

2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter provides a description of the proposed Heavenly Mountain Resort Epic Discovery Project (Project). The Project (Proposed Action) is first summarized using an outline of proposed Epic Discovery activities, organized by the three primary geographic areas where proposed development would occur both within and outside of the Lake Tahoe Basin. Detailed descriptions of the Project activities follow the outline. Subsequent to the preparation of the Project Description, and based on scoping comments received during circulation of the Notice of Preparation/Notice of Intent (NOP/NOI), two Action alternatives were developed by the regulatory agencies for study in addition to the Project. The No Action/No Project Alternative and Action Alternatives are described in this chapter as well.

2.1 DEVELOPMENT OF THE PROPOSED ACTION

The Project was developed following the passage of the Federal Ski Area Recreational Opportunity Enhancement Act of 2011 which allows ski resorts operating on National Forest System lands to propose year-round non-skiing activities in order to attract a wider range of visitors to National Forests and help support employment and economic activity in local communities. In addition, the proposal implements an important goal of the TRPA Regional Plan Update (RPU) to develop and implement sustainable public outdoor recreation opportunities consistent with the RPU goals and policies to help with the transition from gaming-driven visitation to outdoor recreation as the Region's economic base evolves. Further, the Proposed Action is consistent with TRPA's recent adoption of the adjacent South Shore Area Plan and the Tourist Core Area Plan (TCAP) both of which include goals consistent with the proposed outdoor recreation opportunities at Heavenly. Unlike other mountain resort communities that rely more exclusively on winter business at ski resorts, Lake Tahoe enjoys strong summer visitation oriented activities around the lake, tourism and outdoor recreation. Heavenly's location and accessibility combined with its underutilized resources and infrastructure supports the purpose for this Project.

2.2 NO ACTION/NO PROJECT

As required by NEPA, TRPA, and California Environmental Quality Act (CEQA), a No Action or No Project Alternative has been included in this analysis for review alongside the action alternatives. By definition, the No Action Alternative represents a continuation of existing management practices without changes, additions, or upgrades to existing conditions. Brief descriptions of existing on-mountain facilities and services are provided below.

The No Action Alternative (continued implementation of the 2007 Master Plan Amendment) allows a comparison of the effects from continued implementation of the 2007 Ski Area Master Plan to the Action Alternatives. Existing summer uses would continue, including sightseeing via the Heavenly Gondola, hiking and mountain biking on existing roadways and pathways, and operation of activities such as the climbing wall, tubing hill, ziplines and ropes courses.

2.3 PROPOSED ACTION (EPIC DISCOVERY PROJECT)

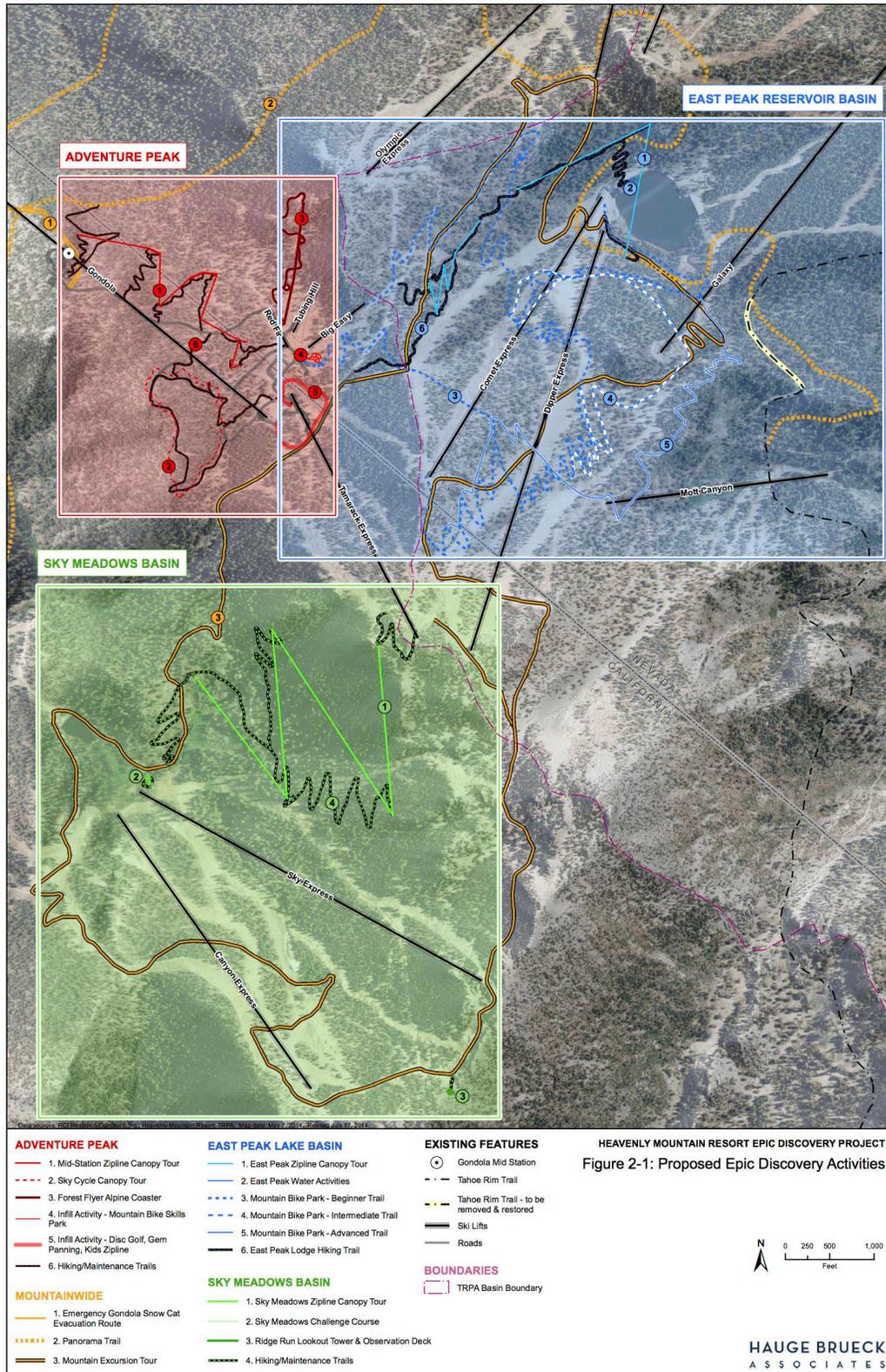
The Proposed Action includes the following project activities, grouped by general location:

- Adventure Peak (Entirely within the Lake Tahoe Basin)
 - Mid-Station Zipline Canopy Tour
 - Sky Cycle Canopy Tour
 - Forest Flyer Alpine Coaster
 - Smaller Infill Activities
 - Interpretive Activities at Tamarack Lodge
- East Peak Basin (Almost entirely outside the Lake Tahoe Basin)
 - Mountain Bike Park
 - East Peak Zipline Canopy Tour
 - East Peak Reservoir Water Activities
 - Interpretive Activities at East Peak Lodge
 - East Peak Lodge Hiking Trail
- Sky Meadows Basin (Entirely within the Lake Tahoe Basin)
 - Sky Meadows Zipline Canopy Tour
 - Sky Meadows Challenge Course
 - Ridge Run Lookout Tower and Observation Deck
 - Interpretive Activities at Sky Deck
- Mountainwide
 - Educational Opportunities and Interpretive Information
 - Mountain Excursion Tour
 - Connecting Trails (e.g., Panorama Trail to connect East Peak Lake area to Tahoe Rim Trail and Van Sickle Park)
 - Emergency Gondola Snow Cat Evacuation Route (Winter Use Only)

The Proposed Action is designed to expand and diversify year-round, non-skiing recreational opportunities at Heavenly, primarily for summer time users. Proposed projects would utilize existing infrastructure (e.g., ski lifts) and guest service facilities to provide a wide variety of summer activities for guests. All activities would be accessed using the existing Gondola from the base station at Heavenly Village.

Adventure Peak, located at the top of the Heavenly Gondola, would continue to serve as the primary access portal and hub for most non-skiing activities. Adventure Peak currently provides year-round, family-oriented and non-skiing activities on the mountain. Proposed activities would extend beyond Adventure Peak to two other on mountain locations - the East Peak Basin to the east and the Sky Meadows Basin to the west. These three distinct activity centers would be linked by a combination of existing ski lifts, proposed hiking and mountain biking trails, proposed ziplines or similar conveyances, and existing summer roads (e.g., Mountain Excursion Tour vehicles). Below are detailed descriptions of all proposed projects, grouped by general location. Each of the proposed activities and operations are depicted in Figure 2-1.

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2.3.1 Adventure Peak

All projects in the Adventure Peak activity area are located within the Tahoe Basin and are therefore subject to the development requirements of TRPA. Figure 2-2 depicts the locations of specific projects in this area. Appendix 2-A includes the detailed plan sheets for the Adventure Peak activities.

Mid-Station Zipline Canopy Tour

This project would consist of multiple, elevated, interconnected ziplines and aerial bridges that would allow riders to traverse through, or above, the forest canopy. Participants would access the start platform via a new hiking trail beginning just northeast of the Tamarack Lodge. The start platform would be located slightly northwest of the bottom of the existing Heavenly Zipline at an elevation of approximately 9,235 feet. The guided tour would take riders through a forested area to the east of the Gondola alignment and finish near the Gondola Mid Station at an elevation of approximately 9,000 feet. A short hiking trail would take participants back to the Gondola Mid Station. From there, they would take the Gondola to the top station to return their equipment. The tour would provide views of surrounding mountains and Lake Tahoe and would allow guests to experience the forest canopy.

The two to three hour tour would be led by trained Heavenly guides, and would consist of six zipline segments and three aerial bridges. Refer to Photos A and B for examples of these features. The zipline segments would include both closed canopy tree-to-tree traverses, and longer, open-air layouts crossing ravines. A short training zipline would be built near the start platform in order to teach participants how to use ziplines. Guides would provide interpretive information and zipline training prior to, and throughout, the tour.



Photo A – Example of a zipline segment that crosses over existing trees and ravines.

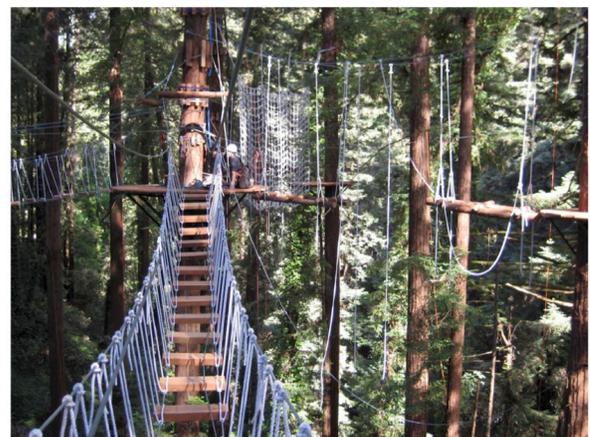


Photo B – Example of an aerial bridge.

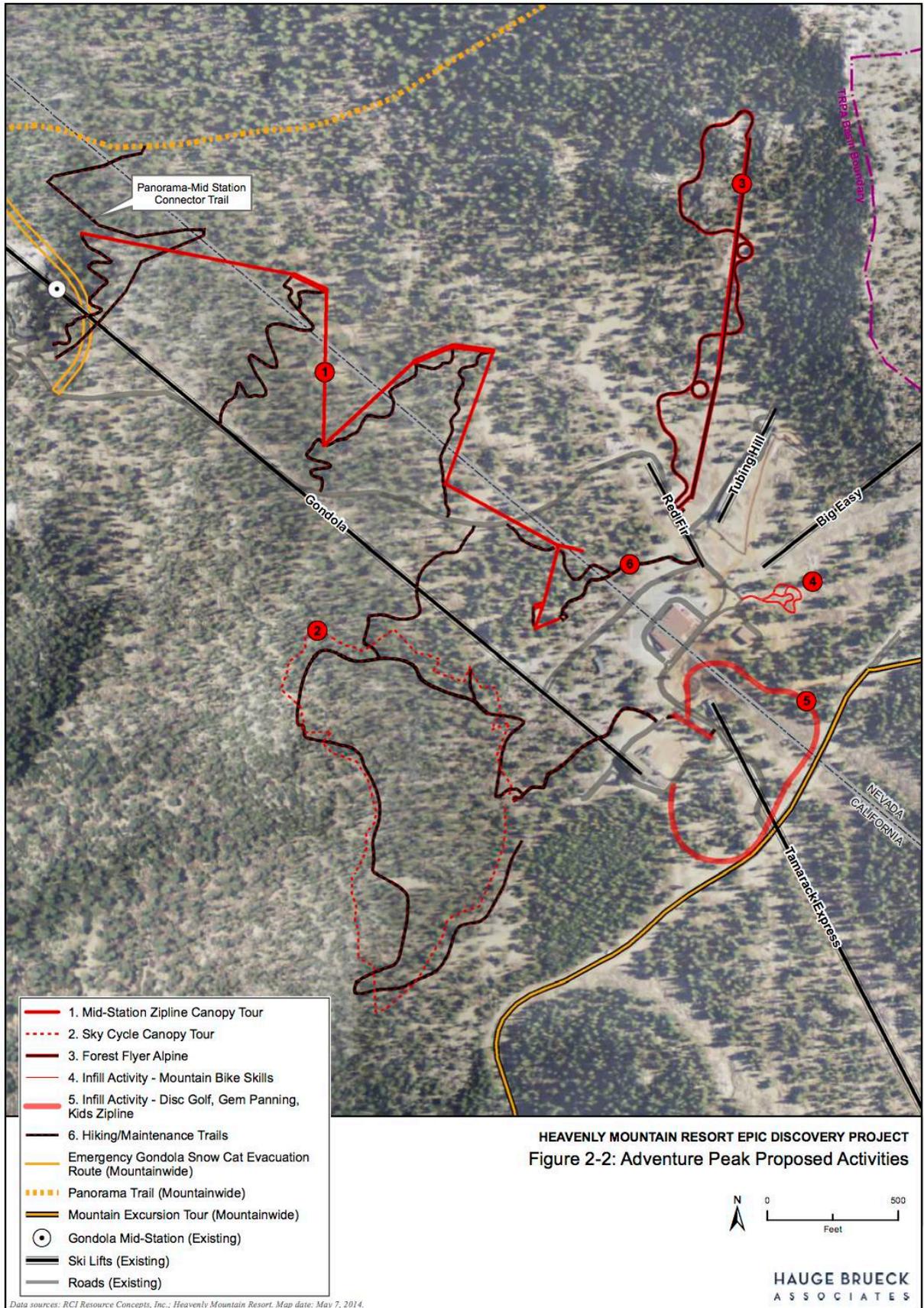




Photo C – Example of a typical canopy tour platform.

The zipline cables, aerial bridges, and platforms would be anchored to trees. Ladders and rappel equipment would provide access to/from platforms as necessary. Some of the trees serving as platforms would be stabilized by guy wires attached to surrounding trees or anchors on the ground. Photo C provides an example of typical platform designs.

Construction of this project would require selective tree removal to provide adequate clearance for course elements. Where the ziplines travel through the trees, this project would require a 10 to 15 foot wide corridor of vegetation removal for installation and operation (resulting in approximately 1.91 acre of tree removal) of the closed canopy ziplines. Low shrubs and ground cover could remain within the corridor following construction. A 20 by 20 foot queuing area would be constructed at the start of the canopy tour. No utilities or additional infrastructure would be required. Emergency and construction access and egress to the platforms would utilize the existing maintenance road and proposed hiking/maintenance trails that would realign hiking trails previously approved but not constructed. As such, the alignments of proposed trails would differ from those studied and approved in previous decision documents. Approximately 1,500 linear feet of trail would be constructed for public use, and approximately 3,800 linear feet for maintenance use only. Refer to Table 2-1 for detailed specifics on trail segments, including anticipated disturbance for temporary construction access. Maintenance crews would access the ziplines using the existing Gondola Mid Station maintenance road and designated parking areas within the roadway prism.

This activity would operate year-round.

Table 2-1

Adventure Peak Trails

Trail Designation on Plans	Activity Trail Serves	Length (ft)	Width (ft)	Land Coverage (SF)	Maintenance (M) or Public Use (P)	Estimated Construction Access Disturbance Width (ft)
M11	Mid Station Canopy Tour	1196	2	2,392	M	6
M12	Mid Station Canopy Tour	163	2	326	M	6
M13	Mid Station Canopy Tour	387	2	774	M	6
M14	Mid Station Canopy Tour	547	2	1,094	M	6
M15	Mid Station Canopy Tour	194	2	388	M	6
M16	Mid Station Canopy Tour	755	2	1,510	M	6
M17	Mid Station Canopy Tour	221	2	442	M	6
M18	Mid Station Canopy Tour	298	2	596	M	6
Maintenance Trail Subtotal				7,522		
P8	Alpine Coaster	60	6	360	P	N/A
P9	Alpine Coaster	75	6	450	P	N/A
P10	Mid Station Canopy Tour	787	2	1,574	P	6
P19	Mid Station Canopy Tour	75	2	150	P	6
P20	Mid Station Canopy Tour	617	4	2,468	P	8
P21	Sky Cycle Canopy Tour	686	4	2,744	P	8
M22	Sky Cycle Canopy Tour	3952	3	11,856	P	6
M23	Sky Cycle Canopy Tour	839	3	2,517	P	6
M24	Sky Cycle Canopy Tour	125	3	375	P	6
P25	Kids Zipline	34	4	136	P	N/A
P26	Kids Zipline	33	4	132	P	N/A
P27	Disc Golf	1835	2	3,670	P	6
Public Trail Subtotal				26,432		
In Basin Trail Land Coverage Total				33,954		

Source: Resource Concepts Inc., 2014

Sky Cycle Canopy Tour

This activity would consist of a series of interconnected, elevated cables from which individual, bicycle-like devices would be suspended. The cables would be arranged to form a continuous loop around a designated course in which participants would pedal the suspended bike-like devices. Refer to Photos D and E for examples of equipment used for sky cycle tours. This project would be located to the northwest of the Gondola Top

Station and participants would enjoy views of Lake Tahoe and the Desolation Wilderness Area.



Photo D – Example of a sky cycle.



Photo E – Example of sky cycle start/finish platform.

The tour is estimated to take approximately 45-60 minutes. A new hiking trail beginning just northeast of the top terminal of the Gondola would lead participants to the low-level starting platform and enclosed equipment storage area, located to the west of the top terminal of the Gondola at an approximate elevation of 9,200 feet. A new 475 foot long, 10-foot wide access roadway would be built to provide construction and maintenance access to the starting platform. From the platform, participants would ride around a loop of approximately 4,200 linear feet along a nearly level profile. The tour would be entirely above the ground with a mid-way observation deck to be used for scenic views and a place for riders to rest if needed. Trained Heavenly personnel would be stationed at key locations on the ground along the route to ensure safety of the participants. A hiking trail would be constructed beneath portions of the alignment to allow the public to follow the course route and to provide for maintenance access. Emergency access and egress would utilize existing and proposed summer maintenance road segments, and the new hiking trails constructed for maintenance and viewing. Refer to Table 2-1 for detailed specifics on trail segments, including temporary construction access disturbance.

The start/finish platform (Photo E) that also serves as an enclosed storage area, and an observation deck located on the west end of the tour alignment would total approximately 1,500 square feet in new land coverage. Approximately 5,600 linear feet of public hiking trail totaling approximately 17,500 square feet would be constructed for access to the start/finish platform and for guests to watch the Sky Cycle participants from the ground. The maintenance roadway and queuing area would total approximately 4,900 square feet. The steel cable and landing platforms would be fastened to trees using guy wires and other techniques that do not damage tree health. Where conditions permit, guy wires would be fastened into the ground. Small diameter trees within the approximately 1.93 acre routing alignment would be selectively removed. No utilities would be necessary.

This activity would operate exclusively during the summer.

Forest Flyer Alpine Coaster

Alpine coasters are elevated, self-contained, participant-controlled fixed-rail rides that allow users on individual sleds to descend on tracks through the forest. The Forest Flyer Alpine Coaster would allow users to descend through the forest and natural rock formations. Participants would be pulled up the track line in the sleds that are locked onto tubular steel rails to the top station where they would then descend using gravity (see Photos F and G for an example). Downhill speed is controlled individually through a magnetic braking system in each sled and additionally by the riders. Individual sleds can accommodate one or two riders and incorporate a number of safety features, including position detection sensors to ensure sleds do not collide. The top speed of the sleds can be set with centrifugal brakes (up to approximately 25 mph). Each sled is equipped with safety belts, brake levers and energy absorbing front and rear bumpers.



Photo F – Example of an alpine coaster track and sled.



Photo G – Example of winter use.

The bottom station of the Forest Flyer would be located a short distance to the north and west of the top terminal of the existing tubing lift, immediately adjacent to the existing Gondola Mid Station access roadway (Figure 2-2). The track extends to the northeast in an alignment generally parallel to the existing tubing lift. The downhill segment of the track would be approximately 2,800 feet in length and descend approximately 300 vertical feet.

The layout of the track would be dictated by features such as topography, vegetation, snow depth (so that it could operate during winter), rock formations and general infrastructure. The height of the track would average between 3-6 feet above natural grade. The maximum height would be between 15-20 feet above grade. This project would require a 20-25 foot wide corridor of vegetation removal for installation and operation (resulting in approximately 0.7 acre of tree removal due to the lack of trees in the lower areas of the alignment). Low shrubs and ground cover could remain within the corridor following construction. Foundations for the top and bottom terminals would require minimal ground disturbance. The top terminal would consist of a bullwheel enclosure (approximately 150 square feet) and attendant's booth (approximately 100 square feet) and would be approximately 13'4" tall. The bottom terminal would consist of

a bullwheel enclosure (approximately 300 square feet) and storage/maintenance and attendant's building (approximately 600 square feet) and would be approximately 18'5" tall. The elevated track would be anchored into the ground with soil nails and minimal footings, except when crossing an existing feature such as a ski run or maintenance road, in which case concrete foundations would be used. No permanent road construction would be necessary for installation or operation. Two short foot paths (approximately 150 feet in total length) would provide access to and from the bottom terminal location.

Electrical power and communications utilities would be required at the top and bottom stations. The bottom station would be located adjacent to the tubing lift and summer maintenance road, where existing utilities can be accessed. Utility lines to the top station would be attached to the underside of the uphill track line.

This activity would operate year-round. During winter operations, a continuous rope line boundary (e.g., similar to those used for boundary markers and congestion management areas) would be placed around the perimeter of the Forest Flyer (an area of approximately 6 acres), closing the area to downhill tree skiing.

Infill Activities

Proposed Infill Activities would be located in the immediate vicinity of existing Adventure Peak activities (e.g., climbing wall, challenge course), adjacent to the Gondola Top Station and Tamarack Lodge. These Infill Activities would generally provide a shorter duration experience and serve as capacity buffers for longer-duration activities that are expected to have longer wait times and queues. In other words, infill activities would be available to guests waiting for the start time of other activities that they purchased and reserved. The Adventure Peak area has been previously developed with the Gondola Top Station, Tamarack Lodge, adjacent ski lifts and trails, snowmaking and other support infrastructure. As such, the Infill Activities would be located on an area previously disturbed from existing development and use. With the exception of the Kids Zipline (which would operate year round), these activities would operate exclusively during the summer.

Mountain Bike Skills Park

The Mountain Bike Skills Park would contain small features such as jumps, bridges, tabletop jumps, and other course elements for mountain bikers to practice their skills (Photo H provides an example of these features). Users could access the park by loading their bikes onto the Gondola, renting bikes at the Adventure Peak area, or riding their bikes up trails and maintenance roads. This activity would be located a short distance to the south of the bottom terminal of the Big Easy lift and would be accessed from an existing maintenance road. This activity would require ground disturbance for the construction of trail and skills park features amounting to approximately 15,200 square feet in land coverage. The six-foot wide skills park trails would utilize a serpentine layout totaling approximately 2,500 linear feet. A seasonal tent-like bike rental and maintenance facility would be set up on a new permanent concrete slab near the base of the Big Easy lift. The tent would be removed annually prior to winter operations.

Disc Golf

This activity would be located generally to the south and east of the Gondola Top Station. The 18-hole course layout would begin at the top terminal of the Gondola and end near the bottom terminal of the Tamarack Express lift. The course would traverse underneath the Tamarack Express lift and the existing Heavenly Zipline. Approximately 1,800 linear feet of 2 foot wide hiking trail (up to 3,600 square feet of land coverage) would be constructed for access to tee boxes and hole baskets. Hole baskets would be pole-mounted and placed along the trail in existing forest openings. Refer to Table 2-1 for detailed specifics on trail segments.

Kids Zipline

A small zipline designed for kids and beginners would be constructed a short distance to the west from the bottom terminal of the Tamarack Express lift. Minimal ground disturbance would be required for the top and bottom towers. A wooden ladder would provide access to the take off platform on the top tower. An earthen landing ramp approximately 15 feet by 30 feet in area would be constructed adjacent to the bottom tower. Approximately 70 linear feet of access trail would be constructed. Refer to Table 2-1 for detailed specifics on trail segments.

2.3.2 East Peak Basin

The activities located in the East Peak Basin lie almost entirely in Nevada and outside of the Tahoe Basin and are not subject to the jurisdiction of TRPA (with the exception of two segments of mountain bike trail that provide access to the mountain bike park from the base of the Big Easy lift). Activities in the East Peak Basin would be accessed via the Tamarack Express lift, the Big Easy lift, Mountain Excursion Tour vehicles (described below) or on bike or foot using existing roadways or the proposed East Peak Lodge Hiking Trail (described below). Visitors would return to Adventure Peak using these same means. Figure 2-3 depicts the locations of projects in this area. Appendix 2-B includes the detailed plan sheets for the East Peak Basin activities.

Mountain Bike Park

A new, lift-served mountain bike park would include a combination of existing summer roads and new single-track trails (see an example in Photo I). These trails would be for mountain bike use only. New trails would generally be contained within the area bounded by the Big Easy lift, the top of the Tamarack Express lift, the top of Mott Canyon lift, and the East Peak Lodge. The Comet Express (unloads at elevation 9,500 feet) and Big Easy (unloads at elevation 9,300 feet) lifts would transport participants uphill so that they could access the downhill trails to the bottom of the park at an elevation of approximately 8,600 feet near East Peak Lake.

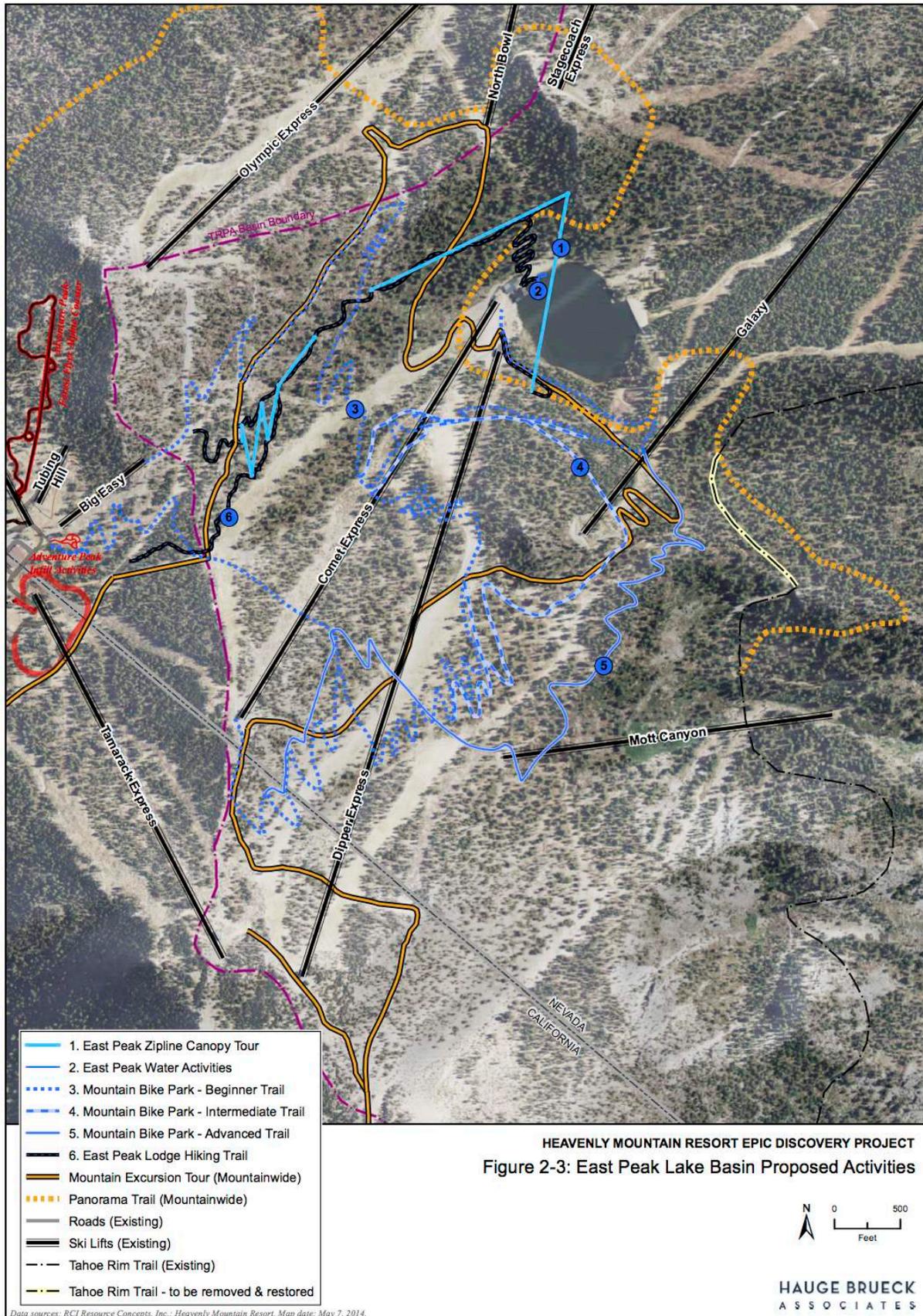




Photo H – Example of a mountain bike skills park.



Photo I – Example of a mountain bike park single track trail.

The park would contain approximately 8.5 miles of new trail. Only two trail segments (B3-1 and B3-2) would be located within the Tahoe Basin, totaling approximately 0.5 mile in length and approximately 15,000 square feet of land coverage. Refer to Table 2-2 and Appendix 2-B for detailed specifics on mountain bike park trail segments, including estimates of temporary construction access disturbance and earthwork volumes. In most cases, cut and fill volumes will be balanced so that no soil export or imported fill is required. Please note that the trail cross section disturbance width reported in Table 2-2 varies because of differences in slope steepness for the different trails. In most cases, steeper slopes result in a wider area of temporary disturbance.

The majority of the park would be oriented towards beginner and intermediate level riders and families, but it would also include trails designed for advanced riders. Bike rentals, guided tours and instruction would be offered. Rentals would be available at the Adventure Peak area and at East Peak Lodge. As with the bike skills park, users could bring their bikes up on the Gondola, rent a bike at Adventure Peak, or ride up trails and roads from Heavenly Village. Bike park riding in the Tahoe Basin would be restricted to existing summer maintenance road segments on Von Schmidt's Trail, Crossover Trail and Steve's Road and the two proposed trail segments referenced above (B3-1 and B3-2) that connect the mountain bike park to the Gondola Top Station area.

New trails would be four feet wide with a one-foot wide shoulder on either side for a total cross-section width of six feet. Limited tree removal would be necessary as trails would be field fit by Heavenly during construction to avoid tree removal where possible. Water from the snowmaking system would be used to control dust during construction and operations where practical. No other utilities would be required.

This activity would operate exclusively during the summer.

Table 2-2

Mountain Bike Park Trails

Trail Segment	Segment Length (feet)	Trail cross section - temporary disturbance (feet)	Final Segment Width (feet)	Temporary disturbance (sf)	Final Trail footprint (sf)	Trail Earthwork (cut/fill) (cu yd)
Beginner Trails						
B1-1	992	8	6	7,936	5,952	735
B1-2	3,146	18	6	56,628	18,876	5,243
B1-3	822	12	6	9,864	4,932	913
B1-4	3,311	18	6	59,598	19,866	5,518
B1-5	1,529	12	6	18,348	9,174	1,699
B1-6	1,930	18	6	34,740	11,580	3,217
B1-7	1,502	12	6	18,024	9,012	1,669
B1-8	3,326	12	6	39,912	19,956	3,696
B2	1,419	18	6	25,542	8,514	2,365
B3-1	900	6	6	5,400	5,400	500
B3-2	1,624	12	6	19,488	9,744	1,804
B4-1	2,172	6	6	13,032	13,032	1,207
B4-2	1,543	0	6	0	9,258	0
B4-3	2,783	12	6	33,396	16,698	3,092
B4-4	1,094	12	6	13,128	6,564	1,216
Subtotal	28,093			355,036	168,558	32,874
Intermediate Trails						
I1-1	2,364	18	6	42,552	14,184	3,940
I1-2	912	12	6	10,944	5,472	1,013
I1-3	1,684	12	6	20,208	10,104	1,871
I2	629	12	6	7,548	3,774	699
I3	934	12	6	11,208	5,604	1,038
I4	2,088	6	6	12,528	12,528	1,160
Subtotal	8,611			104,988	51,666	9,721
Advanced Trails						
A1-1	1,589	6	3	9,534	4,767	530
A1-2	1,929	12	4	23,148	7,716	1,286
A1-3	3,585	6	3	21,510	10,755	1,195
A1-4	963	12	4	11,556	3,852	642
Subtotal	8,066			65,748	27,090	3,653
Total	44,770			525,772	247,314	46,247

Source: Resource Concepts Inc., 2014

East Peak Zipline Canopy Tour

This project would be similar in nature to the Mid-Station Zipline Canopy Tour described above under Adventure Peak; however, the setting, forest landscape and slope condition in this area would provide a different experience for users.

The East Peak Zipline Canopy Tour would begin a short distance to the east of the top terminal of the Big Easy lift at an elevation of approximately 9,175 feet. A series of interconnected canopy-level ziplines would allow participants to travel in a general northeasterly direction through the area between Von Schmidt's Trail and the East Peak Lodge. The final zipline would carry riders over East Peak Reservoir to terminate southeast of the bottom terminal of the Dipper Express lift at an elevation of approximately 8,655 feet. Participants would return to the Adventure Peak area via lift, Mountain Excursion vehicle (described below), or on foot.

The two to three hour tour would be led by trained Heavenly guides and would consist of eight zipline segments with a short hike between the sixth and seventh zipline segments. The hike segment would coincide with the East Peak Lodge hiking trail (discussed below). A short training zipline would be built near the start in order to teach participants how to use ziplines. Guides would provide interpretive information and zipline training prior to, and throughout, the tour.

This activity would require ten platforms to access the zipline segments. The starting and landing platforms would be wooden tower structures and the other eight platforms would be constructed around existing trees. Refer to the description of the Mid-Station Zipline Canopy Tour for a discussion of platforms.

Construction of this activity would require selective tree removal for the zipline alignments. This project would require 12 to 28 foot wide corridors of vegetation removal for installation and operation (resulting in approximately 1.48 acres of tree removal). Low shrubs and ground cover could remain within the corridor following construction. A 20 by 20 foot queuing area would be constructed at the start of the canopy tour for staging of guests waiting for their tour to begin. Emergency access and egress would utilize existing nearby summer maintenance road segments, new maintenance trails, and the East Peak Lodge hiking trail (discussed below). Approximately 900 linear feet of trail would be constructed for maintenance use only. Approximately 1,500 linear feet of trail would be constructed to access the start and finish platforms. Refer to Table 2-3 for detailed specifics on trail segments, including temporary construction access disturbance. No utilities or other infrastructure would be necessary.

This activity would operate year-round.

East Peak Reservoir Water Activities

Water-oriented activities on and around the existing East Peak reservoir (outside of the Lake Tahoe Basin) would include kayaking, canoeing, other non-motorized boating and fishing. The reservoir would be stocked and maintained with fish as in previous years. A

floating dock and seasonal storage area (no enclosed structure) would be provided on the shore of the reservoir near the East Peak Lodge. The dock would be approximately 10 feet wide by 100 feet in length and would be anchored by small-diameter steel columns driven into the lake bottom. A short access trail (approximately 150 feet long and 4 feet wide) would be constructed from the East Peak Lodge to the shoreline.

These activities would operate exclusively during the summer.

Table 2-3

East Peak Basin Trails

Trail Designation on Plans	Activity That Trail Serves	Length (ft)	Width (ft)	In Basin Land Coverage (SF)	Maintenance (M) or Public Use (P)	In or Out of Basin	Estimated Construction Access Disturbance Width (ft)
M34	East Peak Canopy Tour	529	2		M	Out	6
M35	East Peak Canopy Tour	371	2		M	Out	6
P28	East Peak Lodge Hiking Trail	605	2	1,210	P	In	6
P29	East Peak Lodge Hiking Trail	2078	2		P	Out	6
P30	East Peak Lodge Hiking Trail	661	2		P	Out	6
P31	East Peak Lodge Hiking Trail	2650	2		P	Out	6
P32	East Peak Canopy Tour	669	4		P	Out	8
P33	East Peak Canopy Tour	21	4		P	Out	8
P36	East Peak Canopy Tour	786	2		P	Out	6
P37	East Peak Water Activities	133	4		P	Out	8
Trail In Basin Land Coverage Total				1,210			

Source: Resource Concepts Inc., 2014

Interpretive Activities at East Peak Lodge

The existing East Peak Lodge and deck would be seasonally converted into an interpretive education center. It would continue to provide restrooms, First Aid and food and beverage services. No permanent modifications to the lodge or deck are planned.

The interpretive activities would operate exclusively during the summer, but the other activities would be provided during winter operations.

East Peak Lodge Hiking Trail

A new segment of hiking trail would connect the Adventure Peak area with East Peak Lodge, allowing visitors to hike between the two activity centers. The trail would roughly parallel the alignment of the East Peak Zipline Canopy Tour. It would be approximately 1 mile in length and approximately two feet wide. Approximately 600 linear feet of this trail would be located in the Tahoe Basin, resulting in approximately 1,200 square feet of land coverage. Refer to Table 2-3 for detailed specifics on trail segments, including temporary construction access disturbance.

This trail would be accessible exclusively during the summer.

2.3.3 Sky Meadows Basin

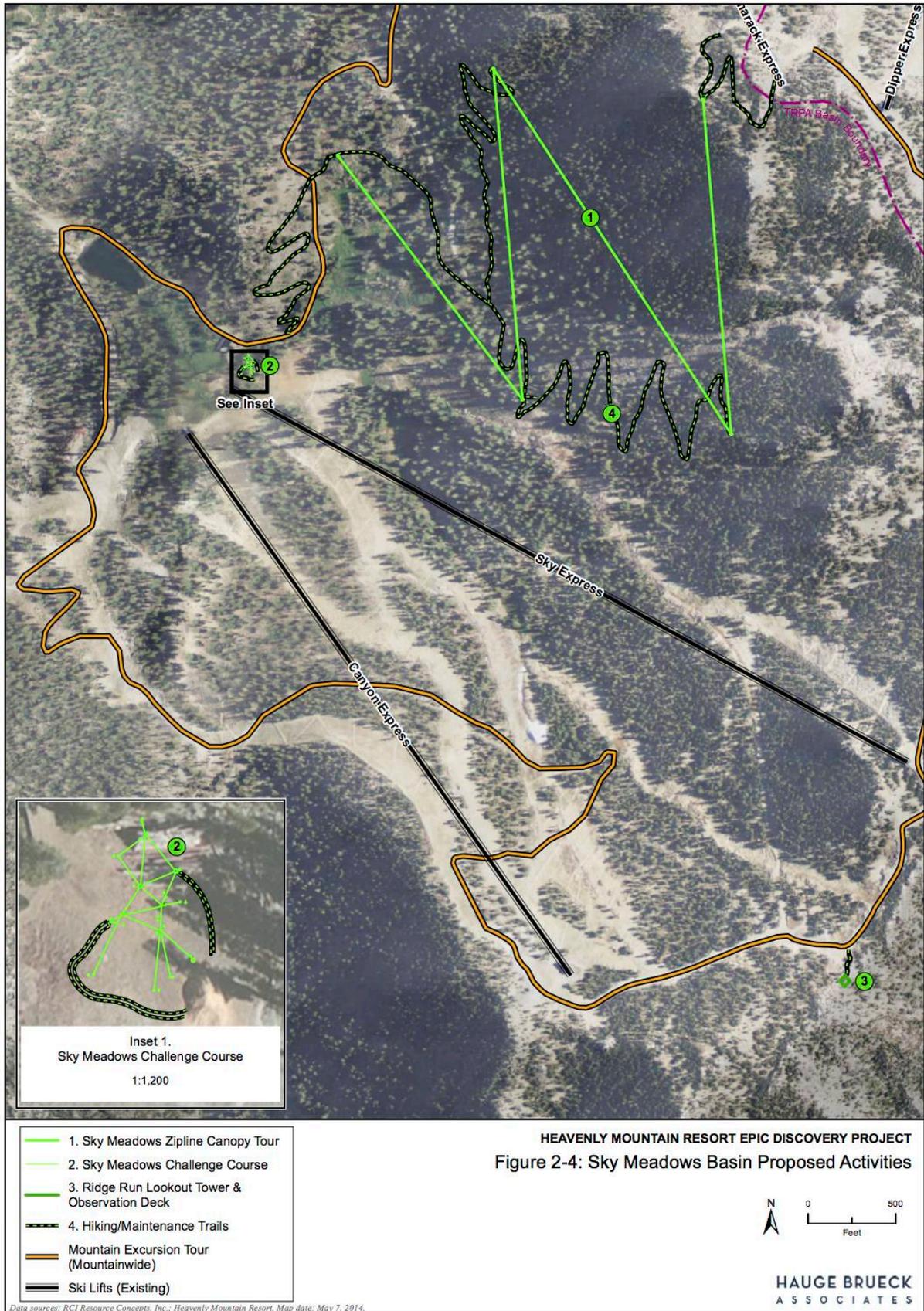
The Sky Meadows Basin lies generally south and west of the Gondola Top Station and Tamarack Lodge. It lies entirely within the State of California and within TRPA jurisdiction. Activities in Sky Meadows Basin would be accessed from the Tamarack Express lift, on foot, or by using the Mountain Excursion tour vehicles (described below). Visitors would return to Adventure Peak using the Mountain Excursion vehicles or on foot. Figure 2-4 depicts the locations of projects in this area. Appendix 2-C includes the detailed plan sheets for the Sky Meadows Basin activities.

Sky Meadows Zipline Canopy Tour

This project would be similar in nature to the Mid-Station Zipline Canopy Tour and East Peak Zipline Canopy Tour, described above. However, the setting, forest landscape and slope in the Sky Basin would provide a different experience for users.

The Sky Meadows Zipline Canopy Tour would begin a short distance to the west of the top terminal of the Tamarack Express lift at an elevation of approximately 9,700 feet. Participants would access the start platform via a new hiking trail beginning at the top of the Tamarack Express lift. The tour would consist of four interconnected canopy-level ziplines and would terminate to the northeast of the bottom terminal of the Sky Express lift at an elevation of approximately 8,780 feet, near a maintenance road which would be used by the Mountain Excursion vehicles. From the end of the canopy tour, participants could return to the Sky Deck area on a new hiking trail or on a Mountain Excursion vehicle (described below).

Groups of participants would be led by trained guides through the one to one and a half hour long tour. Guides would provide interpretive information and zipline training prior to, and throughout, the tour. This project would include five platforms supported by steel columns and guy wires anchored to the ground or adjacent trees.



Construction of this project would require selective tree removal for the zipline alignment. This project would require 12 to 20 foot wide corridors of vegetation removal for installation and operation (resulting in approximately 4.12 acres of tree removal) of the closed canopy ziplines. Low shrubs and ground cover could remain within the corridor following construction.

A 20 by 20 foot queuing area would be constructed at the start of the canopy tour. A 30 foot by 30 foot area of temporary disturbance would be required for each of the five steel platforms. Emergency access, construction and egress would utilize approximately 11,500 linear feet of new maintenance trails, totaling approximately 24,000 square feet of land coverage. Approximately 2,700 linear feet of the trails would be constructed for public access to the start and finish platforms, and the rest would be used for maintenance access to other zipline platforms. Refer to Table 2-4 for detailed specifics on trail segments, including temporary construction access disturbance. No utilities or other infrastructure would be necessary. This activity would operate year-round.

Table 2-4

Sky Meadows Basin Trails

Trail Designation on Plans	Activity That Trail Serves	Length (ft)	Width (ft)	Land Coverage (SF)	Maintenance (M) or Public Use (P)	Estimated Construction Access Disturbance Width (ft)
M2	Sky Basin Zip Tour	2440	2	4,880	M	6
M3	Sky Basin Zip Tour	6402	2	12,804	M	6
Maintenance Trail Subtotal				17,684		
P1	Sky Basin Zip Tour	2301	2	4,602	P	6
P4	Sky Basin Zip Tour	450	4	1,800	P	8
P5	Sky Meadows Challenge Course	150	4	600	P	8
P6	Sky Meadows Challenge Course	71	2	142	P	6
P7	Ridge Run Lookout Tower	164	4	656	P	30
Public Trail Subtotal				7,800		
Trail In Basin Land Coverage Total				25,484		

Source: Resource Concepts Inc., 2014

Sky Meadows Challenge Course

A self-guided ropes course consisting of a series of elevated platforms and rope walkways/bridges would be located between Sky Deck and the base of the Sky Express lift. This project would incorporate existing mature trees into the layout. Platforms

would resemble those discussed under the Mid-Station Zipline Canopy Tour and would be located on trees (Refer to Photos B and C).

The activity would provide 4 to 6 routes of varying degrees of difficulty. As such, the activity would accommodate a range of skill levels (e.g., from beginner to expert). Participants would be outfitted with harnesses by Heavenly guides, led to the course start point and continually secured to an overhead belay line while on the course. The course would occupy an area approximately 75 to 100 feet in diameter. The layout would be determined by the existing mature trees to be used. The course elements in the trees would be approximately 30 to 35 feet above grade. No utilities would be needed and limited tree removal and limbing would be required for implementation.

Access to the challenge course is proposed using an existing maintenance road and two short hiking trails (approximately 150 feet and 70 feet in length and totaling approximately 740 square feet in land coverage) that would provide access to the start and end platforms. Approximately 604 square feet of the proposed land coverage would be located in Class 1b SEZ soils. However, as documented in Chapter 3.4 (Soils), the proposed access trails must be relocated outside of the mapped SEZ. Therefore, no new land coverage will be allowed in SEZ for the Sky Meadows Challenge Course.

This activity would operate year-round, but would only serve skiers and riders already in the Sky Meadows area during winter (i.e., non-skiers do not have a way to access this activity in winter).

Ridge Run Lookout Tower and Observation Deck

An observation tower (similar to the one shown in Photo J) would be constructed near the existing Ridge Run Overlook. This facility would resemble a historic Forest Service Fire Lookout Tower and would offer scenic views and interpretive education regarding the Forest Service's historic and modern role in managing the forests, land acquisition (e.g., land purchases to ensure public access and environmental protection), fire suppression and fuels management

The tower would be located along the ridge to the southwest of the top terminal of the Sky Express lift and anchored to the ground using four wooden (e.g., utility type) poles. It would provide approximately 400 to 500 square feet of space for the observation deck (located approximately 28 feet off the ground) and would be approximately 44 feet tall measured from natural grade to top of the roof structure. The facility would be sited to allow for barrier-free access. The tower's observation deck, located at an approximate elevation of 9,830 feet, would offer views of High Meadows and Freel Peak as well as Lake Tahoe. A new foot path (approximately 164 feet in length and 4 feet in width and totaling approximately 650 square feet in land coverage) would be constructed from the adjacent maintenance road for access. This path would be used as a construction access corridor, resulting in a temporary disturbance corridor approximately 30 feet wide. Photo K provides a schematic design of this facility.

Additionally, the existing picnic deck adjacent to the top terminal of the Sky Express lift would be rebuilt. The footprint of the deck would be expanded by approximately 1,000

square feet (from approximately 2,000 to 3,000 square feet). The facility would include a seasonal ramp in order to provide barrier-free access in the summer. The deck would offer scenic views and a place to sit and rest near the top of the mountain.

Both facilities would be accessed either on foot or via the Mountain Excursion Tour vehicles. Limited parking for Mountain Excursion Tour vehicles, approximately 20 feet by 22 feet (440 square feet), would be developed at the Lookout Tower location. No utilities would be necessary for these projects.

This facility would be accessible year-round, but would only serve skiers and riders already in the area during winter (i.e., non-skiers do not have a way to access this activity in winter).



Photo J – Example of a similar lookout tower.

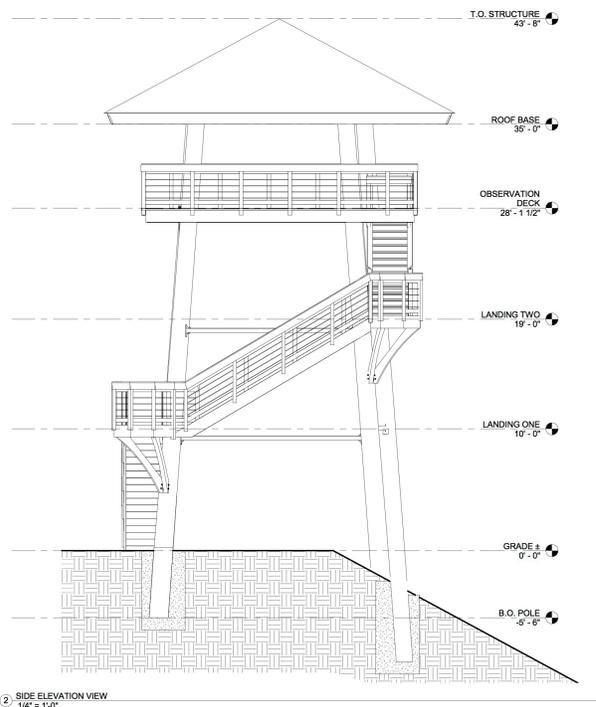


Photo K – Schematic plan of the proposed lookout tower.

Interpretive Activities at Sky Deck

The existing Sky Deck facility, located near the bottom terminal of the Sky Express lift, would provide a small interpretive education center, restrooms, First Aid and food and beverage service. The existing facility would be seasonally modified to provide information and exhibits. No other permanent modifications to the lodge or deck would be necessary.

The interpretive activities would operate exclusively during the summer, but the other activities are also provided during winter operations.

2.3.4 Mountainwide Activities

Educational Opportunities and Interpretive Information

Year-round and non-skiing activities at Heavenly create an opportunity to further engage the public with National Forest System lands. Heavenly believes that the Proposed Action would build upon the long-standing and successful partnership between Heavenly and the LTBMU to educate guests about the unique natural environment and the National Forest System lands. While it does not require analysis under CEQA, TRPA or NEPA, a comprehensive interpretive program would be integrated throughout all current and proposed activities.

The educational and interpretive programming would revolve around the concept of learning through play and would emphasize activities and interpretive interactions. These components would be integrated into activity waiting areas, along trails and walkways between activities, and within core buildings supporting the program. Participatory programs would also be developed focusing on skills and knowledge to encourage people to further explore the outdoors on their own. Content of the program would be further developed through coordination with the LTBMU, TRPA, the League to Save Lake Tahoe and The Nature Conservancy.

These programs would be incorporated into year-round activities.

Mountain Excursion Tour

A Mountain Excursion Tour would connect all three activity centers described above and would offer guided tours to various locations around the upper mountain. See Figure 2-1 for the full route of this tour. Segments of the tour loop in the Sky Meadows Basin and Adventure Peak would be within the Tahoe Basin and therefore subject to the jurisdiction of TRPA. However, the tour would utilize existing on mountain roadways and would only propose new land coverage at a small number of proposed parking areas adjacent to proposed activities (e.g., adjacent to the Sky Meadows Challenge Course and Ridge Run Lookout Tower). The tour would employ vehicles (see Photo L) to transport participants around the ski area on existing summer maintenance roads. The vehicles would travel a continuous loop and would stop at designated locations along the route to pick up and drop off participants. The vehicles would be driven by Heavenly employees who would also serve as interpretive guides.

This activity would operate exclusively during the summer.



Photo L – Example of a mountain excursion tour vehicle.

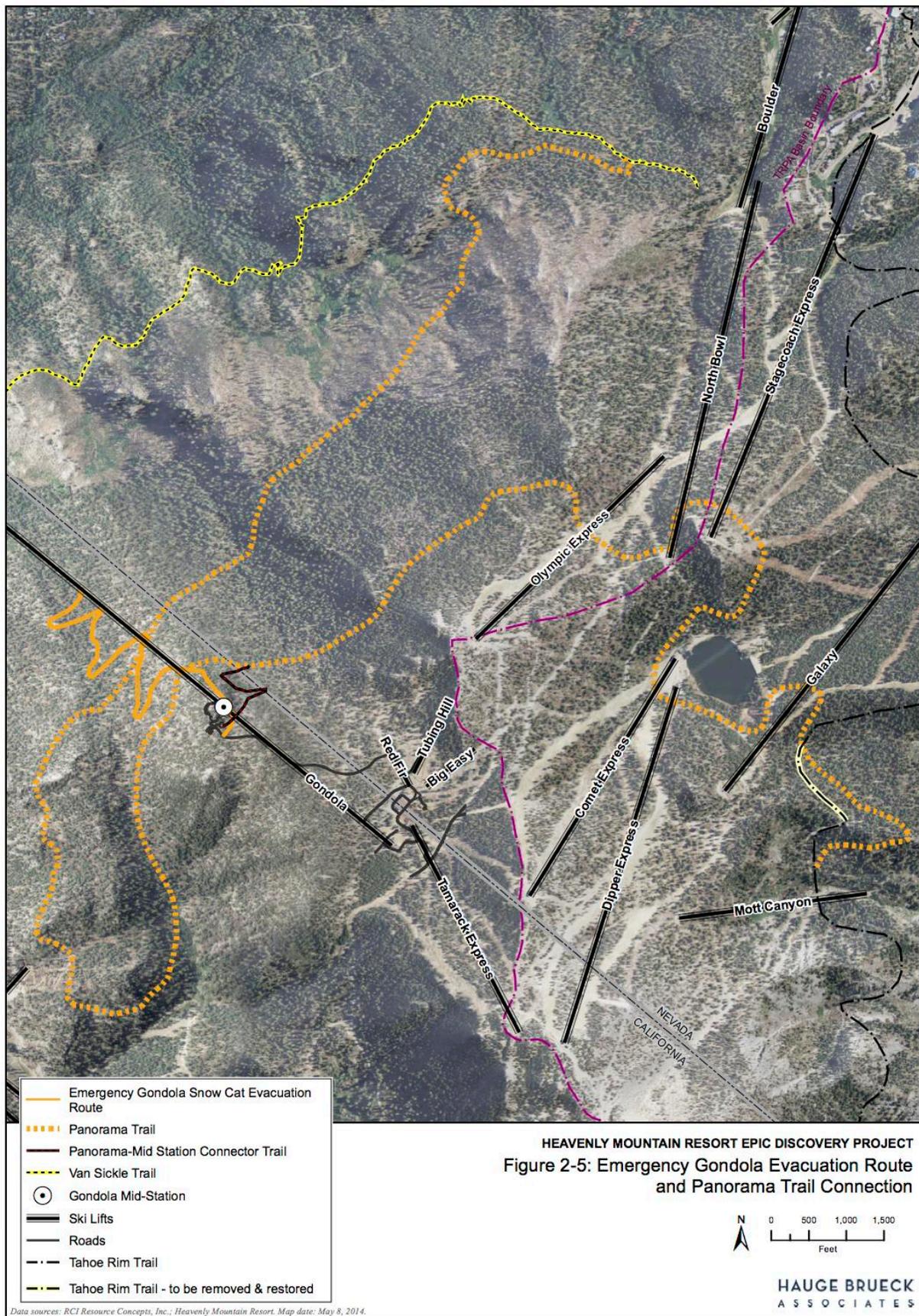
Connecting Trails

A multi-use connecting trail, the Panorama Trail, would be developed to facilitate safe and efficient movement by visitors between activities and activity areas and establish a link to Heavenly Village and surrounding public lands. Interpretive opportunities would be incorporated along the trail. Construction would be consistent with Forest Service trail standards for this type of use.

The Panorama Trail would be approximately 8.1 miles (42,600 feet) long, of which, approximately 6 miles would be located in the Tahoe Basin. See Figure 2-5 for the full route of this trail.

One segment of the Panorama Trail (approximately 1.2 miles) would connect the East Peak Mountain Bike Park to the existing Tahoe Rim Trail. This trail segment would begin at the bottom of the East Peak Zipline Tour and would connect to the existing Tahoe Rim Trail near the top of the existing Mott Canyon maintenance road. The trail would be 2-3 feet wide. The trail is located outside of the Lake Tahoe Basin. Construction of this trail would provide new access to the existing Tahoe Rim Trail and allow for the removal of approximately 1,100 linear feet of existing trail that would no longer be needed.

The second segment of the Panorama Trail (approximately 6.9 miles) would connect the East Peak Mountain Bike Park to Heavenly Village. It would begin near the bottom of the proposed East Peak Zipline Canopy Tour near East Peak Lodge and ultimately intersect the existing Van Sickle Connector Trail in the Van Sickle Bi-State Park. The trail would be 2-3 feet wide and would incorporate project design features to help minimize erosion and sedimentation. This trail segment would be located primarily within the Lake Tahoe Basin (approximately 6 miles long and up to 95,800 square feet of land coverage) and is located entirely on National Forest System lands except for the final segment which is located on Nevada Division of State Park lands.



A second connecting trail (approximately 0.7 mile or 3,700 feet in length and up to 11,100 square feet of land coverage) would be constructed between the Gondola Mid Station and the proposed Panorama Trail. This trail would be designated for use by hikers only and would begin at the Gondola Mid Station and connect to the Panorama Trail to the east of the gondola line near the California/Nevada state line.

These trails would be accessible exclusively during the summer.

Emergency Gondola Snow Cat Evacuation Route (Winter Use Only)

An emergency snow cat access route would be cleared at strategic locations along the Gondola line below the Gondola Mid Station. This access route would facilitate evacuations of the Gondola during emergency situations. It would allow Heavenly employees to deliver rescue supplies and personnel and transport passengers in the event of a Gondola evacuation. It would be used during the winter in times of operational emergencies.

The clearing would be 25-30 feet wide to allow a standard-sized snow cat to access the Gondola line in key locations. The route would begin to the southwest of the Gondola Mid Station at the existing mid station access road and terminate near Gondola line tower number 16, for a total length of approximately 6,830 feet (resulting in approximately 4.7 acres of tree removal). The entire route would be located on National Forest System lands. No permanent ground disturbance or development of a new permanent road prism or platform would be necessary for the emergency snow cat route. Tree stumps would be cut at a height of approximately six inches (up to 12 inches on steeper slopes) and large rocks/boulders would be reduced to a height of approximately 12 to 18 inches. See Figure 2-5 for the snow cat evacuation route.

Land Coverage for Activities Located within the Tahoe Basin

For activities located within the Tahoe Basin and subject to the jurisdiction of the TRPA, land coverage and permanent disturbance that is needed for Epic Discovery activities will be utilized from banked land coverage that TRPA has previously verified as legally existing at Heavenly with the exception of the Panorama Trail. Coverage requirements for this National Forest System (NFS) trail will be determined in consultation with the USFS LTBMU which will coordinate maintenance and operations of the Panorama trail. Land coverage requirements for Epic Discovery activities are summarized in Table 2-5, along with projects approved since the adoption of the 2007 Master Plan Amendment (MPA).

Table 2-5

Proposed Action In Basin Land Coverage Summary

	Class 1a	Class 1b	Total
Base Allowable Land Coverage (per 2007 MPA which did not break out allowable by Class 1a and 1b)			2,053,854
Balance of Banked Land Coverage Remaining per Table 3.4-3 of the 2007 Heavenly MPA Final EIR/EIS/EIS	434,580	4,464	439,044
Existing (Permitted) Coverage since 2007 MPA Adoption			
Northbowl/Olympic Express Lifts Project Balances	960	396	1,356
Gondola Hiking trails (approved but not built)	54,501	0	54,501
Mid Station Road	50,469	0	50,469
Northbowl/Olympic Express Lifts - Plan Revision	216	0	216
World Cup/East Bowl Snowmaking - Plan Revision	283	0	283
Calif. Base Surface Lift Replacement	1,572	0	1,572
Skyline Trail Grading and Snowmaking	1,134	0	1,134
Top of the Gondola Lodge	42,387	0	42,387
Adjusted Gondola Permit Coverage	-27,519	0	-27,519
Umbrella Bar Relocation	651	0	651
Covered Surface Lift and Snowmaking	10,039	0	10,039
California Side Trail Widening	0	0	0
Adventure Peak Improvements	6,207	0	6,207
Zipline Adventure Ride	4,916	0	4,916
Verizon Angel's Roost Cell Tower and Back-up Bldg	584	0	584
Epic Race Course Electrical	0	0	0
Summer Activities	22,213	0	22,213
Tamarack Lodge Modifications	537	0	537
Total Existing (Permitted Land Coverage)	169,150	396	169,546
Remaining Banked Land Coverage	265,430	4,068	269,498
Proposed Epic Discovery Projects			
<i>Adventure Peak Epic Discoveries</i>	<i>63,070</i>	<i>0</i>	<i>63,070</i>
<i>Removal of permitted land coverage for approved but unbuilt Gondola Hiking Trails (Adventure Peak area)</i>	<i>-54,501</i>	<i>0</i>	<i>-54,501</i>
<i>East Peak Basin Epic Discoveries</i>	<i>16,354</i>	<i>0</i>	<i>16,354</i>
<i>Sky Meadows Basin Epic Discoveries</i>	<i>27,816</i>	<i>772</i>	<i>28,588</i>
Total of Epic Discovery Projects	52,739	772*	53,511
Total of Past Projects Plus Proposed Epic Discovery Projects	221,889	1,168	223,057
Banked Land Coverage Balance Remaining Upon Epic Discovery Project Implementation	212,691	3,296	215,987

Source: Heavenly Mountain Resort and RCI, 2014

* 772 square feet of land coverage is proposed for the Sky Basin Zipline and Sky Meadows Challenge Course activities. However, as documented in Chapter 3.4 (Soils), 604 square feet of the proposed land coverage requested for the Sky Meadows Challenge Course access trails must be relocated outside of the mapped SEZ.

2.3.5 Epic Discovery Project Design Features and Construction Methods

The following design features and construction methods will be utilized for Epic Discovery project activity construction as appropriate. Many of the measures are taken directly out of or adapted from the Master Plan Mitigation Monitoring Program (refer to Chapter 5), including the Construction Erosion Reduction Program (CERP), a key requirement to ensure protection of soils and water quality.

Standard Design Features

- Botanical surveys that are consistent with Forest Service protocols will be conducted during the summer before project implementation in order to identify the presence/absence of Tahoe Draba, Arabis Rigidissima and other sensitive plants. (2007 MPA Measures 7.5-21 through 7.5-23)
- Avoidance of sensitive plants, including Tahoe Draba. (2007 MPA Measures 7.5-21 through 7.5-23)
- Site-specific layout of walking paths and hiking trails with Forest Service specialists. (See Trail Construction Standards below)
- Implementation of Forest Service-approved temporary and permanent water quality Best Management Practices (BMPs). (2007 MPA Measures 7.4-1 through 7.4-6)
- Limited disturbance and construction staging areas. (2007 MPA Measure 7.4-6)
- Limit tree removal to minimum amount necessary, including white bark pine where present. (2007 MPA Measure 7.5-23)
- Over-the-snow tree removal and yarding where feasible based on implementation timing and snowpack, over a minimum 12” compacted snow.
- Trees which are removed over the snow will be skidded over a minimum of 12” of compacted snow behind a snow cat to a staging area in order to prevent soil disturbance. Removed trees will be limbed and chipped at the staging area for use for erosion control and soil amendments.
- Proper backfilling and compaction of all excavations. (2007 MPA Measures 7.4-1 through 7.4-6)
- Separating top soil and duff layers from excavation spoils for later re-use in revegetation where possible. (2007 MPA Measures 7.4-1 through 7.4-6)
- Implementing the adaptive management approach for revegetation and erosion control methods contained in the 2007 MPA. (2007 MPA Measure 7.6-1)
- Incorporation of organic material into soil amendments to promote soil infiltration and plant establishment. (2007 MPA Measures 7.4-2 and 7.5-24)
- Specific pre-construction and post-construction monitoring evaluations of disturbed areas and success/re-establishment of revegetation and soil functions. (2007 MPA Measure 7.5-2)
- Implementation of permanent water quality BMPs following project construction. (2007 MPA Measure 7.4-6)
- Multi-year, post-construction monitoring and reporting of construction areas as required by the Forest Service BMP Effectiveness Protocol Program. (2007 MPA Measure 7.5-2)

- Dust control measures implementing 2007 MPA Measure 7.4-14, at construction sites and on roads including:
 - Exposed soil (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered at least two times per construction day.
 - Any visible mud or dirt track-out onto adjacent public roads will be removed at least once per construction day.
 - Vehicle speeds onsite will be limited to 15 mph (10 mph in areas where wildlife concerns exists per 2007 MDP measure 7.5-26).
- Use of US EPA Tier 2/Tier 3 level engines and power units to minimize emissions. (2007 MPA Measure 7.5-8)
- Comprehensive wildlife-proof trash management program including facilities installed and maintained at all activity gathering areas. Containers should have functioning locks that are secured at all times except when actively being used. Refuse containers will be emptied daily when being used by workers or visitors.

Trail Construction Standards

A Trail Construction Plan shall be prepared and approved by the USFS to ensure that the hiking and mountain bike park trails are designed to optimize the user experience while minimizing soil erosion and water quality impacts. They would be designed and maintained to the applicable Forest Service bike trail standards. The park operations would include a comprehensive operations and maintenance plan (see section below) for the trails and roads that includes regular watering for dust control.

Forest Service trail construction requirements tier from the National Best Management Practices for Water Quality on National Forest System Lands, Volume 1: National Core BMP Technical Guide to the following manuals and handbooks: FSM 2353, FSH2309.18, FSM 7715.5, FSM 7723, and EM 7720-104.

The National Core BMP Technical Guide states the following under Practices, “Develop site-specific BMP prescriptions for the following practices, as appropriate or when required, using State BMP’s, Forest Service regional guidance, land management plan direction, BMP monitoring information, and professional judgment.”

1. Locate or relocate Trails to conform to the terrain, provide suitable drainage, provide adequate pollutant filtering between the trail and nearby waterbodies, and reduce potential adverse effects to soil, water quality, or riparian resources.
 - a. Avoid sensitive areas, such as riparian areas, wetlands, stream crossings, inner gorges, and unstable areas to the extent practicable.
 - b. Use suitable measures to mitigate trail impacts to the extent practicable where sensitive areas are unavoidable.
 - c. Use suitable measures to hydrologically disconnect trails from waterbodies to the extent practicable.

2. Design, construct, and maintain trail width, grades, curves, and switchbacks suitable to the terrain and designed use.
3. Use applicable practices of BMP Fac-2 (Facility Construction and Stormwater Control) for control of erosion and stormwater when constructing trails.
4. Use and maintain surfacing materials suitable to the trail site and use to withstand traffic and minimize runoff and erosion.
5. Designate season of use to avoid periods when trail surfaces are particularly prone to unacceptable erosion, rutting, or compaction.
6. Designate class of vehicle and type of nonmotorized uses suitable for the trail width, location, waterbody crossings, and trail surfaces to avoid or minimize adverse effects to soil, water quality, or riparian resources.
7. Monitor trail conditions at regular intervals to identify drainage and trail surface maintenance needs to avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources from over-use when closure and rehabilitation is not practicable or desired.
 - a. Change designated vehicle class and season-of-use period as necessary.
8. Close and rehabilitate unauthorized trails that are causing adverse effects on soil, water quality, and riparian resources (see BMP Fac-10 [Facility Site Reclamation]).

FSM 2309.18 Trails Management Handbook identifies planning (NEPA), design, construction, and operation requirements for trails. The following site specific standards have been identified for the Heavenly Epic Discovery trail system:

Designed Use: Hike/Pedestrian		Trail Class 2	Trail Class 3	Trail Class 4
Designed Tread Width	Maintenance	18"	24"	36"
	Public	24"	36"	48"
Design Surface		Native	Native	Native/Borrow
		Rough	smooth-rough	smooth
Design Grade	Target Grade	7%	6%	5%
	Short Pitch Max	15%	12%	8%
	Max Pitch Density	10%	10%	10%
Design Cross Slope	Target Cross Slope	5%-10%	5%-10%	3%-7%
	Max Cross Slope	15%	12%	10%
Design Clearing	Height	7'	8'	8'
	Width	24"-48"	36"-60"	48"-72"
	Shoulder Clearance	6-12"	12"-18"	12"-18"
Design Turn	Radius	2-3'	3'-6'	4'-8'

Designed Use: Mountain Bike Park Trail Class 3		Difficult	Moderate	Easy
Designed Tread Width	Max Width	36"	48"	48"
	Target Width	24"	36"	36"
	Min Width	12"	18"	24"
Design Surface		Native	Native	Native/Borrow
		Rough	smooth-rough	smooth
Design Grade	Target Grade	7%	6%	5%
	Short Pitch Max	15%	12%	8%
	Max Pitch Density	10%	10%	10%
Design Cross Slope	Target Cross Slope	5%-10%	5%-10%	3%-7%
	Max Cross Slope	15%	12%	10%
Design Clearing	Height	7'	8'	8'
	Width	24"-48"	36"-60"	48"-72"
	Shoulder Clearance	6-12"	12"-18"	12"-18"
Design Turn	Radius	6'-8'	7'-10'	8'-12'

Drainage Spacing: 150' typical intervals. Drainages may be spaced at a maximum of 250' to fit with natural landscape. As slope increases, drainage spacing decreases. Where rolling grade dips are not constructed into the trail tread, drainage dips shall be used on mountain bike trails. Where grades exceed 7%, drainage dips shall be armored with rock or paver stones.

Trail Tread Armoring: In high impact areas, trail hardening techniques shall be used to prevent the tread from becoming incised, causing soil loss and water channelization. Areas such as high braking areas, trail sections steeper than 7% and corners shall be removed for armoring.

Trail Maintenance Requirements

A Trail Management Plan shall be prepared and approved by the USFS that ensures adequate maintenance of trails to protect resources and meet recreation objectives as defined by the Trail Management Objectives, the National Core Best Management Practices, and the Trail Management Handbook and to address annual and deferred maintenance needs.

Mountain Bike Park Trail System:

Inspection Frequency (e.g., evaluate potential hazards, riding surface, features, irrigation lines, drainage and vegetation) – daily (high traffic areas) and weekly (all trails) during park operations

Maintenance Frequency – ongoing throughout season as needed using work lists developed during inspections

Reconstruction Frequency (e.g., clear riding surfaces, install features, re-establish drainages) – Annually prior to park opening

Winterization (e.g., remove features, irrigation, re-establish drainages and revegetation as needed) – Annually following park closure and before winter snow fall

Extended (Connected) Trail System: Monument Pass Trail, Tahoe Rim Trail from Daggett to Star Lake, Van Sickle Trail, Star Lake Trail, Cold Creek Trail, and High Meadows Trailhead. Additional use created from lift service will create additional maintenance needs upon the larger connected trail system. While the proposed Panorama Trail will be a NFS trail, a proposed multiple-party agreement will facilitate ongoing maintenance, volunteer coordination, and monitoring.

Inspection Frequency – Bi-Annually

Maintenance Frequency – Bi-Annually

Reconstruction Frequency – every 5 years

The recreational experience (including user numbers, conflicts, and other criteria) on the Van Sickle Connector and Tahoe Rim Trails would be monitored prior to, during, and following implementation of the proposed projects. Monitoring could include user surveys, collection of user numbers, and other metrics. If adverse impacts to recreation on these trails are identified following implementation of the Panorama trail, measures would be developed to restore and/or maintain a high quality recreational experience. Mitigation measures could include education, additional signage, maintenance, and management in partnership with non-profits, etc. Maintenance could include: drainage repair, tread repair, surface armoring, trail narrowing, sign repair, and other similar items. Operational changes could include: trail closure, restricting access, increased education, trail patrol program, etc. Route changes could include: trail reroutes to reduce grade or increase sight lines, additional signage, access trails or other trail connections, and other similar actions.

Mountain Excursion Tour Roadway/Parking Protections

The vehicles would utilize existing parking areas and new parking areas identified in the project description. Drivers would be trained so that no stops would be made along roadways where identified populations of Tahoe Draba are located. Site-specific maintenance/road improvement needs would be identified and completed prior to public operations at the beginning of each summer season. Ongoing dust control would be provided by a water truck on a regular daily or as-needed basis in order to minimize dust and maintain a high-quality experience for the visitors.

On-Mountain Roadway Monitoring and Maintenance Requirements

As directed in MPA 07 MMP Measure 7.5-2, an On-Mountain Roadway Management Plan is necessary to ensure adequate maintenance of on-mountain roadways. The Plan shall be approved as an amendment to the existing USFS Special Use Permit by December 2015 or prior to implementation of Epic Discovery activities. The agreement will outline necessary monitoring, and road retrofit and maintenance measures necessary to ensure that on-mountain roadway management activities are being conducted and tracked in accordance with current USFS protocols. The agreement will require an annual meeting, annual maintenance plan, and road retrofit priorities identified through monitoring to address resource concerns.

Temporary Construction Road, Staging and Trail Access Disturbance Decommissioning

All areas disturbed during construction other than existing access roads, including access corridors, storage areas, staging areas, and construction areas shall be stabilized according to these specifications. Upon completion of grading and construction, and prior to revegetation, all areas to be revegetated will be inspected by the engineer's revegetation specialist (RS). The contractor shall notify the engineer at least five working days prior to planting to schedule the required inspection. Final seeding and mulch treatment areas will be staked in the field at that time. Revegetation treatments performed by an outside contractor shall not be initiated without the approval of the engineer. Revegetation performed by Heavenly personnel need not be approved by the engineer or the RS prior to initiating revegetation work.

Stabilization treatments shall be installed as per these specifications and the plan sheets and shall consist of wood chip incorporation into the top 12 inches of soil, seeding, and pine needle/wood chip mulch application.

Seed shall be clean new crop seed, purchased premixed on a pure live seed (PLS) basis. See mixes are shown on RCI plan sheets prepared for the project and include: Squirreltail, Mokelumne or El Dorado brome, Western needlegrass, Antelope bitterbrush and Sulfur-flower buckwheat. Seed shall be delivered to the site in original unopened containers bearing the dealer's guaranteed analysis and germination percentage, and shall meet the state of California freedom from noxious weed requirements. No substitutions in the seed mixture will be accepted without written approval from the RS.

Seed labels shall be removed from the seed sacks by the RS at the time of seeding. Seed labels will include documentation for each type of seed certifying that a recognized laboratory tested the seed within 6 months of the date of delivery.

Wood chips shall be prepared from trees removed during construction and maintenance activities on heavenly mountain resort. Tops and branches of trees removed on this and other Heavenly mountain resort project sites will be chipped to a minimum diameter of 2 inches, and a maximum length of 6 inches.

Pine needles salvaged from the construction site can be used as a mulch material. Pine needle mulch shall be weed free and clean without debris, or excessive woody material.

All areas to be stabilized (with and without seeding) shall be loosened to a depth of at least 12 inches to alleviate compaction and to incorporate wood chips to improve water infiltration and water holding capacity. A uniform 3-inch layer of wood chips shall be spread across the surface of the treatment areas. Wood chips shall be incorporated into the top 12 inches of soil by an approved loosening method. Areas shall be raked smooth following wood chip incorporation.

Areas designated for seeding by the RS shall be uniformly broadcast seeded with hand operated broadcast seeders. The contractor shall provide the RS a written statement or site demonstration to verify that the seeding broadcast equipment has been calibrated to the specified application rates. Large and small size seed shall be broadcast in separate applications. Seeding shall not occur under conditions that would allow seed to become wind born. Seed shall not be

incorporated and applied with hydromulch. Immediately following broadcasting, the seeded areas shall be lightly hand-raked to completion of seeding. Seedings shall not be left overnight without receiving mulch treatment.

All seeded areas shall be mulched with pine needles or wood chips. Pine needle mulch shall be spread across seeded areas in a loose 2 inch layer to achieve a minimum of 90 percent cover.

Unseeded treatment areas shall be mulched with wood chips spread in a uniform 6 to 8 inch layer.

SEZ and Vegetation Protection/Improvement

The following design measures shall be implemented to protect and improve existing SEZ/riparian habitat and other sensitive vegetation communities located nearby Epic Discovery summer activities.

1. Improve vegetation management – as proposed by MPA 07 mitigation measures 7.4-7 and 7.4-9 for new SEZ disturbance, Heavenly shall trim only the tops of vegetation within the Sky Meadows SEZ (to a height of no less than 3 feet tall). However, for the five feet immediately adjacent to each side of the Heavenly Valley Creek bank, no vegetation shall be trimmed except for an approximately 25 to 30 foot wide creek crossing that provides winter skier access between the base of the Sky and Canyon Express lifts and the Sky Deck and Restrooms. The creek channel location to be managed for winter access to the Sky Deck and Restrooms is depicted in Photo M below.
2. Improve protection of sensitive vegetation and soils from human disturbance – as proposed by MPA 07 mitigation measure 7.5-21 for protection of Tahoe draba, Heavenly shall install fencing/barriers during summer use periods along all existing and proposed roadways and trails where human activity will take place near SEZs (e.g., Sky Meadows), sensitive plants (e.g., Tahoe draba), and steep slopes susceptible to erosion.
3. Heavenly shall define the staging and training area for the Sky Meadows Challenge Course with fencing/barriers outside of the Sky Meadows SEZ.
4. Heavenly shall define the parking area for the Mountain Excursion Tour vehicles with fencing/barriers and separate it from nearby SEZ.
5. Heavenly shall locate all temporary and permanent disturbance required for the construction and operation of the Sky Meadows Challenge Course outside of the mapped SEZ.
6. Heavenly shall use fencing/barriers to exclude pedestrian access to the mapped SEZ located under the Sky Meadows Challenge Course (e.g., stairway access from the Sky Deck to the SEZ will be closed during summer use).
7. Heavenly shall use fencing/barriers as needed to direct summer visitors to the existing Sky Meadows bathrooms using the existing summer maintenance roadway.



Photo M – Location (orange shading) of proposed Heavenly Valley Creek bank vegetation management for winter access.

2.4 ALTERNATIVES

Alternative 1 – Sky Meadows Basin Coaster Alternative

The Sky Meadows Basin Coaster would provide an alternative location for the Forest Flyer Alpine Coaster described above under the Proposed Action for Adventure Peak. Under this Alternative, the Sky Meadows Basin Coaster would be added to the Sky Meadows Basin (Figure 2-6) and the Forest Flyer Alpine Coaster would be removed from the Adventure Peak area (Figure 2-7). This alternative is being studied as an alternative location for the Forest Flyer Coaster that is located near suitable habitat for a USFS sensitive species (Pacific marten).

The Sky Meadows Basin Coaster includes a braking system and other safety features in order to ensure rider safety. Visitors would access the Coaster from either the top terminal located near the top of Tamarack Express Lift or the bottom terminal located immediately adjacent to the existing summer access roadway that serves Sky Meadows Lodge and Bathrooms. Participants accessing the coaster from the top would ride the sled down to the bottom terminal where they would subsequently be pulled back up the track as described below. Participants accessing the coaster from the bottom would be pulled up the approximately 3,250 foot long track line in sled, which are locked onto tubular steel rails, to the top terminal located near the top of the Tamarack Express Lift. Following the ride to the top terminal, participants would coast down the hillside slope to an unloading station, located across the existing summer access roadway from the

loading station. There they would choose to stay in the Sky Meadows area, take the coaster back up to download via the Tamarack lift, or wait for a Mountain Excursion Tour vehicle. The downhill segment of the track would be approximately 7,960 feet in length and would descend approximately 1,250 vertical feet. Riders and Heavenly maintenance staff would access the top terminal using a new 2-foot wide hiking trail that connects to the 4-foot wide trail proposed to serve the Sky Meadows Zipline Canopy Tour. The maintenance trail would total approximately 100 square feet in land coverage.

The elevation of the track would be dictated by features such as topography, vegetation, snow depth, rock formations and general infrastructure. The average height of the track will be 3-6 feet above natural grade in part to account for snow depths in the area. Sections of it will be a maximum of 15-20 feet above the ground for crossing ski runs and maintenance roads.

Individual sleds can accommodate one or two riders and incorporate a number of safety features. The top speed of the sleds can be set with magnetic brakes (up to approximately 25 mph). Each sled is equipped with safety belts, brake levers and energy absorbing front and rear bumpers.

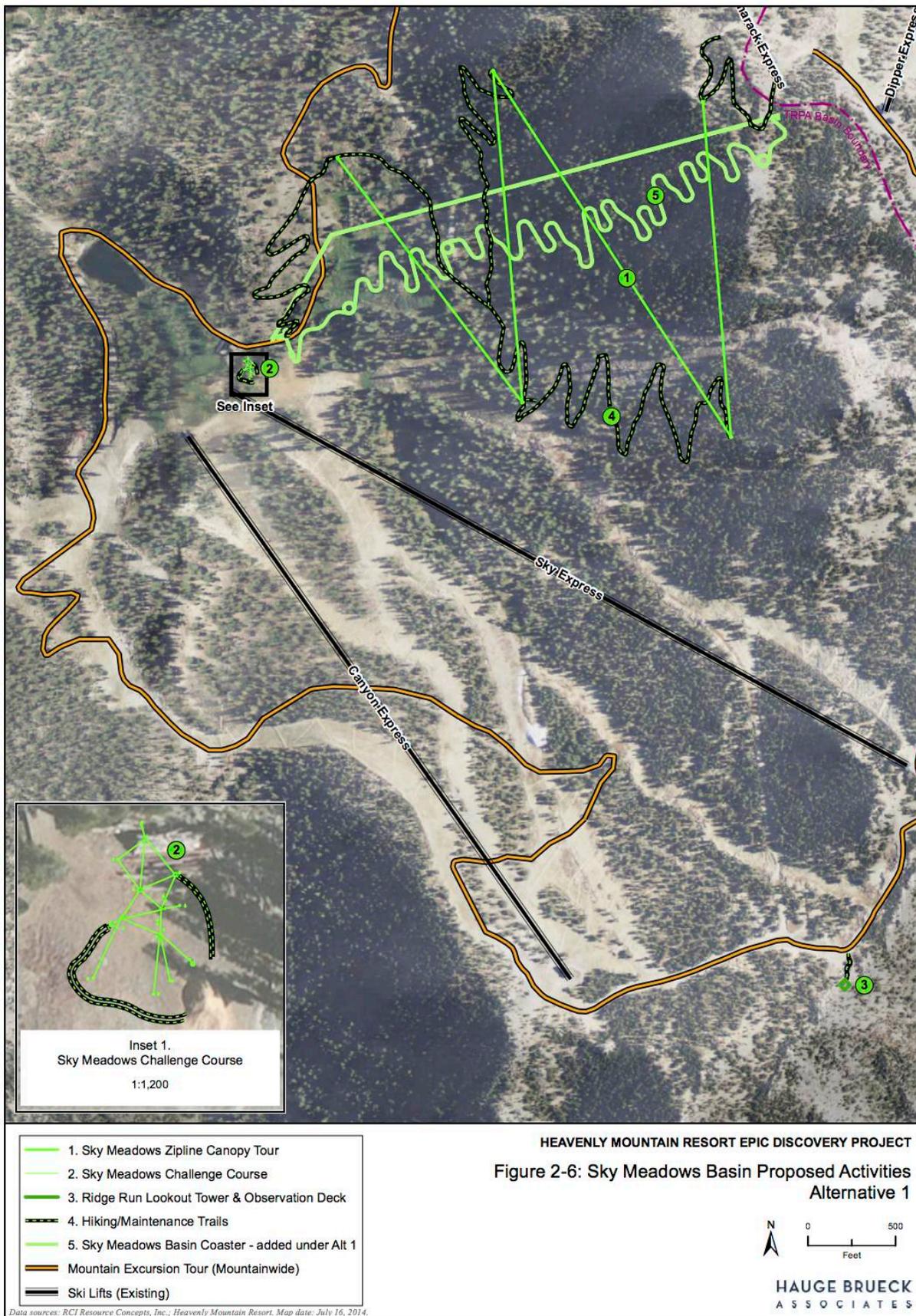
This project would require a 20-25 foot wide corridor of vegetation removal for installation and operation (resulting in approximately 2.5 acres of tree removal within the coaster corridor). Low shrubs and ground cover could remain within the corridor following construction. Foundations for the top and bottom terminals would be generally small in size, requiring minimal ground disturbance. The top terminal would consist of a bullwheel enclosure (approximately 210 square feet) and attendant's booth (approximately 80 square feet) and would be approximately 12 feet tall. The bottom terminal would consist of a bullwheel enclosure (approximately 260 square feet) loading/unloading stations (approximately 570 square feet each) and would be approximately 13'4" tall. The structures would total approximately 1,690 square feet of new land coverage. The elevated track would be anchored into the ground with soil nails and minimal footings, except when crossing an existing feature such as a ski run or maintenance road, in which case concrete foundations would be used. The coaster track would require approximately 2,340 square feet of new land coverage for footings (approximately 370 square feet in Class 1b SEZ soils). No permanent road construction would be necessary for installation or operation. Two small foot paths (approximately 5 feet in width) would provide access to the bottom terminal loading and unloading locations, and a maintenance trail would be required for access to the top terminal, totaling approximately 2,630 square feet of land coverage. Total land coverage required for the Sky Meadows Basin Coaster would be approximately 6,660 square feet.

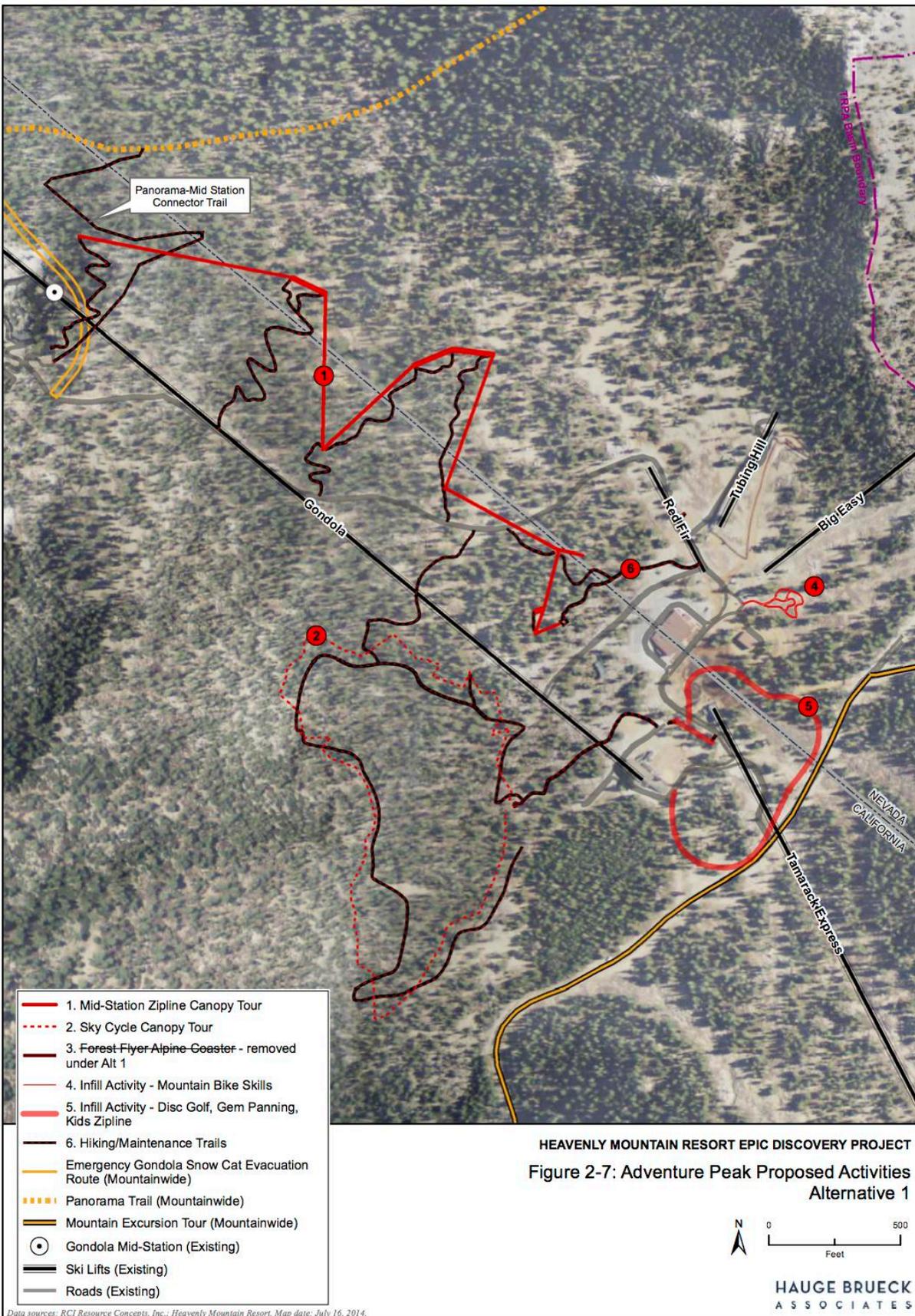
Electrical power and communications utilities would be required at the top and bottom stations. The bottom station would be located adjacent to the Sky Meadows bathrooms, where existing utilities can be accessed. Utility lines to the top station would be attached to the underside of the uphill track line.

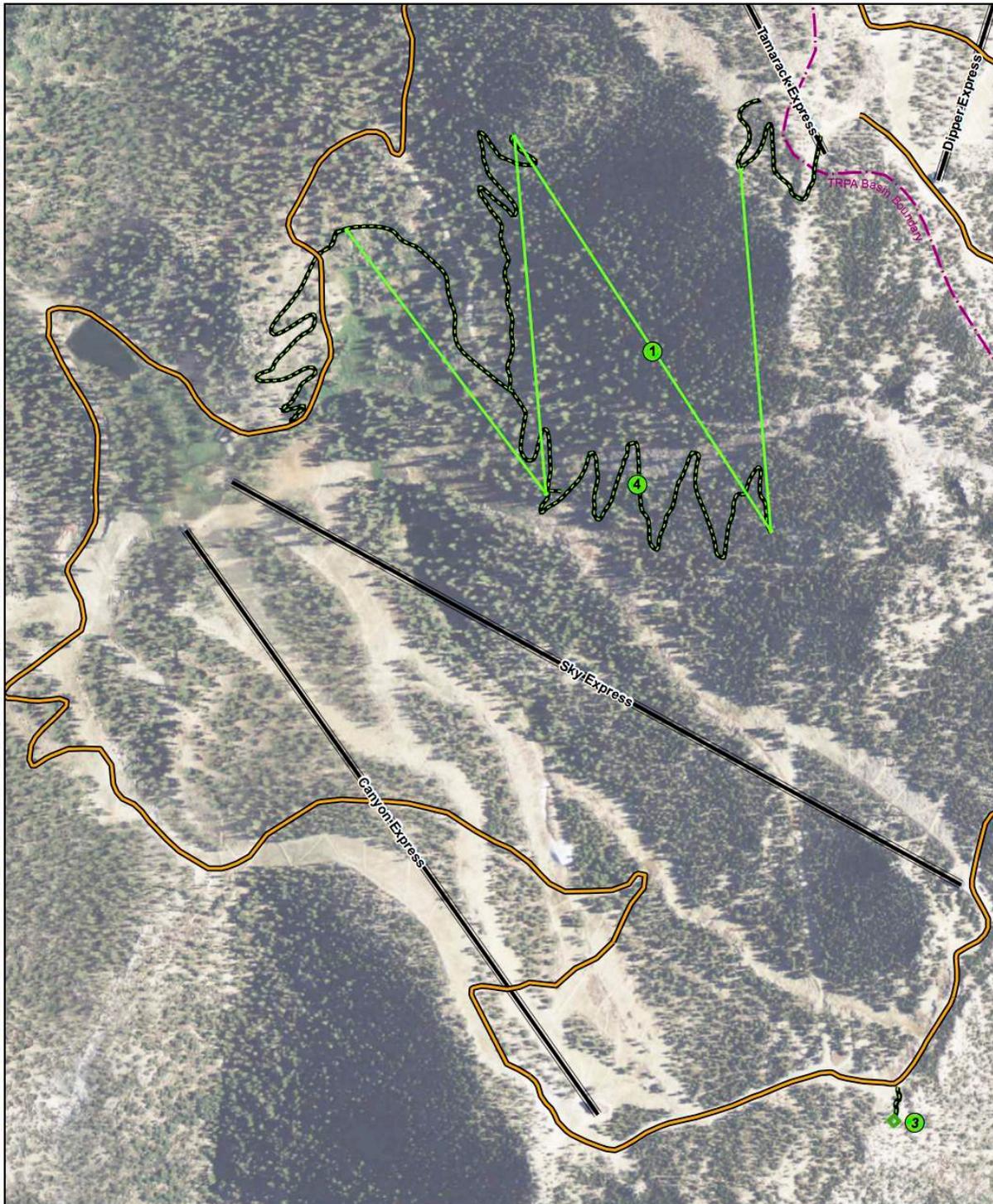
This activity would operate year-round. During winter operations, a continuous rope line boundary (e.g., similar to those used for boundary markers and congestion management areas) would be placed around the perimeter of the coaster (an area of approximately 29 acres), closing the area to downhill tree skiing.

Alternative 2 – Eliminate Sky Meadows Challenge Course

This alternative is being studied to reduce physical impacts to the Sky Meadow SEZ area. This alternative would remove the Sky Meadows Challenge (Ropes) Course from the Proposed Action, leaving only the Sky Meadows Zipline Canopy Tour (and associated maintenance trails) and Ridge Run Lookout Tower in the Sky Meadows Basin (Figure 2-8).

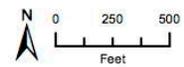






- ▲— 1. Sky Meadows Zipline Canopy Tour
- - - 2. Sky Meadows Challenge Course - removed under Alt 2
- ◆ 3. Ridge Run Lookout Tower & Observation Deck
- - - 4. Hiking/Maintenance Trails
- Mountain Excursion Tour (Mountainwide)
- Ski Lifts (Existing)

HEAVENLY MOUNTAIN RESORT EPIC DISCOVERY PROJECT
 Figure 2-8: Sky Meadows Basin Proposed Activities
 Alternative 2



HAUGE BRUECK
 ASSOCIATES

Data sources: RCI Resource Concepts, Inc.; Heavenly Mountain Resort. Map date: July 16, 2014.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

Sections 2.2 through 2.4 define the No Action, Proposed Action, and Action Alternative. The public suggested a number of alternatives during the project scoping process through written and oral comments. The alternatives below were considered during initial alternative discussions with agency staff and in response to public scoping, but were eliminated from detailed study as a result of limited or unidentified environmental impacts as described below.

No Mountain Coaster. This configuration was considered but eliminated from detailed study since elimination of this component would not meet the stated Purpose and Need for the Project (see Chapter 1.3) by failing to offer a sufficient range of additional summer activities. Specifically, a “no mountain coaster” alternative would not allow visitors to experience a downhill ride experience through the trees and natural environment, utilizing the natural slope and contours of the ground, similar to tree skiing, yet in a controlled and safe environment. This experience is different from the elevated canopy tours and zip lines, and most closely replicates the excitement associated with alpine skiing and snowboarding, enabling the visitor to control their speed with a hand brake. Heavenly’s terrain and tree cover are well known for providing a world class tree skiing and riding experience. A mountain coaster broadens public access to an experience otherwise unavailable to a significant portion of the visiting public.

Construction of Two Mountain Coasters. A two-coaster alternative was also considered but eliminated from detailed study since a single coaster achieves the purpose and need as noted above. In light of the foregoing, a multiple coaster alternative is not taken forward for further consideration.

Panorama Trail alignment within Maggie's SEZ. A portion of the initial alignment for the proposed Panorama Trail was located within mapped stream environment zone (SEZ) of the Heavenly Valley Creek headwaters and was eliminated from detailed study because of the potential for permanent SEZ impacts. The alignment chosen for the Proposed Action was revised with input from Lahontan and USFS staff to minimize disturbance to SEZ by providing only one short and direct crossing of the mapped SEZ habitat. Because of trail grade considerations, complete avoidance of the mapped SEZ was not possible.

Panorama Trail Connection to Heavenly California Base. Comments received during public scoping suggested routing the Panorama Trail to the California base area instead of the Van Sickle Bi-State Park. Agency staff considered this alternative but eliminated it from detailed study because the Epic Discovery project doesn't preclude a California base area connection as a future option, biological surveys have not included this route, the connector would not mitigate an impact of the project, and a trail user can currently access the California base using existing bike facilities located in town.

Panorama Trail alignment outside of NV State Parks Lands. Comments received during public scoping suggested a Panorama Trail alignment that would avoid Nevada State Parks lands. Because of existing topography, sensitive areas and trail grade considerations, complete avoidance of Nevada State Parks lands is not possible while allowing a connection to the existing Van Sickle connector trail.

Mountain Bike Park in the Sky Meadows Basin Watershed. Because of greater watershed sensitivity, an in basin Sky Meadows mountain bike park is eliminated from further consideration.

Access Mountain Bike Park using Dipper Lift instead of Comet Lift. The Dipper chair lift accesses terrain at the upper end of the lift and mountain bike park area that is considered to be too steep and difficult to enjoy for the average mountain bike park guest that Heavenly expects to attract. Based on the terrain, there were no feasible options to route trails in the upper areas for the anticipated guest. In addition, the presence of Tahoe Draba plants in the vicinity of the Dipper top station made this alignment less desirable and led to its elimination from further consideration.

2.6 HEAVENLY MASTER PLAN MITIGATION MEASURES

The following MPA 07 mitigation measures applicable to the Epic Discovery Project have been incorporated into the Proposed Action and Action Alternatives to reduce potentially significant or adverse impacts. Implementation of these existing mitigation measures and Epic Discovery design features defined above in Section 2.3 would reduce impacts that may occur to the environment as a result of development of the projects listed in the Proposed Action and Action Alternatives. Details of each of these mitigation measures are provided in the Master Plan Mitigation Monitoring Program (Chapter 5) of this EIR/EIS/EIS.

Table 2-6

Measures/Design Features Applicable to the Proposed Action and Action Alternatives

Reference No.	Description
Planning Measures	
7.3-1	Obtain Summer Day Use PAOT Allocations
7.3-2	TRPA Mitigation Monitoring Activities
Construction Measures	
7.4-1	REVISED Construction Erosion Reduction Program
7.4-2	Construct Infiltration Facilities
7.4-3	Control Runoff for Existing Facilities
7.4-4	Meet Water Quality Standards
7.4-5	Implement Adaptive Ski Run Prescriptions
7.4-6	Control Runoff due to Future Construction and Long-term Operation of Facilities
7.4-7	Avoid Disturbance to SEZ or Restore/Create SEZ
7.4-8	Avoid Disturbance to Wetlands or Restore/Create Wetlands
7.4-9	Restore Future Disturbed SEZ to Meet MP 96 Mitigation Measure 7.4-7 Requirements.
7.4-10	Restore Future Disturbed Jurisdictional Waters and Wetlands to Meet MP 96 Mitigation Measure 7.4-8 Requirements.
7.4-13	TRPA Land Coverage Mitigation

Table 2-6

Measures/Design Features Applicable to the Proposed Action and Action Alternatives

Reference No.	Description
GEO-1	Relocate Sky Meadows Challenge Course Access Trails Outside of Mapped SEZ
BIO-1	Delay Sky Meadows Challenge Course, Sky Basin Coaster and East Peak Lake Water Activities Until Sierra Nevada Yellow-legged Frog Surveys and USFWS Consultation Are Complete
7.4-14	Reduce and Control Fugitive Dust
7.4-15	Minimize Removal/Modification of Deciduous Trees, Wetlands, and Meadows
7.4-16	Active Raptor and Migratory Bird Nest Site Protection Program
7.4-17	Monitor and Protect Northern Goshawk
BIO-4	Wildlife Nursery Site Survey
7.4-18	Utilize Boundary Management Plan to Manage Skier Access on Adjacent NFS Lands
7.4-19	Evaluate and Monitor Known Archaeological Resources Within Comstock Logging Historic District
7.4-20	Identify and Protect Undiscovered Archaeological Resources
7.4-21	Protect the Tahoe Rim Trail
Operation and Maintenance Measures	
7.5-1	REVISED Cumulative Watershed Effects Restoration Program
WATER-C1a	CA-1 ERA and Erosion Reduction Measures
WATER-C3	NV-1 ERA and Erosion Reduction Measures
7.5-2 (WATER-C1b)	REVISED Collection/Monitoring Agreement – (On-going Environmental Monitoring Program)
7.5-3	Maintain Water Rights Balance
7.5-4	Maintain Water Flows in Heavenly Valley Creek
7.5-5	Maintain Summertime Flows in Heavenly Valley Creek
7.5-6	Maintain Water Flows in Daggett Creek
7.5-7	Maintain Compliance with Water Entitlements
7.5-8	Reduce Vehicle Emissions
7.5-15	Rock Busting Noise Mitigation Methods
7.5-16	Restrict Hours of Amphitheater Operations
TRANS-1	Traffic and Air Quality Mitigation Program
7.5-17	Expanded Bus/Shuttle Access
7.5-18	Discourage Use of Automobiles
7.5-19	Implement the Coordinated Transportation System (CTS)
7.5-20	Reduce Traffic on U.S. Highway 50 at Echo Summit
7.5-21	Protect Tahoe Draba Populations within Heavenly Mountain Resort
VEG-1	Update MPA 07 Mitigation Measure 7.5-20: <i>Protect Tahoe Draba Populations within Heavenly Mountain Resort</i>

Table 2-6

Measures/Design Features Applicable to the Proposed Action and Action Alternatives

Reference No.	Description
7.5-22	Tahoe Draba Long-Term Conservation Strategy
7.5-23	Minimize Loss/Degradation of Sensitive Plant Species
7.5-24	Noxious Weed Management
7.5-25	Late Seral/Old Growth Forest Enhancement
7.5-26	Restrict Vehicle Traffic within the Heavenly Ski Resort Master Plan Development Area
7.5-27	Monitor and Protect Nesting and Fledgling Bird Species
BIO-3	Migratory Bird Limited Operating Period and Habitat Utilization Survey
BIO-8	Wildlife Trash Management and Education Program
7.5-28	Compliance with Design Review Guidelines Section 7 Exterior Lighting Standards and Code
7.5-29	Building and Site Design
7.5-30	Maintain Timber Thinning Practices
7.5-31	Compliance with Existing Health and Safety Practices
7.5-33	Provide Employee Housing
7.5-34	Ensure Adequate Police/Sheriff/Fire Capacity

2.7 SUMMARY AND COMPARISON OF ALTERNATIVES

Chapter 3 of this EIR/EIS/EIS discloses the direct and indirect effects that the Proposed Action, No Action and Alternatives may have on the environment. Table 2-7 summarizes the operational requirements for each Epic Discovery Activity. Table 2-8 summarizes the potential effects by Alternative.

Table 2-7

Summary of Operational Requirements by Activity

Activity	Operation Summary	Operation Period*	Method of Access	Length of new trail if applicable	Guided/Unguided	PAOT**
Adventure Peak Area						
Mid Station Zipline Canopy Tour	Interconnected platforms and ziplines between Gondola Top Station and Mid Station	Year Round	Gondola and proposed trail from existing Mid Station Access Road near Tamarack Lodge	4,300 lf - approx 1,500 lf for public access and 3,800 lf for maintenance	Guided Tour	30
Sky Cycle Canopy Tour	Bicycle-like devices attached to elevated cables riding through tree canopy	Summer	Gondola and proposed trail from Gondola Top Station	5,600 lf - approx 700 lf for access to start platform and 4,900 lf for maintenance and public viewing	Monitored individual activity w/station attendants & roving guides	50
Forest Flyer Alpine Coaster	Elevated fixed-rail ride that uses gravity and user controlled braking	Year Round	Gondola and proposed access trail (approx. 150 feet) from existing Mid Station Access Road	Approx 150 lf for access to loading terminal	Monitored individual activity w/station attendants	65
Infill activities (Mtn Bike Skills Park, Disc Golf)	Activities close to Gondola Top Station/Tamarack Lodge	Summer	Gondola and proposed trail from Gondola Top Station	Approx 2,500 lf for mtn bike skills park and 1,800 lf for disc golf	Attendants at each activity	140
Infill activities (Kid's Zipline)	Small zipline for kids and beginners	Year Round	Gondola and proposed trail from Gondola Top Station	Approx 70 lf for access to start and end platforms	Attendants at each station	10
East Peak Basin						
Mountain Bike Park	Lift-served mountain bike park with beginner, intermediate and advanced level trails	Summer	1) Gondola Top Station using proposed trail from Big Easy lift or 2) proposed Panorama Trail to East Peak Lake	Approx 8.5 miles total - 0.5 mile within the Lake Tahoe Basin	Monitored individual activity w/station attendants, guides & bike patrol medics on park trails	125
East Peak Zipline Canopy Tour	Interconnected platforms and ziplines above East Peak Lake	Year Round	Existing summer roadways and proposed East Peak Lodge hiking trail	2,400 lf - approx 1,500 lf for public access and 900 lf for maintenance	Guided tour	30

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Activity	Operation Summary	Operation Period*	Method of Access	Length of new trail if applicable	Guided/Unguided	PAOT**
East Peak Reservoir Water Activities	A floating dock to provide access for kayaking, canoeing and other non-motorized activities on the Lake	Summer	1) Proposed East Peak lodge hiking trail or 2) Mtn Excursion Tour	Approx 140 lf for access to floating platform	Monitored individual activities along shoreline & in the lake. Attendants along shore & at activity rental area	50
Interpretive Activities at East Peak Lodge	Educational signs/materials for guests	Summer	1) Proposed East Peak lodge hiking trail or 2) Mtn Excursion Tour	NA	Activity on the deck	N/A
East Peak Lodge Hiking Trail	New trail to connect Adventure Peak area with East Peak Lake	Summer	Existing summer roadways	Approx 6,000 lf total - 600 lf within the Lake Tahoe Basin	Unguided, roving guides on trail	N/A
Sky Meadows Basin						
Sky Meadows Zipline Canopy Tour	Interconnected platforms and ziplines between top of Tamarack lift and Sky Meadows lodge/deck	Year Round	Tamarack Express lift or Mtn Excursion Tour and proposed access trail from Tamarack lift top station	11,500 lf - approx 2,700 lf for public access (boardwalk near Tahoe draba habitat) and 8,800 lf for maintenance	Guided Tour	30
Sky Meadows Challenge Course	Self-guided ropes course consisting of platforms and rope walkway/bridges	Year Round (non-skiers would not have access in winter)	Mtn Excursion Tour or existing summer roadways and proposed access trail from existing summer roadways	Approx 220 lf (outside of mapped SEZ) for access to start and end platforms	Monitored w/attendants	20
Ridge Run Lookout Tower and Observation Deck	Tower similar to historic Forest Service fire lookout tower	Year Round (non-skiers would not have access in winter)	Mtn Excursion Tour or existing summer roadways and proposed access trail	Approx 160 lf for access to stairway	Interpretive activity w/attendant in tower	40
Interpretive Activities at Sky Deck	Educational signs/materials for guests	Summer	Mtn Excursion Tour or existing summer roadways	NA	Activity on deck	N/A
Sky Meadows Basin Coaster (Alternative)	Elevated fixed-rail ride that uses gravity and user controlled braking	Year Round	Mtn Excursion Tour or existing summer roadways and proposed access trails	Approx 500 lf for public access to loading and unloading platforms and 50 lf for maintenance access to top terminal	Monitored individual activity w/station attendants	75

HEAVENLY MOUNTAIN RESORT EPIC DISCOVERY PROJECT EIR/EIS/EIS
PROPOSED ACTION AND ALTERNATIVES

Activity	Operation Summary	Operation Period*	Method of Access	Length of new trail if applicable	Guided/Unguided	PAOT**
Mountainwide						
Mountain Excursion Tour	2 Vehicles operated in a loop to provide guided tours and 2 vehicles to provide connection between the activity areas	Summer	Gondola Top Station and existing summer roadways	No new trail. Parking pullouts for tour vehicles at pick-up/drop-off locations.	Guided Tour	50
Panorama Trail - E. Peak Lake to Van Sickle State Park	Trail to connect Heavenly summer activities to existing offsite trails (Van Sickle Connector and TRT)	Summer	Gondola and proposed Mountain Bike Park or existing trails (Van Sickle Connector or TRT)	Approx 6.9 miles (approximately 6 miles in the Lake Tahoe Basin)	Unguided	N/A
Panorama Trail - E. Peak Lake to Existing Tahoe Rim Trail	Trail to connect Heavenly summer activities to existing offsite trails (Van Sickle Connector and TRT)	Summer	Gondola and proposed Mountain Bike Park or existing trails (Van Sickle Connector or TRT)	Approx 1.2 miles	Unguided	N/A
Mid Station to Panorama Trail Connector	Trail to connect Gondola Mid Station to proposed Panorama trail	Summer	Gondola Mid Station or existing Mid Station access roadway	Approx 0.7 mile	Unguided	N/A
Emergency Gondola Snow Cat Evacuation Route	Emergency snow cat access route to facilitate evacuation of the gondola during winter emergencies	Winter	Heavenly emergency use only	NA	NA	N/A

Source: Heavenly Mountain Resort, 2014

* Operation Period Assumptions

Summer Operations = Approximately 90 days mid June to mid September

Winter Operations = Approximately 140 days late November to late April

Year Round Operations = Both Summer and Winter periods defined above

** PAOT = Persons at one Time

Table 2-8

Summary of Potential Effects by Alternative

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
3.1 Water Resources: Hydrology, Water Quality, and Cumulative Watershed Effects				
<p>WATER-1: Would the Project increase peak and total runoff such that downstream conveyance or storage facilities (creeks, reservoirs, pipes, basins, etc.) no longer have adequate capacity, create new sources of chronic erosion or be located in areas of known chronic soil erosion in the Heavenly Valley Creek watershed (CA-1)?</p>	<p>CA-1 = 1,564 acres No changes are proposed that would increase runoff.</p>	<p>2.1 acres of new impervious coverage. 4.5 acres of temporary disturbance.</p> <p>(Mid-Station Canopy Tour, Sky Cycle Canopy Tour, Forest Flyer Alpine Coaster, Infill Activities, Sky Meadows Zipline Canopy Tour, Sky Meadows Challenge Course, Ridge Run Lookout Tower, Mountain Excursion Tour, and Panorama Trail)</p> <p>Less than 1% of watershed area</p>	<p>2.12 acres of new impervious coverage. 6.0 acres of temporary disturbance.</p> <p>(Mid-Station Canopy Tour, Sky Cycle Canopy Tour, Sky Meadows Coaster, Infill Activities, Sky Meadows Zipline Canopy Tour, Sky Meadows Challenge Course, Ridge Run Lookout Tower, Mountain Excursion Tour, and Panorama Trail)</p> <p>Less than 1% of watershed area</p>	<p>2.08 acres of new impervious coverage. 4.5 acres of temporary disturbance.</p> <p>(Mid-Station Canopy Tour, Sky Cycle Canopy Tour, Forest Flyer Alpine Coaster, Infill Activities, Sky Meadows Zipline Canopy Tour, Ridge Run Lookout Tower, Mountain Excursion Tour, and Panorama Trail)</p> <p>Less than 1% of watershed area</p>

HEAVENLY MOUNTAIN RESORT EPIC DISCOVERY PROJECT EIR/EIS/EIS
PROPOSED ACTION AND ALTERNATIVES

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>WATER-2: Would the Project increase peak and total runoff such that downstream conveyance or storage facilities (creeks, reservoirs, pipes, basins, etc.) no longer have adequate capacity, create new sources of chronic erosion or be located in areas of known chronic soil erosion in the Gondola watershed (CA-7)?</p>	<p>NV-7 = 305 acres No changes are proposed that would increase runoff.</p>	<p>Mid-Station Canopy Tour, Access/Maintenance Trails, connector trail to Panorama Trail = 0.04 acres permanent coverage Emergency Snow Cat Evacuation Route = 0 acres coverage</p> <p>Temporary and permanent BMPs would effectively infiltrate runoff and control soil erosion.</p> <p>Impacts are avoided through implementation of resource protection measures as outlined in the USDA Forest Service Region 5 Water Quality Management Handbook along with the design features and the operations and maintenance associated plans required by the TRPA and USDA Forest Service for project-level approval and permitting.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action.</p>

HEAVENLY MOUNTAIN RESORT EPIC DISCOVERY PROJECT EIR/EIS/EIS
PROPOSED ACTION AND ALTERNATIVES

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>WATER-3: Would the Project increase peak and total runoff such that downstream conveyance or storage facilities (creeks, reservoirs, pipes, basins, etc.) no longer have adequate capacity, create new sources of chronic erosion or be located in areas of known chronic soil erosion in the Mott Canyon watershed (NV-1)?</p>	<p>NV-1 = 643 acres No changes are proposed that would increase runoff.</p>	<p>Mountain Bike Trails = 2.7 acres permanent disturbance, 7.1 acres temporary disturbance, and 2.7 acres of impervious surface (1.5% of watershed). Panorama Trail = 12,000 square feet permanent disturbance.</p> <p>Temporary and permanent BMPs would effectively infiltrate runoff and control soil erosion.</p> <p>Impacts are avoided through implementation of resource protection measures as outlined in the USDA Forest Service Region 5 Water Quality Management Handbook along with the design features and the operations and maintenance associated plans required by the TRPA and USDA Forest Service for project-level approval and permitting.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action.</p>

HEAVENLY MOUNTAIN RESORT EPIC DISCOVERY PROJECT EIR/EIS/EIS
PROPOSED ACTION AND ALTERNATIVES

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>WATER-4. Would the Project increase peak and total runoff such that downstream conveyance or storage facilities (creeks, reservoirs, pipes, basins, etc.) no longer have adequate capacity, create new sources of chronic erosion or be located in areas of known chronic soil erosion in the Daggett Creek watershed (NV-2+5)?</p>	<p>NV-2+5 = 830 acres No changes are proposed that would increase runoff.</p>	<p>Mountain bike trails = 3.1 acres of new permanent disturbance and 4.8 acres of temporary disturbance (1% of watershed) Panorama Trail = 17,751 square feet of new permanent disturbance.</p> <p>East Peak Zipline Canopy Tour = 2,800 square feet of new permanent disturbance.</p> <p>East Peak Lodge Hiking Trail = 10,800 square feet of new permanent disturbance and 36,000 square feet of temporary disturbance.</p> <p>Temporary and permanent BMPs would effectively infiltrate runoff and control soil erosion.</p> <p>Impacts are avoided through implementation of resource protection measures as outlined in the USDA Forest Service Region 5 Water Quality Management Handbook along with the design features and the operations and maintenance associated plans required by the TRPA and USDA Forest Service for project-level approval and permitting.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action.</p>

HEAVENLY MOUNTAIN RESORT EPIC DISCOVERY PROJECT EIR/EIS/EIS
PROPOSED ACTION AND ALTERNATIVES

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>WATER-5. Would the Project increase peak and total runoff such that downstream conveyance or storage facilities (creeks, reservoirs, pipes, basins, etc.) no longer have adequate capacity, create new sources of chronic erosion or be located in areas of known chronic soil erosion in the Edgewood Creek watersheds (NV-3, EDGE-1, EDGE-2)?</p>	<p>Heavenly Mountain Resort NV-3 = 408 acres Heavenly Mountain Resort EDGE-1 = 479 acres Heavenly Mountain Resort EDGE-2 = 825 acres No changes are proposed that would increase runoff.</p>	<p>Panorama Trail in NV-3 = 9,126 square feet of permanent disturbance (<0.5%)</p> <p>Panorama Trail, Mid-Station Canopy Tour, Mid-Station to Panorama Trail connector and top portion of the Forest Flyer in EDGE-1 and -2 have low connectivity with Edgewood Creek</p> <p>Temporary and permanent BMPs would effectively infiltrate runoff and control soil erosion.</p> <p>Impacts are avoided through implementation of resource protection measures as outlined in the USDA Forest Service Region 5 Water Quality Management Handbook along with the design features and the operations and maintenance associated plans required by the TRPA and USDA Forest Service for project-level approval and permitting.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action.</p>

HEAVENLY MOUNTAIN RESORT EPIC DISCOVERY PROJECT EIR/EIS/EIS
PROPOSED ACTION AND ALTERNATIVES

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>WATER-6: Would Construction and Operation of the Project Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Heavenly Valley Creek?</p>	<p>No new use or disturbance is proposed in the Heavenly Valley Creek watershed.</p>	<p>New impervious surfaces and temporary disturbance in Adventure Peak would have little to no direct effects to surface water quality and beneficial uses in Heavenly Valley Creek.</p> <p>The Sky Meadows Zipline Canopy Tour (0.55 acres of permanent disturbance and 2.96 acres of tree removal), Sky Meadows Challenge Course (742 square feet of land coverage – 604 square feet in the SEZ), Ridge Run Lookout Tower and Observation Deck, and associated hiking and maintenance trails would create 25,484 square feet of new permanent disturbance and 3 acres of temporary construction disturbance and tree removal in a portion of CA-1.</p> <p>Impacts would be avoided and minimized through implementation of the Sky Basin resource protection measures. Construction impacts are avoided and minimized through compliance with state NPDES construction permits and TRPA project permit conditions.</p>	<p>In addition to the impacts identified for the Proposed Action, the Sky Basin Coaster would require 6,656 square feet of permanent land coverage for the Sky Basin Coaster and 2.5 acres of temporary disturbance and tree removal, resulting in a total of 32,140 square feet of permanent coverage and 5.5 acres of temporary disturbance and tree removal.</p> <p>Impacts would be avoided and minimized through implementation of the Sky Basin resource protection measures. Construction impacts are avoided and minimized through compliance with state NPDES construction permits and TRPA project permit conditions.</p>	<p>Impacts would be the same as identified for the Proposed Action, except elimination of the Sky Meadows Challenge Course (742 square feet of land coverage – 604 square feet in the SEZ) from this alternative results in less land disturbance, particularly within the SEZ.</p> <p>Impacts would be avoided and minimized through implementation of the Sky Basin resource protection measures. Construction impacts are avoided and minimized through compliance with state NPDES construction permits and TRPA project permit conditions.</p>
<p>WATER-7: Would Construction and Operation of the Project Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Edgewood Creek?</p>	<p>No new use or disturbance is proposed in the Edgewood Creek watershed.</p>	<p>A section of the Panorama Trail crosses the Edgewood Creek watershed (NV-3). No direct effects to surface water quality and beneficial uses would occur. Indirect effects would be addressed through appropriate trail location and design installation of permanent BMPs and design features, and on-going trail monitoring and maintenance.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action.</p>

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>WATER-8: Would Construction and Operation of the Project Lead to Noncompliance with Surface Water Quality Standards and Thresholds in Mott and Daggett Creeks?</p>	<p>Watershed NV-1 (Mott Creek) and MV-2+5 (Daggett Creek) would not be affected as no new uses/disturbances are proposed.</p>	<p>Mountain bike trails in the vicinity of NV-1 include design features and resource protection measures. The Panorama Trail and rerouting of the Tahoe Rim Trail would not adversely affect NV-1.</p> <p>The East Peak Zipline Canopy Tour, East Peak Lake Water Activities, Beginner and Intermediate Mountain Bike Trails, and East Peak Lodge Hiking Trail located in NV-2+5 include design features to avoid adverse effects. Other than a short access trail that includes design features to avoid effects, no permanent disturbance is required for the East Peak Reservoir water activities.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action.</p>

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
WATER-C1: Would the Project have significant cumulative impacts to water resources in watershed CA-1?	TOC = 5% CA-1 = 3.91 ERA rated fair - good with stable trend. No increase to existing ERA would occur and existing restoration programs and mitigation would continue.	CA-1 Existing 3.91 ERA Project = 0.30 ERA Cumulative CA-1 = 4.11 ERA With MPA 07 CA-1 = 4.49 ERA Cumulative ERA would be within the TOC; however the potential for cumulative off-site watershed effects is high. Disturbance would be offset by ongoing CWE Restoration Program in MPA 07 and by restoration and land coverage reductions within the Cookhouse Meadow, Cold Creek, and Blackwood Creek watersheds on National Forest Lands. Existing adverse conditions in the Sky Basin area would be addressed through Mitigation Measures WATER-C1a: CA-1 ERA and Erosion Reduction Measures and WATER-C1b: Amend Mitigation Measure 7.5-2 Environmental Monitoring Program to add Roads and Trails Monitoring, In-stream Substrate Analysis, and SWAMP protocols for Particle Size Distributions.	Same as Proposed Action.	Same as Proposed Action.
WATER-C2: Would the Project have significant cumulative impacts to water resources in watershed CA-7?	TOC = 7% CA-7 = 0.58 ERA rated excellent with stable trend. No increase to existing ERA would occur and existing restoration programs and mitigation would continue.	CA-7 Existing 0.58 ERA Project = 0.10 ERA Cumulative CA-7 = 0.68 ERA With MPA 07 CA-7 = 1.19 ERA Cumulative ERA would be within the TOC. The 1,800 square feet of new permanent disturbance would be offset by restoration and land coverage reductions within the Cookhouse Meadow, Cold Creek, and Blackwood Creek watersheds on National Forest Lands.	Same as Proposed Action.	Same as Proposed Action.

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
WATER-C3: Would the Project have significant cumulative impacts to water resources in watershed NV-1?	TOC = 4% NV-1 = 3.35 ERA rated good with stable trend. No increase to existing ERA would occur and existing restoration programs and mitigation would continue.	NV-1 Existing 3.35 ERA Project = 0.44 ERA Cumulative NV-1 = 3.79 ERA With MPA 07 NV-1 = 4.24 ERA Total ERA offset by the ongoing CWE restoration program and Mitigation Measure WATER-C3: NV-1 ERA and Erosion Reduction Measures to reduce ERA and soil erosion impacts associated with the Mountain Bike Park.	Same as Proposed Action.	Same as Proposed Action.
WATER-C4: Would the Project have significant cumulative impacts to water resources in watershed NV-2+5?	TOC = 7% NV-2+5 = 3.9 ERA rated good with stable trend. No increase to existing ERA would occur and existing restoration programs and mitigation would continue.	NV-2+5 Existing 3.9 ERA Project = 0.4 ERA Cumulative NV-2+5 = 4.32 ERA With MPA 07 NV-2+5 = 5.70 ERA Cumulative ERA would be within the TOC and the ongoing CWE restoration program would further offset cumulative ERA. No adverse cumulative effect would occur.	Same as Proposed Action.	Same as Proposed Action.
WATER-C5: Would the Project have significant cumulative impacts to water resources in watershed NV-3?	TOC = 5% NV-3 = 4.56 ERA rated good with a stable trend. Edge-1 = 0.53 ERA Edge-2 = 4.72 ERA No increase to existing ERA would occur and existing restoration programs and mitigation would continue.	NV-3 Existing 4.56 ERA Panorama Trail = 0.04 ERA Cumulative NV-3 = 4.60 ERA With MPA 07 NV-3 = 5.61 ERA Total ERA offset by restoration programs, land coverage reduction, and mitigation to achieve TOC. Edge-1 Existing = 0.53 ERA Edge-1 Cumulative = 0.61 ERA Edge-2 Existing = 4.72 ERA Edge-2 Cumulative = 4.77 ERA No adverse cumulative effect.	Same as Proposed Action.	Same as Proposed Action.

3.2 Stream Environment Zones and Jurisdictional Waters and Wetlands

See Chapters 3.1, 3.4 and 3.8	--	--	--	--
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3.3 Water Use, Water Rights and Groundwater

None	--	--	--	--
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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
3.4 Geology and Soils				
<p>GEO-1: Would the project result in covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System?</p>	<p>No change would occur.</p>	<p>Additional land coverage: LCD 1a – 107,240 ft² LCD 1b – 772 ft² Total – 108,012 ft²</p> <p>Although total land coverage is less than the 439,044 ft² of land coverage remaining within the Heavenly Mountain Resort, TRPA must make findings to allow coverage on low capability land. Most recreation activities are addressed by the Basin Plan, but parking areas, offices, and shops are not included and require findings.</p> <p>Findings can be made for the Sky Basin Zipline trail (168 ft² LCD1b) as no alternative locations exist.</p> <p>Findings cannot be made for the Sky Meadows Challenge Course (604 ft² LCD1b) because this component does not need to be located within an SEZ. Mitigation Measure GEO-1: Relocate Sky Meadows Challenge Course Access Trails Outside of Mapped SEZ</p> <p>Required LCD 1b existing land coverage relocation (1.5:1) - 252 ft²</p> <p>Existing banked coverage: 434,580 ft² LCD 1a 4,464 ft² LCD 1b</p>	<p>Additional land coverage: LCD 1a – 107,862 ft² LCD 1b – 1,142 ft² Total – 109,004 ft²</p> <p>Although total land coverage is less than the 439,044 ft² of land coverage remaining within the Heavenly Mountain Resort, TRPA must make findings to allow coverage on low capability land. Most recreation activities are addressed by the Basin Plan, but parking areas, offices, and shops are not included and require findings.</p> <p>Findings can be made for the Sky Basin Zipline trail (168 ft² LCD1b) and Sky Basin coaster footing (370 ft² LCD1b) as no alternative locations exist.</p> <p>Findings cannot be made for the Sky Meadows Challenge Course (604 ft² LCD1b) because this component does not need to be located within an SEZ. Mitigation Measure GEO-1: Relocate Sky Meadows Challenge Course Access Trails Outside of Mapped SEZ</p> <p>Required LCD 1b existing land coverage relocation (1.5:1) - 807 ft²</p> <p>Existing banked coverage: 434,580 ft² LCD 1a 4,464 ft² LCD 1b</p>	<p>Additional land coverage: LCD 1a – 107,102 ft² LCD 1b – 168 ft² Total – 107,270 ft²</p> <p>Although total land coverage is less than the 439,044 ft² of land coverage remaining within the Heavenly Mountain Resort, TRPA must make findings to allow coverage on low capability land. Most recreation activities are addressed by the Basin Plan, but parking areas, offices, and shops are not included and require findings.</p> <p>Findings can be made for the Sky Basin Zipline trail (168 ft² LCD1b) as no alternative locations exist.</p> <p>Required LCD 1b existing land coverage relocation (1.5:1) - 252 ft² Existing banked coverage: 434,580 ft² LCD 1a 4,464 ft² LCD 1b</p>

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
GEO-2: Would Project construction of new summer activities impact soil quality and function or create unstable soil conditions?	No new activities would occur.	<p>Maximum disturbance area: 8.5 acres permanent disturbance 18 acres temporary disturbance</p> <p>Cut and Fill Volumes: Cut – 146 yd³ Fill – 97 yd³ Net – 47 yd³</p> <p>Tree clearing – 14.8 acres</p> <p>Implementation of compliance measures and required TRPA, Lahontan, and Forest Service Plans results in no adverse effect.</p>	<p>Maximum disturbance area: 8.52 acres permanent disturbance 18 acres temporary disturbance</p> <p>Cut and Fill Volumes: Cut – 146 yd³ Fill – 97 yd³ Net – 47 yd³</p> <p>Tree clearing – 17.3 acres</p> <p>Implementation of compliance measures and required TRPA, Lahontan, and Forest Service Plans results in no adverse effect.</p>	Same as Proposed Action.
GEO C-1: Cumulative Geological Effects	No change would occur to contribute to a cumulative effect.	No considerable contribution towards cumulatively significant effects to geologic hazards, erosion or unstable slopes. Implementation of compliance and standard mitigation measures for erosion control during construction activities and operations minimize the potential project-level effects to a level of less than significant.	Same as Proposed Action.	Same as Proposed Action.

3.5 Air Quality and Greenhouse Gases/Climate Change

AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?	No new air emissions or conflict	<p>Maximum Daily Operation Emissions (lbs/day): NO_x – 3.6 CO – 47 ROG – 5.9 SO_x – 0.07 PM₁₀ – 38.4 PM_{2.5} – 9.2 All are below threshold limits.</p>	Same as Proposed Action.	Would be slightly less than the Proposed Action and Alternative 1 due to the elimination of the Sky Meadows Basin Challenge Course. Emissions are below threshold limits.
AQ-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	No new air emissions	<p>Maximum Daily Operation Emissions (lbs/day): NO_x – 3.6 CO – 47 ROG – 5.9 SO_x – 0.07 PM₁₀ – 38.4 PM_{2.5} – 9.2 All are below threshold limits.</p>	Same as Proposed Action.	Would be slightly less than the Proposed Action and Alternative 1 due to the elimination of the Sky Meadows Basin Challenge Course. Emissions are below threshold limits.

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
AQ-3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	No new air emissions	Project emissions will not exceed any significance criteria thresholds in the District's Guide to Air Quality Assessment. Traffic increases would not cause traffic density of LOS E. The Project is not significant for "project alone" emissions of PM ₁₀ , SO ₂ , or NO ₂ and will not be cumulative significant for ROG, NO _x , or CO.	Same as Proposed Action	Same as Proposed Action
AQ-4: Would the project expose sensitive receptors to substantial pollution concentrations?	No new air emissions	The distance to the nearest sensitive receptor is over 5,500 feet. Sensitive receptors would not be exposed to substantial pollutant concentrations.	Same as Proposed Action.	Same as Proposed Action.
AQ-5: Will the Project Generate Objectionable Odors?	No new odors	The Mountain Tour and O&M pickups, O&M ATVs, and vehicles transporting visitors and employees to the Project will not emit odorous compounds. Odors associated with the exhaust emissions from the diesel-fueled engines used in construction equipment would be temporary and localized.	Same as Proposed Action.	Same as Proposed Action.
GHG-1: Would the project generate more than 25,000 MT CO ₂ e GHG emissions?	No new greenhouse gas emissions	Maximum Annual Total Project Operation Emissions (tons/year): CO ₂ – 272.7 CH ₄ – 0.010 N ₂ O - 0.0021 CO ₂ e – 273.6	Same as Proposed Action.	Total emissions would be slightly less than the Project under Alternative 2, as the Sky Meadows Basin Challenge Course would be eliminated.
GHG-2: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?	No new greenhouse gas emissions or regulatory conflict	Project operational emissions of GHG will not be cumulatively significant because these emissions are less than either the 1,100 metric tons CO ₂ e per year suggested as a non-stationary source threshold by the BAAQMD, or the 25,000 metric tons of CO ₂ e threshold of the CEQ.	Same as Proposed Action.	Total emissions would be slightly less than the Proposed Action or Alternative 2, as the Sky Meadows Basin Challenge Course would be eliminated.

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
3.6 Noise				
NOISE-1: Adventure Peak Activities Noise Impacts	No new noise sources and no exceedance of standards	Zipline and Sky Cycle– 52.6 dBA CNEL Forest Flyer – 45.6 dBA Infill Activities – 50 dBA CNEL Each component falls within the 50 dBA CNEL noise standard at the Plan Area boundary.	Zipline and Sky Cycle– 52.6 dBA CNEL Infill Activities – 50 dBA CNEL Each component falls within the 50 dBA CNEL noise standard at the Plan Area boundary.	Same as Proposed Action.
NOISE-2: East Peak Lake Basin Activities Noise Impacts	No new noise sources and no exceedance of standards	Zipline – 50 dBA CNEL Water Activities – trace noise Mountain Bike Park – 50 dBA CNEL Each component falls within the 50 dBA CNEL noise standard at the Plan Area boundary.	Same as Proposed Action.	Same as Proposed Action.
NOISE-3: Sky Meadows Basin Activities Noise Impacts	No new noise sources and no exceedance of standards	Zipline - 50 dBA CNEL Challenge Course - 50 dBA CNEL Lookout Tower - 50 dBA CNEL Each component falls within the 50 dBA CNEL noise standard at the Plan Area boundary.	Same as Proposed Action plus Sky Basin Coaster. Sky Basin Coaster – 45.6 dBA CNEL	Zipline - 50 dBA CNEL Lookout Tower - 50 dBA CNEL Each component falls within the 50 dBA CNEL noise standard at the Plan Area boundary.
NOISE-4: Construction Noise Impacts	No new noise sources and no exceedance of standards	Construction Noise – 77 to 94 dBA Construction hours limited to between 8:00 am and 6:30 pm	Same as Proposed Action.	Same as Proposed Action.
NOISE-5: Traffic Noise Impacts	No new noise sources and no exceedance of standards	Traffic noise levels expected up to 64 dBA CNEL, which is the same as current levels and forecasts without the Project.	Same as Proposed Action.	Same as Proposed Action.
NOISE C-1: Cumulative Noise Effects	No new noise sources and no exceedance of standards	Since the proposed activities are spread across the mountain and there are setbacks associated with each activity, cumulative noise levels will not exceed any standards or contribute to a significant increase in noise levels.	Same as Proposed Action.	Same as Proposed Action.

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
3.7 Transportation, Parking and Circulation				
TRANS-1: Will the Project result in the generation of 200 or more new Daily Vehicle Trip Ends?	No new impact	Results in 200 new daily vehicle trip ends. Mitigation Measure TRANS-1. Traffic and Air Quality Mitigation Program mitigates the impact by contributing to the TRPA Air Quality Mitigation Fund, support programs and improvements that reduce VMT and encourage alternative transportation.	Same as Proposed Action.	Same as Proposed Action.
TRANS-2: Will the Project result in a substantial impact upon the existing transportation systems, including roadways and intersections?	No new impact	Although some increase in traffic would occur, the LOS at various intersections would remain at acceptable levels: US 50/Lake Pkwy – LOS B US 50/Stateline Ave – LOS C US 50/Transit Way – LOS A(C) US 50/Friday Ave – LOS B US 50/Park Ave – LOS D US 50/Pioneer Trail – LOS C Heavenly Village Way/Bellamy Ct – LOS A Heavenly Village Way/Lake Pkwy – LOS A	Same as Proposed Action.	Same as Proposed Action.
TRANS-3: Will the Project result in changes to existing parking facilities or create a demand for parking that cannot be served by existing parking facilities?	No change/No effect	Visitor parking demand: 69 vehicles in 420 space parking garage (current summer use is 320) Employee parking demand: 140 vehicles in 300 space parking lot (less than winter employee parking demand) No adverse effect	Same as Proposed Action.	Same as Proposed Action.
TRANS-4: Will the Project result in a substantial impact upon the existing transportation systems, including bicycle or pedestrian facilities?	No change/No effect	Beneficial components include: -Mountain bike parks -Hiking trails -Multi-use connecting trails -Panorama trail -Connections to other area trails Existing trail use would continue and no change to off-site facilities is proposed.	Same as Proposed Action.	Same as Proposed Action.

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
TRANS-5. Will the Project result in a substantial impact upon the existing transportation systems, including transit facilities?	No change/No effect	No change to transit facilities is proposed and no interference with existing transit would occur.	Same as Proposed Action.	Same as Proposed Action.
TRANS-6. Will the Project result in alterations to the present patterns of circulation or movement of people and/or goods?	No change/No effect	No changes to existing access or circulation elements are proposed or would occur.	Same as Proposed Action.	Same as Proposed Action.
TRANS-7. Will the Project result in substantial increased traffic congestion on mountain roadways and trails?	No change/No effect	The Mountain Excursion Tour would generate approximately 8 tour trips and 24 trips picking up zipline participants (assumes a trip by each of the two vehicles every 20 minutes during the 4 hour period). Average travel speed = 15-20 mph. Congestion would not occur due to low speeds and low frequency of trips.	Same as Proposed Action.	Same as Proposed Action.
TRANS-8. Will the Project result in a temporary impact upon existing transportation systems due to construction traffic?	No change/No effect	Construction traffic would be less than operational traffic and would not result in traffic impacts.	Same as Proposed Action.	Same as Proposed Action.
TRANS-9. Will the Project result in an increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	No change/No effect	No new roadways, parking facilities, or access driveways are proposed. Existing bicycle and pedestrian facilities would remain. No new hazards would occur.	Same as Proposed Action.	Same as Proposed Action.
TRANS-C1: Will the project result in a substantial impact upon cumulative transportation systems, including roadways and intersections?	No change/No effect	The cumulative PM peak LOS would be the same as the cumulative plus project for most intersections, with the exception of US 50/Park Ave/Heavenly Village Way (LOS D instead of C) and US 50/Transit Way (LOS B instead of A). The Project would not result in unacceptable LOS conditions.	Same as Proposed Action.	Same as Proposed Action.

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
3.8 Vegetation				
VEG-1: Would the Project increase the risk of introduction or spread of invasive plants (aquatic or terrestrial)?	No change. Continued implementation of VEG-1C Noxious Weed Management would occur.	<p>High potential for spread of Tall Whitetop: Sky Meadows Zipline Canopy Tour, portions of the Mountain Excursion Tour</p> <p>Low potential for spread of Tall Whitetop and Canada thistle: Portions of the Mountain Excursion Tour and Mountain Bike Park</p> <p>Continued implementation of VEG-1C Noxious Weed Management would occur, resulting in a less than significant impact and no adverse effect.</p>	<p>High potential for spread of Tall Whitetop: Sky Basin Coaster, Sky Meadows Zipline Canopy Tour, portions of the Mountain Excursion Tour</p> <p>Low potential for spread of Tall Whitetop and Canada thistle: Same as Proposed Action.</p> <p>Continued implementation of VEG-1C Noxious Weed Management would occur, resulting in a less than significant impact and no adverse effect.</p>	Same as Proposed Action.
VEG-2: Would the Project result in an overall decrease in long term trends in Tahoe draba populations within the Project area?	No new impact would occur and implementation of the MPA 07 design features and MPA 07 Mitigation Measure 7.5-20: Protect Tahoe Draba Populations within Heavenly Mountain Resort would continue.	<p>Potential to directly and indirectly impact Tahoe draba populations located in or near the Sky Meadows Zipline access/maintenance road and portions of the Mountain Excursion Tour (indirectly).</p> <p>Continued implementation of the MPA 07 mitigation measures and design features listed in Chapter 2 and implementation of VEG-1: Update MPA 07 Mitigation Measure 7.5-20: Protect Tahoe Draba Populations within Heavenly Mountain Resort will reduce the potential for adverse effects/impacts by relocating the access/maintenance road and providing adequate fencing to prohibit foot traffic.</p>	<p>Potential to directly and indirectly impact Tahoe draba populations located in or near the Sky Meadows Zipline access/maintenance road and Sky Basin Coaster access/maintenance road and portions of the Mountain Excursion Tour (indirectly).</p> <p>Continued implementation of the MPA 07 mitigation measures and design features listed in Chapter 2 and implementation of VEG-1: Update MPA 07 Mitigation Measure 7.5-20: Protect Tahoe Draba Populations within Heavenly Mountain Resort will reduce the potential for adverse effects/impacts by relocating the access/maintenance road and providing adequate fencing to prohibit foot traffic.</p>	Same as Proposed Action.

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
VEG-3: Would the project result in an increase to the risk/threat factors for listing of whitebark pine?	No change in acreage or numbers of whitebark pine would occur.	Potential for 14.84 acres of whitebark pine removal and 4.82 acres of removal within whitebark pine dominant stands, which is less than 1% acreage removal and is not expected to result in a trend toward federal listing. Future implementation of the Whitebark Pine Conservation Action Plan would protect populations.	Potential for 16.64 acres of whitebark pine removal and 6.62 acres of removal within whitebark pine dominant stands, which is less than 1% acreage removal and is not expected to result in a trend toward federal listing. Future implementation of the Whitebark Pine Conservation Action Plan would protect populations.	Same as Proposed Action.
VEG-4: Would the project result in a loss of TESPC, CNPS, FSS, or Nevada at Risk Botanical Species?	No change would occur and MPA 07 design features and MP 96 mitigation measures would continue to be implemented.	No known threatened, endangered, or sensitive plant species occur within the Special Use Permit Boundary and would not be directly impacted. MPA 07 design features and MP 96 mitigation measures would be implemented. Implementation of projects outside of the Lake Tahoe Basin may result in loss of individuals and habitat of Galena creek rock cress or Tahoe draba, but would not result in a trend toward federal listing or loss of viability to these species	Same as Proposed Action.	Same as Proposed Action.
VEG-5: Would the project adversely affect other botanical resources (e.g. LTBMU watch list, uncommon plant list communities, special aquatic features or Stream Environment Zones)?	No change would occur to affect other botanical resources.	No LTBMU watch list species are located in the project area. No impacts to uncommon plant species, fens, or bogs would occur. Minor loss of SEZ riparian vegetation would occur, but would not result in functioning habitat loss and is considered minor.	Same as Proposed Action.	Same as Proposed Action.

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>VEG-6: Will the Project result in the removal of any native live trees larger than 24-inch dbh, and late seral habitat as defined by TRPA or SNFPA?</p>	<p>No tree removal would occur.</p>	<p>Approximately 161 trees larger than 24" dbh would be removed (14.84 acres) as a result of constructing the Mid-station Canopy Tour, Forest Flyer, Sky Cycle Canopy Tour, East Peak Canopy Tour, Sky Meadows Canopy Tour, and Emergency Gondola Snowcat Evacuation Route. Removal of late seral old growth forest habitat would not occur. No adverse effect or significant impact would occur.</p>	<p>Approximately 188 trees larger than 24" dbh would be removed (16.64 acres) as a result of constructing the Mid-station Canopy Tour, Sky Cycle Canopy Tour, East Peak Canopy Tour, Sky Meadows Canopy Tour, Sky Basin Coaster, and Emergency Gondola Snowcat Evacuation Route. Removal of late seral old growth forest habitat would not occur. No adverse effect or significant impact would occur.</p>	<p>Same as Proposed Action.</p>
<p>VEG-C1: Will the project have significant cumulative impacts to vegetation?</p>	<p>No change would occur that would contribute to a significant cumulative impact.</p>	<p>Future effects would be reduced due to compliance with existing standards and regulations, project avoidance measures, or habitat mitigation plans. Continued implementation of measures 7.4-15 Minimize Removal/Modification of Deciduous Trees, Wetlands, and Meadows; 7.5-21 Protect Tahoe Draba Populations within Heavenly Mountain Resort; 7.5-22: Tahoe Draba Long-Term Conservation Strategy; 7.5-23: Minimize Loss/Degradation of Sensitive Plant Species; and 7.5-24 Noxious Weed Management would prevent future loss.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action.</p>

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
3.9 Wildlife and Fisheries				
BIO-1: Would the Project, directly or indirectly, cause a loss of individuals or occupied habitat of endangered or threatened fish or wildlife species?	No new effect would occur.	No threatened or endangered fish or wildlife species are known to nest or be present within 0.5 mile of the project area. Sierra Nevada yellow-legged frog has potential to occur within the Sky Meadows Basin (upland habitat) and East Peak Lake. Implementation of mitigation measure BIO-1: Delay Sky Meadows Challenge Course, Sky Basin Coaster and East Peak Lake Water Activities Until Sierra Nevada Yellow-legged Frog Surveys and USFWS Consultation are Complete would ensure that appropriate protection measures are implemented.	Same as Proposed Action.	Same as Proposed Action.
BIO-2: Would the Project cause a permanent loss of sensitive wildlife individuals, or habitat (e.g. Forest Service Sensitive, CA Species of Concern, NV At-Risk, TRPA Special Interest Species)?	No new loss of individuals or habitat would occur.	Minor impacts on bald eagle and osprey foraging habitat may occur. Minor impacts to Carson River mule deer foraging and movement habitat. The Sky Cycle Canopy Tour and Mid-Station Zipline Canopy Tour may affect up to 3.84 acres of northern goshawk habitat, which is 0.002% of suitable habitat and not a significant impact. Approximately 14.84 acres of Pacific marten habitat affected, particularly near the Forest Flyer, but significant impacts are not expected due to existing requirements for preconstruction surveys and the Forest Supervisor's ability to implement a Limited Operating Period.	Minor impact on bald eagle, osprey, and western bumblebee foraging habitat may occur. Minor impacts to Carson River mule deer foraging and movement habitat. The Sky Cycle Canopy Tour and Mid-Station Zipline Canopy Tour may affect up to 3.84 acres of northern goshawk habitat, which is 0.002% of suitable habitat and not a significant impact. Approximately 16.64 acres of Pacific marten habitat affected, but significant impacts are not expected due to existing requirements for preconstruction surveys and the Forest Supervisor's ability to implement a Limited Operating Period. Alternative 1 avoids impacts to known successful Pacific marten female reproductive habitat.	Same as Proposed Action.

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
BIO-3: Would the Project have an adverse effect to migratory land bird species or their associated habitats?	No change in facilities or operations would occur to affect migratory species.	Canopy activities such as the Sky Cycle Canopy Tour, Mid-Station Zipline Canopy Tour, East Peak Zipline Canopy Tour, Sky Meadows Zipline Canopy Tour and the Sky Meadows Challenge Course have the potential to disturb nesting and foraging migratory bird species. Fragmentation may result in edge effects. Implementation of preconstruction surveys, the Active Raptor and Migratory Bird Nest Site Protection Program, and mitigation measure BIO-3: Migratory Bird Limited Operating Period and Habitat Utilization Survey would ensure migratory birds are identified and appropriate buffers established.	Same as Proposed Action.	Same as Proposed Action, but to a lesser extent with elimination of the Sky Meadows Challenge Course.
BIO-4: Would the Project cause a loss of wildlife nursery/den sites and associated habitat?	No change would occur to result in loss of wildlife nursery/den sites or habitat	Increased summer human activity, including noise, potential harassment, and refuse, in Sky Meadows Basin, East Peak Lake Basin, and Adventure Peak have potential to directly and indirectly affect wildlife nursery sites, particularly for Pacific marten. Implementation of mitigation measure BIO-4: Wildlife Nursery Site Survey would ensure protection of nursery sites by identifying individual sites and establishing buffers as determined by the Forest Supervisor.	Same as Proposed Action.	Same as Proposed Action.
BIO-5: Would the Project substantially block or disrupt major fish or wildlife migration or travel corridors?	No change would occur to result in a new blockage or disruption of migration or travel corridors.	The project area does not contain fish migration corridors. The closest mapped Carson River Deer Herd migration corridor is located south of the project area. No significant impacts or effects would occur.	Same as Proposed Action.	Same as Proposed Action.

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>BIO-6: Would the Project alter the existing bioregional trend in habitats and ecosystem components, or lead to a change in the distribution of Management Indicator Species (MIS) across the Sierra Nevada Bioregion?</p>	<p>No new change would occur to affect MIS.</p>	<p>Impacts to MIS: CA spotted owl – (indirect) Panorama Trail, Sky Cycle Tour, and Mid-Station Zipline Canopy Tour.</p> <p>Blue grouse and mountain quail – (direct) Sky Cycle Tour, and Mid-Station Zipline, Forest Flyer, Emergency Gondola Snowcat Evacuation Route, Panorama Trail, East Peak Zipline, Mountain Bike Park, East Peak Lodge Trail, Sky Meadows Zipline, and Sky Meadows Challenge Course.</p> <p>No effects will occur to MIS or their associated habitat that will result in a downward trend in populations.</p>	<p>Impacts to MIS: CA spotted owl – (indirect) Same as Proposed Action.</p> <p>Blue grouse and mountain quail – (direct) Sky Cycle Tour, and Mid-Station Zipline, Emergency Gondola Snowcat Evacuation Route, Panorama Trail, East Peak Zipline, Mountain Bike Park, East Peak Lodge Trail, Sky Meadows Zipline, Sky Meadows Challenge Course, and Sky Meadows Basin Coaster.</p> <p>No effects will occur to MIS or their associated habitat that will result in a downward trend in populations.</p>	<p>Impacts to MIS: CA spotted owl – (indirect) Same as Proposed Action.</p> <p>Blue grouse and mountain quail – (direct) Sky Cycle Tour, and Mid-Station Zipline, Forest Flyer, Emergency Gondola Snowcat Evacuation Route, Panorama Trail, East Peak Zipline, Mountain Bike Park, East Peak Lodge Trail, and Sky Meadows Zipline.</p> <p>No effects will occur to MIS or their associated habitat that will result in a downward trend in populations.</p>
<p>BIO-7: Would the Project conflict with any federal, local, regional, or state policies or TRPA ordinances protecting wildlife resources, or with any applicable habitat conservation plans?</p>	<p>No change would occur that would result in a conflict.</p>	<p>There are no threatened or endangered wildlife species that would be negatively impacted. Minimal loss of habitat would not lead towards a trend to listing. Design measures will protect the delineated riparian habitat in Sky Meadows by requiring avoidance for access to the Sky Meadows Challenge Course. No impact or adverse effect would occur.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action, except elimination of the Sky Meadows Challenge Course results in fewer impacts to riparian habitat. No impact or adverse effect would occur.</p>

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
BIO-8: Would the Project result in increased human/wildlife interactions?	No new increase in human/wildlife interaction would occur.	Expansion of summer uses may result in increased human presence impacts to sensitive wildlife, including the generation of additional refuse, potential harassment and increased levels of noise that would result in increased frequency of interaction. Implementation of mitigation measure BIO-8: Wildlife Trash Management and Education Program would reduce the impact by providing adequate refuse collection and removal, including wildlife proof trash containers, and education measures.	Same as Proposed Action.	Same as Proposed Action.
BIO-C1: Will the project have significant cumulative impacts to biological resources?	No change would occur to contribute to a cumulative impact.	Timber thinning, increased human activity/disturbance, and additional recreational pressure could reduce available habitat for wildlife species and decreasing habitat suitability. Implementation of required mitigation measures offset these impacts and fuels reduction projects benefit habitat.	Same as Proposed Action.	Same as Proposed Action.

3.10 Visual Resources

SCENIC-1: Emergency Gondola Snow Cat Evacuation Route Would Create New Forest Clearings and Would be Visible Offsite	No visual change	Route clearing - 25 to 30 feet wide. The visibility of new forest clearings would detract from the scenic quality of views from U.S. Highway 50 and Lake Tahoe, but it would be visually subordinate to the existing man-made features and would not affect Scenic Quality ratings. The route would contribute to an existing EVC of Partial Retention, but would not be visually dominant and would be consistent with the VQO.	Same as Proposed Action.	Same as Proposed Action.
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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
SCENIC-2: Ridge Run Lookout Tower Would be Visible Off-site	No visual change	The lookout tower would not be large enough to be visually evident to casual observers from U.S. Highway 50 or State Route 89 and it would not contribute to the degradation of Scenic Quality and Travel Route Rating. The tower would contribute minimally to a Forest Service EVC of Unacceptable Modification, but would be consistent with the VQO of Partial Retention and with BEIG objectives.	Same as Proposed Action.	Same as Proposed Action.
SCENIC-3: The Forest Flyer Alpine Coaster Top Terminal, Sky Meadows Zipline Canopy Tour and Sky Basin Coaster Would Create New Forest Clearings and Would be Visible Off-site	No visual change	The Forest Flyer would not be visible from U.S. 50 and would not affect Visual Quality ratings. It would also be consistent with the EVC of Partial Retention. The Sky Meadows Canopy Tour would be partially visible; however not to the casual observer and would not degrade Visual Quality ratings. The Sky Meadows Canopy Tour would be located in an EVC of Unacceptable Modification, but would be consistent with the VQO of Partial Retention as the component would be subordinate to the landscape.	The Sky Meadows Canopy Tour would be partially visible; however not to the casual observer and would not degrade Visual Quality ratings. The Sky Meadows Coaster top terminal would not be visible from most viewpoints along scenic US 50 because of intervening topography and forest areas. The Sky Meadows Coaster and Sky Meadows Canopy Tour would be located in an EVC of Unacceptable Modification, but would be consistent with the VQO of Partial Retention as the component would be subordinate to the landscape.	Same as Proposed Action.
SCENIC-4: Proposed Project Components Would Create Changes to the Scenic Quality of Views within Heavenly Mountain	No visual change	Components would be visible from within Heavenly Mountain, but would remain subordinate to the surrounding landscape.	The Sky Basin Coaster would be visible from higher elevations in the Sky Meadows Basin, such as the Sky Express and Canyon Express Lifts, the Ridge Run Lookout Tower, and portions of the Mountain Excursion Tour roadway alignment near the top terminal; however, it would not be visible from other areas of the resort. Components would be visible from within Heavenly Mountain, but would remain subordinate to the surrounding landscape.	Elimination of the Challenge Course would result in less visual alteration than the Proposed Action or Alternative 1. Components would be visible from within Heavenly Mountain, but would remain subordinate to the surrounding landscape.

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
SCENIC-5: Proposed Project Components Would Be Visible from the Tahoe Rim Trail	No visual change	Only the Ridge Run Lookout Tower and portions of the East Peak Lake Basin Mountain Bike Park Advanced Trail and Panorama Trail (which intersects and extends the TRT) have the potential to be visible from the TRT. Trees along the TRT and trees within the Mountain Bike Park would limit views beyond each of the respective trails. These components would meet the VQO of Partial Retention.	Same as Proposed Action.	Same as Proposed Action.
SCENIC-C1: Cumulative Visual Resource	No visual change	Cumulative impacts from other Heavenly And non-Heavenly projects would not be discernable from the viewpoint locations used in the analysis, due to the distance between projects and the presence of intervening topography and vegetation.	Same as Proposed Action.	Same as Proposed Action.

3.11 Cultural Resources

CULT-1: Would the Project comply with Section 106 of the National Historic Preservation Act and TRPA Ordinances included in Code Chapter 67?	No change/No effect	Continued implementation of 2007 Master Plan mitigation measures 7.4-10 and 7.4-21 and Programmatic Agreement ensures compliance with Section 106 of the Historic Preservation Act and TRPA Code Chapter 67.	Same as Proposed Action.	Same as Proposed Action.
CULT-C1: Will the project have significant cumulative impacts to cultural resources?	No change/No effect	Each project in the area would be surveyed as required by NEPA and SHPO prior to commencement to determine the presence or absence of cultural resources. Continuation of the Annual Mitigation and Monitoring Program as approved in the 2007 Master Plan will provide data necessary to monitor potential cumulative impacts to cultural resources.	Same as Proposed Action.	Same as Proposed Action.

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
3.12 Land Use				
LU-1: Will the Project be inconsistent with the TRPA Regional Plan, Code of Ordinances or Plan Area Statements 086 or 087?	No change/No effect	Summer day use PAOTs – 475 in-basin + 205 out-of-basin No inconsistencies	Summer day-use PAOTs– 550 in-basin + 205 out-of-basin No inconsistencies	Summer day-use PAOTs– 455 in-basin + 205 out-of-basin No inconsistencies
LU-2: Will the project be inconsistent with the LTBMU Forest Plan and Forest Service policy for Additional Year-Round Recreation Activities at Ski Areas?	No change/No effect	The components are consistent with the general management direction contained within the 1988 Forest Plan and with the 2011 SAROEA.	Same as Proposed Action.	Same as Proposed Action.
LU-3: Will the project be inconsistent with local General Plan designations?	No change/No effect	Project components are consistent with the Alpine County General Plan and TRPA Regional Plan (El Dorado County).	Same as Proposed Action.	Same as Proposed Action.

Impact	No Action	Proposed Action	Alternative 1	Alternative 2
3.13 Recreation				
<p>REC-1: Is the Project consistent with Forest Plan Standards and Guidelines and objectives for summer recreation at ski areas as authorized by SAROE A?</p>	<p>Consistent with Forest Service objectives, but does not support the purpose and need or goals of SAROE A to enhance recreational opportunities at ski areas.</p>	<p>Consistent with Forest Service objectives for summer recreation at ski areas as authorized by SAROE A and the purpose and need.</p> <p>Consistent with the overall atmosphere at Heavenly Mountain Resort as a developed recreation facility</p> <p>Additional use of the Tahoe Rim Trail and/or Van Sickle Trail resulting from the mountain bike park and connector trails would be consistent with the intended use and management of these trails and is not anticipated to degrade the recreational experience. If a reduction in quality of the experience is observed, improvements would be required.</p>	<p>Consistent with Forest Service objectives for summer recreation at ski areas as authorized by SAROE A and the purpose and need.</p> <p>Consistent with the overall atmosphere at Heavenly Mountain Resort as a developed recreation facility.</p> <p>Additional use of the Tahoe Rim Trail and/or Van Sickle Trail would be consistent with the intended use and management of these trails. The Sky Meadows Coaster would be located in closer proximity to other recreation infrastructure, would be more visible, and would have more impacts on the winter recreational experience than the Forest Flyer. The Sky Meadows Coaster would be located in an area often used for tree-skiing and approximately 22 acres immediately surrounding the coaster track would be fenced-off and closed to skiing.</p>	<p>Consistent with Forest Service objectives for summer recreation at ski areas as authorized by SAROE A and the purpose and need.</p> <p>Consistent with the overall atmosphere at Heavenly Mountain Resort as a developed recreation facility</p> <p>Additional use of the Tahoe Rim Trail and/or Van Sickle Trail would be consistent with the intended use and management of these trails. Exclusion of the Sky Meadows Challenge Course reduces potential opportunities for outdoor recreation and enjoyment of nature.</p>

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
<p>REC-2: Would the Project result in decreased availability or degradation of a high quality recreational experience?</p>	<p>No change in recreational opportunities would occur that would decrease availability or degrade existing recreational experiences. Likewise no increase in availability or enhancement of the recreational experience would occur.</p>	<p>Proposed components would expand the range of additional summer and year-round activities suitable for users of different abilities, interests, and familiarity with outdoor recreation.</p> <p>Additional use of the Tahoe Rim Trail and/or Van Sickle Trail resulting from the mountain bike park and connector trails would be consistent with the intended use and management of these trails and is not anticipated to degrade the recreational experience. If a reduction in quality of the experience is observed, improvements would be required as outlined in design features included in the project description.</p>	<p>Same as Proposed Action.</p>	<p>Alternative 2 would less effectively meet the Purpose and Need stated in Chapter 1, when compared with the Proposed Action and Alternative 1 due to the exclusion of the Sky Meadows Challenge Course. The Sky Meadows area would be less of a destination as the only recreational opportunities would be the Mountain Excursion Tour and Sky Meadows Zipline.</p> <p>Additional use of the Tahoe Rim Trail and/or Van Sickle Trail resulting from the mountain bike park and connector trails would be consistent with the intended use and management of these trails and is not anticipated to degrade the recreational experience. If a reduction in quality of the experience is observed, improvements would be required as outlined in design features included in the project description.</p>
<p>REC-3: Would the Project conflict with an established recreational use in the area?</p>	<p>No change in existing recreational opportunities or use would occur.</p>	<p>The proposed projects would enhance the variety of activities available to existing user groups, and would not displace any particular group of users.</p> <p>Additional use of the Tahoe Rim Trail and/or Van Sickle Trail resulting from the mountain bike park and connector trails would be consistent with the intended use and management of these trails. The recreational experience on these trails would be monitored, and if a reduction in the quality of the experience or degradation of the facility were observed, improvements would be required.</p>	<p>Same as Proposed Action.</p>	<p>Same as Proposed Action.</p>

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Impact	No Action	Proposed Action	Alternative 1	Alternative 2
REC-4: Would the Project result in the need for new or expanded parks or recreational facilities?	A need for new or expanded recreational facilities would not occur as there would be no change in existing conditions.	New and expanded recreational opportunities would result; however no increase in the approved buildout capacity would occur and there would be no requirement for additional facilities to serve new populations.	Same as Proposed Action.	Same as Proposed Action.
REC-C1: Will the project result in cumulative impacts to recreational uses or resources?	No change would occur that would contribute to a cumulative impact or that would improve recreational opportunities.	The recreational experience at Heavenly Mountain Resort and the surrounding area would be improved and enhanced through the variety of year-round and summer outdoor recreational opportunities.	Same as Proposed Action.	Same as Proposed Action.
3.14 Socioeconomics				
None	--	--	--	--
Source: HBA, 2014				