3.4 GEOLOGY AND SOILS

3.4-1 INTRODUCTION

This Chapter tiers from Chapter 4.4 of the Heavenly Ski Area Master Plan EIR/EIS/EIS, referred to as the MP 96 EIR/EIS/EIS, and Chapter 3.4 of the Heavenly Mountain Resort Master Plan Amendment EIR/EIS/EIS, referred to as the MPA 07 EIR/EIS/EIS. This Chapter addresses the in-basin land coverage regulations and required findings of the TRPA Code of Ordinance Chapter 30 (Land Coverage) and describes how the Project would comply with requirements for stable soil conditions during and following project construction.

Potential environmental effects related to surface runoff and soil erosion are addressed in Chapter 3.1 Water Resources: Water Quality, Hydrology and Cumulative Watershed Effects.

3.4-2 ENVIRONMENTAL AND REGULATORY SETTING

The subsections below provide updates to the regulatory settings and available data since adoption of the MPA 07. More detailed descriptions of geology, topography, seismicity, and soils in the Lake Tahoe Basin and Carson Range are referenced to Chapter 4.4 of the MP 96 EIR/EIS/EIS with additional data on the seismicity and landslide features of the project area provided in Chapter 4.14, Public Health and Safety Hazards.

3.4-2.1 Regulatory

TRPA

The in-basin portion of Heavenly Mountain Resort is regulated by the TRPA Land Coverage Standards found in Chapter 30 of the Code of Ordinances. Chapter 30 sets forth "…regulations for the permissible amount of land coverage within the Region. It implements provisions of the Goals and Policies concerning the land capability system, land capability districts, prohibitions of additional land coverage in certain land capability districts, and transfer and mitigation of land coverage." TRPA Code Subsection 30.4.4 of the Code outlines the regulations and requirements for Relocation of TRPA-Verified Existing Land Coverage. Relocation of existing land coverage would be necessary to accommodate the No Action, Proposed Action, and Alternatives, as exceedance of the TRPA's allowable land coverage standards is considered a significant impact. Additionally, alteration of soil and geologic substructures is considered a significant impact.

The classification of land is based on the report entitled *Land Capability Classification of the Lake Tahoe Basin, California-Nevada* (Bailey 1974), as described in TRPA Code Subsection 30.4, Land Coverage Limitations. The land classification system ranks land into seven levels of capability according to the frequency and magnitude of natural hazards (*i.e.*, floods, landslides, high water tables, poorly drained soil, fragile flora and fauna, and easily erodible soil). There are grading standards set forth in TRPA Code

Chapters 30 and 33. Limitations include no excavation, filling, or clearing of vegetation or other disturbance of the soil between October 15 and May 1 of each year, unless approval is granted by TRPA and Lahontan. Grading schedule standards are established in Section 33.5 of the Code. A grading schedule is required by TRPA prior to approval and project construction.

Lahontan –Regional Water Quality Control Board

Section 402 of the Clean Water Act (CWA) is directly relevant to earthwork and grading in the project area and establishes the National Pollutant Discharge Elimination System (NPDES) program Lahontan implements in Lake Tahoe. Projects with construction activities disturbing greater than one acre in California must apply for coverage under Board Order No R6T-2011-019, prepare a Notice of Intent (NOI) and implement a Stormwater Pollution Prevention Plan (SWPPP). BMPs must be installed and maintained throughout project construction to avoid adverse impacts to receiving water quality as defined by Chapter 5 of the Lahontan Basin Plan. Upon completion of the Project, Heavenly Mountain Resort must submit a Notice of Termination (NOT) to Lahontan to indicate that construction is completed. Further information regarding Lahontan's requirements for NPDES permitting is set forth in Chapter 3.1 (Hydrology, Water Quality and Cumulative Watershed Effects).

Section 5.4 of the Basin Plan outlines land capability and coverage limitations and section 5.7 outlines protections for SEZ, low capability land capability districts (LCDs), and floodplains. Section 5.8 includes prohibitions on SEZ disturbance and the criteria for exemptions.

Douglas, El Dorado and Alpine Counties

The out-of-basin portion of Heavenly Mountain Resort located on public land is held to management standards outlined in the Sierra Nevada Forest Plan, as amended by the Forest Plan Record of Decision. Privately-owned land on the Nevada-side of Heavenly Mountain Resort is located in Douglas County.

For land within El Dorado County, the goals, objectives, and policies of the 2004 El Dorado County General Plan apply to the impact analysis of geologic and soil resources of the Project. Specific policy language appears in the Policy Section under Soil (Objective 7.1.1 to Objective 7.1.2).

For land in Alpine County, the goals, policies, and objectives of the Alpine County General Plan apply to the impact analysis of earth resources of the project. Specific policy language appears in the Conservation Element Section IA for Earth (Element I-Section I, GP Goal No. 1, Policy No. 1, Objective No. 1).

Alpine, El Dorado and Douglas Counties require new development to conform to the Uniform Building Code in place at the time of construction, to ensure public safety.

3.4-2.2 Physical Settings

Topography, Geology, Seismicity

Heavenly Mountain Resort is situated along the Carson Range, east of the southern portion of Lake Tahoe. Located in the States of Nevada and California, Heavenly is typically broken down into the "California side" and the "Nevada side." Almost all the California side and portions of the Nevada side of Heavenly are within the Lake Tahoe Basin, which lies on the east side of the Sierra Nevada physiographic province, between elevations of 6,200 and 10,000 feet (ft) above mean sea level (MSL). The Basin includes approximately 500 square miles, with 192 square miles (38%) covered by Lake Tahoe.

The Lake Tahoe Basin is classified as Zone III on the State of California's Earthquake Epicenters, Faults and Intensity Zone Map. The V-shaped structural Basin that contains Lake Tahoe was formed by faulting. The Lake occupies the down-dropped block (graben) and is bordered by steep faults. The southern end of the basin in the vicinity of the project area consists of a flat plain of lake bed deposit, glacial outwash, and glacial moraines bounded by high granite/metamorphic rock peaks.

The potential to seismicity correlates to the proximity of faults. The North Tahoe-Incline Village Fault, West Tahoe-Dollar Point Fault and the East Tahoe Fault are active faults located beneath Lake Tahoe. No active faults have been mapped within the project area.

Soils

Project area soils are mapped in three soil survey areas: Tahoe Basin Area (USDA 2007), Douglas County Area (USDA 1984), and Eldorado National Forest Area (USDA 1985). Figure 3.4-1 illustrates the soil map units mapped within the project areas, 3.4-1 details soil characteristics, including erosion hazard, parent material, depth to bedrock, corrosion risk and frost action potential. Suitability for footpaths and trails is also stated. Two of the map units from the Eldorado survey mapped in the East Peak Reservoir Basin may not correctly represent the soils on the ground. Units 112 and 113 are soils derived from andesitic lahar, mudflows of volcanic origin. The geologic map (Saucedo, 2004) shows only granitic rocks in the project area, and limited mapping of the Heavenly special use permit area done by the Forest Service in 1995 also shows only granitic soils.

While the soils in the project area may present some implementation and maintenance challenges, the Project can be implemented without significantly impacting the long-term productivity of the soils. Soil depth is highly variable. Rock outcrops are common, and soil depth ranges from 8 inches to more than 80 inches, so some footings or other structures may need to be anchored in bedrock. There is little hard bedrock, with most bedrock soft to moderately-cemented (Table 3.4-1). A few soils have a moderate to high risk of corrosion for concrete and uncoated steel, which is considered in site-specific design. Similarly, a few soils have moderate to high potential for frost action.

Table 3.4-1

Epic Discovery Project Area Soils

Map Unit Symbol	Map Unit Name	Soil Survey	Suitability for Paths and Trails	Erosion Hazard Rating	Parent Rock	Bedrock		Risk of Corrosion		Potential Frost Action
						Depth (inches)	Hardness	Uncoated Steel	Concrete	
112	Cohasset-McCarthy association, 2 to 30 percent slopes	Eldorado NF	Moderate: slope, dusty	Slight-Moderate	andesitic lahar	20-72	soft	Moderate-High	High	no data
113	Cohasset-McCarthy association, 30 to 50 percent slopes	Eldorado NF	Moderate: slope, dusty	Severe	andesitic lahar	20-72	soft	Moderate-High	High	no data
140	Hartless-Neuns complex, 30 to 75% slopes	Eldorado NF	Severe: slope	Severe	meta-sediments	20-80	soft or hard	Moderate-High	Moderate-High	no data
161	Witefels-Rock outcrop complex, 4-15% slopes	Douglas County	Moderate: too sandy	Slight	granitic	20-40	soft	Moderate	Moderate	Low
162	Witefels-Rock outcrop complex, 15-30% slopes	Douglas County	Moderate: too sandy, slope	Moderate	granitic	20-40	soft	Moderate	Moderate	Low
163	Witefels-Rock outcrop complex, 30-50% slopes	Douglas County	Severe: slope	Moderate	granitic	20-40	soft	Moderate	Moderate	Low
931	Temo-Rock outcrop complex, 30-50% slopes	Douglas County	Severe: slope	Moderate	granitic	8-20	soft	Low	Moderate	Low
932	Temo-Rock outcrop complex, 50-70% slopes	Douglas County	Severe: slope	Moderate	granitic	8-20	soft	Low	Moderate	Low
942	Toiyabe-Rock outcrop	Douglas	Severe: slope	Moderate	granitic	10-20	soft	Moderate	Moderate	Low

Map Unit Symbol	Map Unit Name	Soil Survey	Suitability for Paths and Trails	Erosion Hazard Rating	Parent Rock	Bedrock		Risk of Corrosion		Potential Frost Action
						Depth (inches)	Hardness	Uncoated Steel	Concrete	
	complex, 50-75% slopes	County								
7425	Cassenai cobbly loamy coarse sand, moist, 5 to 15 percent slopes, very bouldery	Tahoe Basin	Low: rocky	Slight-Moderate	granitic	20- >80	moderately cemented	Low-Moderate	Low-Moderate	Low
9001	Bidart complex, 0 to 2 percent slopes	Tahoe Basin	Low: saturation at <12", flooding	Slight	mixed alluvium	>80	----	High	High	High
9401	Dagget very gravelly loamy coarse sand, 15 to 30 percent slopes, extremely bouldery	Tahoe Basin	Low: rocky, slope	Moderate-Severe	granitic	39-59	moderately cemented	Low	Low	Moderate
9402	Dagget very gravelly loamy coarse sand, 30 to 50 percent slopes, extremely bouldery	Tahoe Basin	Low: slope, rocks >10"	Severe	granitic	39-59	moderately cemented	Low	Low	Moderate
9403	Dagget very gravelly loamy coarse sand, 50 to 70 percent slopes, extremely bouldery	Tahoe Basin	Low: slope, rocks >10"	Severe	granitic	39-59	moderately cemented	Low	Low	Moderate
9421	Jobsis-Whittell-Rock outcrop complex, cool, 8 to 30 percent slopes	Tahoe Basin	Low-Moderate: rocks >10"	Moderate-Severe	granitic	10-39	weakly to moderately cemented	Low-High	Low-High	Moderate - High
9442	Temo-Witefels complex, 15 to 30 percent slopes	Tahoe Basin	Low: sandy, rocks >10"	Moderate-Severe	granitic	10-39	moderately cemented	Low-Moderate	Low-Moderate	Low-Moderate
9443	Temo-Witefels complex, 30 to 50 percent slopes	Tahoe Basin	Low: sandy, rocks >10", slope	Severe	granitic	10-39	moderately cemented	Low-Moderate	Low-Moderate	Low-Moderate

Map Unit Symbol	Map Unit Name	Soil Survey	Suitability for Paths and Trails	Erosion Hazard Rating	Parent Rock	Bedrock		Risk of Corrosion		Potential Frost Action
						Depth (inches)	Hardness	Uncoated Steel	Concrete	
9444	Temo-Witefels complex, 50 to 70 percent slopes	Tahoe Basin	Low: sandy, rocks >10", slope	Severe-Very Severe	granitic	10-39	moderately cemented	Low-Moderate	Low-Moderate	Low-Moderate
9461	Whittell-Jobsis-Rock outcrop complex, cool, 30 to 75 percent slopes	Tahoe Basin	Moderate: rocks >10", slope	Severe-Very Severe	granitic	10-39	weakly to moderately cemented	Low-High	Low-High	Moderate - High

Source: NRCS Tahoe Soil Survey (2007),, El Dorado National Forest Soil Survey (1974), Douglas County Soil Survey (1984)

1 See definition of Land Capability Class (LCD) in Table 4.4-2 of MP 96 EIR/EIS/EIS
2 See definition of allowable percentage of impervious land coverage in Table 4.4-3 of MP 96 EIR/EIS/EIS

The steep slopes found in much of the project area result in moderate to severe erosion hazard ratings; design and maintenance of trails and other areas of soil that will remain un-vegetated will be critical to limiting erosion. The presence of large rocks (>10 inches diameter) will present challenges to road and trail construction, but this is an operational issue that should not impact soils.

While the soils in the project area may present some implementation and maintenance challenges, the Project can be implemented without significantly impacting the long-term productivity of the soils. Soil depth is highly variable.

Allowable Land Coverage

Soils and land capability at Heavenly have been mapped and revised over the past 20 plus years. Heavenly-specific land capability verification and soils mapping was initiated in 1991 (Almarez and Pepi 1991). The classification of land within the Tahoe Basin is based on the report entitled *Land Capability Classification of the Lake Tahoe Basin, California-Nevada* (Bailey 1974). A summary of land capability classifications for Lake Tahoe (Bailey 1974) is provided in TRPA Code Subsection 30.4.4. Bailey land capability classes define the allowable percentage of land coverage, ranging from 30 percent for low hazard lands to 1 percent for high hazard lands.

TRPA and NRCS 1991 soil investigations and land capability verification determined that the Heavenly Mountain Resort special use permit area contains Land Capability Districts (LCD) 7, 4, 2, 1a, 1b, and 1c. The MP 96 EIS/EIS/EIR analysis of existing permanent in-region land coverage determined that a majority of the lands contained within the Heavenly special use permit boundary were located in geomorphic Group I (High Hazard Land) classified as LCD 1a with some areas of LCD 1b (Stream Environment Zone). Therefore, using a worst-case assumption, the total base allowable land coverage at Heavenly would be 47.15 acres, allowing 1 percent land coverage within the permit area of 4,715 acres. Base allowable land coverage within the Heavenly special use permit boundary is 2,053,854 square feet (ft^2).

Existing Land Coverage

Upon adoption of the MPA 07, a balance of 439,044 ft^2 of base allowable and banked land coverage remained within the Heavenly special use permit area. Since the MPA 07, TRPA has made findings for and permitted in-basin projects that have utilized an additional 114,649 ft^2 of land coverage in LCD 1a and 396 ft^2 of land coverage in LCD 1b. TRPA has also permitted 54,501 ft^2 of LCD 1a land coverage for approved but not constructed hiking trails in the gondola area. Including the approved but unbuilt land coverage for gondola hiking trails, the remaining allowable base and banked land coverage is 269,498 ft^2 (265,430 and 4,068 ft^2 in LCD 1a and LCD 1b, respectively). The remaining allowable base and banked land coverage for the in-basin projects without the gondola hiking trails is 323,999 ft^2 (i.e., 319,931 and 4,068 ft^2 in LCD 1a and LCD 1b, respectively). Heavenly Mountain Resort is currently in compliance with Section 30.6 of TRPA Code of Ordinance.

3.4-3 EVALUATION CRITERIA

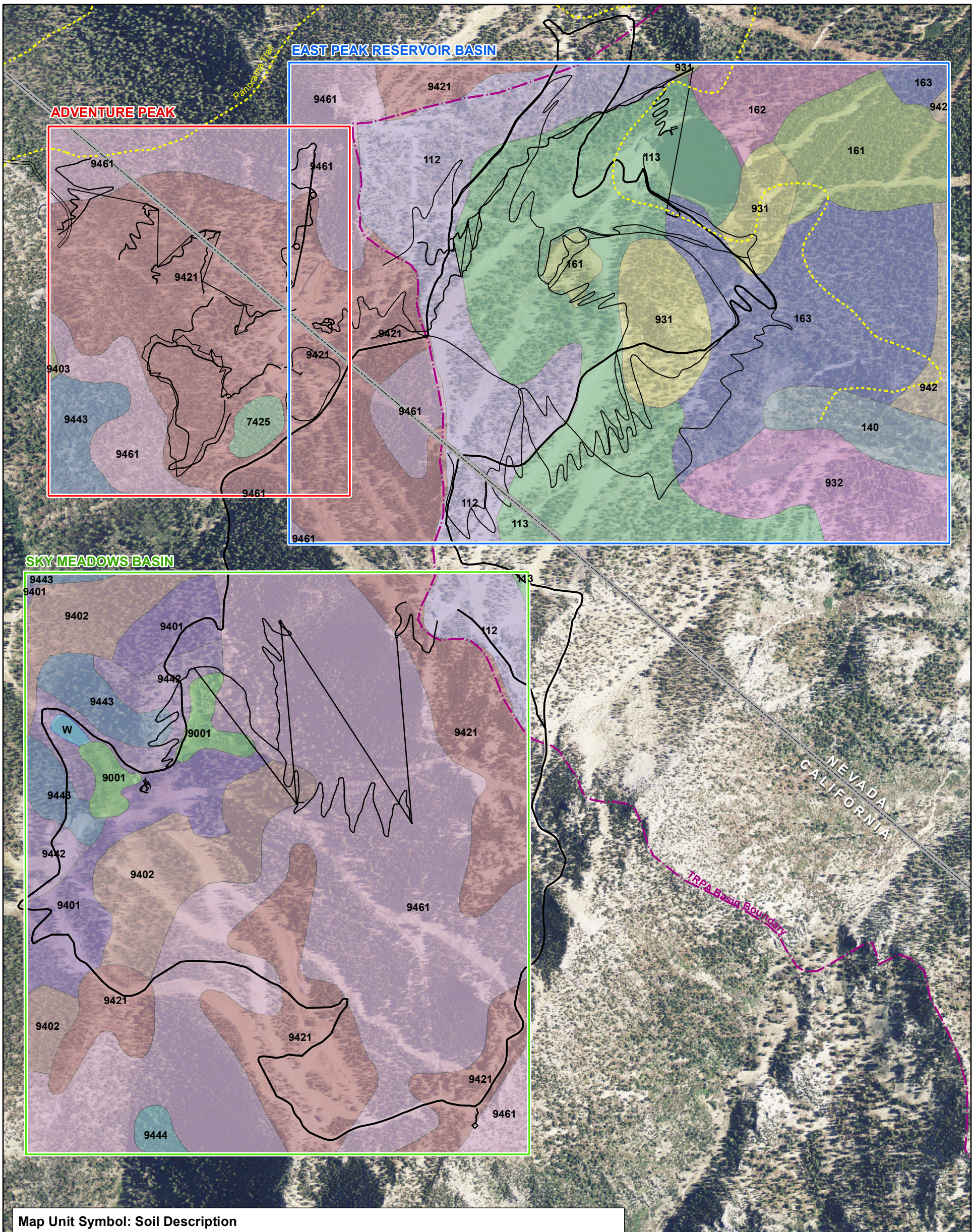
A Project impact is considered significant if conditions presented in Table 3.4-2 are met or exceeded.

Table 3.4-2

Evaluation Criteria with Point of Significance – Geology and Soils

Evaluation Criteria	As Measured by	Point of Significance	Justification
GEO-1. Would the project result in covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System?	TRPA land coverage limitations	Exceedance of TRPA allowable base land coverage as specified by the Bailey Land Capability Classification System	TRPA Code of Ordinances Chapter 30 Lahontan Basin Plan Section 5.4
GEO-2. Would project construction of new summer activities impact soil quality and function or create unstable soil conditions?	Compliance of construction activities with requirements of the TRPA Code of Ordinances or US Forest Service Soil and Water Conservation Handbook or Lahontan Basin Plan Chapter 5.3	Non-compliance with Construction and Project Permits Topography or ground surface relief features are permanently altered Project components located within a known active fault and the soil substrate consists of material that is subject to liquefaction or other secondary seismic hazards in the event of groundshaking Project area shows evidence of static hazards, such as landsliding or soils characterized by shrink/swell potential	TRPA Code of Ordinances Chapter 33 and Chapter 30 LTBMU Forest Plan Standards and Guidelines Sierra Nevada Forest Plan Lahontan Basin Plan Chapter 5.3 Uniform Building Code, as amended

Source: HBA 2014



Map Unit Symbol: Soil Description

- 112:Cohasset-McCarthy association, 2-30% slopes
- 113: Cohasset-McCarthy association, 30-50% slopes
- 140: Hartless-Neuns complex, 30-75% slopes
- 161: Witefels-Rock outcrop complex, 4-15% slopes
- 162: Witefels-Rock outcrop complex, 15-30% slopes
- 163: Witefels-Rock outcrop complex, 30-50% slopes
- 931: Temo-Rock outcrop, 30-50% slopes
- 932: Temo-Rock outcrop, 50-70% slopes
- 942: Toiyabe-Rock outcrop, 50-75% slopes
- 7425: Cassenai cobbly loamy coarse sand, moist, 5-15% slopes, very bouldery
- 9001: Bidart complex, 0-2% slopes
- 9401: Dagget very gravelly loamy coarse sand, 15-30% slopes, extremely bouldery
- 9402: Dagget very gravelly loamy coarse sand, 30-50% slopes, extremely bouldery
- 9403: Dagget very gravelly loamy coarse sand, 50-70% slopes, extremely bouldery
- 9421: Jobsis-Whittell-Rock outcrop complex, cool, 8-30% slopes
- 9442: Temo-Witefels complex, 15-30% slopes
- 9443: Temo-Witefels complex, 30-50% slopes
- 9444: Temo-Witefels complex, 50-70% slopes
- 9461: Whittell-Jobsis-Rock outcrop complex, cool, 30-75% slopes
- W: Water

Data sources: United States Department of Agriculture, Soil Conservation Service,1984, Soil Survey of the Douglas County Area, Nevada; United States Department of Agriculture, Forest Service in cooperation with Soil Conservation Service, 1985, Soil Survey of Eldorado National Forest Area; United States Department of Agriculture, Natural Resources Conservation Service, 2007, Soil survey of the Tahoe Basin Area, California and Nevada. Accessible online at: http://soils.usda.gov/survey/printed_surveys/ (Access date May 20, 2014). Map date: July 1, 2014. Revised August 12, 2014.

HEAVENLY MOUNTAIN RESORT EPIC DISCOVERY PROJECT

FIGURE 3.4-1:
SOILS WITHIN PROJECT AREAS

N

0 500 1,000
Feet

1:12,000

HAUGE BRUECK
ASSOCIATES

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3.4-4 ENVIRONMENTAL IMPACTS

This section provides a project-level analysis for components included in the Proposed Action and Alternatives. Impacts associated with temporary and permanent disturbance are analyzed for extent of short and long-term erosion but are not considered to significantly affect topography or ground surface relief features. The locations of new structures are not considered within known active faults or soils subject to unstable conditions from liquefaction, expansion, or corrosion. Detailed geotechnical explorations to identify project-level geologic hazards are performed for new facilities and structures for project permitting and prior to construction, as required by federal and state laws. Hiking, biking and maintenance trails by their very nature would be located on steep slopes and would be design to comply with federal, regional, state and local regulations to avoid and minimize unstable soil conditions.

The Project would not expose people or structures to adverse geological hazards, including risk of loss, injury, or death involving fault rupture, strong seismic ground shaking, seismic related ground failure (e.g., liquefaction), or landslides. The impact level is less than significant based on the past record of no loss, injury or death involving geologic hazards within the project area.

3.4-4.1 No Action Alternative

Potential impacts from land coverage and soil disturbance and associated mitigation measures for the No Action Alternative are analyzed in detail in Chapters 3.1 and 3.4 of the MPA 07 Final EIR/EIS/EIS. Approximately 112,518 ft^2 of new land coverage within the Lake Tahoe Basin would occur as a result of the build out of the No Action Alternative, as detailed in Appendix 2-A of the MPA 07 EIR/EIS/EIS. Heavenly is currently in compliance with Section 30.6 of TRPA Code of Ordinance. Based on past project records and operations, existing facilities are not located in areas of soils susceptible to significant collapse, subsidence, corrosion or expansion.

3.4-4.2 All Action Alternatives

IMPACT: GEO-1: Would the project result in covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System?

The Proposed Action and Alternatives would add new land coverage within the in-basin portion of the Heavenly Mountain Resort special use permit boundary. This new land coverage would be associated with facilities outlined in the existing 2007 MPA (No Action Alternative) and proposed Epic Discovery Project components.

Project implementation would result in impacts associated with the addition of new land coverage within low capability land at Heavenly Mountain Resort (Geomorphic Unit 1) and the potential removal and disposal of excess soil resulting from project excavation.

The Proposed Action would add ~~108,012~~107,408 ft^2 of new land coverage, 107,240 and ~~772~~ 168 ft^2 in LCD 1a and LCD 1b, respectively (Table 3.4-3). Alternative 1 would result in an additional 992 ft^2 of new land coverage (for a

total of ~~109,004~~108,400 ft^2) with an increase of 622 and 370 ft^2 in LCD 1a and LCD 1b, respectively. Alternative 1 adds the Sky Meadows Basin Coaster (6,660 ft^2 of total land coverage) but removes the Forest Flyer Alpine Coaster (5,668 ft^2 of total land coverage). Alternative 2 would eliminate the Sky Meadows Challenge Course (~~742~~ 138 ft^2 of coverage~~ including 604 ft^2 in LCD 1b~~), resulting in a total land coverage amount of 107,270 ft^2.

The land coverage allocated since adoption of the MPA 07 and proposed for the Proposed Action and Alternatives would be less than the 439,044 ft^2 of land coverage remaining within the Heavenly Mountain Resort special use permit area at the time of MPA 07 adoption. However, to construct the land coverage proposed at Heavenly Mountain Resort, TRPA must make findings to allow new land coverage on low capability land. TRPA Code Subsection 30.5 findings for new land coverage associated with the Project.

Subsection 30.5.1.B of the TRPA Code provides an exception to the prohibition of land coverage and disturbance in LCDs 1a, 1c, 2 and 3 for public outdoor recreation facilities, stating that land coverage and disturbance for public outdoor recreation facilities, which includes public recreation projects on public lands, private recreation projects through use of public lands, and private recreational projects on private lands depicted or provided for on a public agency's recreational plan, may be permitted if certain findings can be made. TRPA Code Subsection 30.5.2 provides for exceptions to prohibitions in LCD 1b, Stream Environment Zones if certain findings can be made. Lahontan Basin Plan Section 5.4 and TRPA Code Subsection 30.4.4 (A-D) provides for existing TRPA-verified land coverage to be relocated on the same parcel or project area if certain findings can be made. These findings are presented in the CEQA and TRPA land coverage analyses that follow.

Table 3.4-3

Heavenly TRPA In-Basin Land Coverage Summary - Estimated New Land Coverage

New Coverage	Proposed Action		Alternative 1 (Sky Basin Coaster)		Alternative 2 (Eliminate Sky Challenge Course)	
	LCD 1a	LCD 1b/SEZ	LCD 1a	LCD 1b/SEZ	LCD 1a	LCD 1b/SEZ
Adventure Peak Epic Discoveries						
Alpine Coaster Forest Flyer						
Buildings (terminal, bull wheels, shed)	3,170		N/A		3,170	
Coaster	1,256		N/A		1,256	
Trails	810		N/A		810	
Parking	432		N/A		432	
Sky Cycle						
Structures	1,511		1,511		1,511	
Trails and Queuing Areas	18,255		18,255		18,255	
Maintenance Road	4,898		4,898		4,898	
Mid Station Canopy Tour						
Trails and Queuing Areas	11,538		11,538		11,538	
Structures	80		80		80	
In-fill Activities						
Trails	3,938		3,938		3,938	
Mountain Bike Skills Park	15,182		15,182		15,182	
Concrete Pad for Bike Rental Area	2,000		2,000		2,000	
Total Adventure Peak Epic Discoveries	**63,070**		**57,402**		**63,070**	
East Peak Basin Epic Discoveries						
East Peak Lodge Hiking Trail	1,210		1,210		1,210	
Mountain Bike Park (Segments B3-1 and B3-2)	15,144		15,144		15,144	
Total East Peak Basin Epic Discoveries	**16,354**		**16,354**		**16,354**	
Sky Meadows Basin Epic Discoveries						
Sky Basin Zip Line						
Trails and Queuing Areas	24,150	168	24,150	168	24,150	168
Sky Meadows Challenge Course						
Trails	138	~~604~~	138	~~604~~	N/A	N/A
Mountain Excursion Tour						
Parking/Pullouts	440		440		440	
Ridge Run Lookout Tower						
Sky Express Deck Expansion	1,000		1,000		1,000	
Structures	992		992		992	
Parking/Pullouts	440		440		440	
Trails	656		656		656	
Sky Meadows Alpine Coaster						
Buildings (terminal, bull wheels, shed)	N/A	N/A	4,320		N/A	N/A
Coaster	N/A	N/A	1,970	370	N/A	N/A
Total Sky Meadows Basin Epic Discoveries	**27,816**	**~~772~~168**	**34,106**	**~~1,142~~538**	**27,678**	**168**
Total New Land Coverage	**107,240**	**~~772~~168**	**107,862**	**~~1,142~~538**	**107,102**	**168**
Total New Land Coverage (1a and 1b)	**~~108,012~~ 107,408**		**~~109,004~~ 108,400**		**107,270**	

Source: RCI Epic Discovery Plan Sets February 2014

N/A – Not Applicable; Project Component Not Included in Proposed Project and/or Alternative

CEQA

Analysis: *~~Potentially~~ Less than Significant; Proposed Action and Alternatives 1 and 2 ~~Less than Significant; Alternative 2~~*

Compliance with the TRPA Regional Plan and Code Chapter 30 would generally ensure compliance with El Dorado County's General Plan and Lahontan Basin Plan Sections 5.4 and 5.7. The Regional Board relies on TRPA to ensure that coverage relocation complies with the required criteria. If the Regional Board finds that TRPA is not fully implementing these criteria, the Board reserves the right to review projects involving relocation of land coverage in accordance with the language included in this Basin Plan. The Regional Board may also determine that site-specific or project-specific water quality impacts or issues warrant its review of coverage relocation separately from TRPA. Findings for new land coverage and new SEZ disturbance are presented in the TRPA analysis that follows (refer to Table 3.4-4).

Basin Plan Section 5.8 outlines additional restrictions on new development, stating that no further construction in SEZs shall occur with limited exceptions. To protect the natural treatment capacity of SEZs, and to prevent channelized flows from causing erosion, encroachment of SEZs must not be allowed. The Regional Board shall grant exemptions to the prohibitions against discharges or threatened discharges attributable to new development or permanent disturbance in SEZs only under the following circumstances:

For public outdoor recreation facilities if all of the following findings can be made:

(a) The project by its nature must be sited in a Stream Environment Zone (in making this determination the Regional Board should use the criteria in Table 5.7-3);

Basin Plan Table 5.7-3 provides guidelines regarding public outdoor recreation facilities and activities that create additional land coverage or permanent disturbance and which, by their very nature need not be sited on sensitive land. Prohibited activities of facilities are identified as parking areas, base lodge facilities and offices, and retail shops, unless there is no feasible non-sensitive site pursuant to a TRPA-approved and Forest Service-accepted master plan.

The Proposed Action, Alternative 1 and Alternative 2 would require 168 ft^2 of new permanent disturbance in LCD 1b to establish a 2-foot wide maintenance trail to access tower 4 of the Sky Basin Canopy Zipline Tour. As a linear facility, the maintenance trail must cross a mapped but unverified SEZ to reach one of the zipline towers. The crossing has been located at the most narrow crossing available that would still allow for appropriate trail grades.

Under Alternative 1, an additional 370 ft^2 of permanent SEZ disturbance would be necessary for installation of several footings of the Sky Basin Coaster. This project component is linear in nature and must cross the SEZ to reach the base station of the coaster that would be located to the southwest side of Sky Meadows adjacent to the existing access road and existing restrooms.

~~The Proposed Action and Alternative 1 would include 604 ft^2 of new permanent disturbance in LCD 1b for proposed access trails for the Sky Meadows Challenge Course. Because a challenge course is an aerial activity and does not have to be sited in an SEZ and is not an exempted activity as specified in the Basin Plan, findings for new LCD 1b land coverage necessary for trail access to this project activity cannot be supported. The proposed Challenge Course access trails must be relocated to an area that is outside of the SEZ to eliminate potentially significant impacts and therefore the proposed LCD 1b land coverage (604 ft^2) would be removed from the Proposed Action and Alternative 1.~~

(b) There is no feasible alternative which would reduce the extent of SEZ encroachment;

As required by the MMP included in the MPA 07, the Proposed Action and Alternatives would be implemented in such a manner as to first avoid LCD 1a, 1b, 1c, 2, 3 and SEZs, and if avoidance is not feasible due to the function or nature of the facility, impacts would be mitigated to a level of less than significant with land coverage relocation and restoration. The Project proposal incorporates design features that minimize permanent land coverage and disturbance and the effects of disturbance while improving the use of the site for recreational benefits. Facilities provide services to the summer-use guest foremost and must be located nearby existing recreational uses. Design features that reduce encroachment include consideration of alternative alignments for linear project components, use of towers and existing trees, and installation of bridge and rope spans.

The two-foot wide maintenance trail that would access tower 4 of the Sky Basin Zipline Canopy Tour (Proposed Action, Alternative 1, and Alternative 2) has been designed to cross the approximately 100-foot wide mapped SEZ at the most narrow crossing and at a point farthest away from the Sky Meadow while providing appropriate grades for the access trail. Because of topography, no other alternative alignment that would reduce the extent of SEZ encroachment (168 ft^2) exists in this location that would also meet necessary grade standards for the trail.

The proposed LCD 1b land coverage (370 ft^2) for the Sky Meadows Basin Coaster (Alternative 1) cannot avoid mapped SEZ because the coaster track must cross a narrow SEZ located between the top and bottom terminals. The bottom terminal cannot be located above the mapped SEZ because the topography is not flat enough to construct a loading and unloading terminal.

The determination of reasonable segment alignments considers technical feasibility, economic feasibility, existing land use patterns and the regulations and

requirements of lead agencies in concert with the stated objectives and purpose and need of the Project.

This evaluation concludes no alignment alternatives exist for the 168 ft^2 maintenance trail (Proposed Action, Alternative 1 and Alternative 2) and 370 ft^2 for coaster footings (Alternative 1) that completely avoid encroachment in sensitive areas and also meets the project objectives and purpose.

~~This evaluation concludes that findings cannot be supported for the 604 ft^2 of new land coverage proposed for access to the Sky Meadows Challenge Course (Proposed Action and Alternative 1), as this project component by its very nature does not require location in an SEZ.~~

(c) Impacts are fully mitigated; and

The application of temporary BMPs during construction and permanent BMPs and design features incorporated into project component design plans, along with implementation of the MMP and on-going Construction Erosion Reduction Program (CERP) would mitigate impacts of new land coverage and permanent disturbance.

(d) SEZs are restored in an amount 1.5 times the area of SEZ disturbed or developed for the project.

The Proposed Action and Alternative 2 would construct up to 168 ft^2 of new land coverage in mapped SEZ for a foot trail to access tower 4 of the Sky Meadows Zipline Canopy Tour. The relocated land coverage proposed for this activity was removed, restored, and verified by TRPA as banked land coverage as part of the Boulder Lodge BMP Project (TRPA File 20030285). The Boulder Lodge Project removed hard land coverage located up gradient of the Edgewood Creek channel, which daylights directly below the parking lot from which the land coverage was restored. New land coverage for the access trail (soft land coverage) would be located more than 500 feet upslope from Heavenly Valley Creek and would cross a mapped SEZ drainage that contains no active channel. Projects that would disturb SEZs would include land coverage relocation at a minimum ratio of 1.5:1. Heavenly would retire 1.5 times the amount of land coverage being relocated in SEZ, which is 252 ft^2 for the Proposed Action and Alternative 2 and 807 ft^2 for Alternative 1, from the 4,068 ft^2 of TRPA banked land coverage that has been removed and restored from LCD 1b.

(e) Wetlands are restored in an amount at least 1.5 times the area of wetland disturbed or developed. Certain wetland areas may require restoration of greater than 1.5 times the area disturbed or developed.

Refer to the analysis presented for item d above. The wetland boundary at Sky Meadows is assumed to be within the mapped SEZ boundary included on the project site plans. For permitting, the wetland boundaries within the mapped and

TRPA verified SEZ will be delineated and verified as needed by the US Army Corps of Engineers. Some banked SEZ land coverage (LCD 1b) could be applied towards wetland restoration mitigations, but the site from which LCD 1b land coverage was removed, restored and banked would also require delineation and verification of wetland boundaries to be eligible.

TRPA

Analysis: *~~Potentially~~ Less than Significant; Proposed Action and Alternatives 1 and 2*

~~Less than Significant; Alternative 2~~

Table 3.4-4 presents the findings required for new land coverage associated with development in low capability LCDs at Heavenly Mountain Resort under TPRA Code Subsection 30.5.1.B for Public Outdoor Recreation Facilities.

Table 3.4-4

TRPA Findings for New Land Coverage in LCD 1a and LCD 1b

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
Findings required for new land coverage associated with development in low capability LCDs at Heavenly Mountain Resort under TRPA Code Subsection 30.5.1.B for Public Outdoor Recreation Facilities are discussed as follows:		
Finding (1): The project is a necessary part of a public agency's long-range plans for public outdoor recreation.	Implementation of the No Action, Proposed Action and Alternatives would ensure continued commitment of services for recreational use by Heavenly Mountain Resort and would not result in an increase in winter-use PAOT/SAOT already approved as part of the MP 96. Summer PAOTs are reserved for recreational providers in the Lake Tahoe Basin. Additional summer-use PAOT allocations would be required for Epic Discovery projects as proposed summer-use activities expand. The Proposed Action and Alternatives are located on National Forest Lands. The Forest Service renewed the 40-year special use permit in 2002. The LTBMU Forest Plan and the TRPA Regional Plan were amended in 1996 to outline goals and policies that support inclusion of the MP 96 as part of a public agency's long-range plans for public outdoor recreation. The MPA 07 amended the MP 96 with the focus of reallocation and rearrangement of already-approved services, facilities, and uses. The Forest Plan includes a goal that states "provide opportunities for enjoying a variety of outdoor recreation facilities." In November 2011, Congress enacted the Ski	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
	Area Recreational Opportunity Enhancement Act (SAROEA), which amended the National Forest Ski Area Permit Act of 1986, to clarify the authority of the Secretary of Agriculture regarding additional recreational uses of National Forest System land. SAROEA amended the 1986 Act by striking specific references to ''nordic and alpine" ski areas, facilities, operations and purposes and inserting more general language regarding 'ski areas and associated facilities'' and ''skiing and other snow sports and recreational uses authorized by this Act.'' However, for the purposes of this analysis, the most important amendment to the 1986 Act is an insertion to section 3 regarding "Other Recreational Uses." Per SAROEA, subject to the terms of a ski area permit, the Secretary may authorize a ski area permittee to provide such other seasonal or year-round natural resource-based recreational activities and associated facilities (in addition to skiing and other snow-sports) on National Forest System land subject to a ski area permit as the Secretary determines to be appropriate. The Proposed Action and Alternatives would provide greater year round recreational use of National Forest Land.	
Finding (2): The project is consistent with the Recreation Element of the Regional Plan;	The Heavenly Mountain Resort special use permit area encompasses Plan Areas 080, 086, 087, and 089B (Note that PAS 089B has been replaced with the Tourist Core Area Plan). Allowable land uses for these Plan Areas include downhill skiing and other recreation, as well as accessory commercial and tourist accommodations. The TRPA Regional Plan includes several goals in the Recreation element: 1) provide a fair share of the total basin capacity of outdoor recreation; 2) provide for the appropriate type, location, and rate of development of outdoor recreational use; 3) protect natural resources from over use and rectify incompatibility between uses; and 4) provide for the efficient use of outdoor recreation resources. Policy number R-6.2 encourages "Seasonal facilities should provide opportunities for alternative uses in the off-season, whenever appropriate." The MPA 07 goals and objectives remained consistent with the Recreation Element of the Regional Plan as amended in 1996. As summer-use and activities expand at Heavenly Mountain Resort under the Proposed Action and Alternatives, summer-use PAOTs must be applied for and allocated before utilization. The proposed summer uses are consistent with the uses proposed in the MP 96 and more clearly defined in the MPA 07. The Proposed Action and Alternatives would continue to provide for the appropriate type, location, and rate of development of outdoor recreational use by adapting the daily mountain operations	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
	and orientation and prioritization of projects and activities to the shift in needs that resulted from construction of the Gondola project and MPA 07 project components.	
Finding (3): The project, by its very nature, must be sited in Land Capability Districts 1a, 1c, 2 or 3, such as a ski run or hiking trail; in accordance with the Guidelines Regarding Public Outdoor Recreation Facilities and Activities Which Create Additional Land Coverage or Permanent Disturbance and Which By Their Very Nature Need Not Be Sited in Sensitive Lands (1a, 1b, 1c, 2, 3 or SEZs), Water Quality Management Plan for the Lake Tahoe Region, Volume I, Table 16, dated November, 1988;	The Bailey land capability system classifies the majority of lands at Heavenly Mountain Resort as sensitive or low capability (e.g., LCD 1, 2 and 3). The Proposed Action and Alternatives would include new facilities and hiking, biking and maintenance trails. These combinations of activities and support facilities are necessary to serve visitors while expanding summer use activities. Facilities are proposed on sites with higher land capability designations whenever feasible, and project designs include site-specific design features and temporary and permanent BMPs to further mitigate the potential effects of development. Most proposed facilities requiring new permanent land coverage would be located in areas of previously developed or disturbed land. Linear project features such as ziplines, canopy tours, and biking and hiking/maintenance trails by their very nature must be located on steeper, lower capability land, as their function often requires steeper slopes or the access to facilities located on steeper slopes. Facilities are sited to first avoid LCD 1b, SEZs. Basin Plan Table 5.7-3 provides guidelines regarding public outdoor recreation facilities and activities that create additional land coverage or permanent disturbance and which, by their very nature need not sited on sensitive land. Prohibited activities of facilities are identified as parking areas, base lodge facilities and offices, and retail shops, unless there is no feasible non-sensitive site pursuant to a TRPA-approved and Forest Service-accepted master plan. The Proposed Action, Alternative 1 and Alternative 2 would require 168 ft^2 of new permanent disturbance associated with the 2-foot wide maintenance trail that must access tower 4 of the Sky Basin Zipline Canopy Tour. Additionally, Alternative 1 would require 370 ft^2 new permanent disturbance in LCD 1b that is associated with footings of the Sky Basin coaster. This project component must cross the SEZ to terminate at the base station that is located adjacent to the existing access road. Based on a review of aerials, SEZ mapping and the proposed activity alignment, this evaluation concludes that no alignment alternatives exist for the 168 ft^2 maintenance trail (Proposed Action, Alternative 1 and Alternative 2) and 370 ft^2 for coaster footings (Alternative 1) that would completely avoid encroachment in sensitive areas and also meet the project objectives and purpose. ~~The Proposed Action and Alternative 1 propose 604 ft^2 of~~	Proposed Action: ~~No~~Yes Alternative 1: ~~No~~Yes Alternative 2: Yes ~~**Recommended Mitigation:**~~ ~~**GEO-1: Relocate Sky Meadows Challenge Course Access Trails Outside of Mapped SEZ**~~ ——— ~~**For the Proposed Action and Alternative 1, the Sky Meadows Challenge Course shall be redesigned to locate access trails outside of the mapped Sky Meadows SEZ boundary.**~~

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
	~~new permanent LCD 1b land coverage for proposed access trails to the Sky Meadows Challenge Course. This evaluation concludes that findings cannot be supported for the 604 ft^2 of new land coverage proposed for access trails to the Sky Meadows Challenge Course (Proposed Action and Alternative 1), as this project component by its very nature does not have to be sited in an SEZ. As such, the proposed access trails must be located outside of LCD 1b to make findings for the new land coverage.~~ Projects that may disturb SEZs would include land coverage relocation at a minimum ratio of 1.5:1, resulting in the need for relocation of 252 ft^2 of existing LCD 1b land coverage under the Proposed Action and Alternative 2 and 807 ft^2 of existing LCD 1b land coverage under Alternative 1.	
Finding (4): There is no feasible alternative that avoids or reduces the extent of encroachment in Land Capability Districts 1a, 1c, 2 or 3.	As required by the MMP included in the MPA 07, the Proposed Action and Alternatives would be implemented in such a manner as to first avoids permanent disturbance in LCD 1a and LCD 1b (SEZs), through project design and location, and if avoidance is not feasible due to the function or nature of the facility, impacts would be mitigated to a level of less than significant with land coverage relocation and restoration. The Project proposal incorporates design features that minimize permanent land coverage and disturbance and the effects of disturbance while improving the use of the site for recreational benefits. Facilities provide services to the summer-use guest foremost and must be located nearby existing recreational uses. Design features that reduce encroachment include consideration of alternative alignments for linear project components, use of towers and existing trees, and installation of bridge and rope spans. The determination of reasonable segment alignments considers technical feasibility, economic feasibility, existing land use patterns and the regulations and requirements of lead agencies in concert with the stated objectives and purpose and need of the Project. This evaluation concludes no alignment alternative exists that completely avoids encroachment in sensitive areas and meets the project objectives and purpose.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
Finding (5): The impacts of the coverage and disturbance are fully mitigated through means including, but not limited to, the following:		
(a) Application of best management practices; and	The application of temporary BMPs during construction and permanent BMPs and design features incorporated into	Proposed Action: Yes

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
	project component design plans, along with implementation of the MMP and on-going Construction Erosion Reduction Program (CERP) would mitigate impacts of new land coverage and disturbance.	Alternative 1: Yes Alternative 2: Yes
(b) Restoration, in accordance with Subsection 30.5.3, of land in Land Capability Districts 1a, 1c, 2 and 3 and 1b (Stream Environment Zones) in the amount of 1.5 times the area of land in such districts covered or disturbed for the project beyond that permitted by the coefficients in Table 30.4.1-1.	As shown in Table 3.4-3, build out of the Proposed Action would result in approximately ~~108,012~~107,408 ft^2 of additional in-basin land coverage with ~~772~~ 168 ft^2 of this total proposed in LCD 1b. ~~Findings for 604 ft^2 of LCD 1b land coverage for the Sky Meadows Challenge Course cannot be supported so the mitigated LCD 1b land coverage total under the Proposed Action would be 168 ft^2.~~ Under Alternative 2, the Sky Meadows Challenge Course would be removed along with its proposed land coverage of ~~742~~ 138 ft^2 ~~(138 ft^2 in LCD 1a and 604 ft^2 in LCD 1b)~~, for a total land coverage of 107,270 ft^2. Under Alternative 2, total land coverage within LCD 1b would also equal 168 ft^2. Alternative 1 would add 6,290 and 370 ft^2 in LCD 1a and LCD 1b for the Sky Basin Coaster to the Proposed Action totals, but would eliminate 5,668 ft^2 (LCD 1a) associated with the Forest Flyer Coaster that would be removed under Alternative 1. As a result, Alternative 1 proposes ~~109,004~~108,400 ft^2 of total land coverage, 107,862 ft^2 within LCD 1a and ~~1,142~~538 ft^2 within LCD 1b. ~~As with the Proposed Action, findings for 604 ft^2 of LCD 1b land coverage for the Sky Meadows Challenge Course cannot be supported under Alternative 1 so the mitigated LCD 1b land coverage total would be 538 ft^2.~~ With the retirement of previously permitted but not constructed land coverage assigned for Gondola hiking trails (54,501 ft^2), Heavenly has 323,999 ft^2 (319,931 ft^2 of LCD 1a and 4,068 ft^2 of LCD 1b) of base allowable and banked land coverage available. Restoration of existing land coverage in the amount of 1:1.5 would not be required for new land coverage provided that Heavenly does not exceed base allowable land coverage coefficients.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes

Source: HBA 2014

Both TRPA and Lahontan prohibit new disturbance on low capability lands, including LCD 1b (SEZ) except for limited uses such as public recreation that can demonstrate compliance with restrictive findings. Lahontan Basin Plan Section 5.4 and TRPA Code Subsection 30.4.4 (A-D)

provides for existing TRPA-verified land coverage to be relocated on the same parcel or project area if TRPA determines that these findings have been satisfied. Relocation of existing TRPA-verified land coverage (or use of TRPA banked land coverage) would be necessary for construction of the Proposed Action and Alternatives. Table 3.4-5 presents the findings necessary for relocation of existing base allowable and bank land coverage for development within the Heavenly special use permit boundary.

Table 3.4-5

TRPA Findings for Relocation of Land Coverage in LCD 1a and LCD 1b

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
TRPA Code Subsection 30.4.4 (A-D) provides for existing TRPA-verified land coverage to be relocated on the same parcel or project area if TRPA finds that:		
(A) The relocation is to an equal or superior portion of the parcel or project area, as determined by reference to the following factors:		
(1) Whether the area of relocation already has been disturbed;	Areas proposed for summer use under the Epic Discovery Project are currently disturbed by existing ski trails, covered by hard land coverage, or crossed by existing dirt access roads (soft land coverage). The Proposed Action and Alternatives do not expand the special use permit area, but would add summer uses to areas previously disturbed by winter use and associated ski area management.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
(2) The slope of and natural vegetation on the area of relocation;	The natural vegetation and slopes will be protected as outlined on the Detail sheets of the Project plan sets and outlined in the Corridor Clearing Plan. Installation of temporary BMPs during construction and permanent BMPs illustrated on Project plan sets, mitigations outlined in the MMP, and design features detailed in the on-going Construction Erosion Reduction Program would occur to further protect vegetation and slopes.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
(3) The fragility of the soil in the area of relocation;	Higher capability LCDs by definition have less fragile soils and are thus considered more suitable for land coverage or disturbance. Base allowable land coverage for the Heavenly special use permit area has been based on 1 percent allowable land coverage permitted for LCD 1a and LCD 1b. Relocation of land coverage within the special use permit boundary would come from other similarly low capability lands.	Proposed Action: Yes Alternative 1: Yes Alternative 2:

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
		Yes
(4) Whether the area of relocation appropriately fits the scheme of use of the property;	The redevelopment of these areas appropriately fits the scheme of use of the project area, which is operated as a ski resort with supporting accessory uses and winter and summer recreation opportunities.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
(5) The relocation does not further encroach into a stream environment zone, backshore, or setbacks established in the Code for protection of SEZs or backshore; and	The Proposed Action and Alternatives would not further encroach into SEZ, backshore or setbacks because SEZ disturbance would be located in an area of existing development at Sky Meadows. The Proposed Action and Alternatives would utilize existing TRPA-verified base allowable and banked land coverage from LCDs 1a and 1b. LCD 1a existing base allowable and banked land coverage would be relocated to LCD 1a. LCD 1b banked land coverage would be relocated to LCD 1b.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
(6) The project otherwise complies with the land coverage mitigation program set forth in Section 30.6.	The Proposed Action and Alternatives would comply with the land coverage mitigation program set forth in Section 30.6, as discussed in the Existing Land Coverage section. As the entirety of the project area is classified as LCD 1a and 1b low capability lands, the relocation of 108,012 ft^2 (Proposed Action), 109,004 ft^2 (Alternative 1), or 107,270 ft^2 (Alternative 2) of banked land coverage will be to an area of equal or superior portion of the project area.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
(B) The area from which the land coverage was removed for relocation is restored in accordance with Subsection 30.5.3.	Land coverage that would be used for relocation has been previously removed, restored in accordance with Code Subsection 30.5.3 and TRPA-verified as banked land coverage. Table 3.4-3 in the MPA 07 EIS/EIS/EIR reports the status and banking of 434,580 ft^2 of LCD 1a land coverage since the adoption of the MP 96. Banked land coverage available for relocation to LCD 1b (4,464 ft^2) was removed and restored as part of the Boulder Lodge BMP Project (TRPA File #20030285).	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
(C) The relocation is not to Land Capability Districts 1a, 1b, 1c, 2, or 3, from any higher numbered land capability districts.	Relocated land coverage would come from LCDs 1a and 1b because Heavenly Mountain Resort land consists primarily of these LCDs and not of higher capability LCDs. ~~The 604 ft^2 of LCD 1b land coverage proposed for access trails to the Sky Meadows Challenge Course (Proposed Action and Alternative 1) must be relocated outside of LCD 1b to avoid potentially significant impacts. A mitigation measure has been included to require the relocation of the proposed access trails outside of the mapped SEZ.~~ Project components have been located outside of LCD 1b with the exception of 168 ft^2 of Sky Basin Zipline Canopy Tour	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
	maintenance trail (Proposed Action, Alternative 1 and Alternative 2) and 370 ft^2 for footings for the Sky Basin coaster (Alternative 1 only). Land coverage relocation for these project components is addresses under Finding D below.	
(D) If the relocation is from one portion of an SEZ to another portion, there is a net environmental benefit to the SEZ. Net environmental benefit to an SEZ is defined as an improvement in the functioning of the SEZ and includes, but is not limited to:		
(1) Relocation of coverage from a less disturbed area to a more disturbed area or to an area further away from the stream channel or waterbody, as applicable;	The Proposed Action and Alternative 2 would construct up to 168 ft^2 of new land coverage in Sky Meadows SEZ. The land coverage would be for a foot trail to access tower 4 of the Sky Meadows Zipline Canopy Tour when maintenance is necessary. The relocated land coverage was removed, restored, and verified by TRPA as banked land coverage as part of the Boulder Lodge BMP Project (TRPA File 20030285). The Boulder Lodge Project removed hard land coverage located up gradient of Edgewood Creek channel, which daylights directly below the parking lot from which the land coverage was restored. New land coverage for the maintenance trail (soft land coverage) would be located more than 500 feet upslope from Heavenly Valley Creek and cross a mapped SEZ drainage that contains no active channel.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
(2) Retirement of land coverage in the affected stream environment zone in the amount of 1.5:1 of the amount of land coverage being relocated within a stream environment zone; or	Projects that would disturb SEZs would include land coverage relocation at a minimum ratio of 1.5:1. Heavenly would retire 1.5 times the amount of land coverage being relocated in SEZ, which is 252 ft^2 for the Proposed Action and Alternative 2 and 807 ft^2 for Alternative 1, from the 4,068 ft^2 of TRPA banked LCD 1b land coverage currently available for relocation.	Proposed Action: Yes Alternative 1: Yes Alternative 2: Yes
(3) For projects involving the relocation of more than 1,000 square feet of land coverage within a stream environment zone, a finding, based on a report prepared by a qualified professional, that the relocation will improve the functioning of the stream environment zone and will not negatively affect the quality of existing habitats, considering factors such as,	(3) This finding is not applicable to the Proposed Action and Alternative 2 because relocation will be less than 1,000 ft^2. For the Proposed Action, the relocation of ~~772~~ 168 ft^2 would be ~~reduced to 168 ft^2 through implementation of Mitigation Measure GEO-1, which requires the relocation of 604 ft^2 of land coverage associated with the Sky Meadows Challenge Course outside of LCD 1b~~required. For Alternative 1, the relocation of ~~1,142~~538 ft^2 would be ~~reduced to 538 ft^2 through implementation of Mitigation Measure GEO-1, which requires the relocation of 604 ft^2 of land coverage associated with the Sky Meadows Challenge Course outside of LCD 1b~~required.	Proposed Action: Yes Alternative 1: Yes ~~(Through implementation of Mitigation Measure GEO-1)~~ Alternative 2: Yes

TRPA Code of Ordinance Chapter 30 Findings	Proposed Action, Alternative 1 and Alternative 2	Finding Supported?
but not limited to, soil function, hydrologic function, vegetation, and wildlife habitat.		

Source: HBA 2014

NEPA

Analysis: *Not Applicable; All Alternatives*

TRPA and Lahontan land coverage standards do not apply under NEPA.

~~**Mitigation: GEO-1: Relocate Sky Meadows Challenge Course Access Trails Outside of Mapped SEZ (Proposed Action, Alternative 1)**~~

~~Sky Meadows Challenge Course shall be redesigned to locate access trails outside of the mapped Sky Meadows SEZ boundary.~~

~~***CEQA and TRPA***~~

~~**After Mitigation** *Less Than Significant; Proposed Action and Alternative 1*~~

~~Redesign of the Sky Meadows Challenge Course would remove access trails from the SEZ and enable compliance with TRPA Code Subsection 30.5.1.B.3.~~

~~***NEPA***~~

~~**After Mitigation** *Not Applicable; All Alternatives*~~

IMPACT: GEO-2: Would Project construction of new summer activities impact soil quality and function or create unstable soil conditions?

Construction of the Proposed Action and Alternatives would involve soil disturbance and vegetation removal from: clearing and grubbing activities; trenching for utilities; grading for cut and fill slopes that are necessary to achieve final trail grades; and excavating, filling, compacting and pile driving for installation of various support facilities for summer uses. The degree of

disturbance is related to the amount of land coverage associated with each alternative, which is detailed above for Impact GEO-1, and the extent of temporary construction corridors necessary for installation of linear project components (e.g., various ziplines, canopy tours, alpine coasters, and hiking, biking and maintenance trails). Chapter 2, Table 2-5, details the extent of permanent in-basin land disturbance necessary for the Project. Tables 2-1, 2-2, 2-3 and 2-4 detail the temporary disturbance that would result from construction. Table 3.1-8 summarizes permanent and temporary disturbance by watershed.

Construction activities could result in temporary, short-term increases in runoff, soil erosion, wind erosion and sedimentation within and down gradient of the project area. The potential for soil erosion is greatest during the construction period when slopes are disturbed and prior to establishment of revegetation plantings. Wind can dislodge soil particles and make them airborne when disturbed sites are not adequately stabilized and revegetated.

TRPA Code Chapters 30, 33, and 60, the 208 Plan, the Lahontan Basin Plan (Chapter 5), the USDA Forest Service Soil and Water Handbook (USFS 2011), and construction permit conditions detail the requirements for the control of erosion on and off-site and the stabilization of soil conditions during and upon completion of ground disturbance activities.

Maximum project area disturbance for the Proposed Action and Alternative 2 is estimated at 8.5 acres of permanent disturbance and 18 acres of temporary disturbance and tree removal. When also considering disturbance associated with the Panorama Trail, portions of which would be located on National Forest Land outside the Heavenly special use permit area, maximum temporary disturbance increases to 19.4 acres and permanent disturbance increases to 9.7 acres.

Cut and fill volumes would be 146 cubic yards of cut and 97 cubic yards of fill, resulting in a net of 47 cubic yards of cut and the need for disposal of excess spoils. Excess spoils would be utilized to establish grades for proposed mountain bike trails. The tree clearing necessary to install project components such as the Mid-station, Sky Meadows and East Peak Canopy Ziplines, Gondola evacuation route, Forest Flyer Coaster and Sky Cycle is 646,430 ft^2 or 14.8 acres (Proposed Action and Alternative 2). Alternative 1 would require an additional 2.5 acres of tree clearing to install the Sky Basin coaster.

Under Alternative 1, maximum permanent disturbance would increase by just 992 ft^2 (0.02 acres) compared to the Proposed Action. Cut and fill volumes would remain approximately the same. Temporary disturbance and tree removal would increase by 2.5 acres to a total of 17.3 acres.

Table 2-6 in Chapter 2, Project Description, and the MPA 07 Mitigation and Monitoring Program detail project construction method provisions and temporary BMPs to prevent soil erosion during the construction period and project design

features to avoid and minimize long-term erosion and sedimentation from operation and maintenance activities.

The Project plan sets include site-specific source control BMPs to infiltrate runoff from facilities and trail surfaces for avoidance off-site impacts to soils. The Project stabilizes and revegetates areas disturbed during construction and maintains these areas. Long-term maintenance of disturbance areas minimizes long-term effects to soils. The Project design minimizes soil disturbance and loss of topsoil through implementation of a number of design measures to contain runoff and erosion onsite, minimize wind erosion, stabilize disturbed areas, and reduce potential impacts from erosion, loss of topsoil, or unstable soil conditions to a level of less than significant. These compliance measures and associated plans are required by the TRPA, Lahontan and Forest Service for project-level approval and permitting and include the following:

- ~~On-going~~Implement the Construction Erosion Reduction Program (CERP – Mitigation Measure 7.4-1 that identifies specific sediment and erosion control measures)
- TRPA Erosion and Sediment Control Plan (including Winterization Plans) per TRPA Code Chapters 30 and 60)
- Stormwater Pollution Prevention Plan (SWPPP – required for NPDES General Construction Permit for California projects with disturbance areas greater than one acre);
- Properly Locate and Protect Stockpile Areas (TRPA Code Chapter 33 and standard Construction SWPPP component)
- Landscaping/Revegetation Plan (per TRPA Code Chapters 30 and 61);
- Corridor Clearance Plan (per Project Plan Sheets);
- On-going ~~Collection~~Environmental ~~/~~Monitoring ~~Agreement~~ Program – Heavenly and USDA Forest Service (Mitigation Measure 7.5-2)
- Site Specific Soil Protection Design Features listed in the Project Description, Section 2.3.5~~Table 2-6~~.

Geologic Hazards/Unstable Soils Conditions. The project area has been previously altered by earthwork activities through the construction of roadways, utilities, ski support facilities, ski trails and lifts. No unique geologic or physical features have been identified within the project area that could be destroyed, covered or modified. The Proposed Project and Alternatives would not significantly alter topography or ground surface relief features. Project components would not be located within a known active fault or in areas where soil substrate consists of material that is subject to liquefaction or other secondary seismic hazards in the event of groundshaking. The portions of the project area that would be developed under the Proposed Action and Alternatives show no evidence of static hazards, such as landsliding (Chapter 4.14 of MP 96 EIR/EIS/EIS).

The steep slopes found in much of the project area result in moderate to severe erosion hazard ratings; design and maintenance of trails and other areas of soil with permanent disturbance will be critical to limiting erosion. The presence of large rocks (>10 inches diameter) will present challenges to road and trail construction, but this is an operational issue that would not impact soils.

The only soil likely to be predominately SEZ is the 9001 Bidart soil (Figure 3.4-1 and Table 3.4-1); no activities are proposed in this soil type. Project component location would first avoid soils with moderate corrosion risk and shrink/well potential (Table 3.4-1) and if avoidance is not possible, site-specific design measures, identified in geotechnical evaluations required for project permitting, would adequately minimize these risks.

CEQA and TRPA

Analysis: *Less than Significant; Proposed Action and Alternatives*

The following project components would be located within the Lake Tahoe Basin and within watershed CA-1, which drains to Heavenly Valley Creek. Potential permanent and temporary disturbance impacts are identified for each project component.

Emergency Gondola Snow Cat Evacuation Route. This project component requires tree removal to establish a 25-30 foot wide corridor for emergency operational use during winter conditions. Tree removal would be completed over the snow to avoid soil disturbance. No permanent disturbance would result.

Mid-Station Canopy Tour. This project component requires minimal permanent disturbance and 0.11 acres of tree removal on low to moderate slopes. The Canopy Tour would operate year round and increase summer visitor use and associated resort operations and maintenance to the area between the Mid-station and Gondola.

Forest Flyer Alpine Coaster. This project component requires minimal permanent disturbance because of the elevated track on pilings and 0.7 acres of tree removal on slight to moderate slopes. The top portion of the Coaster would be located in a watershed previously undeveloped with resort activities. The watershed is tributary to Edgewood Creek. The bottom portion is located within relatively flat areas at the top of watershed CA-1. The Coaster would operate year round and increase summer visitor use and associated resort operations and maintenance to a previously undisturbed area.

Mountain Bike Skills Park. This project component is considered an infill activity adjacent to the Gondola Top Station. The Park requires 15,200 square feet of permanent disturbance and installation and removal of a seasonal tent structure. This portion of the resort and watershed CA-1 has been previously developed.

Infill Activities at Adventure Peak. Other infill activities at the Gondola Top Station area include disc golf and a kid's zipline. The infill activities would require minimal permanent disturbance and tree removal. This portion of the CA-

1 watershed has been previously disturbed and developed for winter and summer uses.

Sky Cycle Canopy Tour. This project component would be located to the southwest of the Gondola Top Station in a previously undeveloped portion of watershed CA-1. The Canopy Tour would require 24,664 square feet of permanent disturbance for platforms, maintenance roadway and 5,600 linear feet of hiking trails. The Sky Cycle would operate year round and increase summer visitor use and associated resort operations and maintenance requirements to a previously undisturbed area of CA-1.

Adventure Peak Hiking/Maintenance Trails. Table 2-1 in the Project Description (Chapter 2) details the characteristics of the Adventure Peak Trails discussed above for the Mid-station Canopy Tour, Sky Cycle Canopy Tour, Forest Flyer Alpine Coaster, Kids Zipline and Disc Golf. Total permanent disturbance for hiking and maintenance trails and footpaths would be approximately 33,954 square feet (some of which is referenced above under the Sky Cycle description). Trails located on moderate to steep slopes would require increased monitoring and maintenance.

Ridge Run Lookout Tower and Observation Deck. This project component would require minimal permanent disturbance and no tree removal. The observation tower would be built near the existing Ridge Run Overlook and the existing picnic deck adjacent to the Top of Sky Express lift would be rebuilt and expanded by 1,000 square feet.

Sky Basin Zipline Canopy Tour/ Sky Basin Hiking and Maintenance Trail. This project component would require 24,000 square feet of permanent disturbance for platforms and maintenance trails, approximately three (3) acres of tree removal, and 30 by 30-foot areas of temporary disturbance for five (5) steel zipline platforms. Approximately 2,700 feet of trail would be constructed for public access to the start and finish platforms and 8,800 feet of trail would be used for platform maintenance access by Heavenly staff. The top and base areas of the Zipline would be located in developed portions of the watershed, while the linear corridor would be located in an undeveloped forested area of watershed CA-1. The platform locations are designed to be located outside of Heavenly Valley Creek headwaters SEZ areas. Around 168 ft^2 of permanent disturbance in LCD 1b would be necessary for the maintenance trail to access tower 4 of the Zipline.

Sky Meadows Basin Coaster (Alternative). This project component would require approximately 6,290 square feet of permanent disturbance in LCD 1a and 370 square feet in LCD 1b (Sky Meadows SEZ) and 2.5 acres of tree removal within the coaster alignment. As with the Zipline, the top and base areas of the Coaster would be located in previously developed portions of the watershed, while the linear coaster corridor would be located in an undeveloped area of watershed CA-1 and would generally follow the centerline of the Sky Meadows Zipline Canopy Tour. The bottom portion of the coaster alignment is actively managed for winter-use activities and the tops of vegetation are cut each fall. One bridge crossing at the existing summer maintenance access road and two bridge

crossings of existing ski runs would be necessary. Plan sets indicate that the uphill towline would cross the Heavenly Valley Creek channel. The Coaster would be constructed on steep slopes (1,250 foot vertical drop).

Sky Meadows Challenge Course. This project component would be located in Sky Meadows SEZ between Sky Deck and the base of Sky Express Lift and new permanent land coverage/ disturbance in LCD 1b would be avoided by establishing access via elevated bridge or rope span. The ropes course would consist of above ground platforms and rope walkways/bridges installed on existing mature trees. The existing maintenance road would provide access in the summer. The Course would be operated year round. This portion of the CA-1 watershed has been previously disturbed and developed for winter and some existing summer uses. Operation of this project component would increase summer visitor use of the SEZ and associated resort operations and maintenance activities in the SEZ. A 440 square parking pad adjacent to the Challenge Course and along the existing access road would be utilized, as identified in the Mountain Excursion Tour description. The project proposal detailed in Chapter 2 clarifies that summer operational effects to the SEZ and Heavenly Valley Creek channel would be avoided through fencing and managed through guided tours.

Portion of Mountain Excursion Tour. This project component would increase summer use and operations of existing access roads throughout the Heavenly Mountain Resort. New parking areas are proposed adjacent to proposed activities. Increased summer use would increase annual road maintenance requirements. The ongoing Environmental Monitoring Program is mechanism in which annual maintenance requirements would continue to be identified and prioritized.

Panorama Trail. This project component would require ~~95,800~~100,140 square feet of new permanent disturbance in the Lake Tahoe Basin. The trail would not cross any active creek channels.

Summary. Ground disturbance within the project area will exceed one acre and is subject to the construction stormwater quality permit requirements of the NPDES program. The Project Applicant must obtain this permit from Lahontan and provide evidence of a state-issued WDID number or filing of a Notice of Intent (NOI) and fees prior to start of construction. A SWPPP is required under Board Order No. R6T-2011-0019 (General Permit No. CAG616002) for discharges of stormwater runoff associated with construction activity involving land disturbance in the Lake Tahoe hydrologic unit.

Compliance with the SWPPP and the TRPA ESCP ensures that runoff, wind and water erosion, and sedimentation are contained on-site during construction of the Proposed Project and Alternatives. The ESCP specifies site-specific temporary BMPs for installation during construction activities. The SWPPP developed by a qualified SWPPP developer (QSD) is submitted concurrently with the NOI to Lahontan 30 days prior to the start of construction for review and approval.

On-going BMP implementation and effectiveness monitoring will continue and would serve to identify and address BMP inadequacies in a timely manner.

Compliance with TRPA's standard conditions of approval for construction-related impacts, implementation of temporary BMPs and compliance with the Lake Tahoe General Construction Permit conditions would reduce potential effects to soils during construction to a level of less than significant.

Permanent disturbance resulting from each project component would be mitigated through application of permanent BMPs and design features illustrated on project proposals and engineering plan, outlined in the on-going MMP, detailed in the on-going CERP, and monitored by the on-going Environmental Monitoring Program. This analysis concludes that the Proposed Action, Alternative 1 and Alternative 2 project proposals in California and within the Tahoe Basin include compliance measures and design features that are appropriate and adequate to control erosion on and off-site and stabilize soils during and upon completion of construction and soil disturbance activities. The level of impact would be less than significant.

NEPA

Analysis *No Adverse Effects; Proposed Project and Alternatives*

Short-term effects from project construction and long-term effects from project operations are discussed above.

Direct effects. Direct effects to soil resources that would result from implementation of the project components include vegetation removal, loss of soil hydrologic function from soil compaction during construction, and increased impervious surface associated with new summer use facilities and hiking, biking and maintenance trails.

Indirect effects. Potential indirect effects include reduction in effective soil cover, alteration of drainage systems, increased summer visitation and associated resort operation and maintenance requirements to previously undeveloped or unmanaged areas of the resort, and increased opportunity for user-created trails.

In addition to the California and In-basin project components discussed for the CEQA and TRPA analysis above, the following project components would effect soils located on National Forest Lands outside of the Lake Tahoe Basin.

East Peak Zipline Canopy Tour. This project component would be located a short distance to the east of Big Easy Lift top station in watershed NV-2+5. The zipline would terminate at East Peak Reservoir. The Canopy Tour would require 400 square feet of permanent disturbance for queuing areas and 2,400 square feet for access and maintenance trails. Tree removal would be 1.75 acres. The Canopy Tour would increase summer visitor use and associated resort operations and maintenance activities to a previously developed and managed portion of the watershed.

Mountain Bike Park. The project component would construct a new lift-served mountain bike park through a combination of existing summer access roads and new single-track trails varying in width from six (6) feet for beginner and intermediate trails and (3) feet for advanced trails. New trails would be generally contained within the area bounded by Big Easy Lift, Tamarack Express Lift top station, and Mott Canyon Lift top station. Construction of mountain bike trails would require 5.7 acres of new permanent disturbance and 12.1 acres of temporary disturbance.

The six-foot wide beginner mountain bike trails, as currently proposed to the west of the Dipper Express lift, would traverse back and forth across Mott Creek headwaters with moderate hydrologic-connectivity to the Mott Creek channel. Additionally, a section of intermediate trail (6-foot wide) would cross two drainages at their confluence and then parallels this drainage with moderate hydrologic connectivity for a few hundred feet. One crossing of the advanced mountain bike trail (3 to 4-foot wide) is identified down gradient along this same drainage feature. Field evaluations conducted in June 2014 conclude that bike trails could be adequately designed and field fitted to avoid direct effects to Mott Creek drainages.

East Peak Lodge Hiking Trail. The hiking trail would connect the Adventure Peak area at the Top of the Gondola (watershed CA-1) to the East Peak Lodge (watershed NV-2+5). The project component would require approximately 12,000 square feet of permanent disturbance (1,200 square feet in CA-1 and 10,800 square feet in NV-2+5). Temporary disturbance is estimated at 36,000 square feet (0.83 acres). The hiking trail would increase summer use and associated resort operation and maintenance activities in NV-2+5.

Panorama Trail. This project component would require 33,264 square feet of new permanent disturbance in watersheds NV-1, NV-3 and NV-2+5. The trail would cross the watershed above East Peak Lake and not pose direct effects to Daggett Creek.

Portion of Mountain Excursion Tour. This project component would increase summer use and operations of existing access roads throughout the Heavenly Mountain Resort. New parking areas are proposed adjacent to summer use activities. Increased summer use would increase annual road maintenance requirements.

There are trails proposed in NRCS soil types that are listed as having a severe hazard of erosion (NRCS 2007). These trails in particular would require more careful layout and construction and close monitoring of BMP implementation and effectiveness, and may require more frequent maintenance than trails on other soils types and slopes. Current trail construction practices account for steep slopes and rocky soils, where present. Because these trail standards and practices would be used, the new trails would not result in chronic areas of erosion or unstable soil conditions, even in soils with severe erosion hazard rating.

Implementation of resource protection measures as outlined in the USDA Forest Service Region 5 Water Quality Management Handbook (USFS 2011) along with the design features and the on-going compliance measures outlined Table 2-6 and associated plans required by the TRPA, Lahontan and Forest Service for project-level approval and permitting would avoid potentially adverse effects to soil resources. In conclusion, summer recreation would not adversely affect the soil resource or create new areas of erosion because activities and uses would be conducted in accordance with law, regulation, policy, Forest Plan Standards and guidelines, and project-specific resource protection measures.

3.4-5 CUMULATIVE EFFECTS

A summary of land coverage for Heavenly Mountain Resort, which is a cumulative analysis based on TRPA's land coverage regulations (Bailey 1974) is provided above in Section 3.4-2.2. Cumulative effects from soil erosion are further addressed in Chapter 3.1 as part of the cumulative watershed effects (CWE) ERA analysis.

Geologic impacts related to implementation of the MPA 07, Epic Discovery Project and future projects in the region would involve hazards and potential impacts related to soils conditions, erosion and seismic activity. The Lake Tahoe region is susceptible to impacts from seismic activity; however, soils and geologic influences are typically site-specific and confined to discrete spatial locations. Construction and operation of the Project would not alter the potential for seismic activity or affect the level of intensity at which a seismic event on a nearby project site is experienced. Geologic impacts require project-level planning and site-specific design to avoid and minimize potential hazards and do not combine to create cumulative impact conditions beyond project area boundaries. The exception to this general condition would occur in areas where a large geologic feature such as a fault zone or active landslide area might affect the geology of an off-site location up or down gradient. These circumstances are not present within the project area. Project-specific geotechnical evaluations are required as part of the project design, approval and permitting process. As such, project facilities in the Lake Tahoe Basin and throughout the region are required to utilize standard engineering practices and to comply with seismic design standards and adopted building codes to reduce the potential for cumulative geologic and seismic impacts during construction and operations to a less than significant level. The Epic Discovery Project would also comply with adopted building codes and seismic design standards and will not make a considerable contribution towards cumulatively significant effects to geologic hazards.

Implementation of compliance and standard mitigation measures for erosion control during construction activities (i.e. TRPA grading plans, TRPA ESCP, geotechnical engineering recommendations, NPDES permit conditions and SWPPP) and during operations (i.e. Permanent BMPs and project design features, On-going Environmental Monitoring Program and compliance monitoring for Waste Discharge Requirements) would minimize the potential project-level effects to a level of less than significant. Permitting for other reasonable and foreseeable projects will require similar plans and BMP performance standards. The possibility

for BMP failure exists on any project area, especially when extreme runoff conditions exceed BMP design capacities. The likelihood of the effects of BMP failures in one project area combining with those of other projects is low because BMP failures are typically localized and would be identified and corrected during on-going monitoring of the project area. Therefore, the Project will not make significant contributions towards cumulative effects from erosion or unstable slopes.