, for all new wells drilled after May 1, 1996, a Notice of Intent must be filed within 30 days of the date the TROA becomes effective.

Neither the Settlement Agreement nor the TROA, when effective, will limit the project applicant's, the Squaw Valley Public Service District's, or the Alpine Springs County Water District's right to construct wells, subject to the conditions for presumptive compliance.

State

California Porter-Cologne Water Quality Control Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants SWRCB and each of the nine RWQCBs power to protect water quality and is the primary vehicle for implementation of California's responsibilities under the CWA. The applicable RWQCB is

the Lahontan RWQCB. SWRCB and the Lahontan RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface water and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The Basin Plans must conform to the policies set forth in the Porter-Cologne Act and established by SWRCB in its state water policy. The Porter-Cologne Act also provides that a RWQCB may include within its Basin Plan water discharge prohibitions applicable to particular conditions, areas, or types of waste. The Lahontan RWQCB is responsible for the waterbodies in the study area.

Water Quality Control Plan for the Lahontan Basin

The Basin Plan presents water quality standards and control measures for surface water and groundwater of the region. The Basin Plan designates beneficial uses for waterbodies and establishes water quality objectives, waste discharge prohibitions, and other implementation measures to protect those beneficial uses. The Basin Plan contains both narrative and numeric water quality objectives for the region. Ambient water quality standards are set as objectives for a body of water and effluent limits (or discharge standards) are conditions in state or federal wastewater discharge permits, such as the NPDES permits. Land uses and activities that could degrade water quality and BMPs that could be used to address various nonpoint sources of pollution are identified in the Basin Plan.

Beneficial Uses

The Basin Plan defines and designates the existing beneficial uses for surface water and groundwater in the study area. Beneficial uses for receiving waters of the project study area are identified in Table 4.17-2.

Table 4.17-2 Designated Beneficial Uses for Waterbodies in the Study Area

Beneficial Use	Definition of Use	Truckee River	Squaw Creek	Bear Creek
Surface Water				
Municipal and Domestic Supply	Community, military, or individual water supply, including drinking water supply.	X	X	X
Agricultural Supply	Farming, horticulture, or ranching activities, including irrigation, stock watering, and support of vegetation for range grazing.	X	X	X
Industrial Service Supply	Beneficial uses of waters used for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, geothermal energy production, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.	X	X	X
Groundwater Recharge	Uses of waters used for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.	X		X
Freshwater Replenishment	Uses of waters used for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).	X		
Hydropower Generation	Hydroelectric power generation.	X		
Contact Recreation	Recreational activities involving body contact with water where ingestion of water is reasonably possible. These include, for example, swimming, water-skiing, or fishing.	X	X	X
Noncontact Recreation	Recreational activities involving proximity to water, but not normally involving body contact with water. These uses include picnicking, sunbathing, hiking, beachcombing, camping, boating, and others.	X	X	X
Commercial and Sport Fishing	Commercial or recreational collection of fish or other organisms including, but not limited to, uses involving organisms intended for human consumption.	X	X	X

Table 4.17-2 Designated Beneficial Uses for Waterbodies in the Study Area

Beneficial Use	Definition of Use	Truckee River	Squaw Creek	Bear Creek
Cold Freshwater Habitat	Beneficial uses of waters that support cold water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.	X	X	X
Wildlife Habitat	Uses of waters that support wildlife habitat including preservation and enhancement of vegetation and prey species such as waterfowl.	X	X	X
Rare, Threatened, or Endangered Species	Beneficial uses of waters that support habitat necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened or endangered.	X	X	X
Migration of Aquatic Organisms	Beneficial uses of waters that support habitats necessary for migration, acclimatization between fresh and salt water, or temporary activities by aquatic organisms, such as anadromous fish.	X	X	X
Spawning, Reproduction, and Development	Beneficial uses of waters that support high quality aquatic habitat necessary for reproduction and early development of fish and wildlife.	X	X	X
Warmwater Spawning, Reproduction, and Development	Uses of water that support high quality aquatic habitat necessary for reproduction and early development of fish and wildlife.	X	X	X
Groundwater – All Groundwaters of the Lahontan Region				
Municipal and Domestic Supply	Community, military, or individual water supply, including drinking water supply.	n/a	n/a	n/a
Agriculture Supply	Farming, horticulture, or ranching activities, including irrigation, stock watering, and support of vegetation for range grazing.	n/a	n/a	n/a
Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality, including mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.	n/a	n/a	n/a
Industrial Process Supply	Uses of water for industrial activities that depend primarily on water quality.	n/a	n/a	n/a

Source: Lahontan RWQCB 2016

TMDL for Middle Truckee River

The Truckee River and Squaw Creek TMDLs are discussed above (see discussion of water quality and impairment) but are repeated and expanded here for context. TMDL for sediment establishes sediment load allocations for subwatersheds and intervening areas along the Middle Truckee River, from Tahoe City to the California-Nevada state line (Lahontan RWQCB 2008). The tributary rule establishes that for tributary watersheds, activities must consider and protect downstream uses. Therefore, actions taken in tributaries to Squaw Creek or Bear Creek must be sufficiently protective that they do not contribute to an exceedance of the load allocation for subwatersheds of the Middle Truckee River. The total sediment load allocation for the entire Middle Truckee River watershed is set at 40,329 tons per year (Lahontan RWQCB 2008). The total load allocation for Squaw Creek is 2,228 tons per year, or 5.5 percent of the total, and the total load allocation for Bear Creek is 321 tons per year, or 0.8 percent of the total (Lahontan RWQCB 2008). The TMDL consists of several indirect indicators and target values for each indicator. The only direct indicator is suspended sediment concentration in the Truckee River, with a target of less than or equal to 25 milligrams per liter as an annual 90th percentile loading, as measured in the Truckee River at Farad (USGS Station 10346000). Additional indirect indicators include successful implementation and maintenance of BMPs for road sand application, BMPs for ski runs, and restoration activities such as decommissioning of dirt roads and repair of legacy sites. It is important to highlight the distinction between the Truckee River and Squaw Creek TMDL requirements. While the Squaw Creek TMDL specifically targets sediment that is deposited on the bed, the Truckee River TMDL targets finer sediment that moves in suspension to downstream areas. Proposed project elements and watershed management strategies must focus on both suspended sediment as well as the sand-size portion of bedload sediment, which rarely moves in suspension.

NPDES Permits

SWRCB and the RWQCBs, through powers granted by the federal CWA, require specific permits for a variety of activities that have potential to discharge pollutants to waters of the state and adversely affect water quality. To receive an NPDES permit a Notice of Intent to discharge must be submitted to the RWQCB and design and operational BMPs must be implemented to reduce the level of contaminated runoff. BMPs can include the development and implementation of regulatory measures (local authority of drainage facility design) various practices, including educational measures (workshops informing public of what impacts result when household chemicals are dumped into storm drains), regulatory measures (local authority of drainage facility design), public policy measures (label storm drain inlets as to impacts of dumping on receiving waters), and structural measures (filter strips, grass swales, and retention basins). All NPDES permits also have inspection, monitoring, and reporting requirements.

General Permit for Storm Water Discharges Associated with Construction Activity

SWRCB adopted the statewide NPDES General Permit for Storm Water Discharges Associated with Construction Activity (General Construction Permit) in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Construction Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A stormwater pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include BMPs designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

General Permit for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems

The Municipal Stormwater Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s), which includes development within Olympic Valley. Stormwater is runoff from rain or snow melt that runs off surfaces such as rooftops, paved streets, highways or parking lots and can carry with it pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria and metals. The runoff can then drain directly into local natural and man-made waterbodies. Often, the runoff drains into storm drains which eventually drain, untreated, into a waterbody.

MS4 permits were issued in two phases: Phase I, for medium and large municipalities, and Phase II for small ones. The Phase II Small MS4 General Permit provides coverage for small municipalities and covers permittees statewide. The Phase II Small MS4 General Permit requires the discharger to develop and implement a stormwater management plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable, which is the performance standard specified in Section 402(p) of the CWA. The SWMPs specify what BMPs will be used to address certain program areas. The Phase II Small MS4 General Permit was updated in 2013 with permit language containing reporting requirements, clear performance standards, and measurable and quantifiable targets for implementation. This specificity was intended to establish required outcomes that were not achievable with the previous iteration of the permit.

California Water Code, Water Supply Wells and Groundwater Management

The California Water Code is enforced by DWR. The mission of the DWR is “to manage the water resources of California in cooperation with other agencies, to benefit the State’s people, and to protect, restore, and enhance the natural and human environments” DWR is responsible for promoting California’s general welfare by ensuring beneficial water use and development statewide. The laws regarding groundwater wells are addressed in the California Water Code: Division 1, Article 2 and Articles 4.300 to 4.311; and Division 7, Articles 1-4. The Water Code also includes provisions for water supply assessments, but the project is not of sufficient size (e.g., 500 employees and other similar water demand parameters) to require one.

Groundwater Management is outlined in the California Water Code, Division 6, Part 2.75, Chapters 1–5, Sections 10750 through 10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030 and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SB 1168, SB 1319, and AB 1739) in 2014. The intent

of the acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a groundwater management plan.

California Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

a) Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.

b) Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

Low Impact Development – Sustainable Stormwater Management

On January 20, 2005, SWRCB adopted sustainability as a core value for all California Water Boards' activities and programs and directed RQWCB staff to consider sustainability in all future policies, guidelines, and regulatory actions. As part of the effort to promote sustainability, the RWQCBs are advancing Low Impact Development (LID) principles in California in various ways. LID is a sustainability promoting practice that benefits water supply and contributes to water quality protection. Unlike traditional stormwater management, LID uses site design and stormwater management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional stormwater management.

Local

Placer County General Plan

The following *Placer County General Plan* (Placer County 2013) policies pertaining to sewage conveyance, treatment, and disposal; drainage and water quality; flood protection; water resources; and wetland and riparian areas are most relevant for the alternatives.

Sewage Conveyance, Treatment, and Disposal

- **Policy 4.D.10.** The County shall require all public wastewater facilities to be designed and built to the current standards of the agency providing service.

Drainage and Water Quality

- **Policy 4.E.1.** The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features.

- **Policy 4.E.3.** The County shall consider using stormwater of adequate quality to replenish local groundwater basins, restore wetlands and riparian habitat, and irrigate agricultural lands.

- **Policy 4.E.4.** The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual.

- **Policy 4.E.5.** The County shall continue to implement and enforce its Grading, Erosion and Sediment Control Ordinance and Flood Damage Prevention Ordinance.

- **Policy 4.E.10.** The County shall strive to improve the quality of runoff from urban and suburban development through use of appropriate site design measures including, but not limited to vegetated swales, infiltration/sedimentation basins, riparian setbacks, oil/grit separators, rooftop and impervious area disconnection, porous pavement, and other best management practices (BMPs).

- **Policy 4.E.11.** The County shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County.

- **Policy 4.E.12.** The County shall encourage project designs that minimize drainage concentrations and impervious coverage and maintain, to the extent feasible, natural site drainage conditions.

- **Policy 4.E.13.** The County shall require that new development conforms with the applicable programs, policies, recommendations, and plans of the Placer County Flood Control and Water Conservation District.

- **Policy 4.E.14.** The County shall require projects that have significant impacts on the quantity and quality of surface water runoff to allocate land as necessary for the purpose of detaining post-project flows, evapotranspiring, infiltrating, harvesting/using, and biotreating stormwater, and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff.

- **Policy 4.E.15.** The County shall require that new development in primarily urban development areas incorporate low impact development measures to reduce the amount of runoff, to the maximum extent practicable, for which retention and treatment is required.

- **Policy 4.E 16.** The County shall identify and coordinate mitigation measures with responsible agencies for the control of storm drainage systems, monitoring of discharges, and implementation of measures to control pollutant loads in urban storm water runoff (e.g., California Regional Water Quality Control Board, Placer County Environmental Health Division, Placer County Department of Public Works, CDRA Engineering and Surveying Division, Placer County Flood Control and Water Conservation District).

- **Policy 4.E.20.** The County shall continue to implement and enforce its Stormwater Quality Ordinance.

Flood Protection

- **Policy 4.F.4.** The County shall require evaluation of potential flood hazards prior to approval of development projects. The County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully developed, unmitigated runoff conditions.

- **Policy 4.F.5.** The County shall attempt to maintain natural conditions within the 100-year floodplain of all rivers and streams except under the following circumstances:

    a. Where work is required to manage and maintain the stream's drainage characteristics and where such work is done in accordance with the Placer County Flood Damage Prevention Ordinance, California Department of Fish and Wildlife regulations, and Clean Water Act provisions administered by the U.S. Army Corps of Engineers.

- **Policy 4.F.10.** The County shall preserve or enhance the aesthetic qualities of natural drainage courses in their natural or improved state compatible with flood control requirements and economic, environmental, and ecological factors.

- **Policy 4.F.13.** The County shall continue to implement and enforce its Grading, Erosion and Sediment Control Ordinance and Flood Damage Prevention Ordinance.

- **Policy 4.F.14.** The County shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County's Land Development Manual.

Natural Resources

- **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 special status, threatened or endangered species (see discussion of sensitive habitat buffers in Part I of this Policy Document). Based on more detailed information supplied as a part of the review for a specific project or input from state or federal regulatory agency, 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:

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

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

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

    4. 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.2.** The County shall require all development in the 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.

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

    a. Avoid the disturbance of riparian vegetation;
    b. Replace all functions of the existing riparian vegetation (on-site, in-kind);
    c. Restore another section of stream (in-kind); and/or
    d. Pay a mitigation fee for in-kind restoration elsewhere (e.g., mitigation banks).

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

    d. Provide recreation and public access near streams 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 siltation, 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 stream zone 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.6.** The County shall require development projects to comply with the municipal and construction stormwater permit requirements of the Federal Clean Water Act National Pollutant Discharge Elimination System (NPDES) Phase I and II programs and the State General Municipal and Construction permits. Municipal requirements affecting project design and construction practices are enacted through the County's Stormwater Quality Ordinance. Separate construction permits may be required by and obtained through the State Water Resources Control Board.

- **Policy 6.A.7.** All new development and redevelopment projects shall be designed so as to minimize the introduction of pollutants into stormwater runoff, to the maximum extent practicable, as well as minimize the amount of runoff through the incorporation of appropriate Best Management Practices.

- **Policy 6.A.8.** The County shall support implementation of Low Impact Development site design and Watershed Process Management requirements for new and redevelopment projects in accordance with the NPDES Phase I and II programs, and applicable NPDES permits.

- **Policy 6.A.9.** The County shall require that natural watercourses be 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 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.

- **Policy 6.A.13.** The County shall protect groundwater resources from contamination and further overdraft by pursuing the following efforts:

  a. Identifying and controlling sources of potential contamination;

  b. Protecting important groundwater recharge areas;

  c. Encouraging the use of surface water to supply major municipal and industrial consumptive demands;

  d. Encouraging the use of treated wastewater for groundwater recharge; and

  e. Supporting major consumptive use of groundwater aquifer(s) in the western part of the County only where it can be demonstrated that this use does not exceed safe yield and is appropriately balanced with surface water supply to the same area.

Wetland and Riparian Areas

- **Policy 6.B.1.** The County shall support the "no net loss" policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

- **Policy 6.B.2.** The County shall require new development to mitigate wetland loss in both federal jurisdictional and non-jurisdictional wetlands to achieve "no net loss" through any combination of the following, in descending order of desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation and conservation banking program that provides the opportunity to mitigate impacts to special status, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas. Non-jurisdictional wetlands may include riparian areas that are not federal "waters of the United States" as defined by the Clean Water Act.

- **Policy 6.B.3.** The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.

- **Policy 6.B.5.** The County shall require development that may affect a wetland to employ avoidance, minimization, and/or compensatory mitigation techniques. In evaluating the level of compensation to be required with respect to any given project, (a) on-site mitigation shall be preferred to off-site, and in-kind mitigation shall be preferred to out-of-kind; (b) functional replacement ratios may vary to the extent necessary to incorporate a margin of safety reflecting the expected degree of success associated with the mitigation plan; and (c) acreage replacement ratios may vary depending on the relative functions and values of those wetlands being lost and those being supplied, including compensation for temporal losses. The County shall continue to implement and refine criteria for determining when an alteration to a wetland is considered a less-than-significant impact under CEQA.

Placer County NPDES Municipal Stormwater Permit

Placer County has a Stormwater Management Program in compliance with a NPDES Phase II ("Small MS4") municipal stormwater permit (SWRCB NPDES General Permit No. CAS000004, Board Order 2003-005-DWQ). Project-related stormwater discharges are subject to all applicable requirements of the permit.

Placer County Truckee River Basin Stormwater Management Plan

Placer County published the *Stormwater Management Manual* in 1990 and the *Land Development Manual* in 2006. Building on those efforts, in 2007 the *Truckee River Basin Stormwater Management Plan* was published in 2007. This plan provides a comprehensive program to reduce pollution in stormwater runoff located in the Placer County portion of the Middle Truckee River watershed. The plan is implemented in compliance with NPDES Phase II General Municipal Permit No. CAS000004 and WQCB Order No. 2003-005-DWQ.

Town of Truckee and Placer County Truckee River Water Quality Monitoring Plan

The *Truckee River Water Quality Monitoring Plan* (TRWQMP) has been created in response to an order issued by the Lahontan RWQCB. The California Water Code Section 13267 Lahontan RWQCB order, issued to both Placer County and the Town of Truckee on March 9, 2007 and July 3, 2007, respectively, requires the creation of a comprehensive monitoring program for the middle Truckee River. Although regulated under separate Lahontan RWQCB orders, Placer County and Truckee chose to coordinate efforts in the development of a monitoring program to ensure the cost-effective collection, integration and analysis of water quality data within the watershed.

The TRWQMP is just one element of a much larger stormwater program in the Truckee River watershed. Both Placer County and the Town of Truckee have developed and are implementing SWMPs. The respective SWMPs detail the specific actions each jurisdiction (County and Town) will implement to protect surface water. The purpose of the TRWQMP is to design a strategy which will allow the County and Town to assess the effectiveness of their ongoing SWMPs with respect to protecting downstream water resources.

Squaw Valley General Plan and Land Use Ordinance

The *Squaw Valley General Plan and Land Use Ordinance* (SVGPLUO) was adopted in 1983 as part of Placer County code.

Section V, "Environmental Resources Element," Subsection F, "Streams and Waterways," establishes goals to restore already disturbed drainage areas and to prevent further disturbance, specifically relating to Sections 115, 118, and 121 of the SVGPLUO listed below.

Section 115 of the SVGPLUO addresses drainage/water quality, including: Section 115.14 requiring drainage systems to prevent water quality degradation; limiting work within the 100-year floodplain aside from actions to restore areas previously modified by channelization, fill, or other human activities (Section 115.20); and Section 115.23 that adds additional beneficial function requirements on restoration.

Section 118 of the SVGPLUO addresses erosion control and requires a sedimentation and erosion control plan (Section 118.12) including both construction and long-term measures (Section 118.14) as part of grading, drainage, or improvement plans reviewed by the Placer County Department of Public Works. It does not specify the types of measures to be used but recommends suitable measures and requires revegetation of all disturbed surfaces that will not be part of the approved final impervious surfaces (Section 118.18).

Section 121 of the SVGPLUO, requires that adequate space be provided for storage of snow, and considers that a functional area be 20 percent of the clearable area not including storage along public roads, and that storage may not be within the 100-year floodplain.

Section 139 of the SVGPLUO addresses setbacks for residential structures (Section 139.10) and commercial structures (Section 139.12), setbacks in areas where the floodplain has not been established (Section 139.14), and additional special setbacks (Section 139.10).

Alpine Meadows General Plan

The *Alpine Meadows General Plan* was approved by the Placer County Board of Supervisors on May 1, 1968. It establishes policies specific to Alpine Meadows that build on the general policies found in the *Placer County General Plan* and *Placer County Zoning Ordinance*, similar to the SVGPLUO. California planning law dictates that all land use decisions be consistent with the implementing jurisdiction's adopted general plans; accordingly, the *Alpine Meadows General Plan* is the primary existing document governing land use development in Alpine Meadows, and it includes additional goals and policies that further refine the goals and policies of the *Placer County General Plan*.

The *Alpine Meadows General Plan* is the community plan for the approximately 2,278-acre Alpine Meadows Ski Area, which comprises 1,407 acres of NFS lands, 444 acres of private land, and 427 acres of state lands. While there are no specific goals related to environmental and hydrological preservation identified within the plan, the plan contains a thread of focus on preservation of open space. Specifically, the Land Use element states that "[o]pen space and the watershed classifications provide the first essential step in preserving the natural resource base and appearance…. The compelling reason for [large lot acreages] is to protect the watershed from pollution and siltation."

4.17.2 Analysis Methods

4.17.2.1 METHODS AND ASSUMPTIONS

This section addresses effects on hydrology and water quality from the project within the study area. Evaluation of hydrologic and water quality impacts was based on a review of general and project-specific studies that document water resource and stream corridor conditions and address possible effects of the project. The information obtained from these sources was reviewed and summarized to establish existing conditions and to independently identify potential environmental impacts, based on the standards of

significance presented below. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local ordinances and regulations.

To carry out the impact analysis and determine project-related effects, data relating to the type and location of water quality features in the project vicinity were collected, synthesized, and summarized. Information on drainage and wetland features was collected at a local level for each of the three action alternatives, and this information was used to establish how widespread disturbance impacts would be on riparian environments. These data were combined with watershed-level drainage information to provide an analysis of downstream effects on waterbodies. Local drainage and wetland information was collected from several sources, including aquatic resource delineation surveys, wildlife surveys, National Hydrologic Dataset spatial data, topographic investigations, and satellite imagery. These data were combined to create a single dataset representing drainage features and connectivity in the area where the alternative alignments would cross. For the analysis in Riparian Conservation Areas (RCAs), aquatic features were further categorized based on their characteristics, and appropriate buffers were applied according to the SNFPA land allocations (U.S. Forest Service 2004).

As described in Section 2.2.6, "Resource Protection Measures," the project incorporates a list of 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 (CUP). 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, and their implementation would be ensured by the CUP's conditions of approval. All RPMs are considered roughly proportional and have an essential nexus to the impacts they reduce.

4.17.2.2 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 have an impact on hydrology and water quality. The following analytical indicators are used to inform the Forest Service's determination of impacts:

- Description of existing surface and groundwater hydrology in the study area, including locations and drainage patterns of wetlands, riparian areas, and waterbodies within the study area **(Section 4.17.1.1, "Environmental Setting")**
- Quantification (acres) of ground disturbance resulting from the projects and discussion of impacts on water quality, hydrologic function, drainage patterns, stream health, rate and amount of runoff, stream sedimentation, slope stability, and water quality standards of receiving waters **(Impacts 4.17-1 and 4.17-2)**

- Discuss particularly impacts of the temporary construction access route on water resources (Impact 4.17-1)
- Identification of any Clean Water Act (CWA) impaired or threatened waterbody segments in the Study Area, including Squaw Creek and the Truckee River (Section 4.17.1.1, "Environmental Setting")
- Discussion of Total Maximum Daily Load (TMDL) adopted for sediment in Squaw Creek (Section 4.17.1.1, "Environmental Setting," and Impact 4.17-1)
- Qualitative discussion of existing and proposed groundwater supply and potential changes to groundwater recharge due to increased visitation (Section 4.17.1.1 and Impact 4.17-4)
- Completion of a Riparian Conservation Objective (RCO) analysis, including identification of Riparian Conservation Areas (RCAs) and restrictions for RCAs (Impact 4.17-6 and the Riparian Conservation Objectives Analysis Report [U.S. Forest Service 2019])
- Narrative discussion of BMPs and mitigation techniques to minimize adverse effects to watershed health (specifically measures to minimize erosion and the creation of a stormwater management plan) (Impacts 4.17-1 and 4.17-2)

CEQA Criteria

Based on the Placer County CEQA checklist, Appendix G of the State CEQA Guidelines, and hydrology and water quality policies and standards in the *Placer County General Plan*, implementing any of the alternatives would result in a significant impact related to hydrology and water quality if it would:

- violate any federal, state or county potable water quality standards (Impacts 4.17-1, 4.17-2, and 4.17-3);
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted) (Impact 4.17-4);
- substantially alter the existing drainage pattern of the site or area (Impact 4.17-5);
- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map (Section 4.17.2.3, "Issues Not Discussed Further");
- place within a 100-year flood hazard area structures that would impede or redirect flood flows (Section 4.17.2.3, "Issues Not Discussed Further");
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam (Section 4.17.2.3, "Issues Not Discussed Further");
- result in inundation by seiche, tsunami, or mudflow (Section 4.17.2.3, "Issues Not Discussed Further");
- increase the rate or amount of surface runoff (Impact 4.17-5);
- create or contribute runoff water which would include substantial additional sources of polluted water (Impacts 4.17-1, 4.17-2, and 4.17-3);
- otherwise substantially degrade surface water quality (Impacts 4.17-1, 4.17-2, and 4.17-3);
- alter the direction or rate of flow of groundwater (Impact 4.17-4); or

- impact the watershed of important surface water resources, including but not limited to Lake Tahoe, Folsom Lake, Hell Hole Reservoir, Rock Creek Reservoir, Sugar Pine Reservoir, French Meadows Reservoir, Combie Lake, and Rollins Lake (**Section 4.17.2.3, "Issues Not Discussed Further"**).

4.17.2.3 ISSUES NOT DISCUSSED FURTHER

As discussed in the Initial Study prepared for the project (Appendix A), the project site is not within a 100-year floodplain and no housing would be constructed as part of any of the alternatives. Therefore, none of the alternatives would impede or redirect flood flows, place housing within a floodplain, or expose people or structures to flooding. Because of the distance from the nearest large body of water—Lake Tahoe (approximately 7 miles to the east)—and the elevation of the project site, none of the alternatives would be affected by inundation as a result of seiche or tsunami. There would be no impact related to flooding. These issues are not discussed further in this Final EIS/EIR.

The project would not affect the watersheds of important surface water resources, including but not limited to Lake Tahoe, Folsom Lake, Hell Hole Reservoir, Rock Creek Reservoir, Sugar Pine Reservoir, French Meadows Reservoir, Combie Lake, and Rollins Lake, because the hydrological effects of the project would not be hydrologically upstream of these waterbodies, nor is there known connectivity with the groundwater flow regime of the local groundwater resources for the project and these basins. Therefore, there would be no impact related to watershed effects on these waterbodies. This issue is not discussed further in this Final EIS/EIR.

This section does not analyze indirect effects on Lake Tahoe water quality associated with additional vehicular trips to and from the Lake Tahoe Basin, because the effects would be minor and would be within thresholds established for the protection of lake water quality. Vehicles traveling in the basin can affect lake clarity through emissions of nitrogen and phosphorus and through sediment discharge, such as from driving on snowy roads where sand has been added for traction and which can run off into the lake. The Tahoe Regional Planning Agency (TRPA) established a carrying capacity threshold in 1982 of 2,067,000 vehicle miles traveled (VMT) on a peak summer day as a target to improve air quality. TRPA has begun to consider this threshold as also having an application to water clarity, although TRPA has acknowledged that the relationship between VMT and lake clarity warrants additional study. Existing and cumulative VMT in the basin projected through 2035 was estimated to be below 2,000,000 VMT on a peak summer day (including the Village at Squaw Valley Specific Plan project), which is below the 2,067,000 VMT threshold (Placer County 2016). The gondola project is estimated to generate only a small amount of VMT in the Lake Tahoe Basin, and only in winter. Because it does not include summer operations, the project cannot be compared directly against the carrying capacity threshold established by TRPA. However, for context, the project would generate 1,956 VMT in the basin on a peak winter Saturday and 1,768 VMT on a peak winter Sunday (see Section 4.7, "Transportation and Circulation"), and even if they were added to the summer peak VMT, they would not cause VMT to exceed carrying capacity thresholds. Therefore, it would not substantially affect water quality.

4.17.3 Direct and Indirect Environmental Consequences

4.17.3.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Impact 4.17-1 (Alt. 1): Impacts from Erosion and Sedimentation Caused by Construction-Related Activities

Alternative 1 – The No Action Alternative would result in a continuation of existing conditions. There would be no new construction, and therefore, no generation of erosion or sedimentation. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions, and no construction or installation and operation of new facilities would take place. Therefore, there would be no generation of erosion or sedimentation.

NEPA Effects Conclusion
With no construction activities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no construction activities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.17-2 (Alt. 1): Impacts from Erosion and Sedimentation Caused by Long-Term Implementation of the Project

Alternative 1 – The No Action Alternative would result in a continuation of existing conditions. No new facilities would be installed, and therefore, no generation of erosion or sedimentation associated with them. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions. Therefore, there would be no generation of erosion or sedimentation.

NEPA Effects Conclusion
With no new facilities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no new facilities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.17-3 (Alt. 1): Water Quality Impacts from Acute or Diffuse Releases of Contaminants Used during Project Implementation

Alternative 1 – The No Action Alternative would result in a continuation of existing conditions. No new construction would take place and no facilities would be installed. Therefore, there would be not be any products or materials containing contaminants that would risk exposure to water associated with this alternative. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions. With no construction and no new facilities, there would not be any risk of exposure to contaminants, because no hazardous products or materials would be used.

NEPA Effects Conclusion
With no construction, or new facilities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects
With no construction, or new facilities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.17-4 (Alt. 1): Impacts on Groundwater from Increased Visitation and Groundwater Demand

Alternative 1 – The No Action Alternative would result in a continuation of existing conditions. No new facilities would be installed, and there would not be an increase in visitation to the ski areas. Therefore, there would be no construction activities, facilities, or changes in visitor numbers that could affect groundwater supplies. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions. With no construction, no new facilities, and no increase in visitation, there would be no change in groundwater recharge or consumption within the study area.

NEPA Effects Conclusion

With no new facilities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new facilities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.17-5 (Alt. 1): Localized Flooding from Changes in Site Drainage Patterns

Alternative 1 – The No Action Alternative would result in a continuation of existing conditions. No new facilities would be installed; therefore, there would be no changes to existing site drainage. There would be **no effect** under both NEPA and CEQA.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions. Facilities that could reroute drainage or impede flows would not be installed, and no construction would take place with the potential to modify overland flows on either a temporary or permanent basis.

NEPA Effects Conclusion

With no new facilities under Alternative 1, there would be **no effect** related to this issue.

CEQA Determination of Effects

With no new facilities under Alternative 1, there would be **no effect** related to this issue.

Mitigation Measures

No mitigation measures are required.

Impact 4.17-6 (Alt. 1): Impacts on Riparian Conservation Objectives in Riparian Conservation Areas

Alternative 1 – The No Action Alternative would result in a continuation of existing conditions. No new facilities would be installed; therefore, there would be no impacts on RCOs in RCAs. There would be **no effect** under NEPA. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criterion. No CEQA effects conclusion is provided.

Under Alternative 1 – No Action Alternative, TNF and Placer County would not provide the necessary authorizations to allow construction of a gondola. The outcome would be a continuation of existing conditions. Since no facilities would be installed, no RCAs, and no RCOs designed to protect downstream beneficial water uses, would be affected.

NEPA Effects Conclusion
With no new facilities under Alternative 1, there would be **no effect** related to this issue.

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

4.17.3.2 ALTERNATIVE 2

Impact 4.17-1 (Alt. 2): Impacts from Erosion and Sedimentation Caused by Construction-Related Activities

Activities associated with construction of Alternative 2 such as clearing, grading, log skidding, and travel over temporary roadways could cause localized erosion and sedimentation of waterways, resulting in downstream water quality degradation. The project applicant would be required to adhere to local, state, and federal regulations that safeguard against erosion and sedimentation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project construction would be **adverse** because project construction could cause localized erosion and sedimentation of waterways, resulting in downstream water quality degradation. Implementation of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project construction would be **potentially significant**, despite compliance with regulatory requirements that would minimize the potential for soil erosion and downstream sedimentation and associated effects on water quality. However, RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 provide a robust program to protect soils and water quality. Among other details, these RPMs would include development of plans for the project and review and approval by the lead agencies if an alternative is approved and adopted; require the use of silt fencing, straw mulch, waddles, straw bale check dams, sediment traps or sedimentation basins, stabilized construction areas, material management protocols, and other soil stabilization measures during construction; and require equipment avoidance areas, erosion control measures, limits on operations based on slope, springs, drainages, etc., stream crossing details, rehabilitation of temporary disturbance areas such as staging areas and temporary routes, and timing of operations based on soil moisture, sediment transport, and transportation routes. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Erosion of soil and sediment on the project site, and in nearby or adjacent areas, is a likely outcome of construction of the project. Erosion of soil and sediment ultimately leads to effects on downstream receiving waters as eroded material is transported by stormwater and makes its way into receiving waterbodies. Sedimentation of waterbodies may threaten ecosystem health by producing effects on natural functions such as light penetration, temperature adjustment, bottom conditions, and retention of organic matter (NRCS 2017). Imbalances in these functions can lead to a degradation of hydrological conditions, producing detrimental effects on aquatic species such as increased mortality or chronic toxicity.

The potential magnitude of erosion in an area is dependent on a number of factors, including the degree of susceptibility of the local substrate to erosive forces, the level of activity or disturbance associated with

construction, the steepness of the slope, and local meteorological conditions. Observed erodibility is ultimately dependent on the confluence of these factors working together. Meanwhile, the impact that erosion has on downstream sedimentation depends on the degree of erosion and the sensitivity of the receiving waterbody.

The susceptibility to detachment of soils within the project area is discussed in detail in Section 4.16, "Soils, Geology, and Seismicity." Soils on the project site are loose and poorly developed, and while these types of soils are generally thin (in some places comprising only a veneer of material over bedrock), some soil types within the study area are highly susceptible to erosion by rain and wind. Steep slopes on the project site, often in excess of 45 degrees, help facilitate movement of sediments downslope and into waterways.

The level of activity expected during construction of project-related facilities would be vigorous during the summer months. Project-related construction would involve clearing vegetation, placement of temporary access roads, grading, earth moving, excavation, and tower and station placement. As construction advances, various portions of the project area would be cleared, exposed, and disturbed; these areas would be more susceptible during this vulnerable time to forces exerted by wind, rainfall, and overland stormwater runoff flows than during steady state conditions without the project. The amount and type of disturbance associated with implementation of Alternative 2 is presented in Table 4.17-3.

In addition to construction of facilities, another significant source of ground disturbance that would occur with implementation of the project is road travel. Truck and equipment access over temporary and/or permanent roads has the potential to dislodge soil particles and accelerate erosion. Vehicular travel exerts force on soil particles, which can cause them to separate and become unstable. This accelerates the rate at which normal erosive forces (such as wind and water) can move soil material. Road networks tend to connect either directly or indirectly with streams, and therefore act as an extension of stream networks and effectively increase watershed drainage density. The increase in drainage density decreases the distance over which water must travel to connect to streams, and therefore reduces opportunity for sediment detention during transport.

Table 4.17-3 Projected Ground Disturbance on National Forest System and Private Lands under Alternative 2, by Type

Type of Disturbance	Acres of Disturbance			
	Alternative 1	Alternative 2		
		National Forest System	Private	Total
Temporary Ground Disturbance				
Overstory vegetation removal	None	3.68	9.05	12.73
Tower footing construction area	None	0.16	0.35	0.51
Access roads	None	0.24	3.15	3.40
Total temporary disturbance	**None**	**4.08**	**12.56**	**16.63**
Permanent Ground Disturbance				
Mid-station/terminal	None	2.37	2.54	4.91
Total permanent disturbance	**None**	**2.37**	**2.54**	**4.91**
Grand total	**None**	**6.45**	**15.10**	**21.55**

Note: Totals may not equal sum of numbers because of independent rounding.

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

There are an estimated 3.4 acres of temporary access road that would be required for project construction under Alternative 2 (Table 4.17-3). This length of road would be required within Alpine Meadows to connect existing, permanent local roads to areas of the gondola alignment that would require a crawler for

construction access. While this represents a small amount of disturbance relative to the overall amount of disturbance in the Bear Creek watershed, sensitive soils and hydrologic features in the area could magnify potential disturbance impacts. Where stream crossings are needed, these areas represent a direct connection to project-related erosion and are therefore especially sensitive. Placement of the temporary access road would create an opportunity to circumvent natural hillslope processes and accelerate erosion.

Once eroded, soil and sediment travels downstream in suspension until particle size equilibrates with erosive force to deposit materials within stream channels. Depending on the rate of erosion and efficiency with which sediment is transported, sizable amounts of sediment and soil material can either remain in suspension or accumulate within channels or abrade stream banks. The net effects of this are twofold: (1) a deterioration of water quality due to an increase in stream sediment loads and (2) an alteration in stream morphology and consequent impacts on hydrologic function (see Impact 4.17-5). These processes have been apparent within Squaw Creek over the years, because of upstream development and clearing of vegetation (Lahontan RWQCB 2002). While the project does not involve extensive amounts of disturbance, relative to existing ski area and other nearby disturbance, even small amounts of sedimentation could contribute to degradation of receiving water quality due to the sensitivity of these streams.

An increase in suspended sediment loads from accelerated erosion during construction could degrade water quality in all the receiving waterbodies of the project area. While Bear Creek is not currently Section 303(d)-listed, it has been listed in the past for sedimentation (delisting date 2006). Both Squaw Creek and the Truckee River are on the current Section 303(d) list for sedimentation, with TMDL targets (see Section 4.17.1.1). Site grading and construction activities would increase the potential for soil erosion and sediment transport and delivery to Squaw Creek, Bear Creek and the Truckee River by decreasing vegetative cover, breaking up consolidated soils, and potentially modifying overland drainage. The sensitivity of these receiving waterbodies and their upland environs to erosion and sedimentation indicate that even small amounts of activity could have harmful downstream effects.

While the threat of stormwater and receiving water contamination during construction activities can pose a serious risk to receiving waterbodies as described above, Alternative 2 includes multiple layers of regulatory protections that the applicant and contractor(s) must abide by when executing construction activities. Regulatory protection measures include requirements regarding the maintenance of beneficial uses of water (Table 4.17-1), consistency with Section 404 of the CWA (including the federal NPDES Program that was established through the CWA), compliance with the statewide General Construction Permit, adherence to the Forest Service and SWRCB joint stormwater protection plan (Forest Service Region 5 Forest Service Handbook 2509.22 – Soil and Water Conservation Handbook [Handbook; see Section 4.17.1.2, "Regulatory Setting," above]) and the national BMP handbook (National Best Management Practices for Water Quality Management on National Forest System Lands), compliance with measures that would be prescribed by the Forest Service in the special use permit (SUP) congruent with the Handbook, and compliance with the *Placer County Truckee River Basin Stormwater Management Plan*. Additionally, the project includes RPMs specifically crafted to avoid and minimize environmental effects potentially resulting from project implementation (the text of all RPMs is provided in Appendix B). The RPMs relevant to erosion and sedimentation are identified below, following the description of the federal NPDES Program.

Runoff water quality for all development in California is regulated by the federal NPDES Program (established through the CWA). The NPDES program objective is to control and reduce pollutant discharges to surface waterbodies. Compliance with NPDES permits is mandated by state and federal statutes and regulations. Locally, the NPDES Program is administered by the Lahontan RWQCB. According to the water quality control plans of the Lahontan RWQCB, any construction activities, such as grading and earth work, that would result in the disturbance of 1 acre or more (regardless of whether the disturbance is temporary or permanent) would require compliance with the General Construction Permit. Alternative 2 would require a minimum total disturbance area of approximately 21 acres and would therefore be subject to compliance with the General Construction Permit.

To comply with the General Construction Permit, a SWPPP would be prepared detailing measures to control soil erosion and waste discharges from project construction areas. All contractors conducting construction-

related work would be required to implement the SWPPP to control soil erosion and waste discharges. The general contractor(s) and/or subcontractor(s) conducting the work would be responsible for implementing all BMPs detailed in the SWPPP. The SWPPP would include the following four major elements:

- Identify pollutant sources, including sources of sediment, that may affect the quality of stormwater discharges from the construction site.
- Identify non-stormwater discharges.
- Identify, construct, implement in accordance with a time schedule, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges, from the construction site during construction.
- Identify, construct, implement in accordance with a time schedule, and assign maintenance responsibilities for post-construction BMPs, which are measures to be installed during construction that are intended to reduce or eliminate pollutants after construction is completed.

The SWPPP would also identify the grading and erosion-control BMPs and specifications necessary to minimize or avoid water-quality impacts to the extent practicable. Standard erosion control measures (including management and structural controls) would be required to be implemented for all construction activities that expose soil. Grading operations would be required to eliminate direct routes for conveying potentially contaminated runoff natural watercourses (including ephemeral and intermittent drainages when they contain water). Erosion control barriers such as silt fences and mulching material would be installed. The SWPPP would contain specific measures for stabilizing soils before the onset of the winter season commencing on October 15. Implementation of these standard erosion control measures would reduce the potential for soil erosion and sedimentation of stormwater runoff during construction.

Examples of typical SWPPP BMPs that are employed in areas that are physiographically similar to the location of Alternative 2, and for similar activities include the following:

- conduct visual monitoring of on-site runoff quality;
- place fiber rolls along the perimeter of the site to reduce runoff flow velocities and prevent sediment from leaving the site, and sandbags around potentially affected storm inlets to prevent sediments from entering the inlets;
- place silt fences downgradient of disturbed areas to slow down runoff and retain sediment;
- establish a program of site inspections to ensure that BMPs are consistently implemented and effective; and
- specify that all disturbed soil will be seeded, mulched or otherwise protected by October 15.

In addition to basic SWPPP requirements, and county-level regulatory protections, RPMs have been included as part of the project. The RPMs have been developed in accordance with the process identified in the Handbook (U.S. Forest Service 2011), the *Placer County Truckee River Basin Stormwater Management Plan*, Placer County Code, and policies detailed in the *Placer County General Plan*.

Critically, RPMs include development of plans for the project and review and approval by the lead agencies if an alternative is approved and adopted (RPMs REV-1 through REV-3). The plans would show details on physical improvements for all project components as well as on-site and off-site topography. The plans would provide the specificity to identify any potential conflicts with environmental resources that were identified during Forest Service specialist report preparation or wetland delineation. RPM SOILS-9 requires that improvement plans prepared for Placer County show all proposed grading, drainage improvements,

vegetation and tree removal, and that all work conform with the Placer County Grading Ordinance and Stormwater Quality Ordinance.

Other RPMs relating to the protection of aquatic, soil, and water quality resources have been established, and these would be applied to the final disturbance areas identified in the project plans. These include RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 Examples of specific measures within the RPMs that would be implemented during construction include the use of silt fencing, straw mulch, waddles, straw bale check dams, sediment traps or sedimentation basins, stabilized construction areas, material management protocols, and other soil stabilization measures (Appendix B). RPMs relate to BMPs for soil and hydrology resources detailed in the Handbook, which requires equipment avoidance areas, erosion control measures, limits on operations based on slope, springs, drainages, etc., stream crossing details, rehabilitation of temporary disturbance areas such as staging areas and temporary routes, and timing of operations based on soil moisture, sediment transport, and transportation routes (see Appendix B for RPM and Handbook BMP cross references). The RCO analysis report has assessed proposed RPMs and evaluated if they are sufficient to meet the RCOs in the project area. RPMs have been found to be sufficiently protective of hydrologic functions of RCAs (U.S. Forest Service 2017).

While the full list of measures that would be implemented from the Handbook have not been prescribed or adopted for this project, the methodology detailed in that document would be used to develop additional measures that could be incorporated into the County CUP or the Forest Service SUP, if necessary. Additional measures would be prescribed in the SUP if Forest Service specialists deem it necessary following submission of improvement plans to Placer County and Lahontan RWQCB. Forest Service specialists may review the implementation plans developed by the project proponent and evaluate if additional measures would be appropriate prior to issuing the SUP. BMPs that have already been incorporated into RPMs from the Handbook are cross-referenced in Appendix B.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project construction would be **adverse** because Alternative 2 would generate an increased level of soil disturbance and increased likelihood of sedimentation and water quality degradation in a highly sensitive hydrological environment. These effects would be mitigated through compliance with existing regulations and implementation of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10.

CEQA Determination of Effects

Under CEQA, using the CEQA criteria, and considering applicable regulatory requirements, effects related to erosion and sedimentation during project construction would be **potentially significant** because while Alternative 2 would comply with regulatory requirements to minimize the potential for soil erosion and downstream sedimentation and associated effects on water quality, the level of activity would increase soil disturbance and the likelihood of sedimentation and water quality degradation in a highly sensitive hydrological environment. Sensitive soil units exist within the project area, and two downstream waterbodies are TMDL listed for sedimentation. However, RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 provide a robust program to protect soils and water quality. Among other details, these RPMs would include development of plans for the project and review and approval by the lead agencies if an alternative is approved and adopted; require the use of silt fencing, straw mulch, waddles, straw bale check dams, sediment traps or sedimentation basins, stabilized construction areas, material management protocols, and other soil stabilization measures during construction; and require equipment avoidance areas, erosion control measures, limits on operations based on slope, springs, drainages, etc.,

stream crossing details, rehabilitation of temporary disturbance areas such as staging areas and temporary routes, and timing of operations based on soil moisture, sediment transport, and transportation routes. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 as mitigation measures would reduce the effects related to erosion and sedimentation during project construction to a **less-than-significant** level.

Impact 4.17-2 (Alt. 2): Impacts from Erosion and Sedimentation Caused by Long-Term Implementation of the Project

Long-term implementation of Alternative 2 would result in placement of new structures that could alter the erosion and sedimentation regime, resulting in long-term downstream water quality degradation. The project applicant would be required to adhere to local, state, and federal regulations that safeguard against erosion and sedimentation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project operation would be **adverse** because Alternative 2 would create conditions that could increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation. Implementation of RPMs SOILS-9, BIO-30, and BIO-38 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project operation would be **less than significant** because compliance with regulatory requirements would result in the minimization and containment of soil erosion and prevent downstream sedimentation and associated effects on water quality. In addition, RPMs SOILS-9, BIO-30, and BIO-38 would require revegetation on all disturbed areas; preparation of a Restoration Plan for both Forest Service and private land that would document pre-disturbance conditions and revegetation disturbed areas, including the implementation of long-term erosion and sediment control measures, slope stabilization, and monitoring procedures; and replacement of native trees that would need to be removed along the gondola alignment. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

The permanent, long-term footprint of the project under Alternative 2 would be relatively small (5.0 acres; Table 4.17-3), but it would still have the potential to alter the drainage pattern of the project area sufficiently to result in increased erosion or susceptibility to erosion and sedimentation. Coverage associated with installation of new components such as gondola stations would create new impervious surfaces and obstacles that could modify surface water drainage characteristics locally at the site of the improvements, promoting erosion. Clearing vegetation along the gondola alignment and maintenance of low-profile vegetative cover would create conditions where soils are more susceptible to erosion than under natural forested conditions.

As discussed under Impact 4.16-4 in Section 4.16, "Soils, Geology, and Seismicity," average soil erosion hazard ratings along the alignments are low under steady state conditions. However, with prolonged exposure to rainfall and snowmelt, individual soil units may exhibit characteristics that create a proclivity to erosion from rain and runoff, which can affect soil productivity and stability. Severe erosion can exacerbate soil instability. Erosion could change the pattern of surface runoff or stormwater management such that areas that are susceptible to erosion are exposed to more runoff and experience increased rates of erosion.

Uncontrolled stormwater collection and confluence can lead to rill and gully effects and a positive feedback loop of erosion that can be problematic if left unchecked. During wet periods, sheet runoff can detach soils and result in sheet erosion, which in turn can produce an overall loss in soil and productivity. Variations in

surface roughness can eventually lead to a preferred pathway for water to flow, and can create small incisions in the soil, known as rills. If these incisions are not remediated, they can further incise and lead to large-scale gully erosion. At a small and large scale, rill and gully erosion can reduce the quantity of stable soils by incising into land and/or depleting soil resources and speed up the rate of erosion by exposing subsoil. This generates sediment that can contribute to increased flooding, and ultimately generate suspended sediment that can degrade water quality.

The primary source of sedimentation related to long-term project implementation would be increased rates of erosion from clearing vegetation along the gondola alignment. Under Alternative 2, approximately 12.7 acres of vegetation would be permanently cleared/altered for passage of gondola cars and placement of gondola towers (Table 4.17.3). While the cleared area would be recolonized with native vegetation following construction of the gondola, surface vegetation and root systems would be shallower and less dense than that associated with mature conifers. Maintenance of the gondola right-of-way would prevent a return to a natural, forested condition, and would therefore contribute to greater potential for soil erosion than under natural conditions.

Additionally, placement of permanent platforms for project components on steep mountain slopes would modify the local pattern of drainage around these new features. Surface water flows would collect on the upstream side of features, flowing around them in a channelized manner, potentially causing rill and gully effects on the downslope side, and disrupting the successful reestablishment of vegetation.

Many of the programs which provide protections for construction-related erosion and sedimentation provide protections for long-term operational impacts to a similar degree. Regulatory protection measures protecting beneficial uses of water (Table 4.17-1), and consistency with Section 404 of the CWA are applicable to long-term project implementation. The Forest Service Soil and Water Conservation Handbook, future provisions in the SUP, and the *Placer County Truckee River Basin Stormwater Management Plan* all contain requirements for the ongoing protection of water quality. Additionally, RPMs are included as part of the project that are consistent with Placer County requirements and the Forest Service Soil and Water Conservation Handbook that address the potential for long-term erosion and sedimentation effects of project implementation.

To avoid and minimize the effects of soil erosion and downstream sedimentation related to project implementation, RPMs have been developed to address soil erosion on a long-term basis. Specifically, RPM BIO-30 provides for a Restoration Plan for both Forest Service and private land that would document pre-disturbance conditions and revegetation disturbed areas, including the implementation of long-term erosion and sediment control measures, slope stabilization, and monitoring procedures. Per RPM SOILS-9, revegetation would be required on all disturbed areas. Additionally, RPM BIO- 38 provides for a mitigation monitoring and implementation plan for the replacement of native trees that would need to be removed along the gondola alignment. Trees would not be replaced in the alignment due to safety concerns, but would be located on Common Area Lots, or other appropriate areas. This RPM could help mitigate erosion in the alignment by providing stabilization in other erosion-prone areas and provide a net neutral or net beneficial effect on erosion within the project area.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project operation would be **adverse** because Alternative 2 would create conditions that could increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation. These effects would be mitigated through compliance with existing regulations and implementation of RPMs SOILS-9, BIO-30, and BIO-38.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project operation would be **less than significant** because although Alternative 2 would create conditions that could increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation, compliance with regulatory requirements would result in the minimization and containment of soil erosion and prevent downstream sedimentation and associated effects on water quality.

RPMs SOILS-9, BIO-30, and BIO-38 would require revegetation on all disturbed areas; preparation of a Restoration Plan for both Forest Service and private land that would document pre-disturbance conditions and revegetation disturbed areas, including the implementation of long-term erosion and sediment control measures, slope stabilization, and monitoring procedures; and replacement of native trees that would need to be removed along the gondola alignment. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SOILS-9, BIO-30, and BIO-38 as mitigation measures would reduce the effects related to erosion and sedimentation during project operation but are not necessary to reduce a significant effect.

Impact 4.17-3 (Alt. 2): Water Quality Impacts from Acute or Diffuse Releases of Contaminants Used during Project Implementation

Implementation of Alternative 2 would result in an increase in the use of materials containing contaminants and generate new sources of stormwater runoff and pollution. These new sources could release to receiving waters, potentially contaminating them. However, the project is covered under the General Construction Permit and would require preparation of a Spill Prevention Countermeasure and Contingency (SPCC) Plan; the former requires management of stormwater discharges and both require implementation of pollution protection measures. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to releases of contaminants and hazardous materials would be **adverse** because Alternative 2 would increase the potential for accidental releases of contaminants and hazardous materials into receiving waters, which would result in water quality degradation. Implementation of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because compliance with regulatory requirements would result in the proper handling, storage, and containment of hazardous materials so that releases do not occur. In addition, RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 provide additional measures to protect against accidental release of contaminants to waterways. These include a requirement that construction personnel receive training regarding the appropriate work practices necessary to effectively implement the RPMs related to hazardous materials, compliance with Placer County procedures related to the use and disposal of hazardous materials, and development and implementation of a SPCC Plan and SWPPP and receipt of necessary authorizations from the Lahontan RWQCB. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

In addition to possible water quality degradation from erosion and sedimentation, there is the possibility of water quality degradation from materials brought on site to implement the project. Such materials would require containment from stormwater. While most areas of development would not be connected directly to surface water, storm events could generate stormwater runoff at construction or materials storage sites that could be carried into Bear Creek or Squaw Creek, and eventually on to the Truckee River. This could result in impairment of receiving water beneficial uses identified for these waterways.

Runoff could contain oils, grease, fuel, sediments, brake dust, and other potential water pollutants. During storm events, these pollutants could be carried to downstream receiving waters of Squaw Creek, Bear Creek, and the Truckee River. The Truckee River and Squaw Creek are listed as impaired waterbodies, and additional pollutants could exacerbate toxicity conditions for aquatic organisms. During construction, small amounts of materials such as aggregate-base rock, sand bedding and backfill, and crushed rock would be brought to development areas. Any of these materials could become exposed to stormwater and potentially result in contamination of surface water. If areas of shallow groundwater are identified or encountered during construction, they could also potentially be released to groundwater. Additionally, construction equipment may contain toxic or hazardous substances, including fuels, lubricants, oil, grease, and paint.

These materials could also become exposed to stormwater runoff or to groundwater if they are not properly contained. Multiple small incidents of contamination, or larger single releases (e.g., fuel spill) could result in adverse effects on surface water and groundwater quality.

To protect against releases, application and use of all chemicals used for implementation of the project would be carried out according to manufacturer label instructions and would continue to be applied in this manner with implementation of the project. The General Construction Permit would require preparation of a SWPPP, which would contain provisions for containment of pollutants and stormwater management. Some of these might include:

- scheduling materials deliveries to provide for minimal on-site storage and/or providing covered storage for materials wherever practical;
- designating specific areas for overnight construction equipment storage and maintenance, and providing runoff control around those areas to minimize the potential for runoff to contact spilled materials;
- establishing procedures for daily work site cleanup and immediate cleanup of spilled materials and contaminated soil;
- establishing a program of site inspections to ensure that BMPs are consistently implemented and effective;
- conducting visual monitoring of on-site runoff quality;
- placing fiber rolls along the perimeter of the site to reduce runoff flow velocities and prevent sediment from leaving the site, and sandbags around potentially affected off-site storm inlets to prevent contamination from entering the inlets; and
- specifying that all construction sites would be winterized by October 15.

For projects that require that hydrocarbons be present on-site in substantial quantities, contractors must have an up-to-date SPCC Plan that they will follow to ensure containment of fuels and lubricants and the procedures to follow in the event of a release. Fill and grading materials brought in from off-site would be clean, chemically inert, and handled with appropriate containment to prevent contamination of stormwater.

The project also includes RPMs that reduce the potential for release of contaminants. RPM HAZ-1 requires that construction personnel receive training regarding the appropriate work practices necessary to effectively implement the RPMs related to hazardous materials. RPMs HAZ-5 and HAZ-7 require compliance with Placer County procedures related to the use and disposal of hazardous materials. RPM WQ-1 requires the development and implementation of a SPCC Plan and SWPPP and receipt of necessary authorizations from the Lahontan RWQCB.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to releases of contaminants and hazardous materials would be **adverse** because Alternative 2 would result in contaminants and hazardous materials being brought onto the project site, increasing the potential for accidental releases and resulting in potential contamination of receiving waters and water quality degradation. These effects would be mitigated through compliance with existing regulations and implementation of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because although Alternative 2 would result in contaminants and hazardous materials being brought onto the project site, increasing the potential for accidental releases and resulting in potential contamination of receiving waters and water quality degradation, compliance with

regulatory requirements would require the proper handling, storage, and containment of hazardous materials so that releases do not occur. RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 would require that construction personnel receive training regarding the appropriate work practices necessary to effectively implement the RPMs related to hazardous materials, compliance with Placer County procedures related to the use and disposal of hazardous materials, and development and implementation of a SPCC Plan and SWPPP and receipt of necessary authorizations from the Lahontan RWQCB. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 as mitigation measures would reduce the effects related to erosion and sedimentation during project operation but are not necessary to reduce a significant effect.

Impact 4.17-4 (Alt. 2): Impacts on Groundwater from Increased Visitation and Groundwater Demand

Implementation of Alternative 2 would result in an increase in skier-days at Squaw Valley and Alpine Meadows and would consequently produce an increase in water consumption from local aquifers. Increased use of groundwater by skiers would be minor relative to aquifer and supply system capacity. It is therefore unlikely that there would be a measurable effect on local groundwater conditions in wells. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to groundwater because the project would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to groundwater would be **less than significant** because the project would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would reduce this impact.

The gondola would require minimal use of water for construction and operation, and little to no groundwater would be required to supply water to project components. In addition, the amount of new impervious surfaces would be small and would not interfere with infiltration such that groundwater recharge would be affected by the project. However, it is expected that the proposed gondola will result in some increase in annual skier visitation to Squaw Valley and Alpine Meadows. An increase in the annual number of "skier-days" could result in an increased demand for water (e.g., for drinking and sanitation) from groundwater sources.

Water for Squaw Valley is supplied by groundwater, and water for Alpine Meadows is supplied by a combination of groundwater and springs; aquifers beneath the resorts provide groundwater supplies. The Squaw Valley Public Service District supplies water to Olympic Valley, and the Alpine Springs County Water District supplies water within the Bear Creek watershed at Alpine Meadows. It is estimated that the project would result in up to approximately 36,856 additional skier-days per year (although it is expected to take up to 5 years to reach this level of increased visitation), to occur over the roughly 5-month winter season, during gondola operation. Impact 4.8-1 in Section 4.8, "Utilities," provides details regarding water supply consumption figures. Based on liberal assumptions of reasonably foreseeable, conservative water demand, the analysis provided for Impact 4.8-1 indicates that visitation because of the gondola would increase water demand compared to the available water supply by less than 0.1 percent. The increase in consumption is minor relative to existing supply and is not expected to produce a measurable effect in groundwater supply wells within the Olympic Valley or Bear Creek groundwater subwatersheds.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to groundwater because while Alternative 2 would create conditions that would increase water consumption from local aquifers, it would do so in quantities that would not produce a measurable effect in drawdown or recharge at local wells. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because the amount of groundwater associated with implementation of the project that would be consumed would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.17-5 (Alt. 2): Localized Flooding from Changes in Site Drainage Patterns

Construction of Alternative 2 could cause localized erosion and changes in topography, resulting in potential downstream effects on stormwater conveyance. Without adequate stormwater drainage sizing for anticipated flow volumes, localized flooding may occur. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to localized flooding would be **adverse.** While the amount of disturbance proposed under Alternative 2 is small relative to existing disturbance, currently available information cannot confirm that existing stormwater infrastructure could accommodate modified site drainage resulting from disturbance. Implementation of RPMs WQ-9 and WQ-10 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to localized flooding would be **potentially significant.** While it is unlikely that Alternative 2 would concentrate runoff to a degree that would produce localized flooding, currently available information cannot confirm that such conditions would not be created**.** Implementation of RPMs WQ-9 and WQ-10 would reduce this impact to a **less-than-significant** level.

Several significant drainage features at the Squaw Valley and Alpine Meadows base areas would be permanently modified to accommodate the new base station terminals under Alternative 2. Construction of Alternative 2 could also alter surface flows by regrading contours within the disturbance areas associated with project components and/or increasing the amount of impervious surface on the project site. The footprint of the project and disturbance area relative to existing disturbance would be small; however, positioning and placement of facilities relative to drainage features would be important, because project components can alter local flow pathways. Project components could disturb sensitive soils, alter local topographical features, or otherwise alter surface features in such a manner that would change the drainage pattern of the project area and produce downstream effects on the hydrological regime. Changes to the hydrological regime would generally manifest as changes in the magnitude, timing, and peak discharge of flows. In addition, changes in impervious surface and drainage patterns (i.e., from individual towers and buildings) could result in preferential flow pathways for drainage (see Impact 4.17-2).

Placement of the base terminals on the Squaw Valley and Alpine Meadows base areas would involve modification of prominent features associated with the drainage infrastructure that currently accommodates snowmelt runoff from the ski areas. On the Squaw Valley side, Cushing Pond, the artificial stormwater basin located below and between the Squaw One and KT-22 chairlifts, would be partially filled in to provide a stable foundation for the gondola base terminal. Cushing Pond provides the capability for some spring snowmelt and warm weather melt retention, acting to slow runoff and encourage seepage into shallow ground. Seepage not only slows runoff and reduces peak flow volumes, but also acts as a filtration mechanism that assists in improving water quality. Filling this pond to construct the base-terminal would reduce or eliminate any of these functions that the pond provides. To preserve the function of Cushing Pond, it would be expanded westward on the site, and the expansion would be designed in a manner to accommodate anticipated flow volumes. On the Alpine Meadows side, the base terminal would be situated on or near existing conveyance structures that act to carry Bear Creek tributary flows to the main branch of Bear Creek. Placement of the base terminal at Alpine Meadows would be located atop approximately 125 feet of the 220-foot semi-open existing drainage culvert. However, the existing culvert would be retained and the current screens sealed, or the culvert would be replaced with an enclosed sleeve. In either case, the function and capacity of the culvert would not be altered. The function and capacity of the other nearby culvert also would not be altered.

Project activities could result in enhanced erosion in other disturbed areas along the Alternative 2 alignment (see Impacts 4.17-1 and 4.17-2), which could affect flow characteristics. While the application of regulatory requirements and implementation of RPMs would reduce effects under NEPA and result in less-than-significant impacts on erosion under CEQA, there are several potential consequences of erosion on the downstream flow regime if it does occur. The very process of erosion can beget more erosion, causing a positive feedback loop, loosening topsoil and changing topography by degrees small and large in local areas where disturbance occurs. Preferential pathways can form, and the efficiency in the connections between eroded areas and natural watercourses can increase. If erosion causes sediment loads in waterways to increase, sediments would be deposited downstream on riverbeds and banks. Suspended sediment could also erode banks through abrasive action as water passes narrow or meandering river segments. These effects could produce changes to downstream hydrogeomorphology. Taken together, these geomorphic changes could produce a large effect on drainage in the project area. Drainage infrastructure in the stormwater drainage system at the base of the ski areas could be negatively affected because many of the stormwater conveyance structures resemble natural features and are therefore susceptible to hydromodification.

Both Squaw Valley and Alpine Meadows have semi-engineered drainage systems that convey drainage from the ski areas into the respective creeks at their bases, Squaw Creek and Bear Creek. Squaw and Bear Creeks act informally as an extension of the artificial drainage systems, which results in a sensitive response to peak runoff conditions within the creeks. Information on peak flow conditions and engineered sizing is not available for the existing infrastructure; therefore, changes to the upstream hydrological regime could have consequences for the existing downstream infrastructure that are currently unknown. As a result, storm drainage systems could be inadvertently modified, or the capacity exceeded, resulting in localized flooding. Therefore, although Alternative 2 results in a small disturbance footprint that has a low likelihood of generating changes in drainage patterns, and the potential for erosion is minimal, because of a lack of detailed information on project drainage and existing drainage systems, it cannot be ensured that the project would not result drainage flows that exceed the capacity of the existing drainage system.

RPMs WQ-9 and WQ-10 require that a Registered Civil Engineer conduct a stormwater drainage study for both Squaw Valley and Alpine Meadows, and the site proposed for development in the implementation plans, to determine whether the development would produce runoff that would exceed the capacity of existing stormwater infrastructure, cause localized ponding, or increase the potential for property damage from flooding. The report would identify water quality protection features and methods to be used during and after construction, as well as identify how stormwater runoff would be reduced to pre-project conditions. The Forest Service would adhere to standards equally stringent to or more stringent than Placer County RPMs WQ-9 and WQ-10.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to localized flooding would be **adverse**. Although it is unlikely that Alternative 2 would create conditions that would make soils more susceptible to erosion and potentially create modified drainage pathways, currently available information cannot confirm that such conditions would not be created. These effects would be mitigated through implementation of RPMs WQ-9 and WQ-10.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to localized flooding would be **potentially significant**. Although it is unlikely that Alternative 2 would create conditions that would make soils more susceptible to erosion and potentially create modified drainage pathways, currently available information cannot confirm that such conditions would not be created. Implementation of RPMs WQ-9 and WQ-10 would reduce this impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs WQ-9 and WQ-10 as mitigation measures would reduce the effects related to localized flooding from changes in site drainage patterns during project operation but are not necessary to reduce a significant effect.

Impact 4.17-6 (Alt. 2): Impacts on Riparian Conservation Objectives in Riparian Conservation Areas

Absent the adoption of any RPMs, implementation of Alternative 2 would result in a departure from adherence to the standards and guidelines for riparian and aquatic ecosystems identified in the SNFPA ROD, which would be an **adverse** effect under NEPA. However, the RCO analysis concluded that Alternative 2 is consistent with the Adaptive Management Strategy for the Sierran Forests, as required by the SNFPA ROD, because the project would incorporate RPMs and corresponding Forest Service Region 5 BMPs as protection measures to ensure no net loss or degradation of riparian habitats or aquatic resources. Standards and guidelines for RCOs that have been designed to protect downstream beneficial water uses would be met by Alternative 2 if RPMs and BMPs are adhered to. Therefore, implementation of RPMs and corresponding BMPs would mitigate effects of the alternative. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criterion. No CEQA effects conclusion is provided.

RCAs are land allocations identified by the Forest Service that "are managed to maintain or restore the structure and function of aquatic, riparian, and meadow ecosystems" (U.S. Forest Service 2004). The SNFPA identified broad objectives, known as RCOs, and associated specific standards and guidelines against which projects and actions that the Forest Service implements are measured. Standards and guidelines that are applicable to the project are listed in Table 4.17-4, together with the associated RCO, and a summary evaluation of whether the standards have been met.

Alternative 2 would result in the temporary, construction-related disturbance of 6.6 acres and the permanent disturbance of 5.1 acres of RCAs (KSL Ski Holdings 2017, Hydro Restoration 2016, 2017, U.S. Forest Service 2004, USGS 2017; adapted by Ascent Environmental 2018). This is below the disturbance threshold of 20 percent included in RCO #2 (Table 4.17-4).

To establish whether the guideline has been met, specific activities that would occur with implementation of Alternative 2 were considered within the context of the guideline. RPMs that would be carried out as a part of the project were applied to the project activity, and a determination was made on the degree to which the standard could be met if RPMs were adhered to. An RCO analysis was conducted and documented these determinations (U.S. Forest Service 2019). The RCO report contains a detailed description of actions to be taken, the manner in which those actions could potentially affect whether the standard was met, how the application of specific RPMs would provide sufficient protection against violating the standard, and how the RCO would continue to be achieved. General information further supporting conclusions that standards and guidelines under RCOs #2, #4, and #5 have been met (e.g., potential barriers to upstream or downstream passage for aquatic-dependent species, occurrence of suitable habitat for Sierra Nevada yellow-legged frog, presence/absence of bogs and fens) can be found in Sections 4.12, "Vegetation," 4.13, "Botany," 4.14, "Wildlife and Aquatics," and 4.15, "Wetlands," within this EIS/EIR.

Table 4.17-4 Riparian Conservation Objectives Analysis Summary

Riparian Conservation Objective	S&G No.	Standard and Guideline Description	S&G Met (Y/N)
RCO #1 Ensure that identified beneficial uses for the waterbody are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses.	95	For waters designated "Water Quality Limited" (Clean Water Act Section 303(d)), participate in the development of the Total Maximum Daily Loads (TMDLs) and TMDL Implementation Plans. Execute applicable elements of the completed TMDL Implementation Plans.	Y
	96	Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblage.	Y
	97	Limit pesticide applications to cases where project level analysis indicates that pesticide applications are consistent with riparian objectives. Prohibit application of pesticides to livestock in RCAs.[1]	Y
	98	Avoid pesticide applications within 500 feet of known occupied sites for the California red- legged frog, Cascade frog, Yosemite toad, foothill yellow-legged frog, mountain yellow-legged frog, and northern leopard frog unless environmental analysis	Y

Table 4.17-4 Riparian Conservation Objectives Analysis Summary

Riparian Conservation Objective	S&G No.	Standard and Guideline Description	S&G Met (Y/N)
		documents that pesticides are needed to restore or enhance habitat for these amphibian species.	
	99	Prohibit storage of fuels and other toxic materials within RCAs except at designated administrative sites and sites covered by a Special Use Authorization. Prohibit refueling within RCAs unless there are no other alternatives. Ensure that spill plans are reviewed and up-to-date.	Y
RCO #2 Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; and (3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic- dependent species.	100	Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity.	Y
	101	Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species. Locate water-drafting sites to avoid adverse effects to in- stream flows and depletion of pool habitat. Where possible, maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows, wetlands, and other special aquatic features.	Y
	102	Prior to activities that could adversely affect streams, determine if relevant stream characteristics are within the range of natural variability. If characteristics are outside the range of natural variability, implement mitigation measures and short-term restoration actions needed to prevent further declines or cause an upward trend in conditions. Evaluate required long-term restoration actions and implement them according to their status among other restoration needs.	Y
	103	Prevent disturbance to meadow-associated streambanks and natural lake and pond shorelines caused by resource activities from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines.	Y
	105	At either the landscape or project-scale, determine if the age class, structural diversity, composition, and cover of riparian vegetation are within the range of natural variability for the vegetative community. If conditions are outside the range of natural variability, consider implementing mitigation and/or restoration actions that will result in an upward trend. Actions could include restoration of aspen or other riparian vegetation where conifer encroachment is identified as a problem.	Y
RCO #4 Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species	114	As appropriate, assess and document aquatic conditions following the Regional Stream Condition Inventory protocol prior to implementing ground disturbing activities within suitable habitat for the California red-legged frog, Cascade frog, Yosemite toad, foothill and mountain yellow-legged frogs, and northern leopard frog.	Y
RCO #5 Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas	118	Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining bogs and fens include, but not limited to, presence of: (1) sphagnum moss (*Spagnum* spp.), (2) mosses belonging to the genus Meesia, and (3) sundew (*Drosera* spp.). Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits.	Y

Notes: CAR = critical aquatic refuge; RCA = Riparian Conservation Area; RCO = Resource Conservation Objective; S&G = standards and guidelines

[1] Note: Livestock requirement is not applicable to any of the alternatives.

The RCO analysis concluded that Alternative 2 is consistent with the Adaptive Management Strategy for the Sierran Forests, as required by the SNFPA Record of Decision (U.S. Forest Service 2004). The project would incorporate RPMs and BMPs identified in Appendix B as protection measures to ensure no net loss or degradation of riparian habitats or aquatic resources. Standards and guidelines for RCOs are designed to protect downstream beneficial water uses and would be met by Alternative 2.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to RCO standards and guidelines would be **adverse**. These effects would be mitigated, however, through implementation of the RPMs identified in the RCO report for individual standards and guidelines, and repeated here in Appendix B.

CEQA Determination of Effects

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

4.17.3.3 ALTERNATIVE 3

Impact 4.17-1 (Alt. 3): Impacts from Erosion and Sedimentation Caused by Construction-Related Activities

Activities associated with construction of Alternative 3, such as clearing, grading, and travel over temporary roadways would cause localized erosion and sedimentation of waterways, resulting in downstream water quality degradation. The project applicant would be required to adhere to local, state, and federal regulations that safeguard against erosion and sedimentation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project construction would be **adverse** because project construction could cause localized erosion and sedimentation of waterways, resulting in downstream water quality degradation. Implementation of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project construction would be **potentially significant** despite compliance with regulatory requirements that would minimize the potential for soil erosion and downstream sedimentation and associated effects on water quality**.** However, RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 provide a robust program to protect soils and water quality. Among other details, these RPMs would include development of plans for the project and review and approval by the lead agencies if an alternative is approved and adopted; require the use of silt fencing, straw mulch, waddles, straw bale check dams, sediment traps or sedimentation basins, stabilized construction areas, material management protocols, and other soil stabilization measures during construction; and require equipment avoidance areas, erosion control measures, limits on operations based on slope, springs, drainages, etc., stream crossing details, rehabilitation of temporary disturbance areas such as staging areas and temporary routes, and timing of operations based on soil moisture, sediment transport, and transportation routes. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Impact 4.17-1 (Alt. 3) would be the same as Impact 4.17-1 (Alt. 2) but could vary by degree. The amount of temporary disturbance proposed under Alternative 3 (12.4 acres; see Table 4.17-5) is less than that under Alternative 2 (16.6 acres; see Table 4.17-3), and so it is likely that there would be less disturbance of hydrological features or soils susceptible to erosion with implementation of Alternative 3. While the magnitude and intensity of these impacts would vary with the level of disturbance, the mechanisms by which

the impacts would be generated are the same as those identified for Alternative 2; however, with the incorporation of RPMs, the significance conclusion would remain the same.

Table 4.17-5 Projected Ground Disturbance on National Forest System and Private Lands under Alternative 3, by Type

Type of Disturbance	Acres of Disturbance			
	Alternative 1	Alternative 3		
		National Forest System	Private	Total
Temporary Ground Disturbance				
Overstory vegetation removal	None	0.99	9.61	10.60
Tower footing construction area	None	0.06	0.32	0.38
Access roads	None	0.00	1.14	1.14
Powerline	None	0.04	0.22	0.25
Total temporary disturbance	**None**	**1.08**	**11.29**	**12.37**
Permanent Ground Disturbance				
Mid-station/terminal	None	1.54	3.53	5.07
Total permanent disturbance	**None**	**1.54**	**3.53**	**5.07**
Grand Total	**None**	**2.62**	**14.82**	**17.44**

Note: Totals may not equal sum of numbers because of independent rounding.

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

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project construction would be **adverse** because Alternative 3 would generate an increased level of soil disturbance and increased likelihood of sedimentation and water quality degradation in a highly sensitive hydrological environment. These effects would be mitigated through compliance with existing regulations and implementation of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 .

CEQA Determination of Effects

Under CEQA, using the CEQA criteria, and considering applicable regulatory requirements, effects related to erosion and sedimentation during project construction would be **potentially significant** because while Alternative 3 would comply with regulatory requirements to minimize the potential for soil erosion and downstream sedimentation and associated effects on water quality, the level of activity would increase soil disturbance and the likelihood of sedimentation and water quality degradation in a highly sensitive hydrological environment. Sensitive soil units exist within the project area, and two downstream waterbodies are TMDL listed for sedimentation. However, RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 provide a robust program to protect soils and water quality. Among other details, these RPMs would include development of plans for the project and review and approval by the lead agencies if an alternative is approved and adopted; require the use of silt fencing, straw mulch, waddles, straw bale check dams, sediment traps or sedimentation basins, stabilized construction areas, material management protocols, and other soil stabilization measures during construction; and require equipment avoidance areas, erosion control measures, limits on operations based on slope, springs, drainages, etc., stream crossing details, rehabilitation of temporary disturbance areas such as staging areas and temporary routes, and timing of operations based on soil moisture, sediment transport, and transportation routes. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 as mitigation measures would reduce the effects related to erosion and sedimentation during project construction but are not necessary to reduce a significant effect.

Impact 4.17-2 (Alt. 3): Impacts from Erosion and Sedimentation Caused by Long-Term Implementation of the Project

Long-term implementation of Alternative 3 would result in placement of new structures that could alter the erosion and sedimentation regime, resulting in long-term downstream water quality degradation. The project applicant would be required to adhere to local, state, and federal regulations that safeguard against erosion and sedimentation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project operation would be **adverse** because Alternative 3 would create conditions that could increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation. Implementation of RPMs SOILS-9, BIO-30, and BIO-38 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project operation would be **less than significant** because compliance with regulatory requirements would result in the minimization and containment of soil erosion and prevent downstream sedimentation and associated effects on water quality. In addition, RPMs SOILS-9, BIO-30, and BIO-38 would require revegetation on all disturbed areas; preparation of a Restoration Plan for both Forest Service and private land that would document pre-disturbance conditions and revegetation disturbed areas, including the implementation of long-term erosion and sediment control measures, slope stabilization, and monitoring procedures; and replacement of native trees that would need to be removed along the gondola alignment. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Impact 4.17-2 (Alt. 3) would be the same as Impact 4.17-2 (Alt. 2) but would vary by degree. The amount of permanent disturbance proposed under Alternative 3 (5.0 acres; see Table 4.17-5) is slightly more than that under Alternative 2 (4.9 acres; see Table 4.17-3), and so it is likely that there would be more disturbance of hydrological features or soils susceptible to erosion with implementation of Alternative 3. While the magnitude and intensity of these impacts would vary with the level of disturbance, the mechanisms by which the impacts would be generated are the same as those identified for Alternative 2; however, with the incorporation of RPMs, the significance conclusion would remain the same.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project operation would be **adverse** because Alternative 3 would create conditions that would increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation. These effects would be mitigated through compliance with existing regulations and implementation of RPMs SOILS-9, BIO-30, and BIO-38.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project operation would be **less than significant** because although Alternative 3 would create conditions that could increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation, compliance with regulatory requirements would result in the minimization and containment of soil erosion and prevent downstream sedimentation and associated effects on water quality. RPMs SOILS-9, BIO-30, and BIO-38 would require revegetation on all disturbed areas; preparation of a Restoration Plan for both Forest Service and private land that would document pre-disturbance conditions

and revegetation disturbed areas, including the implementation of long-term erosion and sediment control measures, slope stabilization, and monitoring procedures; and replacement of native trees that would need to be removed along the gondola alignment. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SOILS-9, BIO-30, and BIO-38 as mitigation measures would reduce the effects related to erosion and sedimentation during project operation but are not necessary to reduce a significant effect.

Impact 4.17-3 (Alt. 3): Water Quality Impacts from Acute or Diffuse Releases of Contaminants Used during Project Implementation

Implementation of Alternative 3 would result in an increase in the use of materials containing contaminants and generate new sources of stormwater runoff and pollution. These new sources could release to receiving waters, potentially contaminating them. However, the project is covered under the General Construction Permit and would require preparation of an SPCC Plan; the former requires management of stormwater discharges and the both require implementation of pollution protection measures. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to releases of contaminants and hazardous materials would be **adverse** because Alternative 3 would increase the potential for accidental releases of contaminants and hazardous materials into receiving waters, which would result in water quality degradation. Implementation of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because compliance with regulatory requirements would result in the proper handling, storage, and containment of hazardous materials so that releases do not occur. In addition, RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 provide additional measures to protect against accidental release of contaminants to waterways. These include a requirement that construction personnel receive training regarding the appropriate work practices necessary to effectively implement the RPMs related to hazardous materials, compliance with Placer County procedures related to the use and disposal of hazardous materials, and development and implementation of a SPCC Plan and SWPPP and receipt of necessary authorizations from the Lahontan RWQCB. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Impact 4.17-3 (Alt. 3) would be the same as Impact 4.17-3 (Alt. 2).

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to releases of contaminants and hazardous materials would be **adverse** because Alternative 3 would result in contaminants and hazardous materials being brought onto the project site, increasing the potential for accidental releases and resulting in potential contamination of receiving waters and water quality degradation. These effects would be mitigated through compliance with existing regulations and implementation of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because although Alternative 3 would result in contaminants and hazardous materials being brought onto the project site, increasing the potential for accidental releases and resulting in potential contamination of receiving waters and water quality degradation, compliance with regulatory requirements would result in the proper handling, storage, and containment of hazardous materials so that releases do not occur. RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 would require that construction personnel receive training regarding the appropriate work practices necessary to effectively implement the RPMs related to hazardous materials, compliance with Placer County procedures related to

the use and disposal of hazardous materials, and development and implementation of a SPCC Plan and SWPPP and receipt of necessary authorizations from the Lahontan RWQCB. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 as mitigation measures would reduce the effects related to erosion and sedimentation during project operation but are not necessary to reduce a significant effect.

Impact 4.17-4 (Alt. 3): Impacts on Groundwater from Increased Visitation and Groundwater Demand

Implementation of Alternative 3 would result in an increase in skier-days at Squaw Valley and Alpine Meadows and would consequently produce an increase in water consumption from local aquifers. Increased use of groundwater by skiers would be minor and would constitute a de minimis quantity of water relative to aquifer and supply system capacity. It is therefore unlikely that there would be a measurable effect on local groundwater conditions in wells. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be a **no effect** because the project would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to groundwater would be **less than significant** because the project would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would reduce this impact.

Impact 4.17-4 (Alt. 3) would be the same as Impact 4.17-4 (Alt. 2). The potential for increased visitation, and therefore, increased water demand, is the same across all action alternatives.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to groundwater because while Alternative 3 would create conditions that would increase water consumption from local aquifers, it would do so in quantities that would not produce a measurable effect in drawdown or recharge at local wells. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because the amount of groundwater associated with implementation of the project that would be consumed would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.17-5 (Alt. 3): Localized Flooding from Changes in Site Drainage Patterns

Construction of Alternative 3 could cause localized erosion and changes in topography, resulting in potential downstream effects on stormwater conveyance. Without adequate stormwater drainage sizing for anticipated flow volumes, localized flooding may occur. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to localized flooding would be **adverse.** While the amount of disturbance proposed under Alternative 3 is small relative to existing disturbance, currently available information cannot confirm that existing stormwater infrastructure could accommodate modified site drainage resulting from disturbance. Implementation of RPMs WQ-9 and WQ-10 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to localized flooding would be **potentially significant**. While it is unlikely that Alternative 3 would concentrate runoff to a degree that would produce localized flooding, currently available information cannot confirm that such conditions would not be created**.** Implementation of RPMs WQ-9 and WQ-10 would reduce this impact to a **less-than-significant** level.

Alternative 3 would have an impact similar to that discussed for Alternative 2. Under Alternative 3, construction of the Squaw Valley base station terminal would require partial filling of Cushing Pond, but the pond would not be expanded to the west. On the Alpine Meadows side, the terminal station would be situated on or near existing conveyance structures that act to carry Bear Creek tributary flows to the main branch of Bear Creek. Placement of the terminal station at Alpine Meadows would be located atop approximately 43 feet of the 220-foot semi-open existing drainage channel. However, all culvert capacity and function would be retained.

For the same reasons described for Impact 4.17-5 (Alt. 2), Alternative 3 could produce conditions that contribute to localized flooding. Alternative 3 would produce slightly more permanent disturbance than Alternative 2 and would not involve replacement of the lost detention capacity at Cushing Pond; however, with the incorporation of RPMs, the significance conclusion would remain the same.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to localized flooding would be **adverse**. Although it is unlikely that Alternative 3 would create conditions that would make soils more susceptible to erosion and potentially create modified drainage pathways, currently available information cannot confirm that such conditions would not be created. These effects would be mitigated through implementation of RPMs WQ-9 and WQ-10.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to localized flooding would be **potentially significant**. Although it is unlikely that Alternative 3 would create conditions that would make soils more susceptible to erosion and potentially create modified drainage pathways, currently available information cannot confirm that such conditions would not be created. Implementation of RPMs WQ-9 and WQ-10 would reduce this impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs WQ-9 and WQ-10 as mitigation measures would reduce the effects related to localized flooding from changes in site drainage patterns during project operation but are not necessary to reduce a significant effect.

Impact 4.17-6 (Alt. 3): Impacts on Riparian Conservation Objectives in Riparian Conservation Areas

Absent the adoption of any RPMs, implementation of Alternative 3 would result in a departure from adherence to the standards and guidelines for riparian and aquatic ecosystems identified in the SNFPA ROD, which would be an **adverse** effect under NEPA. However, the RCO analysis concluded that Alternative 3 is consistent with the Adaptive Management Strategy for the Sierra Forests, as required by the SNFPA ROD, because the project would incorporate RPMs and corresponding Forest Service Region 5 BMPs as protection measures to ensure no net loss or degradation of riparian habitats or aquatic resources. Standards and guidelines for RCOs that have been designed to protect downstream beneficial water uses would be met by Alternative 3 if RPMs and BMPs are adhered to. Therefore, implementation of RPMs and corresponding BMPs would mitigate effects of the alternative. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criterion. No CEQA effects conclusion is provided.

As described for Impact 4.17-6 (Alt.2), RCAs are land allocations identified by the Forest Service that "are managed to maintain or restore the structure and function of aquatic, riparian, and meadow ecosystems" (U.S. Forest Service 2004). Standards and guidelines in the SNFPA intended to protect riparian and aquatic ecosystems that are applicable to the project are listed above in Table 4.17-4, together with the associated RCO, and a summary evaluation of whether the standards have been met.

Alternative 3 would result in the temporary, construction-related disturbance in 4.7 acres of RCAs and permanent disturbance in 3.5 acres of RCAs (KSL Ski Holdings 2017; Hydro Restoration 2016, 2017; U.S. Forest Service 2004; USGS 2017; compiled by Ascent Environmental 2018), which is less than the amount of disturbance associated with Alternative 2. While the magnitude and intensity of impacts in RCAs would vary with the level of disturbance, the mechanisms by which the impacts would be generated are the same as those identified for Alternative 2; however, with the incorporation of RPMs, the significance conclusion would remain the same.

For the same reasons identified for Alternative 2, Alternative 3 is consistent with the Adaptive Management Strategy for the Sierran Forests, as required by the SNFPA Record of Decision (U.S. Forest Service 2004). Alternative 3 would incorporate RPMs and BMPs identified in Appendix B to ensure no net loss or degradation of riparian habitats or aquatic resources. Applicable standards and guidelines for RCOs designed to protect downstream beneficial water uses would likely be met by the project.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to RCO standards and guidelines would be **adverse**. These effects would be mitigated, however, through implementation of the RPMs identified in the RCO report for individual standards and guidelines, and repeated here in Appendix B.

CEQA Determination of Effects

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

4.17.3.4 ALTERNATIVE 4

Impact 4.17-1 (Alt. 4): Impacts from Erosion and Sedimentation Caused by Construction-Related Activities

Activities associated with construction of Alternative 4, such as clearing, grading, and travel over temporary roadways would cause localized erosion and sedimentation of waterways, resulting in downstream water quality degradation. The project applicant would be required to adhere to local, state, and federal regulations that safeguard against erosion and sedimentation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project construction would be **adverse** because project construction could cause localized erosion and sedimentation of waterways, resulting in downstream water quality degradation. Implementation of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project construction would be **potentially significant** despite compliance with regulatory requirements that would minimize the potential for soil erosion and downstream sedimentation and associated effects on water quality**.** However, RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 provide a robust program to protect soils and water quality. Among other details, these RPMs would include development of plans for the project and review and approval by the lead agencies if an alternative is approved and adopted; require the use of silt fencing, straw mulch, waddles, straw bale check dams, sediment traps or sedimentation basins, stabilized construction areas, material management protocols, and other soil stabilization measures during construction; and require equipment avoidance areas, erosion control measures, limits on operations based on slope, springs, drainages, etc., stream crossing details, rehabilitation of temporary disturbance areas such as staging areas and temporary routes, and timing of operations based on soil moisture, sediment transport, and transportation routes. With implementation of these RPMs, this impact would be reduced to a **less-than-significant** level.

Impact 4.17-2 (Alt. 4) would be the same as Impact 4.17-1 (Alt. 2) but could vary by degree. The amount of temporary disturbance proposed under Alternative 4 (11.6 acres; see Table 4.17-6) is less than that under Alternative 2 (16.6 acres; see Table 4.17-3) and Alternative 3 (12.4 acres; see Table 4.17-5), and so it is likely that there would be less disturbance of hydrological features or soils susceptible to erosion with implementation of Alternative 4. While the magnitude and intensity of these impacts would vary with the level of disturbance, the mechanisms by which the impacts would be generated are the same as those identified for Alternative 2; however, with the incorporation of RPMs, the significance conclusion would remain the same.

Table 4.17-6 Projected Ground Disturbance on National Forest System and Private Lands under Alternative 4, by Type

Type of Disturbance	Acres of Disturbance			
	Alternative 1	Alternative 4		
		National Forest System	Private	Total
Temporary Ground Disturbance				
Overstory vegetation removal	None	1.70	6.17	7.88
Tower footing construction area	None	0.06	0.38	0.43
Access roads	None	0.31	2.34	2.65
Powerline	None	0.08	0.58	0.66
Total temporary disturbance	**None**	**2.15**	**9.47**	**11.62**

Table 4.17-6 Projected Ground Disturbance on National Forest System and Private Lands under Alternative 4, by Type

Type of Disturbance	Acres of Disturbance			
	Alternative 1	Alternative 4		
		National Forest System	Private	Total
Permanent Ground Disturbance				
Mid-station/terminal	None	1.54	1.42	2.97
Total permanent disturbance	**None**	**1.54**	**1.42**	**2.97**
Grand Total	**None**	**3.69**	**9.47**	**14.59**

Note: Totals may not equal sum of numbers because of independent rounding.

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

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project construction would be **adverse** because Alternative 4 would generate an increased level of soil disturbance and increased likelihood of sedimentation and water quality degradation in a highly sensitive hydrological environment. These effects would be mitigated through compliance with existing regulations and implementation of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 .

CEQA Determination of Effects

Under CEQA, using the CEQA criteria, and considering applicable regulatory requirements, effects related to erosion and sedimentation during project construction would be **potentially significant** because while Alternative 4 would comply with regulatory requirements to minimize the potential for soil erosion and downstream sedimentation and associated effects on water quality, the level of activity would increase soil disturbance and the likelihood of sedimentation and water quality degradation in a highly sensitive hydrological environment. Sensitive soil units exist within the project area, and two downstream waterbodies are TMDL listed for sedimentation. RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 provide a robust program to protect soils and water quality. Among other details, these RPMs would include development of plans for the project and review and approval by the lead agencies if an alternative is approved and adopted; require the use of silt fencing, straw mulch, waddles, straw bale check dams, sediment traps or sedimentation basins, stabilized construction areas, material management protocols, and other soil stabilization measures during construction; and require equipment avoidance areas, erosion control measures, limits on operations based on slope, springs, drainages, etc., stream crossing details, rehabilitation of temporary disturbance areas such as staging areas and temporary routes, and timing of operations based on soil moisture, sediment transport, and transportation routes. 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs REV-1 through REV-3, MUL-1, MUL-3 through MUL-7, BIO-1, BIO-19, BIO-23 through BIO-26, BIO-30, BIO-31, BIO-33 through BIO-36, BIO-38 through BIO-40, HAZ-1, HAZ-5, HAZ-7, SOILS-1 through SOILS-6, SOILS-9 through SOILS-12, WQ-1, WQ-3 through WQ-21, TREE-1 through TREE-7, and TREE-10 as mitigation measures would reduce the effects related to erosion and sedimentation during project construction to a **less-than-significant** level.

Impact 4.17-2 (Alt. 4): Impacts from Erosion and Sedimentation Caused by Long-Term Implementation of the Project

Long-term implementation of Alternative 4 would result in placement of new structures that could alter the erosion and sedimentation regime, resulting in long-term downstream water quality degradation. The project applicant would be required to adhere to local, state, and federal regulations that safeguard against erosion and sedimentation. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project operation would be **adverse** because Alternative 4 would create conditions that could increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation. Implementation of RPMs SOILS-9, BIO-30, and BIO-38 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project operation would be **less than significant** because compliance with regulatory requirements would result in the minimization and containment of soil erosion and prevent downstream sedimentation and associated effects on water quality. In addition, RPMs SOILS-9, BIO-30, and BIO-38 would require revegetation on all disturbed areas; preparation of a Restoration Plan for both Forest Service and private land that would document pre-disturbance conditions and revegetation disturbed areas, including the implementation of long-term erosion and sediment control measures, slope stabilization, and monitoring procedures; and replacement of native trees that would need to be removed along the gondola alignment. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Impact 4.17-2 (Alt. 4) would be the same as Impact 4.17-1 (Alt. 2) but could vary by degree. The amount of permanent disturbance proposed under Alternative 4 (2.9 acres; see Table 4.17-6) is less than that under Alternative 2 (4.9 acres; see Table 4.17-3) and Alternative 3 (5.0 acres; see Table 4.17-5), and so it is likely that there would be less disturbance of hydrological features or soils susceptible to erosion with implementation of Alternative 4. While the magnitude and intensity of these impacts would vary with the level of disturbance, the mechanisms by which the impacts would be generated are the same as those identified for Alternative 2; however, with the incorporation of RPMs, the significance conclusion would remain the same.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to erosion and sedimentation during project operation would be **adverse** because Alternative 4 would create conditions that would increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation. These effects would be mitigated through compliance with existing regulations and implementation of RPMs SOILS-9, BIO-30, and BIO-38.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to erosion and sedimentation during project operation would be **less than significant** because although Alternative 4 would create conditions that could increase the long-term susceptibility of soils to erosion, thereby increasing the possibility for sedimentation and water quality degradation, compliance with regulatory requirements would result in the minimization and containment of soil erosion and prevent downstream sedimentation and associated effects on water quality. RPMs SOILS-9, BIO-30, and BIO-38 would require revegetation on all disturbed areas; preparation of a Restoration Plan for both Forest Service and private land that would document pre-disturbance conditions and revegetation disturbed areas, including the implementation of long-term erosion and sediment control measures, slope stabilization, and monitoring procedures; and replacement of native trees that would need to be removed along the gondola alignment. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs SOILS-9, BIO-30, and BIO-38 as mitigation measures would reduce the effects related to erosion and sedimentation during project operation but are not necessary to reduce a significant effect.

Impact 4.17-3 (Alt. 4): Water Quality Impacts from Acute or Diffuse Releases of Contaminants Used during Project Implementation

Implementation of Alternative 4 would result in an increase in the use of materials containing contaminants and generate new sources of stormwater runoff and pollution. These new sources could release to receiving waters, potentially contaminating them. However, the project is covered under the General Construction Permit and would require preparation of an SPCC Plan; the former requires management of stormwater discharges and the both require implementation of pollution protection measures. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to releases of contaminants and hazardous materials would be **adverse** because Alternative 4 would increase the potential for accidental releases of contaminants and hazardous materials into receiving waters, which would result in water quality degradation. Implementation of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because compliance with regulatory requirements would result in the proper handling, storage, and containment of hazardous materials so that releases do not occur. In addition, RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 provide additional measures to protect against accidental release of contaminants to waterways. These include a requirement that construction personnel receive training regarding the appropriate work practices necessary to effectively implement the RPMs related to hazardous materials, compliance with Placer County procedures related to the use and disposal of hazardous materials, and development and implementation of a SPCC Plan and SWPPP and receipt of necessary authorizations from the Lahontan RWQCB. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact to a less-than-significant level.

Impact 4.17-3 (Alt. 4) would be the same as Impact 4.17-3 (Alt. 2).

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to releases of contaminants and hazardous materials would be **adverse** because Alternative 4 would result in contaminants and hazardous materials being brought onto the project site, increasing the potential for accidental releases and resulting in potential contamination of receiving waters and water quality degradation. These effects would be mitigated through and implementation of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because although Alternative 4 would result in contaminants and hazardous materials being brought onto the project site, increasing the potential for accidental releases and resulting in potential contamination of receiving waters and water quality degradation, compliance with regulatory requirements would result in the proper handling, storage, and containment of hazardous materials so that releases do not occur. RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 would require that construction personnel receive training regarding the appropriate work practices necessary to effectively implement the RPMs related to hazardous materials, compliance with Placer County procedures related to the use and disposal of hazardous materials, and development and implementation of a SPCC Plan and SWPPP and receipt of necessary authorizations from the Lahontan RWQCB. With implementation of these RPMs, this impact would be reduced, although these RPMs are not necessary to reduce a significant impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs HAZ-1, HAZ-5, HAZ-7, and WQ-1 as mitigation measures would reduce the effects related to erosion and sedimentation during project operation but are not necessary to reduce a significant effect.

Impact 4.17-4 (Alt. 4): Impacts on Groundwater from Increased Visitation and Groundwater Demand

Implementation of Alternative 4 would result in an increase in skier-days at Squaw Valley and Alpine Meadows and would consequently produce an increase in water consumption from local aquifers. Increased water consumption would be primarily focused at Squaw Valley. Increased use of groundwater by skiers would be minor and would constitute a de minimis quantity of water relative to aquifer and supply system capacity. It is therefore unlikely that there would be a measurable effect on local groundwater conditions in wells. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be a **no effect** because the project would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to groundwater would be **less than significant** because the project would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would reduce this impact.

Impact 4.17-4 (Alt. 4) would be the same as Impact 4.17-4 (Alt. 2). The potential for increased visitation, and therefore, increased water demand, is the same across all action alternatives.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, there would be **no effect** related to groundwater because while Alternative 4 would create conditions that would increase water consumption from local aquifers, it would do so in quantities that would not produce a measurable effect in drawdown or recharge at local wells. There are no applicable RPMs that would mitigate this effect.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to releases of contaminants and hazardous materials would be **less than significant** because the amount of groundwater associated with implementation of the project that would be consumed would not have a measurable effect on groundwater levels in existing wells. There are no applicable RPMs that would reduce this impact.

Mitigation Measures

No mitigation measures are required.

Impact 4.17-5 (Alt. 4): Localized Flooding from Changes in Site Drainage Patterns

Construction of Alternative 4 could cause localized erosion and changes in topography, resulting in potential downstream effects on stormwater conveyance. Without adequate stormwater drainage sizing for anticipated flow volumes, localized flooding may occur. Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to localized flooding would be **adverse**. Although it is unlikely that Alternative 4 would concentrate runoff and produce localized flooding, currently available information cannot confirm that such conditions would not be created. Implementation of RPMs WQ-9 and WQ-10 would mitigate this effect. Under CEQA, and using the CEQA criteria, effects related to localized flooding would be **potentially significant**. Although it is unlikely that Alternative 4 would create conditions that would make soils more susceptible to erosion and potentially create modified drainage pathways, concentrating runoff and producing localized flooding, currently available information cannot confirm that such conditions would not be created. RPMs WQ-9 and WQ-10 would reduce this impact.

Alternative 4 would have an impact similar to that discussed for Alternative 2. Under Alternative 4, construction of the Squaw Valley base station terminal would not require any modifications to Cushing Pond.

On the Alpine Meadows side, the terminal station would be situated on or near existing conveyance structures that act to carry Bear Creek flows to the main branch of Bear Creek. Placement of the terminal station at Alpine Meadows would be located atop approximately 45 feet of the 220-foot semi-open existing drainage culvert. However, culvert function and capacity would not be altered.

For the same reasons described for Impact 4.17-5 (Alt. 2), Alternative 4 could produce conditions that contribute to localized flooding. However, Alternative 4 would produce less permanent disturbance than both Alternatives 2 and 3. With incorporation of RPMs, the significance conclusion would remain the same.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to localized flooding would be **adverse**. Although it is unlikely that Alternative 4 would create conditions that would make soils more susceptible to erosion and potentially create modified drainage pathways, concentrating runoff and producing localized flooding, currently available information cannot confirm that such conditions would not be created. These effects would be mitigated through implementation of RPMs WQ-9 and WQ-10.

CEQA Determination of Effects

Under CEQA, and using the CEQA criteria, effects related to localized flooding would be **potentially significant**. Although it is unlikely that Alternative 4 would create conditions that would make soils more susceptible to erosion and potentially create modified drainage pathways, concentrating runoff and producing localized flooding, currently available information cannot confirm that such conditions would not be created. Implementation of RPMs WQ-9 and WQ-10 would reduce this impact 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 Mitigation Monitoring and Reporting Program for the project. The adoption of RPMs WQ-9 and WQ-10 as mitigation measures would reduce the effects related to localized flooding from changes in site drainage patterns during project operation but are not necessary to reduce a significant effect.

Impact 4.17-6 (Alt. 4): Impacts on Riparian Conservation Objectives in Riparian Conservation Areas

Absent the adoption of any RPMs, implementation of Alternative 4 would result in a departure from adherence to the standards and guidelines for riparian and aquatic ecosystems identified in the SNFPA ROD, which would be an **adverse** effect under NEPA. However, the RCO analysis concluded that Alternative 4 is consistent with the Adaptive Management Strategy for the Sierran Forests, as required by the SNFPA ROD, because the project would incorporate RPMs and corresponding Forest Service Region 5 BMPs as protection measures to ensure no net loss or degradation of riparian habitats or aquatic resources. Standards and guidelines for RCOs that have been designed to protect downstream beneficial water uses would be met by Alternative 4 if RPMs and BMPs are adhered to. Therefore, implementation of RPMs and corresponding BMPs would mitigate effects of the alternative. This impact analysis is specific to a NEPA analytical indicator and is not responsive to a CEQA criterion. No CEQA effects conclusion is provided.

As described in Impact 4.17-6 (Alt. 2), RCAs are land allocations identified by the Forest Service that "are managed to maintain or restore the structure and function of aquatic, riparian, and meadow ecosystems" (U.S. Forest Service 2004). Standards and guidelines in the SNFPA intended to protect riparian and aquatic ecosystems that are applicable to the project are listed above in Table 4.17-4, together with the associated RCO, and a summary evaluation of whether the standards have been met.

Alternative 4 would result in the temporary, construction-related disturbance of 5.9 acres and the permanent disturbance of 3.6 acres of RCAs (KSL Ski Holdings 2017; Hydro Restoration 2016, 2017; U.S. Forest Service 2004; USGS 2017; compiled by Ascent Environmental 2018), which is less than the amount of disturbance under Alternative 2, but more than Alternative 3. While the magnitude and intensity of impacts in RCAs would vary with the level of disturbance, the mechanisms by which the impacts would be generated

are the same as those identified for Alternative 2; however, with the incorporation of RPMs, the significance conclusion would remain the same.

For the same reasons identified for Alternative 2, Alternative 4 is consistent with the Adaptive Management Strategy for the Sierran Forests, as required by the SNFPA Record of Decision (U.S. Forest Service 2004). Alternative 4 would incorporate RPMs and BMPs identified in Appendix B to ensure no net loss or degradation of riparian habitats or aquatic resources. Applicable standards and guidelines for RCOs designed to protect downstream beneficial water uses would likely be met by the project.

NEPA Effects Conclusion

Under NEPA, and considering the NEPA indicators, absent RPMs and/or mitigation, direct and indirect effects related to RCO standards and guidelines would be **adverse**. These effects would be mitigated, however, through implementation of the RPMs identified in the RCO report for individual standards and guidelines, and repeated here in Appendix B.

CEQA Determination of Effects

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

4.17.3.5 SUMMARY OF DIRECT AND INDIRECT EFFECTS

Table 4.17-7 provides a summary of the effects determinations for the direct and indirect effects evaluated above for each alternative.

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

Addressing the action alternatives, for Impact 4.17-1, all NEPA indicators effects would be adverse and mitigated with adherence to regulatory requirements and implementation of applicable RPMs. For these indicators, there would be a small difference in effects across the three action alternatives relating to the total amount of disturbance from construction and vegetation clearing, with Alternative 2 likely to be slightly more adverse due to the larger disturbance footprint (16.6 acres) compared to Alternative 3 (12.4 acres) and Alternative 4 (11.6 acres). Under CEQA, the impacts of the three action alternatives under Impact 4.17-1 would be potentially significant considering applicable regulatory requirements and with implementation of RPMs but would be mitigated to a less-than-significant level with implementation of RPMs.

For Impact 4.17-2, all NEPA indicators effects would be adverse and mitigated with adherence to regulatory requirements and implementation of applicable RPMs. For these indicators, there would be a small difference in effects across the three action alternatives relating to the total amount of disturbance from placement of permanent structures, with Alternative 3 likely to be slightly more adverse due to the larger disturbance footprint (5.0 acres) compared to Alternative 2 (4.9 acres) and Alternative 4 (2.9 acres). Under CEQA, the impacts of the three action alternatives under Impact 4.17-2 would be less than significant considering applicable regulatory requirements and with implementation of RPMs.

For Impact 4.17-3, the impact would be adverse but mitigated under NEPA and less than significant under CEQA with implementation of applicable RPMs. The impact relates to the potential release of contaminants and hazardous materials, and there would be no discernable difference in the potential severity of this affect across the action alternatives.

For Impact 4.17-4, there would be no effect under NEPA and a less-than-significant impact under CEQA across all three action alternatives because water use would be de minimis under both NEPA and CEQA. Increases in skier visitation, and therefore increases in water demand, would be the same for all action alternatives.

For Impact 4.17-5, the impact would be adverse but mitigated under NEPA and less than significant under CEQA with implementation of applicable RPMs for all three action alternatives. Because specific information on existing drainage systems and project-related drainage systems is lacking, a difference in effect across alternatives cannot be determined.

For Impact 4.17-6, the impact would be adverse but mitigated under NEPA. Because this impact analysis is specific to a NEPA analytical indicator, no CEQA effects conclusion is provided. Alternative 2 would result in the most substantial temporary, construction-related disturbance (6.6 acres) and permanent disturbance of RCAs (5.1 acres), followed by Alternative 4 (5.9 and 3.6 acres, respectively) and Alternative 3 (4.7 and 3.5 acres, respectively).

Table 4.17-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.17-1: Impacts from Erosion and Sedimentation Caused by Construction-Related Activities	Quantification (acres) of ground disturbance resulting from the projects and discussion of impacts on water quality, hydrologic function, drainage patterns, stream health, rate and amount of runoff, stream sedimentation, slope stability, and water quality standards of receiving waters	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Discuss particularly impacts of the temporary construction access route on water resources	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternative 2 and more than under Alternative 3
	Discussion of Total Maximum Daily Load (TMDL) adopted for sediment in Squaw Creek	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Narrative discussion of BMPs and mitigation techniques to minimize adverse effects to watershed health (specifically measures to minimize erosion and the creation of a stormwater management plan)	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Violate any federal, state or county potable water quality standards	No effect	Adverse under NEPA: less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Create or contribute runoff water which would include substantial additional sources of polluted water	No effect	Adverse under NEPA: less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Otherwise substantially degrade surface water quality	No effect	Adverse under NEPA: less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Less than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3

Table 4.17-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
4.17-2: Impacts from Erosion and Sedimentation Caused by Long-Term Implementation of the Project	Quantification (acres) of ground disturbance resulting from the projects and discussion of impacts on water quality, hydrologic function, drainage patterns, stream health, rate and amount of runoff, stream sedimentation, slope stability, and water quality standards of receiving waters	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA More than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Narrative discussion of BMPs and mitigation techniques to minimize adverse effects to watershed health (specifically measures to minimize erosion and the creation of a stormwater management plan)	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA More than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Violate any federal, state or county potable water quality standards	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA More than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Create or contribute runoff water which would include substantial additional sources of polluted water	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA More than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
	Otherwise substantially degrade surface water quality	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA More than under Alternative 2	Adverse under NEPA; less than significant under CEQA Less than under Alternatives 2 and 3
4.17-3: Water Quality Impacts from Acute or Diffuse Releases of Contaminants Used during Project Implementation	Violate any federal, state or county potable water quality standards	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Create or contribute runoff water which would include substantial additional sources of polluted water	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Otherwise substantially degrade surface water quality	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA less than significant under CEQA Same as for Alternatives 2 and 3
4.17-4: Impacts on Groundwater from Increased Visitation and Groundwater Demand	Qualitative discussion of existing and proposed groundwater supply and potential changes to groundwater recharge due to increased visitation	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Same as for Alternative 2	No effect under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3

Table 4.17-7 Summary of Direct and Indirect Effects

Impact	Applicable Analytical Indicators and Significance Criteria	Alt. 1	Alt. 2	Alt. 3	Alt. 4
	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Same as for Alternative 2	No effect under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Alter the direction or rate of flow of groundwater	No effect	No effect under NEPA; less than significant under CEQA	No effect under NEPA; less than significant under CEQA Same as for Alternative 2	No effect under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
4.17-5: Localized Flooding from Changes in Site Drainage Patterns	Substantially alter the existing drainage pattern of the site or area	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
	Increase the rate or amount of surface runoff	No effect	Adverse under NEPA; less than significant under CEQA	Adverse under NEPA; less than significant under CEQA Same as for Alternative 2	Adverse under NEPA; less than significant under CEQA Same as for Alternatives 2 and 3
4.17-6: Impacts on Riparian Conservation Objectives in Riparian Conservation Areas	Completion of a Riparian Conservation Objective (RCO) analysis, including identification of Riparian Conservation Areas (RCAs) and restrictions for RCAs	No effect	Adverse under NEPA; not a CEQA impact	Adverse under NEPA; not a CEQA impact Less than under Alternative 2	Adverse under NEPA; not a CEQA impact Less than under Alternative 2, but more than under Alternative 3

4.17.4 Cumulative Effects

4.17.4.1 METHODS AND APPROACH

The list of past, present, and reasonably foreseeable future projects considered in this cumulative analysis is provided in Chapter 3 of this Final EIS/EIR. The spatial scope for this cumulative effects analysis of hydrology and water quality is the Bear Creek watershed, Squaw Creek Hydrologic Unit Code (HUC) 12, and the portion of upper middle Truckee River HUC-12 near where Bear Creek and Squaw Creek flow into the Truckee River. This area is generally represented by the "Squaw Creek-Truckee River Watershed" identified in Exhibit 4.17-1, "Watershed." A HUC is a U.S. Geological Survey–developed designation for watersheds and provides a mechanism to split larger watersheds into smaller units. The larger the HUC number, the smaller the portion of a watershed area included in the HUC. The entire Squaw Creek watershed and middle Truckee River watersheds cover a larger area than would be appropriate for this cumulative impact analysis. Use of the HUC-12 designations encompasses a portion of the larger Squaw Creek and middle Truckee River watersheds appropriate for evaluating past, present, and reasonably foreseeable future projects with a reasonable potential to interact with the action alternatives on a cumulative basis. Because effects on

groundwater are also considered, the groundwater aquifer of Squaw Valley and Alpine Meadows provides the spatial scope for the assessment of cumulative effects on this resource.

The temporal scope typically includes the construction period (6–8 months) as well as the operational period of the gondola (winter season); however, for hydrology and water quality, the temporal scope for reasonably foreseeable future actions is more broadly defined because actions that could adversely affect hydrology and water quality could contribute to the cumulative condition no matter when they occur. 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 potential changes hydrology and water quality that could occur from the construction and operation of the gondola and reasonably foreseeable future projects.

All present or reasonably foreseeable future projects within the spatial scope of the analysis that have the potential to affect hydrology and water quality are listed below. Potential impacts associated with these projects to hydrology and water quality include the potential for erosion of soil and downstream sedimentation, and changes to the hydrological regime such that the timing and quantity of peak flow conditions overwhelm the capacity of stormwater conveyance structures.

Project	Potential Impacts
Alpine Meadows Master Development Plan	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
Village at Squaw Valley Specific Plan	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
Squaw Valley Red Dog Lift Replacement	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
Alpine Meadows Hotwheels Lift Replacement	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
Timberline Twister	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
Caldwell property (White Wolf) development	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
General development in Olympic Valley	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
General development in Alpine Meadows	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.

Project	Potential Impacts
Alpine Sierra subdivision	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
Truckee River Corridor Access Plan	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.
Truckee River Tributaries Project	Possible erosion and sedimentation, and changes to the timing and quantity of peak flows, and consequent effects on stormwater infrastructure.

4.17.4.2 CUMULATIVE IMPACTS

Alternative 1 – No Action Alternative

Alternative 1 – No Action Alternative would result in a continuation of existing conditions. There would be no direct and indirect effects, and thus by definition no cumulative impacts on hydrology and water quality.

Alternative 2

There are several planned communities and residential developments in and adjacent to the project area that would ultimately increase impervious areas that could increase stormwater runoff volumes and peak flows, including the Alpine Sierra subdivision with 33 single-family residential units and 14 residential halfplex units. Also, the Truckee River Corridor Access Plan includes recreation improvements from Lake Tahoe to the Martis Valley.

Several ski resort improvements are proposed at Squaw Valley and Alpine Meadows. These projects would all result in temporary construction disturbance and long-term increases in impervious surfaces, but similar to the residential developments previously listed, they would be required to incorporate construction BMPs to protect water quality and post-construction stormwater infiltration facilities to mitigate the increase in impervious areas in compliance with Tahoe Regional Planning Agency and Lahontan RWQCB permits and the Lake Tahoe and Truckee TMDL programs.

Six of the eleven probable future projects included in this cumulative impact analysis are provided an estimated “project area” in Table 3-3, which can be used to approximate a ground disturbance area. Completion of all probable future projects provided a project area would result in the disturbance of approximately 195 acres. Sufficient information is not available for two other projects, “General Development in Olympic Valley” and “General Development in Alpine Meadows” (which both consolidate a general development scenario) to provide an acreage value for project area; however, it can be reasonably assumed that each of these projects would result in 10s to 100s of acres of ground disturbance. The “Truckee River Corridor Access Plan” and “Trucker River Tributaries Project” also do not have project area estimates at this time; however, total land disturbance in the area covered by the spatial scope of this cumulative impact analysis would be small. Finally, the Alpine Meadows Master Development Plan covers an area of 2,278 acres; however, this is the planning area, and only a relatively small portion of the area covered by the spatial scope of this cumulative impact analysis could be affected by actual planned activities.

In general, these probable future projects could impose temporary impacts on water quality that would be prevented through compliance with construction permits and individual project SWPPPs. Most of the projects would increase the extent of impervious surface area to varying degrees; however, any substantial increases in the extent of impervious surface area would have to be paired with infiltration and stormwater facilities designed and built to prevent any increase in stormwater runoff or peak flows. Implementation of

Alternative 2, including the RPMs committed to by the project applicant and the standard BMPs required by the agencies, would not result in a considerable contribution to an overall adverse cumulative effect on hydrology or water quality in the project vicinity.

Alternative 2 could produce a cumulative effect on stormwater drainage and the capacity of existing stormwater infrastructure to accommodate changes in the flow regime. However, the stormwater management system at Squaw Valley will be upgraded during implementation of the *Village at Squaw Valley Site Specific Plan* and will be sized to accommodate drainage from the cleared gondola areas. It will be installed over time as project development proceeds, following the requirements of an infrastructure phasing plan. The phasing plan ensures that a sufficient stormwater management system is provided for each element of project construction to address runoff generated by the facilities being built. Therefore, benefits from the upgraded stormwater management system will be realized incrementally as the upgraded systems are installed, and the effectiveness of various components of the stormwater system could be assessed, allowing an adaptive approach to implementation. Paradoxically, the phased implementation approach to the Village at Squaw Valley stormwater infrastructure would decrease effects associated with Alternative 2 because the new system would accommodate adaptive management, if needed. Therefore, the cumulative effects of Alternative 2 would be **less than significant** under CEQA with respect to stormwater drainage and would be **beneficial** under NEPA.

Alternatives 3 and 4

Cumulative impacts resulting from Alternatives 3 and 4 would be essentially the same as those discussed above for Alternative 2.

5 OTHER REQUIRED NEPA AND CEQA ANALYSIS

This chapter provides analyses and information required by NEPA and CEQA not already provided elsewhere in this EIS/EIR.

5.1 NEPA

5.1.1 Short-Term Uses of the Environment versus Maintenance and Enhancement of Long-Term Productivity

NEPA (40 Code of Federal Regulations [CFR] 1502.16) requires the consideration of the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity. This involves the consideration of whether the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project would sacrifice a resource value that might benefit the environment in the long-term for some short-term value to the applicant or the public. In general, "short-term" is used here to refer to the construction period, while "long-term" refers to the operational life of the project and beyond.

The action alternatives do not involve short-term uses, outside of necessary temporary impacts that would occur during the single season construction period. Implementation of the action alternatives would result in short-term construction related impacts within the study area that are described in detail in Chapter 4, "Affected Environment and Environmental Consequences." Potential short-term impacts include ground disturbance and vegetation removal for construction access and safety of operations, disturbance to wildlife, temporary limitations to recreation access in some areas, increased air emissions, transport and use of hazardous materials (e.g., fuels and lubricants), water quality impacts, and increased ambient noise levels. Short-term impacts would be minimized through implementation of Resource Protection Measures (RPMs) (see Appendix B for a full listing of RPMs) and mitigation measures intended to reduce environmental effects. Over the long term, these resources are expected to recover from any adverse short-term effects without a loss in productivity.

The short-term effects identified in this EIS/EIR would be offset by the improved recreational experience provided at the Alpine Meadows ski area (Alpine Meadows) and Squaw Valley ski area (Squaw Valley) and the portion of the Forest Service Management Area 086 – Scott (Scott Management Area) (see Section 4.4, "Land Use") that overlaps with Alpine Meadows. In addition, the ability to move between resort base areas via the gondola would limit the need for vehicle transport between these two locations.

5.1.2 Irreversible and Irretrievable Commitments of Resources

NEPA regulations require that an EIS analysis include a discussion of the potential irreversible and irretrievable commitments of environmental resources as a consequence of the approval and implementation of a project or action (40 CFR 1502.16). The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms. Irretrievable commitments of resources are those that result in experiential losses to certain resources that could never be regained. Irreversible commitments of resources are those impacts that could never be reversed, for example through reclamation and mitigation work that could occur in the future.

Similar to NEPA, Section 1512.6 (c) of the State CEQA Guidelines requires that significant irreversible environmental changes that would be involved with a project be disclosed. Significant irreversible environmental changes may include:

- consumption of non-renewable resources,
- changes to land use which would commit future generations to similar uses, and
- irreversible changes which may result from environmental accidents associated with the project.

Because of the similarities between NEPA and CEQA regarding these topics, the requirements of both laws are addressed below.

5.1.2.1 CONSUMPTION OF NON-RENEWABLE RESOURCES

Implementation of the action alternatives would result in the consumption of energy and materials. Fossil fuels would be required for construction of the project, as well as operation and maintenance. Installing the gondola would require the manufacture of new materials. Much of the materials used in these facilities, such as steel poles and other metal components, could be recycled if desired. However, some materials, such as some equipment in the base and mid-stations and elements of the cabins, would not be recyclable if the project were decommissioned. The raw materials and energy required for the manufacture of the non-recyclable materials would result in an irretrievable commitment of natural resources.

Electrical demand for the action alternatives would increase primarily during winter months (November through March) when the gondola is operational; however, a limited amount of power would be needed to support intermittent maintenance and testing during summer. Indirect increases in energy consumption could also result from increases in the number of daily vehicle trips and fuel usage associated with increases in visitation. However, the project would reduce visitor and resort shuttle system travel on roadways between Squaw Valley and Alpine Meadows, which would reduce fossil fuel usage.

5.1.2.2 CHANGES TO LAND USE THAT WOULD COMMIT FUTURE GENERATIONS

The action alternatives consist of construction of a gondola connecting Alpine Meadows and Squaw Valley. Vegetative clearing for installation of project components would require up to approximately 215-300 trees total to be cleared in the project area depending on which alternative is selected for implementation (see Section 4.12, “Vegetation”). This loss of woody and overstory vegetation is not irretrievable, however, because the productivity of the site would remain intact and the gondola could be abandoned and the site restored in the future. Similarly, the loss of other vegetation communities within the footprints of gondola towers, mid-stations, and base stations could be restored if the project were ever decommissioned.

Disturbance of sensitive habitats such as wetlands and riparian areas could result in a permanent change in land use; however, avoidance, compensation (e.g., habitat restoration and enhancement) where avoidance is not possible, and a requirement of no net loss in habitat functions and values would substantially reduce the effects of the project. These habitat types can also be successfully restored in many cases if facilities are removed some time in the future.

The project would be constructed on land currently designated for use as ski resorts and a recreational area. Operation of a gondola would improve access to the existing ski facilities, which is compatible with the current recreational use of the land. Therefore, any changes to land use would not be significant.

In addition, the footprint of the gondola would be small, and the gondola could be abandoned and the site restored in the future. Implementing the project would not obligate future generations to retain project facilities in their current location or configuration if a compelling reason to alter the facilities were to arise.

5.1.2.3 IRREVERSIBLE CHANGES THAT WOULD RESULT FROM ENVIRONMENTAL ACCIDENTS

The project does not provide for an appreciable increase in use of hazardous materials relative to existing conditions and would involve the transport, use, and generation of only small volumes of hazardous materials. The applicant would prepare relevant hazardous materials management plans, including a spill prevention, control, and countermeasure plan; a stormwater pollution prevention plan; and a flammable gasses safety plan. With continued compliance with existing federal, state, and local laws and regulations related to hazardous materials, the project would not be expected to result in environmental accidents that have the potential to cause irreversible damage to the natural or human environment.

5.1.3 Consistency with Laws, Regulations, and Executive Orders

All project construction and operation activities described and proposed in this document would be implemented to the extent that they are consistent with applicable federal law, U.S. Department of Agriculture regulations, Forest Service policies, and applicable provisions of State law. The major laws and their applicability to the project are described below.

5.1.3.1 CLEAN AIR ACT

As described in Section 4.10, "Air Quality," and Section 4.11, "Greenhouse Gas Emissions and Climate Change," the project is located in the Mountain Counties Air Basin. Air quality in the project area is regulated by the U.S. Environmental Protection Agency (EPA), California Air Resources Board, and Placer County Air Pollution Control District.

General conformity requirements were adopted by Congress as part of the federal Clean Air Act Amendments of 1990 (Public Law 84-159). General conformity requires that all federal actions conform to the state air quality control plan referred to as a State Implementation Plan (SIP). The purpose of the general conformity program is to ensure that actions taken by the federal government do not undermine state or local efforts to achieve and maintain national ambient air quality standards. Before a federal action is taken, it must be evaluated for conformity with the SIP. All reasonably foreseeable emissions, both direct and indirect, that are predicted to result from the action are taken into consideration. The location and quantity of emissions must be identified. If it is found that the action would create emissions above *de minimis* threshold levels specified in EPA regulations, or if the activity is considered regionally significant because its emissions exceed 10 percent of an area's total emissions, the action cannot proceed unless mitigation measures are specified that would bring the project into conformance.

The analysis of air emissions in Sections 4.10, "Air Quality," and 4.11, "Greenhouse Gas Emissions and Climate Change," of this EIS/EIR and associated appendices satisfy the Clean Air Act requirements for conformity determination. Because the project would comply with all federal, state, and local air quality regulations and conform with the SIP, the project would comply with the Clean Air Act.

5.1.3.2 CLEAN WATER ACT

The Clean Water Act (CWA) consists of the Federal Water Pollution Control Act of 1972 (Public Law 92-500) and subsequent amendments. All federal agencies must comply with the provisions of the CWA. The CWA establishes the basic structure for regulation of discharges of pollutants to surface waters within the United States. It authorizes the EPA to set effluent limits for discharges and requires the EPA to set water quality standards for contaminants in surface waters. The EPA has delegated responsibility to the State of California to implement the National Pollutant Discharge Elimination System program authorized by the CWA. This is carried out by the State Water Resources Control Board. The Lahontan Regional Water Quality Control Board provides oversight for the project area.

The CWA regulates forest management activities near waters of the United States and riparian areas. A permit from the U.S. Army Corps of Engineers (USACE) is required prior to any work involving excavation of material from, or deposition of material into, waters of the United States, including jurisdictional wetlands, in accordance with Section 404 of the CWA. Fills of less than 0.5 acre of nontidal waters of the United States for residential, commercial, or institutional development projects can generally be authorized under USACE's nationwide permit (NWP) program, provided that the project satisfies the terms and conditions of the particular NWP. Fills that do not qualify for a NWP require a letter of permission or an individual permit.

As analyzed in Sections 4.12, "Vegetation," and 4.15, "Wetlands," implementing the action alternatives could result in permanent loss or temporary disturbance of the following sensitive habitat types: aspen, freshwater emergent wetland, mesic and riparian shrubland, and pond. All or part of the affected habitat acreage could qualify as waters of the United States and/or waters of the State. The RPMs adopted as part of the project and mitigation measures included in this EIS/EIR would ensure that the terms of the CWA are met because of requirements to obtain necessary permits, minimize fill in Section 404 jurisdictional areas, prevent pollution caused by erosion and sedimentation, and compensate for any unavoidable impacts on a no net loss basis. See Appendix B for detailed descriptions of applicable RPMs.

5.1.3.3 ENDANGERED SPECIES ACT OF 1973

The U.S. Fish and Wildlife Service (USFWS) has authority over projects that may result in take of a species listed as threatened or endangered under the Federal Endangered Species Act (ESA) of 1973 (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 5 of USFWS as species of concern. The ESA defines *take* as "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]). USFWS has also interpreted the definition of "harm" to include habitat modification that could result in take. If a project is likely to result in take of a federally-listed species, either an incidental take permit under ESA Section 10(a) or a federal interagency consultation under ESA Section 7 is required before the take may occur. Such a permit typically requires various types of mitigation to compensate for or to minimize a take.

The California Natural Diversity Database and its geographic information system application, California Native Plant Society's online *Inventory of Rare and Endangered Plants*, and Tahoe National Forest (TNF) data were used as the primary sources to preliminarily identify and map previously reported occurrences of federally listed threatened or endangered species within and around the project area. Observations of listed species and potential habitat for these species were also recorded during reconnaissance level field surveys of the project area.

The action alternatives have the potential to affect Sierra Nevada yellow-legged frog, which is federally-listed as endangered. To avoid negative effects to this protected species, RPMs and mitigation measures would be implemented. For a complete discussion of mitigation measures, see Section 4.14, "Wildlife and Aquatics." For a complete list of RPMs, see Appendix B.

Because potential impacts to this species would be adequately mitigated consistent with the requirements of the ESA and appropriate ESA authorization would be obtained from USFWS, and because no other threatened or endangered species were found within the project area, the action alternatives would comply with the ESA.

5.1.3.4 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. 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.

Bald eagles are not known or expected to nest in the project vicinity, based on the rarity of nesting in the region, no nesting records in or near the project vicinity, and the lack of high-quality nesting habitat. Any bald eagle occurrence and habitat use in the project vicinity would be most likely during winter, when the species is more abundant in the Tahoe region. However, because of the presence of existing recreation use, vehicle travel, vegetation/forest management, and other activities throughout the project vicinity, the existing disturbance level is relatively high; additional construction-related disturbance would not substantially affect the foraging patterns of bald eagle. Also, abundant and suitable foraging habitat is available in other areas nearby (e.g., Lake Tahoe, Watson Lake, Martis Creek Reservoir). Bald eagle breeding activities, nest sites and young, or reproductive success are not expected to be impacted by project construction. To further ensure that construction-related disturbances and loss of nest sites would be avoided (e.g., in the event that nesting is initiated in the study area during or prior to construction), RPM BIO-12 would be implemented. This measure requires conducting preconstruction surveys for nesting birds, and implementing an appropriate exclusionary buffer and limited operating period to avoid or minimize effects of construction-related disturbance on nesting activity and breeding success.

5.1.3.5 ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898 requires that all federal actions consider potentially disproportionate effects on minority and low-income communities especially if adverse effects to environmental or human health conditions are identified. As discussed in Section 4.5, "Socioeconomics and Environmental Justice," no existing minority populations were identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Likewise, no low-income populations were identified in the affected area. Therefore, no inconsistencies between the project and EO 12898 would occur.

5.1.3.6 FEDERAL ANTIDEGRADATION POLICY

The federal antidegradation policy, established in 1968, is designed to protect existing uses of waters and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- existing in-stream uses and the water quality necessary to protect those uses shall be maintained and protected;
- where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and,
- where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Through implementation of RPMs and mitigation measures included in this EIS/EIR, the action alternatives would not result in significant adverse effects on water quality and would be in compliance with the antidegradation policy (see Section 4.17, "Hydrology and Water Quality," and Appendix B for RPMs).

5.1.3.7 FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT (7 USC 136 AS AMENDED)

The objective of the Federal Insecticide, Fungicide, and Rodenticide Act is to provide federal control of pesticide (collective for insecticide, fungicide, rodenticide, and herbicide) distribution, sale, and use. All pesticides used in the United States are subject to approval and registration by the EPA. Through registration, the EPA ensures that pesticides are properly labeled and that if used as specified, will not cause unreasonable harm to the environment. The Forest Service may only use, or authorize use on National Forest System lands,

pesticides registered or permitted in accordance with this act, as well as appropriate state law. The use of insecticides, fungicides, and rodenticides is not included as part of the action alternatives. Implementation of the action alternatives may require the use of herbicides for the control of noxious or invasive weeds within the project area. If the use of herbicides on Forest Service land is required, this action would be subject to approval by the TNF botanists and applicable RPMs (see Appendix B). The requirements of Federal Insecticide, Fungicide, and Rodenticide Act would be met during implementation of the project.

5.1.3.8 FLOODPLAIN MANAGEMENT AND PROTECTION OF WETLANDS

EO 11988 for Floodplain Management directs all federal agencies to evaluate potential effects of any actions they may take in a floodplain and to avoid all adverse effects associated with modifications to floodplains. It also directs Federal agencies to avoid floodplain development whenever there is a practicable alternative and to restore and preserve the natural and beneficial values served by the floodplains.

The project area is not within a floodplain that is regulated as part of the National Flood Insurance Program, and no areas of special flood hazard are identified by the Federal Emergency Management Agency, which issues regulatory floodplain maps (Flood Insurance Rate Maps). Because the project would not include development within a floodplain or flood hazard area, it would be in compliance with EO 11988.

EO 11990 requires that federal agencies avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to such construction; and (2) that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use. As analyzed in Section 4.15, "Wetlands," implementing the action alternatives could result in permanent loss or temporary disturbance of habitats that would qualify as wetlands. The RPMs adopted as part of the project and mitigation measures included in this EIS/EIR would ensure that wetlands are avoided to the extent practicable, that pollution caused by erosion and sedimentation is prevented, and that any unavoidable impacts to wetlands are compensated for on a no net loss basis. Therefore, the project would be in compliance with EO 11990.

5.1.3.9 INDIAN TRUST ASSETS AND COORDINATION WITH TRIBAL GOVERNMENTS

Indian Trust Assets are legal interests in property held in trust by the United States for Native American tribes or individuals. The Secretary of the Interior, acting as the trustee, holds many assets in trust. Examples of trust assets include lands, minerals, hunting and fishing rights, and water rights. The United States has an Indian trust responsibility to protect and maintain rights reserved by or granted to Native American tribes or individuals by treaties, statutes, and executive orders. No Indian Trust Assets have been identified in the project area.

EO 13175, Consultation and Coordination with Indian Tribal Governments, was issued to "establish regular and meaningful consolation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfounded mandates upon Indian tribes." On December 17, 2015, Placer County sent letters to representatives of the Washoe Tribe of California and Nevada, United Auburn Indian Community of the Auburn Rancheria (UAIC), the Shingle Springs Band of Miwok Indians, and the T'Si-Akim Maidu offering the opportunity to consult.

On January 12, 2016, the Shingle Springs Rancheria forwarded a letter noting they are unaware of cultural resources on the project site but requesting copies of any cultural reports prepared for the project. On February 3, 2016, the Washoe Tribe similarly noted via letter that they are unaware of cultural resources that may be affected by the project but requested any cultural reports prepared for the project. On February 8, 2016, UAIC requested to receive copies of cultural reports prepared for the project as well as any future environmental documents. On February 1, 2018, the County provided all requesting tribes with a copy of the *Cultural Resource Inventory and Evaluation* prepared for the project in December 2017.

On February 1, 2018, the County sent an email confirmation to UAIC that consultation was considered closed as of January 16, 2016. On February 5, 2018, UAIC responded affirmatively via email to the close of consultation. On February 1, 2018, the County sent a similar email confirmation to the Washoe Tribe, and on February 2, 2018 received an affirmative response from the tribe to the close of consultation. On February 1, 2018, the County sent an email to Shingle Springs Rancheria confirming that consultation would be considered closed as of March 5, 2018. No further correspondence has been received from Shingle Springs Rancheria.

Surveys have been conducted that identify no known historic or pre-historic resources in the project area, which are well-documented in the cultural report contained in the project file. The above tribes would be immediately contacted if any archaeological artifacts, exotic rock (non-native), unusual amounts of shell or bone, or human remains are uncovered during any on-site construction activities. Therefore, the project would be in compliance with EO 13175.

5.1.3.10 INVASIVE SPECIES

EO 13112 requires federal agencies to identify actions that may affect the status of invasive species, prevent the introduction of invasive species to the extent practicable and permitted by law, and only authorize actions that could promote the introduction or spread of invasive species if the agency determines that: (1) the benefits of the action outweigh the potential harm caused by invasive species; and (2) all feasible and prudent measures to minimize the risk of harm will be taken. Section 4.13, "Botany," addresses botanical resources and noxious weeds. As described in Section 4.13 and the Non-Native Invasive Plant Risk Assessment prepared for the project (U.S. Forest Service 2019) various RPMs would be implemented to avoid or minimize the introduction, spread, and establishment of noxious weeds during project construction and operation. With implementation of these RPMs the project would comply with EO 13112.

5.1.3.11 MIGRATORY BIRD TREATY ACT OF 1918 AS AMENDED

The Migratory Bird Treaty Act, first 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 MBTA includes several hundred species, which essentially comprises all native birds. As discussed in Section 4.14, "Wildlife and Aquatics," potential adverse effects to special-status bird species would be addressed through implementation of RPMs that require pre-construction surveys for individuals, nests, and roost sites of various bird species; provide buffers between construction activities and nest sites; set seasonal construction restrictions in particularly sensitive areas; minimize habitat removal; and incorporate design elements that limit adverse effects on bird species. These activities, although intended to address specific special-status bird species, would also minimize adverse effects to a wide variety of migratory birds in the project area.

5.1.3.12 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969

NEPA (Public Law 91-190) requires that federal agencies complete detailed disclosure on proposed actions and alternatives to the proposed action that may significantly affect the quality of the human environment. The purpose of an EIS is twofold: (1) to provide decision makers with a detailed accounting of the likely environmental effects of a proposed action and any alternatives prior to adoption of an action; and (2) to inform the public and allow it to comment on those environmental effects. This EIS/EIR analyzes the alternatives and discloses their effects in detail. The procedural requirements of NEPA have been met.

5.1.3.13 NATIONAL FOREST MANAGEMENT ACT OF 1976 (PUBLIC LAW 94-588)

The National Forest System lands in the TNF affected by the project are subject to management direction in the 1990 TNF Land and Resource Management Plan (LRMP), as amended by the 2004 Sierra Nevada Forest Plan Amendment Record of Decision. Collectively, the LRMP and amendment are referred to as the Forest Plan. The Forest Plan guides management of all National Forest Lands and resources within the TNF. It includes direction for forest management, goals and objectives, area management direction, and standards and guidelines. 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. The action alternatives are responsive to guiding direction contained in the Forest Plan, is consistent with the standards and guidelines contained in the Forest Plan and is consistent with the requirements for management prescriptions.

5.1.3.14 NATIONAL HISTORIC PRESERVATION ACT AND EXECUTIVE ORDER 13007

Section 106 of the National Historic Preservation Act (Public Law 89-665, as amended) requires federal agencies to take into account the effect of proposed undertakings such as the proposed action on any district, site, building, structure, or object that is included in, or eligible for inclusion in the National Register of Historic Places (NRHP). Section 106 review is conducted to determine whether significant (per NRHP criteria) resources will be adversely affected by an undertaking, and if so, whether measures can be implemented to adequately resolve adverse effects. Section 106 requires federal agencies to afford the State Historic Preservation Officer a reasonable opportunity to comment, which was accomplished through the cultural report (contained in the project file). As of March 2018, the State Historic Preservation Officer has concurred with the determination that there are no historic properties listed on or eligible for listing on the NRHP within the area of potential effect, meaning that no historic properties would be affected by any of the action alternatives.

EO 13007, Indian Sacred Sites (May 24, 1996), requires federal land managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites. It is important to note that a sacred site may not meet the National Register criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site.

Archival research and field surveys were conducted for Native American religious or cultural sites, archaeological sites, and historic properties or areas that may be affected by the project. Research conducted as part of this study indicates that no evidence of archeological or other cultural resources were found (Lindstrom 2016). In addition, the Tribal Historic Preservation Office of the Washoe Tribe of Nevada and California has been contacted regarding the project and they have indicated that they are not aware of cultural resources that may be affected by the project (Cruz, pers. comm., 2016). There are no historic buildings or structures within the project area. Therefore, the project would not affect any resources subject to Section 106 of the National Historic Preservation Act.

5.1.3.15 RECREATIONAL FISHERIES

Federal agencies shall, to the extent permitted by law and where practicable, improve the quantity, function, sustainable productivity, and distribution of aquatic resources for increased recreational fishing opportunities by, among other things, evaluating the effects of federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries. The potential effects to fish habitat from the project are extremely limited due to the distance between the project and waterways that support fisheries. Impacts on fisheries would be limited to degradation of water quality through transport of sediment through erosion. Direct effects on water quality (see Section 4.17, “Hydrology and Water Quality”), and, therefore, effects on fish productivity and the quality of the recreational fisheries, would be negligible. The project would therefore comply with EO 12962.

5.1.3.16 SPECIAL AREA DESIGNATIONS

The only TNF specially designated area that may be affected by the project is the National Forest System-Granite Chief Wilderness (GCW). While no development would occur within the National Forest System-GCW as a result the project, experiential impacts from within it are possible. These experiential impacts would result from the project's visibility within the National Forest System-GCW (see Section 4.3, "Wilderness," for more information); however, buffer zones for development around wilderness areas are prohibited by legislative acts like Public Law 96-550, Section 150, which states:

> *Congress does not intend that the designation of wilderness areas… lead to the creation of protective perimeters of buffer zones around each wilderness area. The fact that non-wilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area.*

The project would be in compliance with all special area designations in the vicinity of the project area.

5.1.3.17 WILD AND SCENIC RIVERS ACT

The Wild and Scenic Rivers Act (Public Law 90-542, as amended) regulates forest management activities within the National Wild and Scenic Rivers System. Through this act, selected rivers of the Nation and their immediate environments are designated for protection based on their scenic, recreational, geologic, fish and wildlife, historic, cultural or similar values. The primary focus of this act is to maintain the "free flowing condition" of these waters, to protect water quality, and to fulfill vital national conservation purposes. Because there are no designated wild and scenic rivers within the project area, the requirements of this act have been met.

5.1.3.18 CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA (Public Resources Code [PRC] Section 21080) applies to discretionary projects to be carried out or approved by public agencies in California. In accordance with the State CEQA Guidelines (California Code of Regulations [CCR] Title 14, Section 15064[f][1]), preparation of an EIR is required whenever a project may result in a significant environmental impact. An EIR is an informational document used to inform public agency decision-makers and the general public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts.

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

5.2 CEQA

5.2.1 Significant Environmental Effects That Cannot Be Avoided

CEQA Section 21100(b)(2)(A) states that an EIR shall include a detailed statement setting forth "[i]n a separate section…[a]ny significant effect on the environment that cannot be avoided if the project is implemented." State CEQA Guidelines Section 15126.2(b) requires that an EIR describe any significant impacts, including those that can be mitigated but not reduced to a less-than-significant level.

Chapter 4, "Affected Environment and Environmental Consequences," of this EIS/EIR addresses the potential environmental effects of the action alternatives for all applicable environmental topic areas and recommends mitigation measures, as necessary, to mitigate project effects to the extent feasible. The analysis identifies the following significant impacts that cannot be reduced to less-than-significant levels through mitigation, as described below.

Impact 4.2-2: Visual Character (General Impact on Visual Character)

Under all action alternatives, project features would be visible from, and adversely affect visual quality in, remote landscapes with high sensitivity levels. Various RPMs would minimize this effect by promoting screening of project features and incorporating design elements that assist project feature in blending into the landscape. However, although implementation of these RPMs would reduce this impact, it would not reduce the impact to a less-than-significant level because project features would remain visible and adversely affect visual quality in remote landscapes with high sensitivity levels. There is no feasible mitigation that would reduce the visibility of the project sufficiently to reduce this impact to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

Impact 4.7-4: Impacts on Vehicular Queuing at Caltrans Intersections

Vehicle trips generated under all action alternatives would adversely affect turn lane storage at intersections owned/operated by the California Department of Transportation (Caltrans). The maximum queue length in the northbound left-turn lane at the State Route (SR) 89/Alpine Meadows Road intersection would be extended from 350 to 375 feet, thereby further exceeding the 300 feet of available storage and resulting in a significant impact. There are no applicable RPMs that would mitigate this effect. Implementation of Mitigation Measure 4.7-4 (Alt. 2) would reduce the maximum queue length in the northbound left-turn lane at the SR 89/Alpine Meadows Road intersection during the Saturday AM peak hour to fit within the available storage that is provided. However, Placer County cannot ensure that this improvement would be implemented because it would occur under Caltrans's and not the County's jurisdiction. Therefore, this impact would be significant and unavoidable despite the availability of a mitigation measure that, if implemented, would restore operations to an acceptable level.

Cumulative Impact 4.7-11: Impacts on Caltrans Intersections

Vehicle trips generated under all action alternatives would worsen unacceptable traffic conditions at the Interstate 80 Eastbound Ramps/SR 89 roundabout and the SR 89/Squaw Valley Road intersection during the Sunday PM peak hour. These conditions would exceed applicable thresholds for intersections that already operate at unacceptable levels under the cumulative no project condition, thereby resulting in a significant impact. There are no applicable RPMs that would mitigate this effect. Implementation of Mitigation Measure 4.7-11 (Alt. 2) would potentially reduce the number of vehicle trips generated during peak periods; however, there are no assurances that such reductions would be sufficient to eliminate the impacts. Therefore, this impact would be significant and unavoidable.

Cumulative Impact 4.7-12: Impacts on Vehicular Queuing at Caltrans Intersections

Vehicle trips generated under all action alternatives would exacerbate vehicle spillbacks and affect turn lane storage at intersections owned/operated by Caltrans (i.e., SR 89/Squaw Valley Road and SR 89/Alpine Meadows Road). The vehicle trips attributable to the project would exacerbate vehicle spillbacks and

exceedances of turn lane storage, thereby resulting in a significant impact. There are no applicable RPMs that would mitigate this effect. Implementation of Mitigation Measure 4.7-12 (Alt. 2) would potentially reduce the number of vehicle trips generated during peak periods; however, there are no assurances that such reductions would be sufficient to eliminate the impacts. Therefore, this impact would be significant and unavoidable.

Cumulative Impact 4.7-13: Impacts on Caltrans Highways

Vehicle trips generated under all action alternatives would exacerbate cumulatively unacceptable operations on a Caltrans highway segment. Cumulative effects on the segment of SR 89 between Squaw Valley Road and West River Street intersections would be significant because this segment would experience an increase in volume-to-capacity ratio that would exceed applicable thresholds. There are no applicable RPMs that would mitigate this effect. Implementation of Mitigation Measure 4.7-13 (Alt. 2) would potentially reduce the number of vehicle trips generated during peak periods; however, there are no assurances that such reductions would be sufficient to eliminate the impacts. Therefore, this impact would be significant and unavoidable.

Impact 4.9-1: Construction Noise Impacts

Under all action alternatives, construction activities would result in temporary increases in noise associated with heavy-duty off-road equipment, blasting, and helicopter use. Incorporation of noise-related RPMs would reduce these effects to the extent possible, but construction noise would not be eliminated. Impacts for all alternatives would be significant and unavoidable due to the potential for helicopter noise to result in substantial disturbance to existing sensitive receptors. There is no feasible mechanism to ensure that helicopters flying between available staging areas (i.e., the Squaw Valley and Alpine Meadows Parking lots) and the gondola alignment will not generate substantial disturbance to nearby sensitive receptors. Therefore, this impact would be significant and unavoidable.

5.2.2 Significant Irreversible Environmental Changes

See Section 5.1.2, “Irreversible and Irretrievable Commitments of Resources,” above, which addresses this topic.

5.2.3 Growth-Inducing Impacts

5.2.3.1 NEPA

The Council on Environmental Quality NEPA Regulations provide for discussion of growth-inducing impacts of an action (40 CFR 1508.8[b]): “Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.” The discussion must additionally address how a proposed project may remove obstacles to growth, or encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

5.2.3.2 CEQA

State CEQA Guidelines Section 2100(b)(5) specifies that growth-inducing impacts of a project must be addressed in an EIR. Section 15126(d) states that a proposed project is growth-inducing if it could “foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” Included in the definition are projects that would remove obstacles to population growth. Examples of growth-inducing actions include developing water, wastewater, fire, or other types of services in previously unserved areas; extending transportation routes into previously undeveloped areas; and establishing major new employment opportunities.

Typically, the growth-inducing potential of a proposed project would be considered significant if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if the project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

5.2.3.3 GROWTH VARIABLES

The timing, magnitude, and location of land development and population growth in a community or region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and nonresidential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Because the General Plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

5.2.3.4 GROWTH CAUSED BY PROJECT-RELATED EMPLOYMENT

The majority of project-related employment would occur during the construction period. Project construction is estimated to require approximately 6-8 months of construction activity taking place over one construction season. The construction season in the project area is limited by weather and regulatory standards to protect water quality and other resources. Construction activity would be limited to the late-spring, summer, and early-fall, with construction sites stabilized/winterized in the late fall and construction activity ceasing during the winter months.

During peak construction periods, approximately 30–40 workers would be present on the project site. Employment requirements are expected to be the same for all of the action alternatives. Construction and monitoring positions could be filled by the local labor pool. However, even if personnel were brought in from outside the region, the jobs are temporary (one construction season) and these employees would return to their place of residence after work is complete.

Operation of the project would require two new full-time, year-round employment positions and eight full-time, seasonal positions; or six full time equivalent employees (FTEEs) calculated over a year. Therefore, operation of the gondola is expected to be accommodated by the existing workforce in the project vicinity, and the seasonal workforce that already travels to the area during the winter season. It is not expected to require specialized skills that would require workers to travel from other areas of the region, state, or country.

In spite of the in-migration of some workers from outside of the project area, due to the short-term nature and seasonality of the work and the relatively small number of workers needed at any one time, it is not expected that growth would be induced by the project's labor force requirements. Construction workers from outside the Truckee-Tahoe region would likely travel to the project site at the beginning of the construction season, stay in transitory housing (e.g., hotels, rental properties), and return home at the end of the construction season. Workers from the Reno area and other regions relatively close to the project site might commute to and from the project area on a daily, weekly, or monthly basis. Project construction would not generate appreciable population growth or demand for new housing in the region.

5.2.3.5 GROWTH AS A RESULT OF INCREASED RESORT VISITATION

Although the project is expected to result in approximately 7,371 additional visitor-days per month (which would average to approximately 246 visitors per day), these additional visitors would be limited to short-term visits (i.e., a day or days) during the gondola's operation (winter season) (SE Group and RRC Associates 2018). Because these visits would be temporary, this increase would not increase the population of the area. In addition, given the existing commercial services (e.g., hotels, gas stations, retail stores) in the vicinity that are currently available to serve peaks in winter visitation, the additional visitation would not

create a substantial increase in demand for goods and services that would result in an increase in development. Furthermore, the project would not open an undeveloped area to development, change land use designations, or expand public services or utilities to an area not previously served. Therefore, the increase in seasonal visitors would not remove obstacles to growth, and the project would not be growth-inducing.

5.2.4 Environmentally Superior Alternative

CEQA calls for the identification of an environmentally superior alternative in an EIR but gives no specific definition for the term (State CEQA Guidelines Section 15126.6(e)(2)); however, the term can be generally defined as the alternative that results in the least amount of environmental impact. CEQA further specifies that if the environmentally superior alternative is the "no project" alternative, the EIR must identify an environmentally superior alternative among the other alternatives.

From the standpoint of minimizing environmental effects, Alternative 1 - No Action Alternative would be the environmentally superior alternative. Under Alternative 1, no construction would take place and the project site would remain consistent with existing conditions. No change to the existing environment would occur under Alternative 1. However, Alternative 1 would not meet any of the basic project objectives related to providing a connection between the Alpine Meadows and Squaw Valley base areas.

Table 2-3 in Chapter 2, "Description of Alternatives," identifies the significant and potentially significant impacts of each alternative for each environmental issue area evaluated in this EIS/EIR. As shown in Table 2-3, based solely on impact significance conclusions, there is little difference in effects among the action alternatives. Using this coarse comparison method, the primary difference between alternatives is that Alternative 3 has one CEQA noise impact that does not occur under Alternatives 2 and 4 and results from the Alpine Meadows mid-station under Alternative 3 being located in close proximity to existing residences. This impact is significant, and is reduced to a less-than significant level with mitigation. Without a clear distinction between alternatives in Table 2-3, a more detailed evaluation of the differences in effects among alternatives is necessary.

For several environmental issue areas, the same effects occur for each action alternative. For example, each action alternative is assumed to result in the same potential increase in visitation; therefore, each action alternative results in the same generation of utility demand. Consequently, there is no difference in utility impacts across the three action alternatives. For the following issue areas, environmental effects are the same for all action alternatives and these issue areas were not considered in the determination of the environmentally superior alternative:

- Section 4.4, "Land Use,"
- Section 4.5, "Socioeconomics and Environmental Justice,"
- Section 4.7, "Transportation and Circulation,"
- Section 4.8, "Utilities,
- Section 4.10, "Air Quality," and
- Section 4.11, "Greenhouse Gas Emissions and Climate Change."

Further information on why effects were considered the same across action alternatives for each environmental issue area is provided in the referenced sections of this EIS/EIR.

5.2.4.1 ALTERNATIVE 2

Due to its location, Alternative 2 results in several different, or more severe environmental effects than Alternatives 3 and 4. The key significant environmental effects of Alternative 2 concern the alternative's close proximity to both the GCW and known occupied habitat for the Sierra Nevada yellow-legged frog (SNYLF). Other environmental issue areas where Alternative 2 would have different or more severe effects

than Alternatives 3 and 4 include biological resources, land use conflicts, and public safety. All are described in greater detail below.

As described in Chapter 2, "Description of Alternatives," and shown in Exhibit 2-2, the central portion of the Alternative 2 alignment, between the Squaw Valley and Alpine Meadows mid-stations, is located just east of the GCW and would cross private lands within the Congressionally-Mapped GCW. This close proximity to the GCW would result in effects related to visual resources, noise, and wilderness. This middle segment would traverse a distance of approximately 3,000 feet along or near the ridgeline between the two resorts, and therefore has the greatest effect on visual character among the three action alternatives (see Section 4.2, "Visual Resources"). Due to the close proximity of Alternative 2 to the GCW, this alternative would have the greatest noise effect on the GCW during project construction.

With the Alpine Meadows mid-station near Barstool Lake, Alternative 2 is the only action alternative with facilities in close proximity (within 100 feet) to known occupied habitat for SNYLF (see Section 4.14, "Wildlife and Aquatics"). As the SNYLF is an endangered species and Alternative 2 is the only alternative that would have a significant impact on SNYLF, Alternative 2 would have a greater effect on SNYLF than would Alternatives 3 or 4.

Alternative 2 would result in approximately 21 acres of ground disturbance, which is greater than the amount that would be disturbed by Alternatives 3 or 4. This greater area of ground disturbance, results in an increased potential for the introduction and establishment of invasive plant species (see Section 4.13, "Botany") and for erosion (see Section 4.17, "Hydrology and Water Quality") compared with Alternatives 3 and 4.

Finally, among the action alternatives, the gondola as proposed under Alternative 2 would also be the most difficult to evacuate in the event of an emergency (see Section 4.6, "Public Safety").

In some areas, Alternative 2 has less environmental effect than Alternatives 3 and 4, such as the least exposure to avalanche risk due to the location near the top of the ridgeline (see Sections 4.6, "Public Safety," and 4.16, "Soils, Geology, and Seismicity") and least effect on aquatic habitats and associated aquatic and botanical species (see Sections 4.13, "Botany," 4.14, "Wildlife and Aquatics," and 4.15, "Wetlands"). However, this difference in habitat effects is small, ranging from a fraction of an acre to approximately 1 acre depending on the alternative and habitat types being compared.

While Alternative 2 may have lesser impacts compared to Alternatives 3 and 4 for the limited environmental issue areas discussed above, these areas of less effect are not sufficient to counterbalance the areas where Alternative 2 has greater adverse effects, or adverse effects unique to this alternative. Alternative 2's greater impacts on the resources discussed above, and in particular those related to visual effects, the GCW, and SNYLF, are sufficient to eliminate it from further consideration as the environmentally superior alternative.

5.2.4.2 ALTERNATIVES 3 AND 4

With Alternative 2 eliminated from consideration as the environmentally superior alternative, it must be chosen from Alternatives 3 and 4.

While there are environmental issue areas where Alternatives 3 and 4 both clearly have lesser impacts than Alternative 2, differences between Alternatives 3 and 4 themselves are frequently more subtle. For example, while the alignments for Alternatives 3 and 4 both cross the Five Lakes Trail between the trailhead near Alpine Meadows and the ultimate destination of the Five Lakes within GCW, Alternative 4 would be the closest alignment to the trailhead. This area currently supports limited development, including other ski lift infrastructure (i.e., "KT South" on the private Caldwell property). By encountering the new infrastructure in closer proximity to existing development and infrastructure, the new development under Alternative 4 would represent less of a contrast with the existing landscape than under Alternative 3. Alternative 4's alignment is also generally the most distant from the Pacific Crest Trail (see Section 4.1, "Recreation").

Alternatives 3 and 4 both avoid adverse effects related to close proximity to the GCW (see Section 4.3, "Wilderness"). While Alternative 3 would locate the Squaw Valley mid-station closer to the GCW than Alternative 4, the mid-station under Alternative 4 would be on a peak and would therefore be more visible to the surrounding area than the Alternative 3 mid-station location (see Section 4.2, "Visual Resources"). As such, Alternative 3 has slightly less effect on visual character compared with Alternative 4.

Alternatives 3 and 4 have similar risks related to avalanche effects and similar characteristics regarding undertaking an emergency evacuation of the gondola (see Section 4.6, "Public Safety"). Both Alternatives 3 and 4 have the potential to generate construction and operational noise that could affect nearby residences; however, Alternative 4 has the potential to affect fewer residences due to the distance of the alignment and the base terminal and mid-station from residences (see Section 4.9, "Noise").

Among Alternatives 3 and 4, Alternative 3 has the least effect on aquatic habitats and associated wildlife and botanical species (see Sections 4.13, "Botany," 4.14, "Wildlife and Aquatics," and 4.15, "Wetlands"). However, this difference in habitat effects is small, ranging up to approximately 1.5 acres. Alternative 4 has a slightly greater effect on potential aquatic habitat for SNYLF compared to Alternative 3; however, Alternative 4 has less of an effect on potential upland habitat. Alternative 4 includes less of the alignment within the area designated by USFWS as critical habitat for SNYLF (see Section 4.14, "Wildlife and Aquatics"). As SNYLF and its habitat are of critical importance, Alternative 4 is the environmentally superior alternative because it affects less critical SNYLF habitat designated by USFWS.

Comparing overall ground disturbance, Alternative 3 disturbs approximately 18 acres whereas Alternative 4 disturbs approximately 15 acres, resulting in Alternative 4 having less potential for introduction and establishment of invasive plant species (see Section 4.13, "Botany") and for erosion (see Section 4.17, "Hydrology and Water Quality") compared with Alternative 3.

Alternative 3 is estimated to require the removal of 104 trees, with 133 additional trees at risk of removal. Alternative 4 is estimated to require the removal of 38 trees with an additional 176 trees at risk of removal. Thus, the estimated amount of tree removal and total amount of potential tree removal is less for Alternative 4 than for Alternative 3.

5.2.4.3 CONCLUSION

While Alternative 3 has less of an effect than Alternative 4 in some areas, such as disturbance of aquatic habitats, Alternative 4 results in less of an effect in multiple areas such as recreation, noise, total ground disturbance, tree removal, and SNYLF upland habitat. Therefore, overall, Alternative 4 is determined to have less of an adverse environmental effect compared to Alternative 3, and is considered to be the environmentally superior alternative.

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6 CONSULTATION AND COORDINATION

This chapter summarizes public and agency involvement activities undertaken by the Forest Service and Placer County that have been conducted to date for this project, and which satisfy NEPA and CEQA requirements for public scoping and agency consultation and coordination.

6.1 PUBLIC INVOLVEMENT STRATEGY

This section first summarizes the public scoping effort conducted for the proposed Squaw Valley | Alpine Meadows Base-to-Base Gondola Project and then follows with a description of the public review process for the Draft EIS/EIR.

Scoping is required by Council on Environmental Quality regulations for preparation of an EIS and by CEQA statutes and guidelines for preparation of an EIR. Scoping is an integral part of the environmental review process. It involves refining the proposed action, identifying preliminary issues, and identifying interested and affected persons. The results of scoping are used to clarify public involvement methods, refine issues, establish analysis criteria, and explore possible alternatives and their probable environmental effects.

The environmental review process for the project began with a public scoping period. A notice of preparation (NOP) and notice of intent (NOI) were issued to inform agencies and the public that an EIS/EIR would be prepared for the project and to solicit views of agencies and the public as to the scope and content of the EIS/EIR. Scoping meetings were held to allow oral expression of those views.

In accordance with NEPA regulations (40 CFR Section 1508.22), the Forest Service initiated the scoping comment period by publishing an NOI in the *Federal Register* on April 29, 2016, with a designated scoping period ending on May 31, 2016. In accordance with CEQA (14 CCR Section 15082), Placer County posted an NOP with the California State Clearinghouse on April 22, 2016, with a 30-day review period ending on May 23, 2016.

The Forest Service prepared a scoping package that was sent to 51 individuals and organizations. The scoping package, including the NOI and public notice of the beginning of the scoping comment period, provided a brief description of the Proposed Action, description of the purpose of and need for the action, and two illustrative maps. The scoping package also directed interested parties to the Forest Service project website where the project information was available. Placer County prepared the CEQA Initial Study Checklist for the project, which included a brief description of the project and project objectives and an initial evaluation of potential environmental effects. The Initial Study Checklist and NOP were posted on the Placer County project website (https://placer.ca.gov/departments/communitydevelopment/envcoordsvcs/eir/squawvalleygondolaproject at the time of scoping and now available at https://www.placer.ca.gov/2680/Squaw-Valley-Alpine-Meadows-Base-to-Base) and mailed to individuals and organizations on the mailing list. Additionally, public notices were placed in both the *Sierra Sun* and *Sacramento Bee* on April 22, 2016.

Two public scoping meetings were held by the Forest Service and Placer County on May 9, 2016, and are described further below.

At the time of the scoping meetings, the Forest Service and Placer County intended to prepare an EIS and an EIR as two separate documents. However, On September 2, 2016, Placer County and the Forest Service announced that they would prepare a combined EIS/EIR. Placer County issued an updated NOP to all previous NOP recipients and others who expressed interest in the project during the scoping process, posted the updated NOP on the County website, and provided a news release to local press outlets. Additional scoping comments were accepted until October 3, 2016.

Copies of these notices and a scoping summary report are provided in Appendix A.

6.1.1 Public Input Mechanisms

The Forest Service and Placer County provided multiple ways to submit comments in order to encourage maximum participation and input into preparation of this EIS/EIR. The public was invited to submit comments through the following mechanisms:

- public scoping meetings,
- traditional mail delivery,
- facsimile transmission (fax),
- telephone,
- email, and
- project website (www.squawalpinegondola-eis.com/).

6.1.2 Public Scoping Meetings

Two joint Forest Service and Placer County public scoping meetings were held on May 9, 2016, to gather comments on the scope of the EIS/EIR. Both meetings were held at the Resort at Squaw Creek, Monument Peak Room, 400 Squaw Creek Road, Olympic Valley, California. The first meeting was held from 2:00 to 4:00 p.m., and the second was held from 6:00 to 8:00 p.m. Representatives from the Tahoe National Forest, Placer County, and Squaw Valley Ski Holdings, LLC, were present to answer questions and provide additional information on this project. A stenographer was present to capture comments submitted orally at the meetings.

6.1.3 Scoping Participation

The initial scoping comment period for the Forest Service was open between April 29, 2016, and May 31, 2016, and for Placer County was open between April 22, 2016, and May 23, 2016. The comment period was reopened when the preparation of a joint EIS/EIR was announced, extending from September 2, 2016, through October 3, 2016. During the scoping periods, a total of 152 comment submissions (including email, website submissions, meeting transcripts, and hard copy letters) were transmitted to either the Forest Service or Placer County.

Of the 152 comment submittals received during the scoping period, most (114 submittals, or 75 percent) included the commenter's address. Of the 114 comments with address information, 93 percent were submitted by commenters with California addresses, and the remaining 7 percent were from out-of-state commenters. The comments from California were distributed as follows (presented as percent of total comments received): 13 percent from Olympic Valley residents, 11 percent from Truckee residents, 9 percent from city of Saratoga residents, 9 percent from Tahoe City residents, and 58 percent from other California locations.

In addition to the 152 commenters who submitted comments during the formal scoping period, 25 commenters submitted comments after the formal 30-day scoping period. While 36 CFR 218.5(a) indicates that commenters failing to submit timely comments are not eligible to object to the project, these commenters have been added to the official list of interested parties and their comments were considered in the preparation of the Draft EIS/EIR. None of these interested parties raised any issues that had not already been considered.

A total of 569 substantive comments were identified in the 152 scoping comment submittals across 21 broad categories. Substantive comments are comments that are generally relevant to the proposed decision and present information and rationale that is beyond conjecture and opinion. Comments were grouped further by subcategory and theme to facilitate the recording. The key issues identified in the comments were:

- scenic values,
- Granite Chief Wilderness,
- wildlife and aquatic resources,
- relationship with federal and local planning documents,
- cumulative effects,
- recreation,
- alternatives,
- traffic and parking,
- air quality,
- avalanche hazards,
- project purpose and need,
- water and wetlands, and
- health and safety.

A more detailed description of the comments received is provided in Appendix A.

6.1.4 Draft EIS/EIR Participation

The Draft EIS/EIR was distributed to interested agencies, stakeholder organizations, and individuals for a comment period of 45 days, from **April 27, 2018, to June 11, 2018**. This distribution ensured that interested parties had an opportunity to express their views regarding the environmental effects of the project and that information pertinent to permits and approvals was provided to decision makers.

During the comment period, the Draft EIS/EIR was available for review by the public during normal business hours at the Tahoe City Library, Truckee Library, Placer County administrative buildings in Auburn, CA and Tahoe City, CA, Tahoe National Forest Supervisor's Office, and Tahoe National Forest Truckee Ranger District. The Draft EIS/EIR was also available online on the project website and on Placer County's website.

Written comments were accepted at the Tahoe National Forest Truckee Ranger District and at the Placer County Community Development Resources Agency. Electronic comments were accepted on the Forest Service project website, and via email at comments@squawalpinegondola-eis.com and cdraecs@placer.ca.gov.

A public hearing on the Draft EIS/EIR was conducted during the comment period on May 24, 2018 at a Placer County Planning Commission Meeting, held at the North Tahoe Events Center.

Pursuant to 36 CFR 218.25, comments on the Squaw Valley | Alpine Meadows Base-to-Base Gondola Project Draft EIS/EIR were accepted for 45 days beginning on the first day after the date of publication of the Notice of Availability (NOA) of the Draft EIS/EIR in the Federal Register, which was April 27, 2018. Only individuals or entities (as defined by 36 CFR 218.2) who submitted timely and specific written comments about the proposed project during the official public comment period are eligible to file an objection.

In summary, one letter was received from a federal agency, two letters were received from state agencies, 13 letters were received from organizations, 174 letters were received from individuals, various commenters provided verbal comments at the public hearing, and eight letter were received after the close of the public comment period, but within 2 weeks after the close. An additional letter was received on December 2018, more than 6 months after the end of the comment period, and is not responded to in this Final EIS/EIR.

Revisions to the Draft EIS/EIR were made in response to public comments, or to amplify, clarify or make minor modifications or corrections. This Final EIS/EIR is reflective of these revisions.

6.2 CONSULTATION

This EIS/EIR has been prepared by the Forest Service, Tahoe National Forest, which is the lead federal agency for preparation of this EIS/EIR in compliance with NEPA and all other applicable laws, executive orders, regulations, and direction; and by Placer County, which is the lead State of California agency in compliance with CEQA and all other applicable laws and regulations.

The following representatives from these agencies have contributed to the preparation and/or review of this EIS/EIR:

- Forest Service
  - Eli Ilano, Forest Supervisor
  - Joanne Robique, Truckee District Ranger
  - Tim Cardoza, Land Use Program Manager
  - Mike Cartmill, Forester
  - Sharon Falvey, Hydrologist and Soil Scientist
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  - Tina Mark, Forest Biologist
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  - Stephanie Holloway, P.E., T.E., Senior Civil Engineer
  - Leigh Chavez, Environmental Coordinator
  - Shirlee Herrington, Senior Community Development Resource Agency Technician

In addition to the individuals identified above, the following entities were consulted during the development of this EIS/EIR:

- U.S. Fish and Wildlife Service,
- Washoe Tribal Historic Preservation Officer,
- Washoe Tribe of California and Nevada,
- United Auburn Indian Community of the Auburn Rancheria,
- Shingle Springs Band of Miwok Indians,
- T'Si-Akim Maidu,

- California Department of Fish and Wildlife,
- California Department of Transportation,
- Lahontan Regional Water Quality Control Board,
- Town of Truckee,
- Alpine Springs County Water District,
- Squaw Valley Public Services District,
- The California Pacific Electric Company, and
- Placer County Air Pollution Control District.

6.3 DOCUMENT DISTRIBUTION

6.3.1 Agencies and Community Notifications

The following agencies and their representatives have been provided copies of this Final EIS/EIR and/or information about how to obtain digital copies of the document.

- Federal government
  - U.S. Fish and Wildlife Service
  - U.S. Army Corps of Engineers
  - U.S. Environmental Protection Agency

- Tribal government
  - Washoe Tribe of Nevada and California
  - United Auburn Indian Community
  - Shingle Springs Rancheria Band of Miwok Indians

- State government
  - California Air Resources Board
  - California Department of Boating and Waterways
  - California Department of Conservation
  - California Department of Forestry and Fire Protection
  - California Department of Fish and Wildlife
  - California Department of Parks and Recreation
  - California Department of Toxic Substances Control
  - California Department of Transportation
  - California Department of Water Resources
  - California Highway Patrol
  - California Office of Historic Preservation
  - California Resources Agency
  - California Tahoe Conservancy
  - Lahontan Regional Water Quality Control Board
  - Native American Heritage Commission
  - Tahoe Regional Planning Agency

- Local government
  - Town of Truckee
  - Placer County Sheriff
  - Tahoe Truckee Sanitation Agency
  - Truckee Sanitary District
  - Lake Tahoe Transit
  - Local Agency Formation Commission
  - Alpine Springs County Water District

- North Tahoe Fire Protection District
- Squaw Valley Fire District
- Squaw Valley Public Service District
- Tahoe Truckee Unified School District
- all neighboring cities and counties

- Other organizations
  - Truckee River Watershed Council
  - North Tahoe Municipal Advisory Council
  - Liberty Energy
  - Southwest Gas
  - Mountain Area Preservation Foundation
  - Sierra Watch
  - North Tahoe Municipal Advisory Council
  - Sierra Club, Tahoe Group
  - Sierra Club, Motherlode
  - Sierra Nevada Alliance
  - League to Save Lake Tahoe
  - Sierra Business Council
  - Ski Area Citizen's Coalition
  - Western States Trail Foundation
  - Tahoe Metropolitan Planning Organization
  - Sierra Planning Organization
  - North Tahoe Preservation Alliance
  - Alpine Meadows Estate Association
  - Alpine Place
  - First Ascent Home Owners Association
  - Intrawest Home Owners Association
  - North Fork of the American River Association
  - Bear Creek Association
  - North Tahoe Preservation Alliance
  - Granite Chief Wilderness Protection League
  - Alpine Meadows and Squaw Valley Home Owners Associations
  - Alpine Meadows Condo Association

- All individuals who received the NOI, NOP, or updated NOP; who signed in at the scoping meetings; who provided scoping comments; or who requested in writing to receive project notifications

7 LIST OF PREPARERS

This document is a product of coordination between two lead agencies: the U.S. Forest Service and Placer County. The following individuals assisted in preparation and review of this document.

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