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 Draft 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 Draft 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 Draft 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 or install an alternative avalanche control system. The No Action Alternative essentially reflects a continuation of existing interresort transportation management practices and avalanche mitigation measures without changes, additions, or upgrades. The existing shuttle system between Squaw Valley and Alpine Meadows would continue to operate. Existing avalanche mitigation methods used in the project area would continue to be used. The gondola connecting the ski and base areas

of Alpine Meadows and Squaw Valley and the eight Gazex exploders 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 the following proposed infrastructure and improvements:

- construction 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, and
- installation of eight Gazex avalanche mitigation exploders at Alpine Meadows (seven on National Forest System [NFS] lands and one on private lands).

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 Draft 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.

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

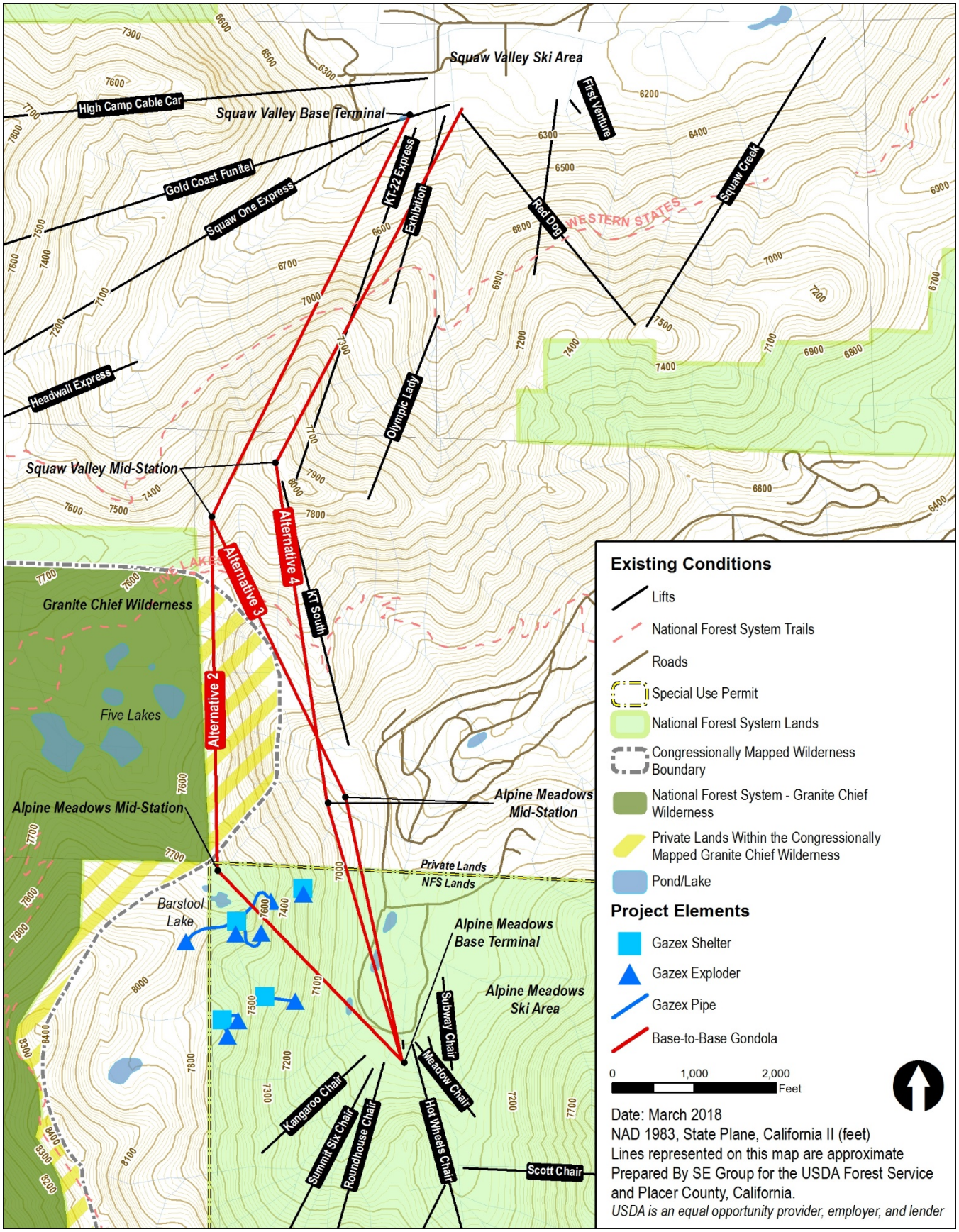

Exhibit 2-1 Topographic Map of Gondola Alignment and Gazex Facilities Associated with Each Action Alternative

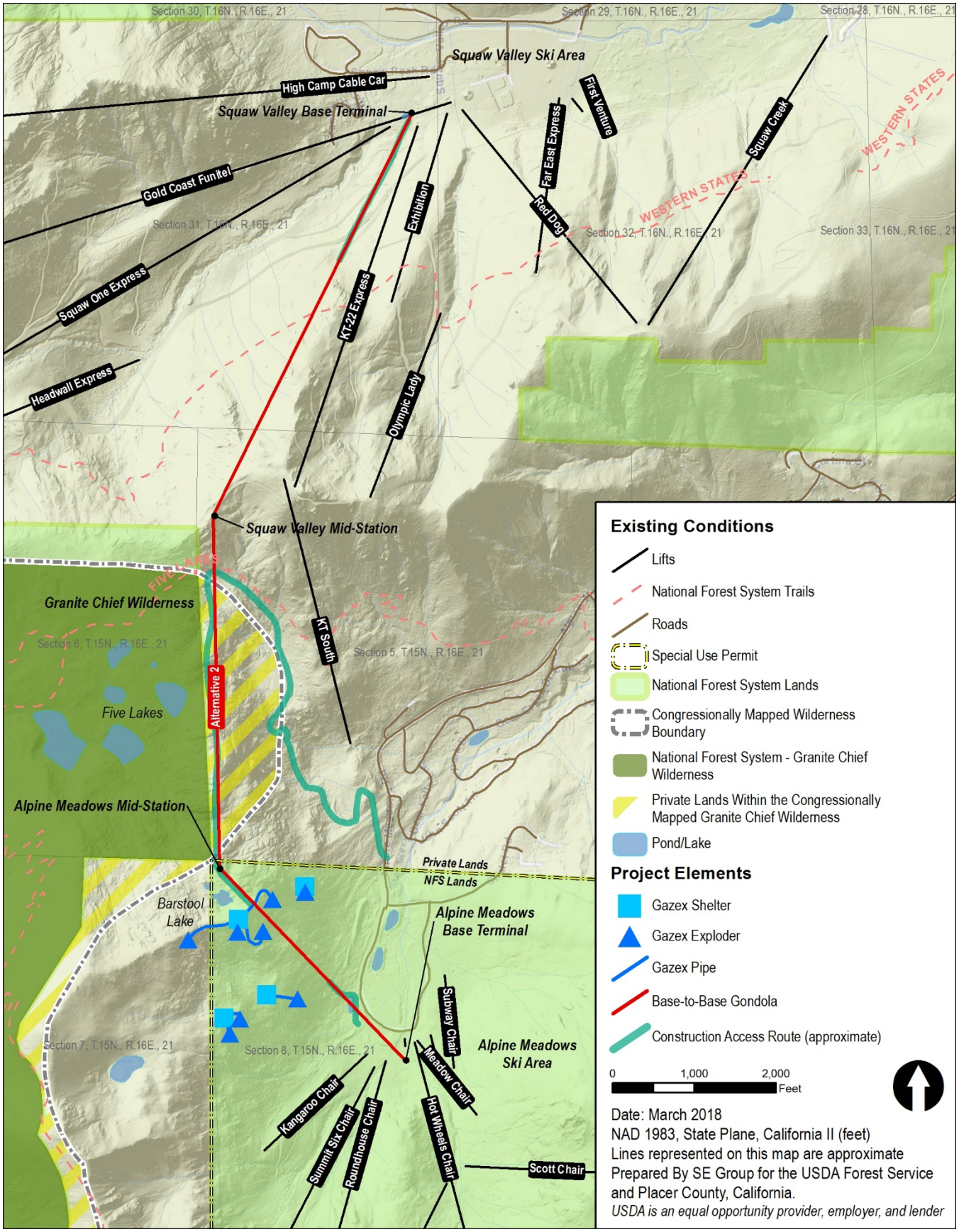

Exhibit 2-2 Overview of Gondola Alignment and Construction Access Route under Alternative 2

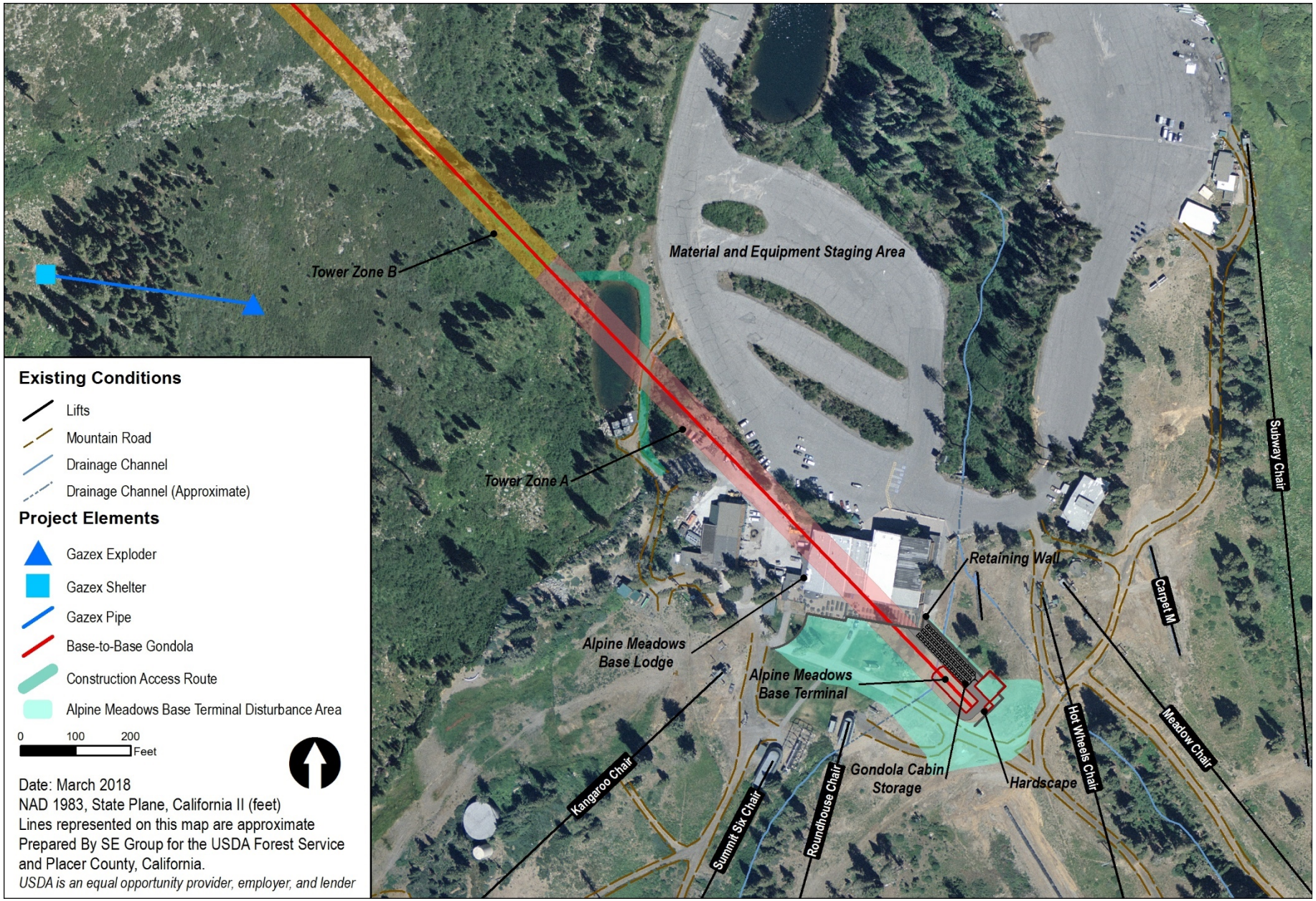

Exhibit 2-3 Close-up of Alpine Meadows Base Terminal under Alternative 2, along with Tower Zones A and B

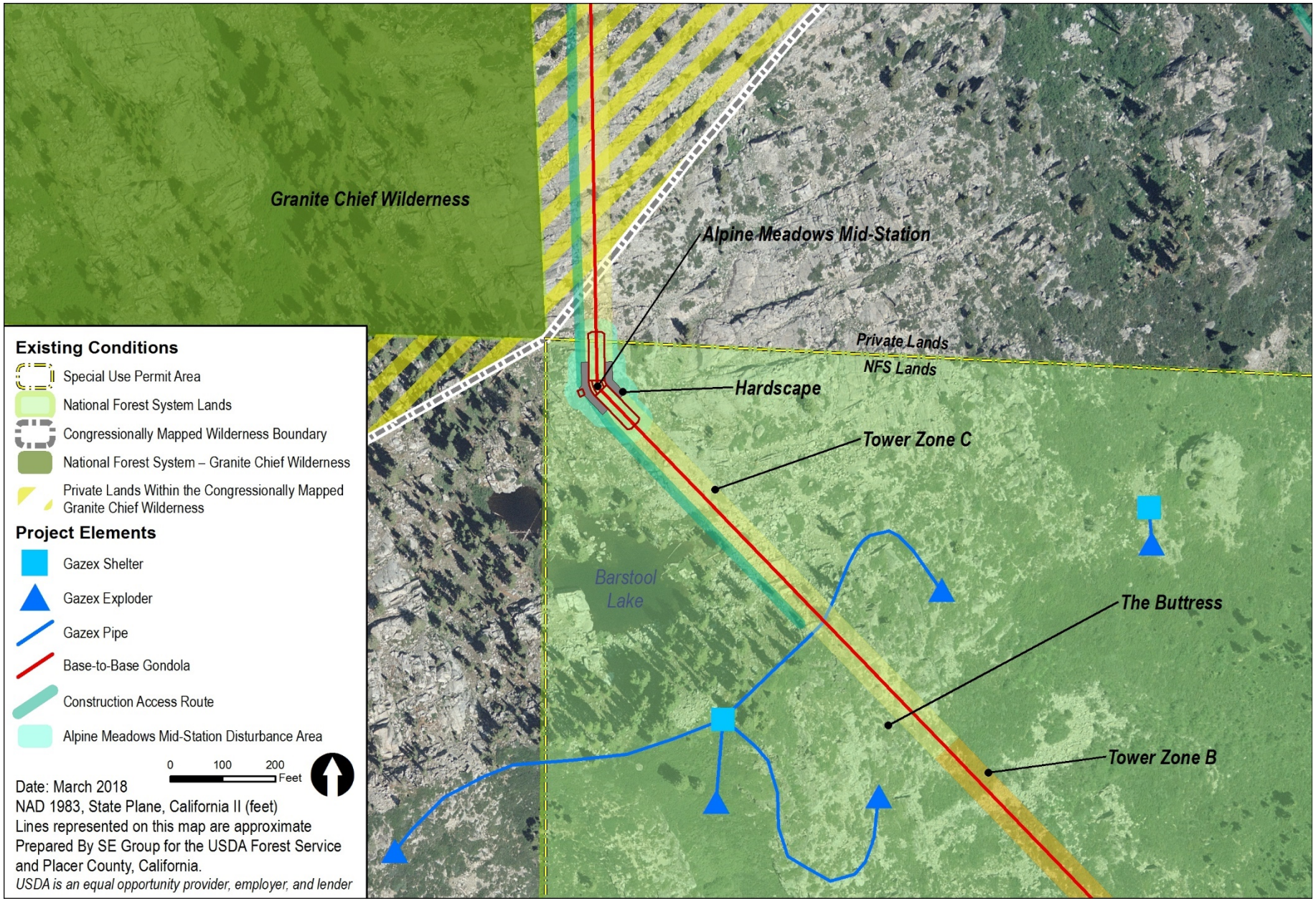

Exhibit 2-4 Close-up of Alpine Meadows Mid-Station under Alternative 2, along with Tower Zones B and C

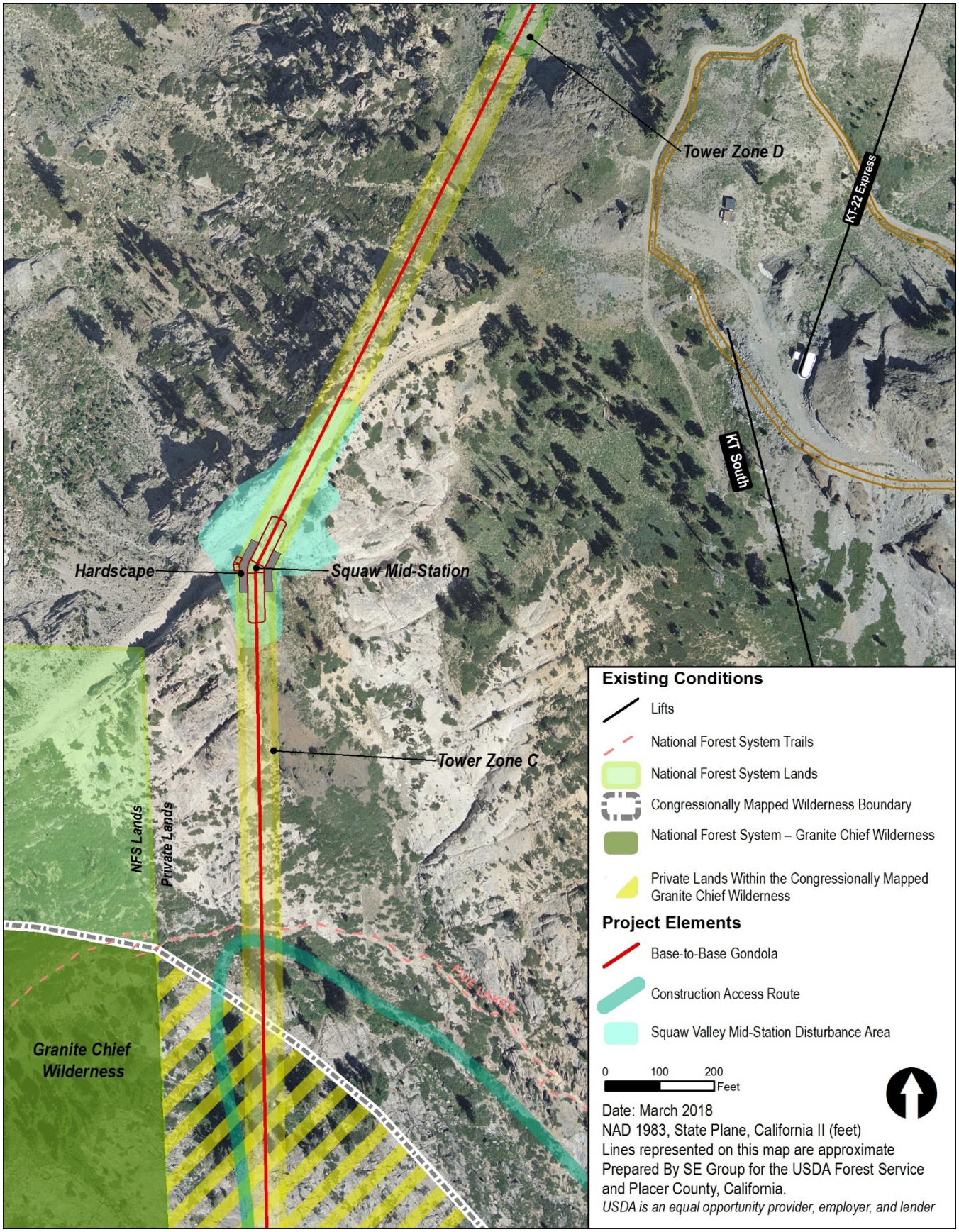

Exhibit 2-5 Close-up of Squaw Valley Mid-Station under Alternative 2, along with Tower Zones C and D

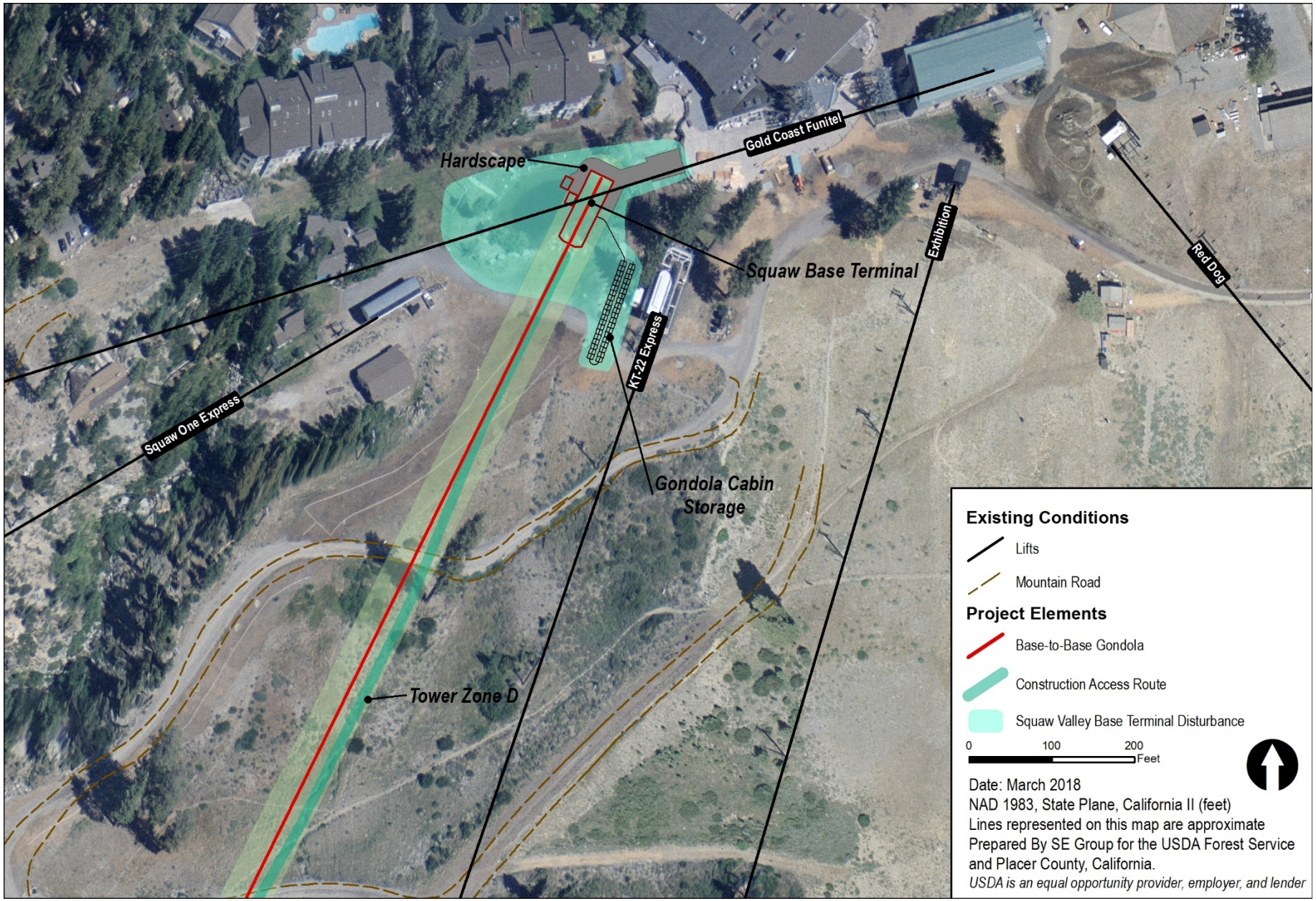

Exhibit 2-6 Close-up of Squaw Valley Base Terminal under Alternatives 2 and 3, along with Tower Zone D

base terminal to the Alpine Meadows 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 construction 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.

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 24 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 station would have a footprint of approximately 24 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.

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 will 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, will 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 will 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 station would have a footprint of approximately 24 feet by 84 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.

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

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. 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 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 24 on private land and 11 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, anticipated to begin in late spring of 2019. 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 500 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 would may be needed to remove debris and achieve the necessary excavation. The blasted rock would be incorporated into the surrounding disturbance areas.

Base-to-Base Gondola 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.

2.2.2.2 GAZEX AVALANCHE MITIGATION SYSTEM

Installation of the proposed gondola would necessitate changes to Alpine Meadows' current snow safety and avalanche hazard mitigation program in proximity to the proposed towers in Zones A and B (see Exhibit 2-3). Currently, avalanche mitigation at Alpine Meadows where the lift connection is proposed is managed via remote artillery and hand shot placements (explosive charges placed by hand). There would be risk of direct artillery and indirect shrapnel damaging new gondola infrastructure under Alternative 2 if current avalanche mitigation procedures continued in this area. Alpine Meadows proposes to install, operate, and maintain up to eight Gazex exploders (seven on NFS lands) to perform avalanche mitigation in the area, known as *The Buttress*, to replace the existing use of artillery in this area (see Exhibits 2-1, 2-2, and 2-4).

Exploders

Eight Gazex exploders would be installed at Alpine Meadows. Gazex exploders utilize cached propane and oxygen gas to ignite a controlled volume explosion within the Gazex tube creating a concussive blast above the snow surface in key avalanche trigger locations. The ignition is controlled remotely. Installation of the Gazex exploders would require two concrete footers for anchoring (see Exhibit 2-7 depicting a typical Gazex exploder below). The upper concrete footing would be approximately 3.5 feet by 8 feet, with a total construction disturbance area of approximately 15 feet by 15 feet. The lower concrete footing would be approximately 5 by 5 feet, with a total construction disturbance area of approximately 7 feet by 7 feet. The construction disturbance required for each exploder would vary depending on its location. Any material disturbed for the footers would be replaced or scattered on site. The exploder tubes would be approximately 15–16 feet in length to ensure the opening remains above the snow surface. The exploders would be a dark galvanized color.

Exhibit 2-7 Typical Gazex Exploder

Shelters

Operation of the Gazex exploders would require four shelters to house propane and oxygen tanks. Each shelter would be approximately 7 feet by 7 feet and would be set on a small aboveground platform (approximately 120 square feet), anchored for stability. The construction disturbance area would be approximately 200 square feet. The shelters would be constructed of wood and steel covered in fiberglass and include an antenna approximately 22 feet tall. The shelters would be white and would be designed to blend visually with the surrounding environment to the maximum extent possible. Exhibit 2-8 below depicts a typical Gazex shelter. Any material disturbed for construction would be scattered on site. From each shelter, one or more 1- to 2-inch-diameter high-density polyethylene (HDPE) pipe would transmit the combustible gases (pressure fed) to the exploder.

Exhibit 2-8 Typical Gazex Shelter

HDPE Pipe

In total, approximately 3,000 feet of 1- to 2-inch HDPE pipe would be installed aboveground to connect the four shelters with the eight exploders. The pipe would be of a dark color (either black or dark galvanized) and may be sheathed in a dark colored material to protect it from rodents, rock fall, and snow creep.

Gazex Construction

Construction associated with the exploders, shelters, and HDPE pipe would be principally by hand crews working in steep locations. Drilling for footers would be completed with a wagon drill, jack leg drill, or sled drill. No temporary or permanent access roads would be required. Materials would be flown in by helicopters. The helicopter and materials would be staged in the existing parking area at Alpine Meadows. The Gazex exploder system would be installed during the same construction season as the Gondola.

Gazex Operation and Long-Term Maintenance

Alpine Meadows would ensure that all combustible gasses are depleted or removed from each shelter at the end of the ski season by over-the-snow vehicles such as snowmobiles or snow cats, or by overland vehicles, or combination land/snow vehicles. Resupply would be conducted over-the-snow or via helicopter immediately prior to the ski season. These facilities would require the storage of propane and oxygen, therefore appropriate spill and fire prevention measures would be developed and incorporated into the project to ensure compliance with regulations promulgated by the U.S. Environmental Protection Agency, and state and local agencies; RPM HAZ-3 requires that SVSH prepare and implement a Flammable Gasses Safety Plan to address the storage, transport, and disposal of propane, oxygen, and any other flammable gasses associated with operation of the proposed Gazex facilities. Routine operation and maintenance of the Gazex exploders, shelters, and HDPE pipe would be authorized by the SUP through an annual Operating Plan. Unforeseen maintenance activities involving ground disturbance would require additional NEPA, and potentially CEQA analysis. No temporary or permanent maintenance access roads will be authorized for use, or created, without additional NEPA analysis, and potentially CEQA analysis, as well.

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 2-9, with Exhibits 2-10 through 2-12 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 2-10, which shows the base terminal at Alpine Meadows under Alternative 3). A mid-station, identified in Exhibits 2-9 and 2-11 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.

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 2-9 and 2-12, 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.

2.2.3.2 GAZEX AVALANCHE MITIGATION SYSTEM

The same Gazex avalanche hazard mitigation system described above is also proposed as part of Alternative 3. Although avalanche mitigation would not be affected by the modified location of the gondola under this alternative, Alpine Meadows nonetheless proposes to replace the existing artillery and hand-charge based system with the more efficient Gazex system to increase the safety and efficiency of the avalanche hazard mitigation program.

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 2-13, with Exhibits 2-14 through 2-17 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.

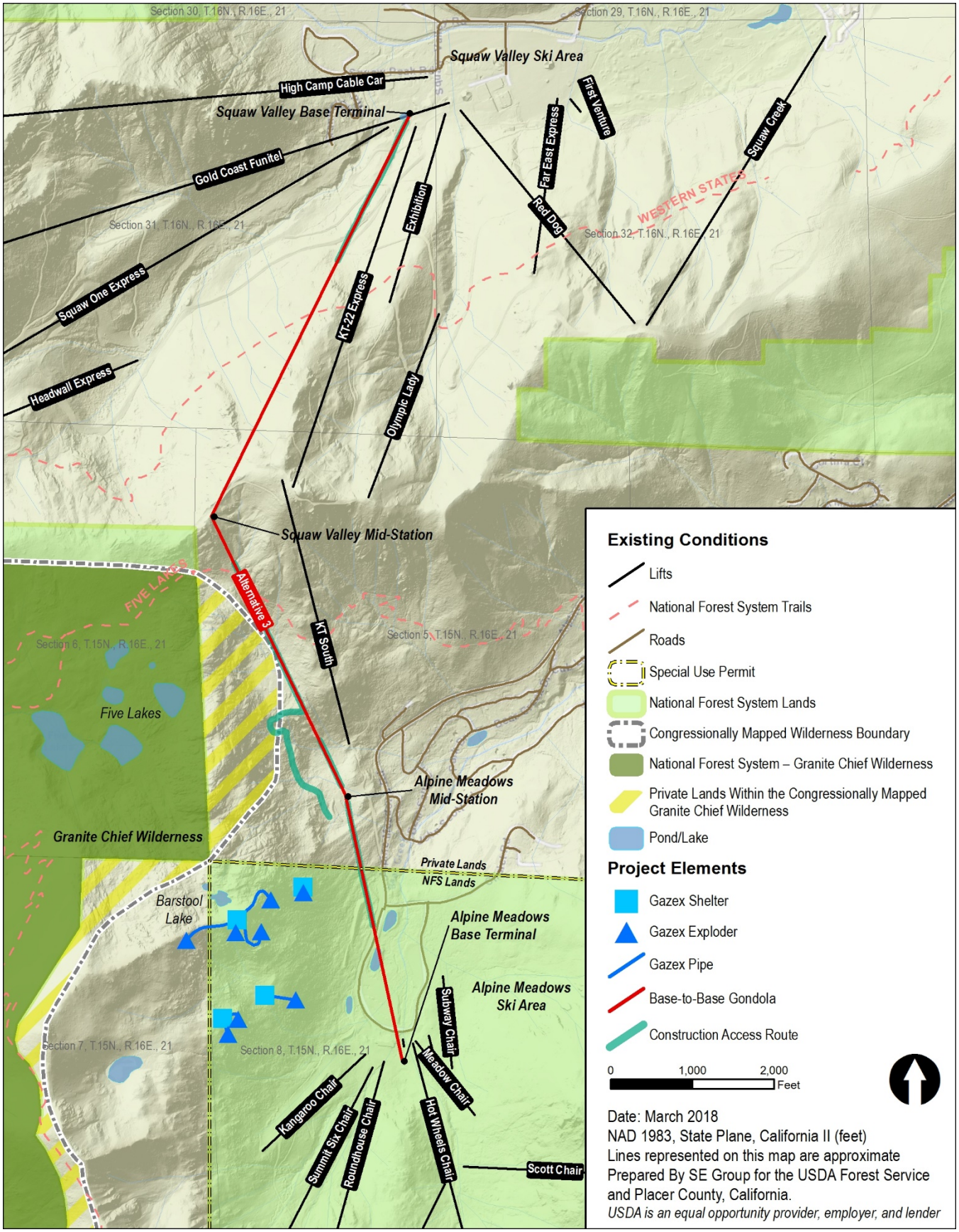

Exhibit 2-9 Overview of Gondola Alignment and Construction Access Route under Alternative 3

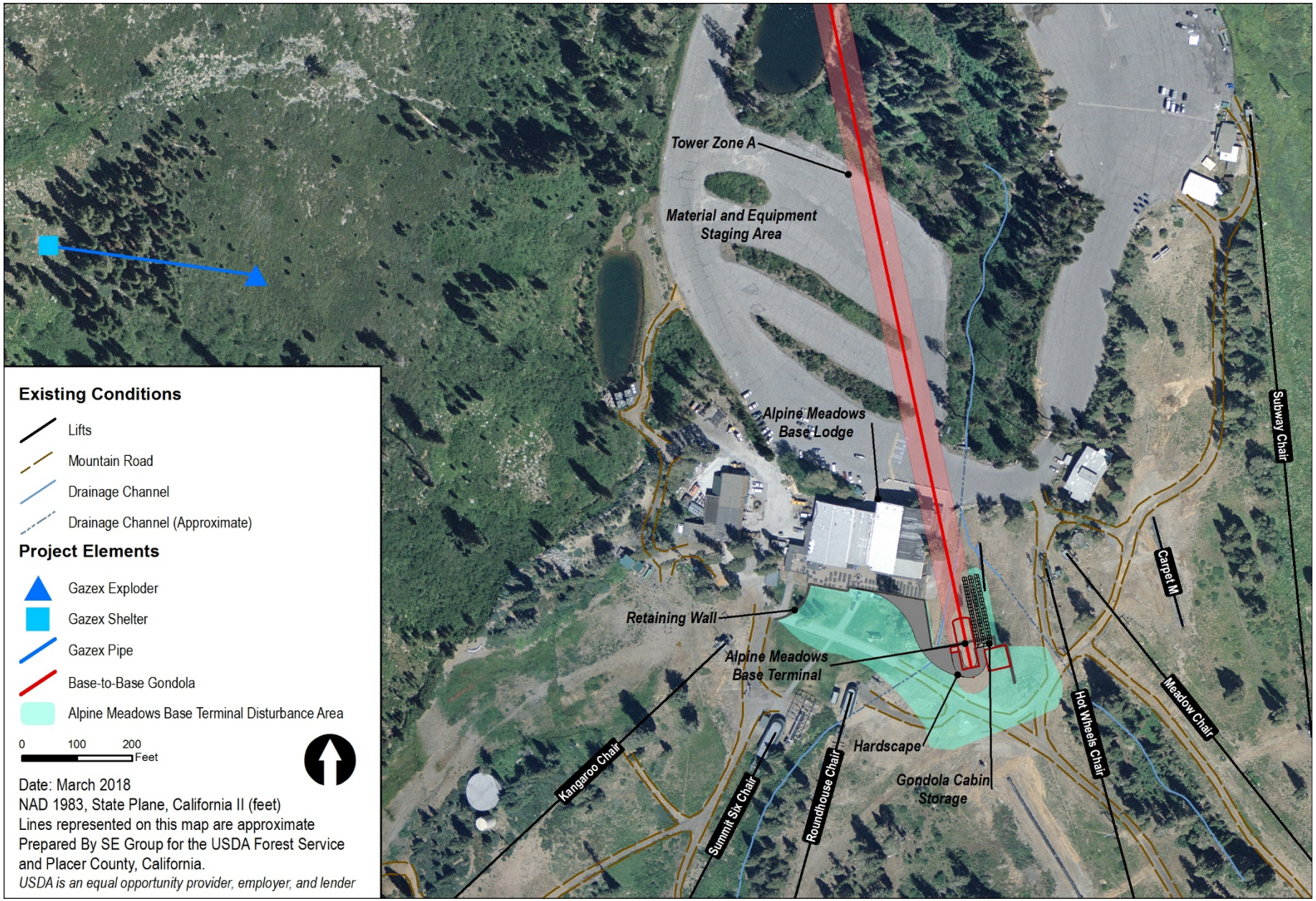

Exhibit 2-10 Close-up of Alpine Meadows Base Terminal under Alternative 3

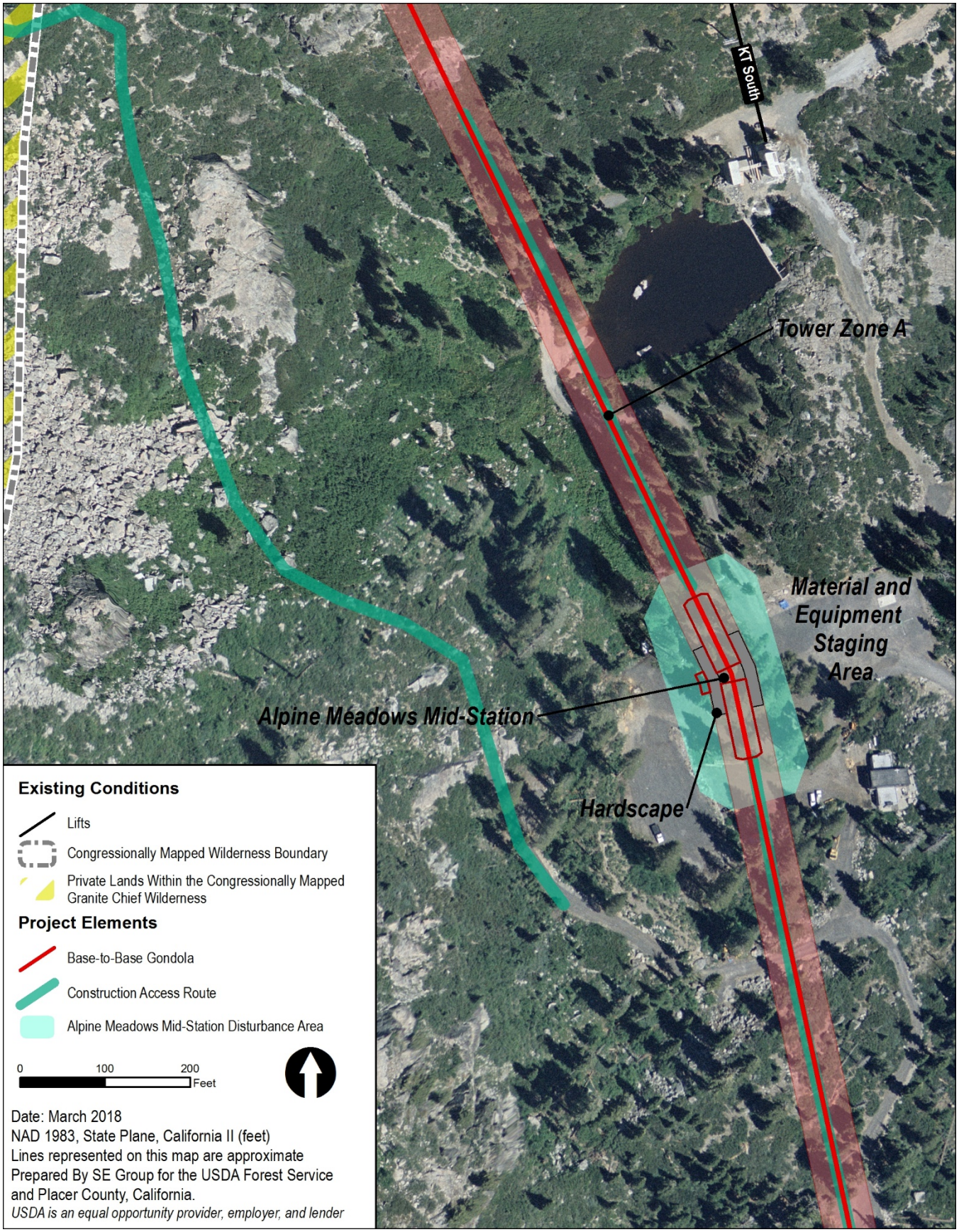

Exhibit 2-11 Close-up of Alpine Meadows Mid-Station under Alternative 3

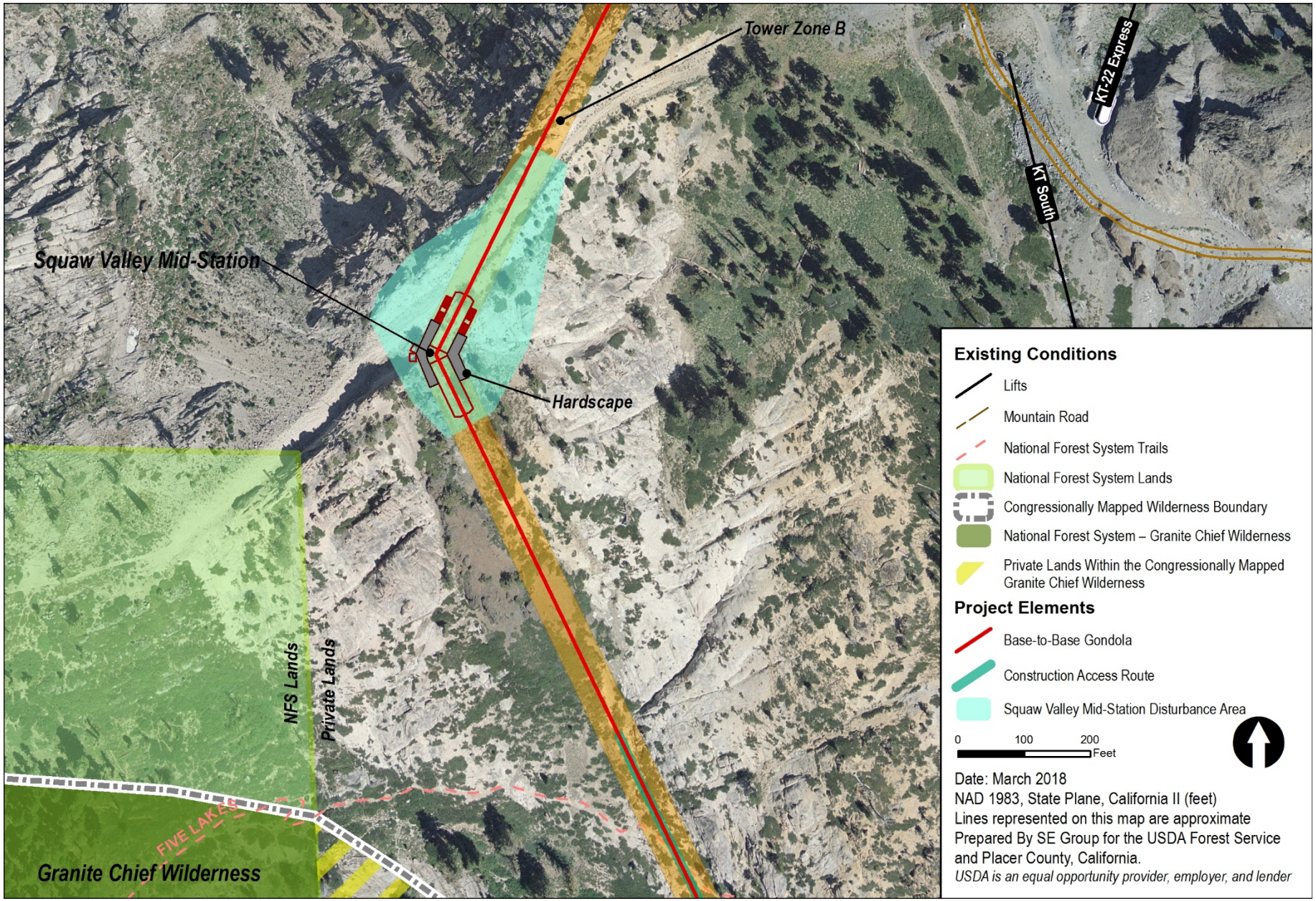

Exhibit 2-12 Close-up of Squaw Valley Mid-Station under Alternative 3

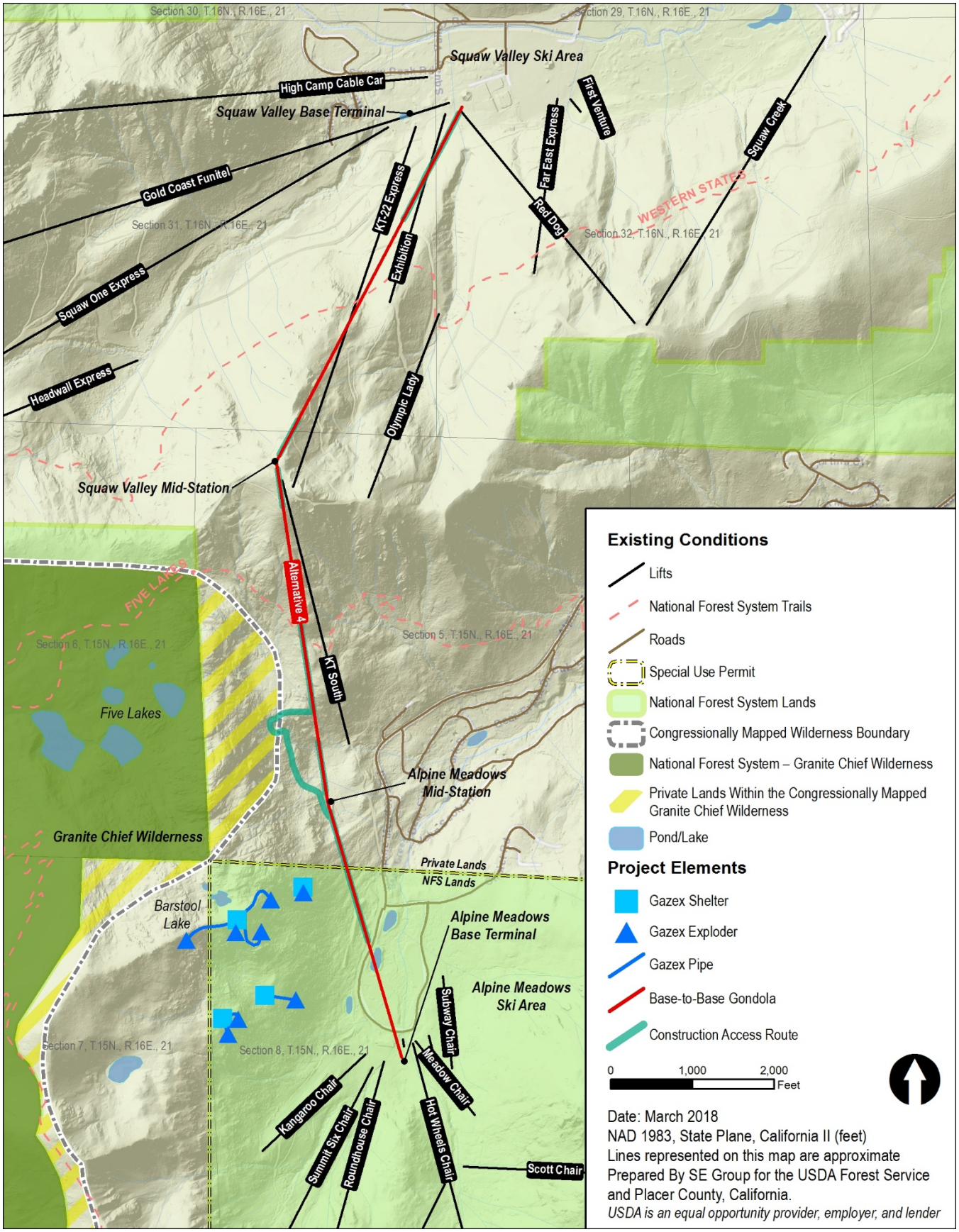

Exhibit 2-13 Overview of Gondola Alignment and Construction Access Route under Alternative 4

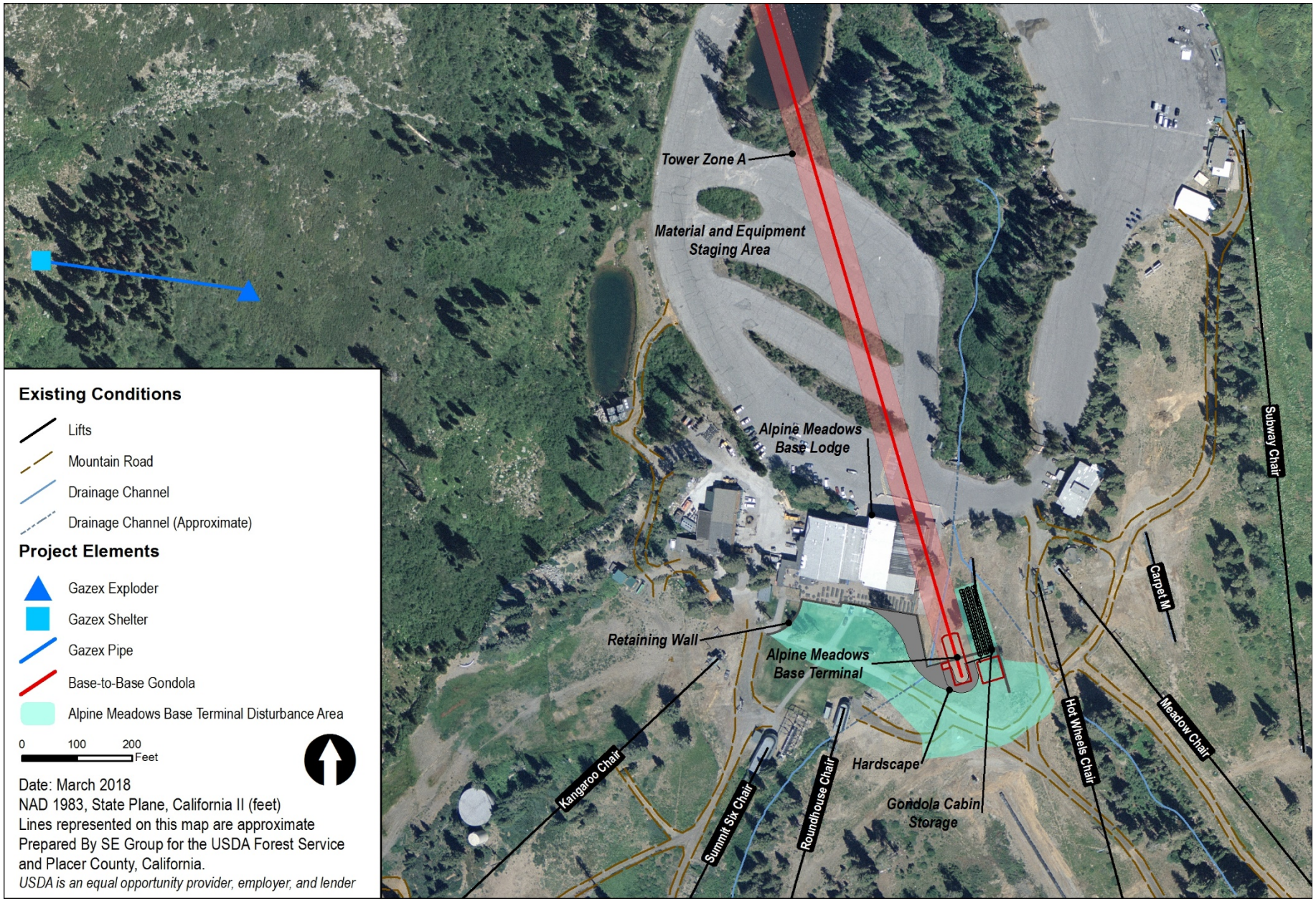

Exhibit 2-14 Close-up of Alpine Meadows Base Terminal under Alternative 4

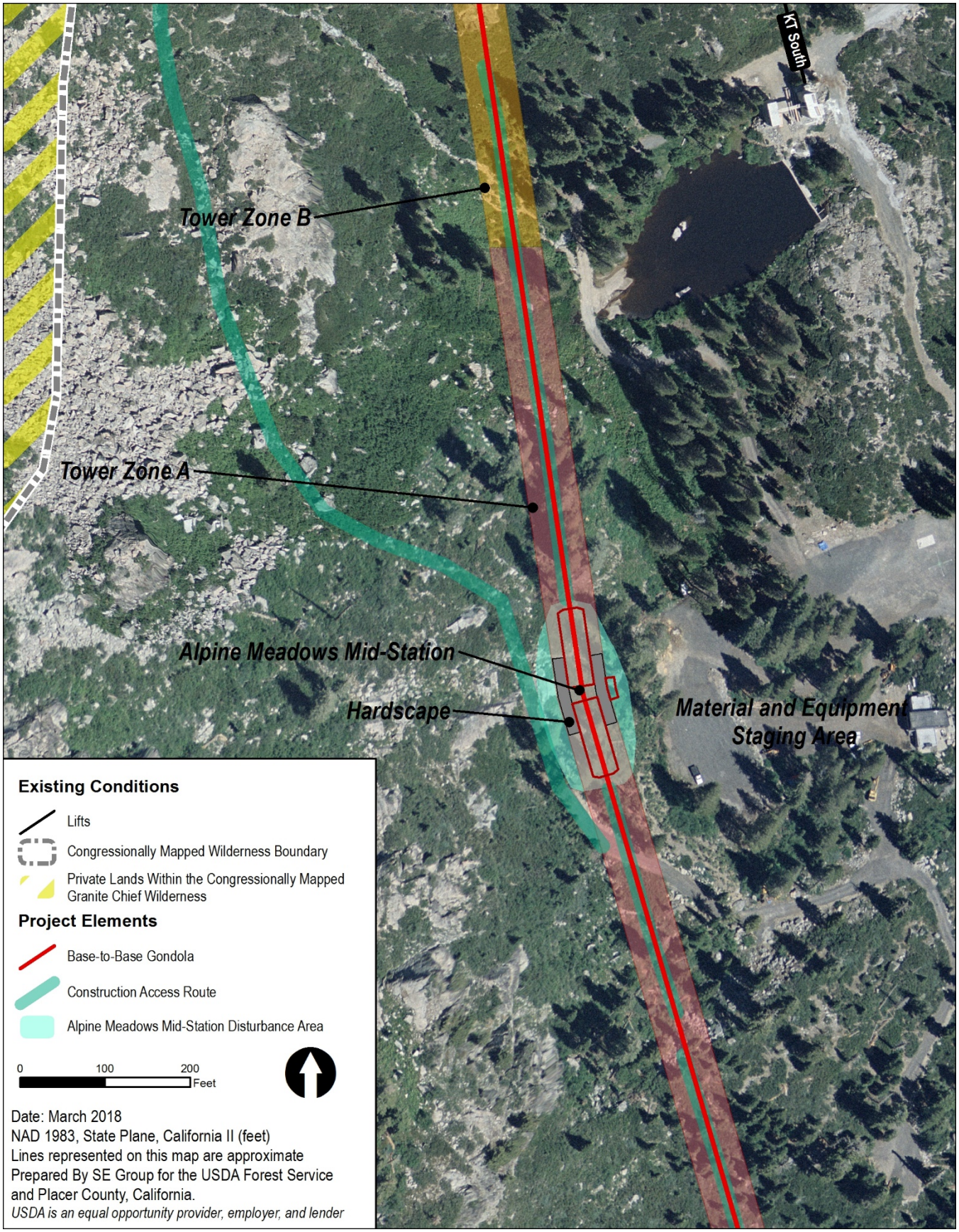

Exhibit 2-15 Close-up of Alpine Meadows Mid-Station under Alternative 4

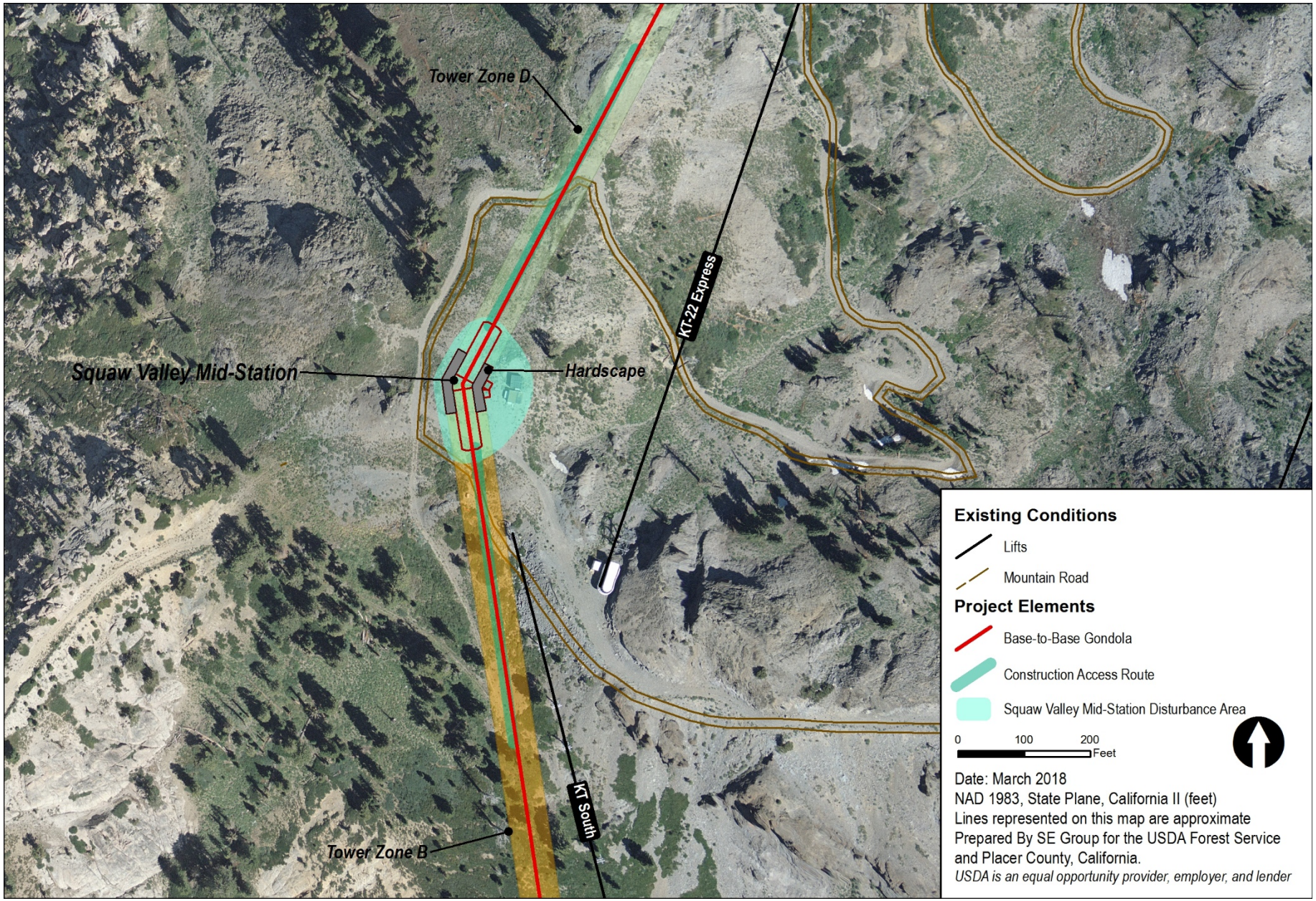

Exhibit 2-16 Close-up of Squaw Valley Mid-Station under Alternative 4

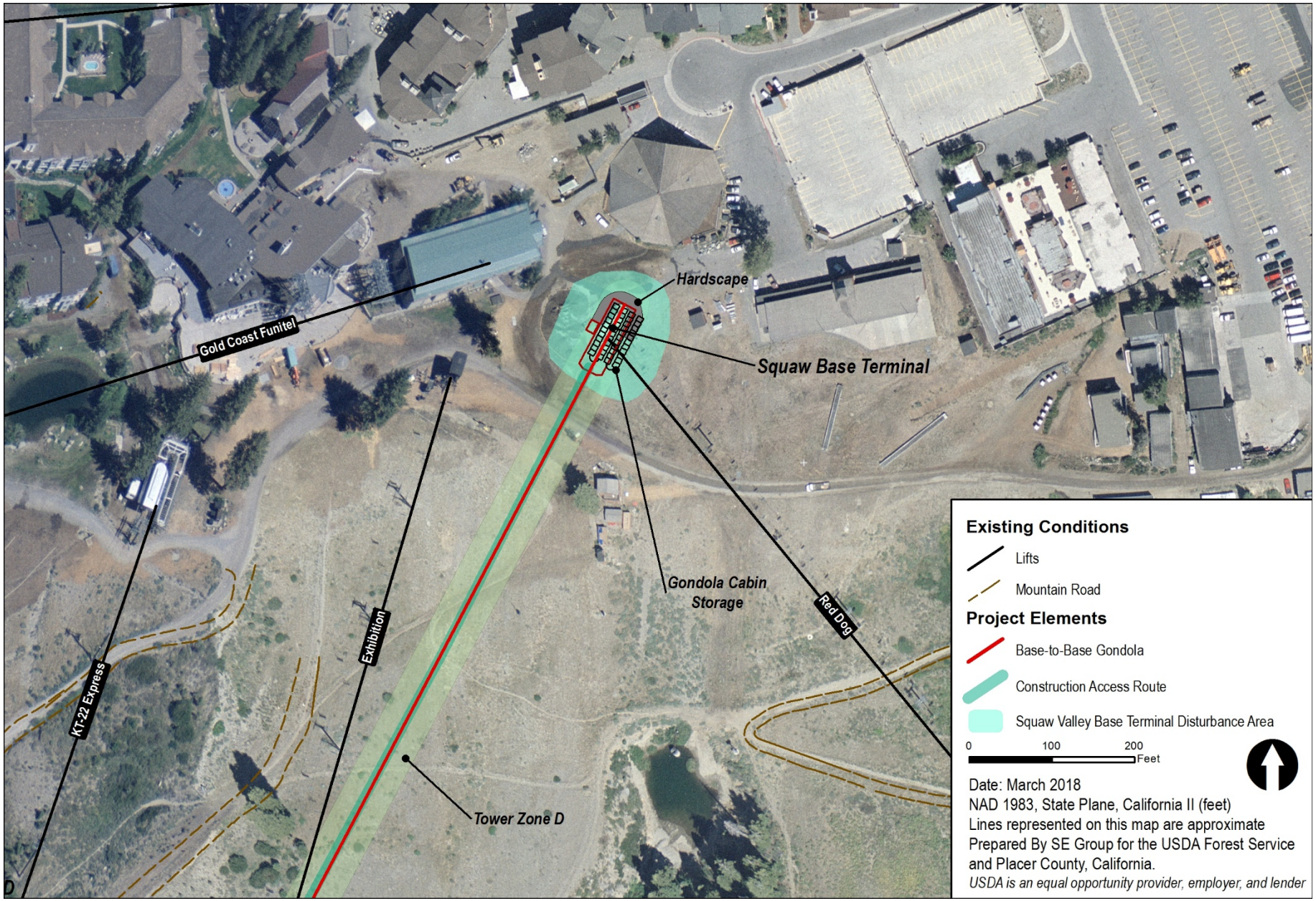

Exhibit 2-17 Close-up of Squaw Valley Base Terminal under Alternative 4

The base terminal at Alpine Meadows would be in the same location as described for Alternative 2 (see Exhibit 2-14). Under Alternative 4, all cabin storage would be located in an enclosed facility at the Alpine Meadows base area due to space constraints near the Squaw Valley base terminal. The Squaw Valley base terminal would be located in a slightly different location than the other alternatives, on or adjacent to the existing Funitel terminal (see Exhibit 2-17). The alignment of the existing Red Dog lift terminal may need to be altered to accommodate the Squaw Valley base terminal. A mid-station, identified in Exhibits 2-13 and 2-15 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 slightly to the west 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. 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 2-16, 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.

2.2.4.2 GAZEX AVALANCHE MITIGATION SYSTEM

The same Gazex avalanche hazard mitigation system described previously for Alternative 2 is also proposed as part of Alternative 4. Although avalanche mitigation would not be affected by the modified location of the gondola under this alternative, Alpine Meadows nonetheless proposes to replace the existing artillery and hand-charge based system with the more efficient Gazex system to increase the safety and efficiency of the avalanche hazard mitigation program.

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**
Gazex Exploders				
Private Land	0	1	1	1
NFS Land	0	7	7	7
Total	**0**	**8**	**8**	**8**
Note: 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
Eight Gazex Exploders (permanent ground disturbance)			
0 acre	Less than 0.1 acre	Less than 0.1 acre	Less than 0.1 acre
Four Gazex Shelters (permanent ground disturbance)			
0 acre	Less than 0.1 acre	Less than 0.1 acre	Less than 0.1 acre
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 Draft 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] 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.

[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.

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 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 – 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 – No effect CEQA – N/A	NEPA – No effect CEQA – N/A	NEPA – No effect 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

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

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Impact 4.3-5: Effects on Potential Wilderness Characteristics on Private Lands within the Congressionally Mapped Granite Chief Wilderness	NEPA – No effect CEQA – N/A	NEPA – Adverse CEQA – N/A	NEPA – No effect CEQA – N/A	NEPA – No effect 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 – Minorly beneficial CEQA – Less than significant	NEPA – Minorly beneficial CEQA – Less than significant	NEPA – Minorly beneficial CEQA – Less than significant
Impact 4.6-2: Operations Efficiency	NEPA – No effect CEQA – N/A	NEPA – Minorly beneficial CEQA – N/A	NEPA – Beneficial CEQA –N/A	NEPA – Beneficial 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 Gazex Exploders and 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 and

installation of Gazex equipment 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, resulting in adverse effects associated with the reduction of 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.

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.

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.

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 loss of individual SNYLFs or occupied habitat because suitable aquatic and upland habitat could be disturbed or removed (Impact 4.14-1). Additionally, implementation of the action alternatives would result in direct and indirect effects on occupied SNYLF habitat and habitat with unutilized potential (not occupied) within critical habitat and would adversely modify or remove primary constituent elements: non-breeding aquatic habitat and upland habitat for the SNYLF (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	10.27
Permanent ground disturbance	4.02	4.27	2.49
Total	**18.3**	**15.44**	**12.76**
Land Cover Disturbance or Loss in Critical Habitat			
Temporary construction disturbance	14.03	10.87	6.85
Permanent ground disturbance	3.89	4.15	2.07
Total	**17.92**	**15.02**	**8.92**
Aquatic Habitat Alteration or Loss[2]			
Short-term change in habitat quality	1.09	0.91	1.28
Permanent loss in habitat quantity	0.43	0.53	0.46
Total	**1.52**	**1.44**	**1.75**
Disturbance or Loss of Non-Breeding Aquatic Habitat PCE in Critical Habitat			
Short-term change in habitat quality	1.09	0.91	1.28
Permanent loss in habitat quantity	0.43	0.53	0.46
Total	**1.52**	**1.44**	**1.75**
Upland Habitat Disturbance[3]			
Short-term change in habitat quality	3.72	3.11	1.34
Permanent loss in habitat quality	1.17	0.42	0.26
Total	**4.89**	**3.53**	**1.60**
Upland Habitat PCE Disturbance in Critical Habitat			
Short-term change in habitat quality	3.72	3.11	1.34
Permanent loss in habitat quantity	1.17	0.42	0.26
Total	**4.89**	**3.53**	**1.60**

Notes: PCE = primary constituent element.

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

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

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

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

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.

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 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 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, Gazex system). 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, the gondola would not be operational during periods of wildfire and rockslide risk, and new avalanche control systems would be installed as part of the action alternatives, minimizing this effect. No mitigation measures would be required.

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