

3.6 NOISE

3.6-1 INTRODUCTION

This analysis discusses the existing noise environment in the vicinity of the Heavenly Mountain Resort Summer Epic Discovery Project area, the potential noise impacts associated with the Project components, and mitigation measures. The intent of this document is to comply with the requirements of the California Environmental Quality Act (CEQA) Tahoe Regional Planning Agency (TRPA) and National Environmental Policy Act (NEPA).

3.6-2 ENVIRONMENTAL AND REGULATORY SETTING

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz). Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dBA. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dBA, and changes in levels (dBA) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. (A sound level which is weighted in a manner that more closely matches the ear's response). For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dBA, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dBA apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

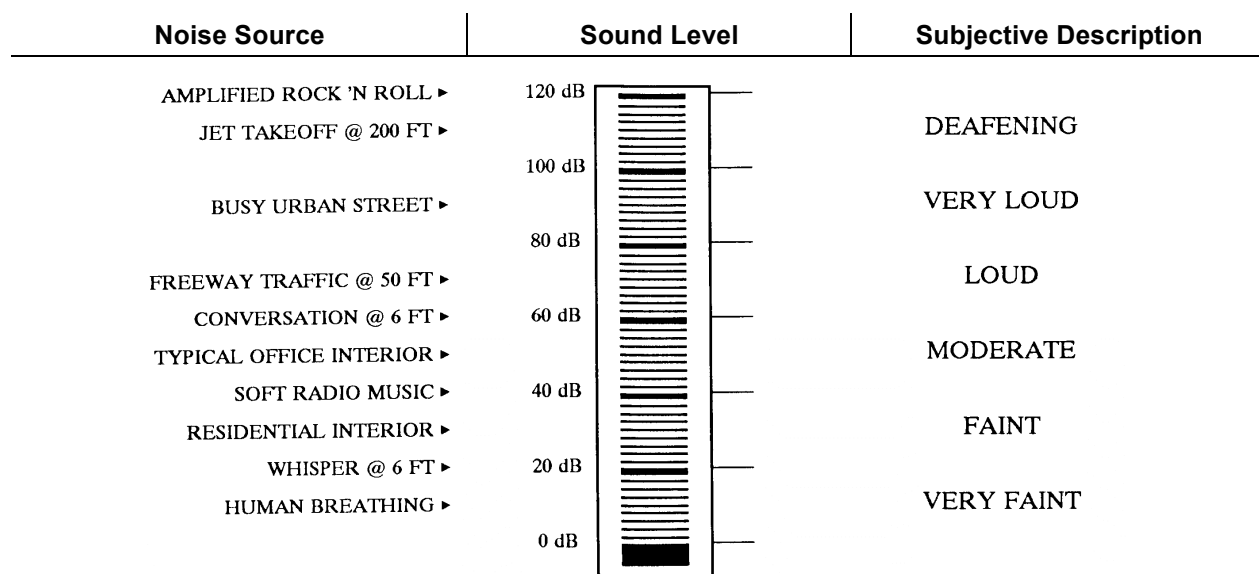
Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The Leq is the foundation of the

composite noise descriptors, Ldn and CNEL, and show very good correlation with community response to noise.

The day/night average level (Ldn) is based upon the average noise level over a 24-hour day, with a +10 decibel weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime adjustment of + 10 dBA is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. The Ldn is similar to the CNEL descriptor. The CNEL is defined as the 24-hour average noise level with noise occurring during evening hours (7:00 p.m. – 10 p.m.) weighted by a factor of three, and nighttime hours (10 p.m. – 7 a.m.) weighted by a factor of 10, prior to the averaging. The measured Ldn and CNEL values generally agree within 1 dBA.

Table 3.6-1 lists several examples of the noise levels associated with common situations. Appendix 3.6-A provides a summary of acoustical terms used in this report.

Figure 3.6-1: Examples of Sound Levels



Ambient Noise Levels Within the Project Boundaries and in the Project Vicinity

Ambient noise levels in the vicinity of the Heavenly Mountain Resort during the ski season have a history of documentation. Extensive background noise measurements during the ski season have been collected as a part of the Heavenly Master Plan and Monitoring Plan. Existing noise sources associated with ski resort operation during the ski season include snowmaking, snow grooming machines, avalanche control, parking lot activities, snow removal, and automobile traffic generated by ski area patrons. Noise measurements which were conducted during the ski season were generally collected to determine noise levels associated with snowmaking operations. However, a permanent noise monitoring station was set up near Heavenly's California base area, and it has historically collected data between November 1st through March

31st. Some of this ambient data may be applicable to the summer activities associated with the Summer Epic Discovery Project, since much of the data was collected when snowmaking operations did not occur. It also provides a comparison to the measured ambient noise levels collected during the summer periods, which are described below. The winter data is shown in Table 3.6-1.

Existing summer noise sources on the mountain are associated with existing maintenance activities, people accessing the mountain via the gondola, some parking lot activities and local roadway noise. Additional ambient noise measurements were conducted during the summer months on the California side of the mountain. Noise measurements were conducted at the mid-mountain lodge, and at the California base area. Noise measurements conducted at the California Base in August 2006 indicated that the typical hourly average noise levels were 50 dBA Leq, and the calculated CNEL was 56 dBA. Noise measurements conducted at the Gondola Top Station Lodge in September 2006 indicated that the typical hourly average noise levels ranged between 36 dBA Leq and 42 dBA Leq, and the calculated CNEL was approximately 43 dBA CNEL.

Existing Traffic Noise Levels

Table 3.6-2 shows the existing traffic noise levels. In addition, this table shows the distances to the CNEL contours. All traffic noise analyses are based upon Friday summer peak hour p.m. traffic volumes provided by the traffic consultant. Peak hour traffic volumes were multiplied by 10 to establish average daily traffic (ADT) volumes. See Appendix 3.6-B for the detailed traffic noise analysis inputs and results.

Table 3.6-1

Summary of Measured Ski Season Noise Levels at the Tahoe Seasons Resort
CA Base Area (Average Measured CNEL)

Year	CNEL on Days with Snowmaking	CNEL on Days without Snowmaking	CNEL During Measurement Period	Total # of Monitoring Days	Total # of Snowmaking Days
*2003/2004	67.4 dBA	62.3 dBA	65.7 dBA	104	56
*2004/2005	65.3 dBA	61.5 dBA	63.1 dBA	149	51
*2005/2006	61.0 dBA	60.9 dBA	61.4 dBA	151	41
*2006/2007	63.7 dBA	58.1 dBA	62.6 dBA	149	75
*2007/2008	62.4 dBA	58.2 dBA	61.6 dBA	140	62
*2008/2009	62.4 dBA	59.7 dBA	61.2 dBA	119	75
**2009/2010	59.8 dBA	55.5 dBA	58.1 dBA	150	72
**2010/2011	57.9 dBA	55.6 dBA	56.5 dBA	150	52
**2011/2012	59.3 dBA	55.5 dBA	58.1 dBA	148	86
**2012/2013	60.1 dBA	55.9 dBA	58.6 dBA	143	77

Source: j.c. brennan & associates, Inc. - 2014

* The 2000/2001 - 2008/2009 measurement site was moved to the ground level of the Tahoe Seasons Resort. Previously this site was located at the roof-top of the Tahoe Seasons Resort.

** Noise measurement site moved to USFS property @ northeast corner of Keller and Saddle.

Table 3.6-2

Existing Traffic Noise Levels

Roadway	Segment	CNEL @ 100 Feet	Distance to Traffic CNEL Contours (feet)		
			55 dBA	60 dBA	65 dBA
US 50	Lake Pkwy - Kingsbury	63 dBA	365	169	79
US 50	Lake Pkwy - Casino Core	62 dBA	309	144	67
US 50	Casino Core - Stateline	63 dBA	319	148	69
US 50	Stateline to Friday Ave	63 dBA	340	158	73
US 50	Friday Ave - Park Ave.	63 dBA	347	161	75
US 50	Park Ave - Pioneer Tr.	64 dBA	398	185	86
US 50	Pioneer Tr. - Ski Run Blvd	63 dBA	335	155	72
Pioneer Trail	South of US 50	58 dBA	162	75	35
Park Ave	West of US 50	51 dBA	58	27	12
Park Ave.	East of US 50	55 dBA	101	47	22

Source: j.c. brennan & associates, Inc., and Fehr & Peers
Traffic Consultants - 2014

3.6-3 EVALUATION CRITERIA

The Table 3.6-3 criteria are taken from the TRPA Regional Plan documents as noted in the “Justification” column.

Table 3.6-3

Evaluation Criteria with Point of Significance - Noise

Evaluation Criteria	As Measured by	Point of Significance	Justification
1. Will construction of the Project expose the public to high noise levels?	Hours of Operation	Construction outside of the hours between 8:00 a.m. to 6:30 p.m.	TRPA Code of Ordinances Chapter 68, Section 68.9
2. Will operation of the Project expose the public to high noise levels?	Projected noise levels at the Plan Area Boundary during hours of operation.	PAS 080 - 50 dB CNEL PAS 082, 085, 086, 087, 088 – 55 dBA CNEL PAS 089B–65 dB CNEL (PAS 098B was replaced by the Stateline/Ski Run Community Plan) PAS 095 – 45 dBA CNEL PAS 121 – 45 dBA CNEL US 50 - 65 dBA CNEL at 300 feet from Roadway	TRPA Plan Area Statement Criteria

3.6-4 ENVIRONMENTAL IMPACTS

The primary noise sources associated with the project include construction activities on the mountain, and recreational activities associated with the Adventure Peak, East Peak Reservoir Basin, Sky Meadows Basin and Mountain-wide designated areas. In addition, traffic associated with the project on the local street system is also a potential noise impact. The impact assessment associated with recreational activities on the mountain has been organized to evaluate individual activities at each of the four designated areas (Adventure Peak, East Peak Reservoir Basin, Sky Meadows Basin, and the Mountain-wide area).

Impacts associated with noise from the project are evaluated using the TRPA CNEL standards as the test of significance. The TRPA standards have been determined to be the most restrictive for the Heavenly Mountain Resort Project Area, and are therefore considered to be the test of significance.

IMPACT: NOISE-1: Adventure Peak Activities Noise Impacts

For the No Action Alternative this analysis assumes that a continuation of existing management practices without changes, additions, or upgrades to existing conditions would occur. Based upon the existing noise measurements on the mountain, no exceedances of the standards are expected to occur.

Mid-Station Zip Line

To assess noise impacts associated with the Mid-Station Zip Line Canopy Tour, this analysis utilizes noise measurement data collected by j.c. brennan & associates, Inc. at Park City, Utah in August 2013. The noise measurement data indicated that the primary noise sources associated with the zip line included people yelling, and the metal-on-metal sound from the cable and the sheave wheel. Noise level data indicated that two individuals passing by on the zip line resulted in a maximum noise level of 68 dBA and a sound exposure level (SEL) of 72 dBA, at a distance of 50 feet. To calculate the CNEL for the zip line, it was assumed that no more than 1,000 individuals per day would utilize the zip line. Therefore, the CNEL at a distance of 50 feet can be calculated as follows:

$$\text{SEL (72) + 30 - 49.4: where}$$

The mean SEL is 72 dBA, 30 is $10 * \log_{10}$ of the number of operations in a day, and 49.4 is $10 * \log_{10}$ of the number of seconds in a day. The calculated noise level from the zip line is 52.6 dBA CNEL.

The Canopy Tour zip lines are located at the upper mountain and the CNEL standards for those plan areas is 50 dBA CNEL. The distance from the zip line to the 50 dBA CNEL contour would be 67 feet. The zip line would comply with the TRPA 50 dBA CNEL standard at the Plan Area boundaries.

Sky-Cycle Canopy Tour

The Sky-Cycle Canopy Tour is similar to a zip line, where bicycle type devices are attached to guy wires and traverse through the trees. Noise levels associated with this activity are assumed to be similar to the zip line activities. The distance to the 50 dBA CNEL contour and is 67 feet. The sky-cycle would comply with the TRPA 50 dBA CNEL standard at the Plan Area boundaries.

Forest Flyer Alpine Coaster

The proposed Forest Flyer project consists of the installation and operation of an all weather coaster, similar to a toboggan ride. The ride consists of a bottom terminal for loading and unloading, bottom drive station, top tension station, and uphill and downhill lines. The ride consists of loading passengers at the bottom terminal, pulling the passengers uphill on two-person sleds, and releasing them onto the downhill track for a controlled descent back to the bottom terminal.

Passengers have the ability to control their own speed, with a secondary maximum safety speed limit of 25 mph.

As a means of evaluating the noise levels associated with the Forest Flyer Alpine Coaster, j.c. brennan & associates, Inc. collected noise level data of a similar Forest Flyer on January 29, 2010, and again on August 13, 2010 in Park City Utah. Based upon 16 different samples of operations, the average maximum noise level was 60 dBA and the average SEL was 63 dBA, at a distance of 50 feet.

According to the ride manufacturer, the ride has a maximum capacity of approximately 400 people per hour, based upon 2 people per sled. Therefore, total number of operations in an 8-hour period would be 1,600 (400 x 8 / 2). Using the formula described above for the zip line the calculated CNEL at a distance of 50 feet is 45.6 dBA. Therefore, the Forest Flyer will comply with the TRPA standard of 50 dBA CNEL at the Plan Area boundaries.

Infill Activities

Infill activities are planned in a small area at the top of the gondola. These activities include a Mountain Bike Skills Park, Disc Golf, Gem Panning, and Kids Zip line. These are designed as passive activities for children and some adults on the mountain bike skills park area and disc golf area. Generally play areas for children produce noise levels associated with children yelling and some interaction with adults. Typical hourly noise levels for play areas of 50 to 75 children result in hourly noise levels of 55 dBA Leq at a distance of 75 feet. The CNEL associated with 8 hours of activity would result in a CNEL of 50 dBA CNEL. Based upon the locations of the infill activities, the noise levels would not exceed the TRPA standard of 50 dBA CNEL at the Plan Area boundary.

CEQA and TRPA

Analysis: *Less than Significant; All Alternatives*

Noise levels associated with the activities at the Adventure Peak area would comply with the 50 dBA CNEL standards at the plan area boundaries. Therefore, this impact is considered to be less than significant.

NEPA

Analysis: *No Adverse Effects, All Alternatives*

Noise effects associated with the Summer Epic Discovery activities within the Adventure Peak area are discussed above under CEQA and TRPA.

IMPACT: NOISE-2: East Peak Lake Basin Activities Noise Impacts

For the No Action Alternative, this analysis assumes that a continuation of existing management practices without changes, additions, or upgrades to existing

conditions would occur. Based upon the existing noise measurements on the mountain, no exceedances of the standards are expected to occur.

East Peak Zipline Canopy Tour

As discussed under the zipline analysis in the Adventure Peak area, the same analysis applies to the East Peak Zipline Canopy Tour, located outside of the Lake Tahoe Basin but close to a Plan Area boundary. If it is assumed that 1,000 people use the zipline in a day, the distance to the 50 dBA CNEL contour would be 67 feet. The zip line would comply with the TRPA 50 dBA CNEL standard at the Plan Area boundaries.

East Peak 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. These types of uses are similar to a passive park, and result in less noise than the typical active facilities which have been proposed. The water activities are not expected to exceed any noise level criteria.

Mountain Bike Park

The mountain bike park is proposed for the East Peak Reservoir Basin, but begins near the Lake Tahoe Basin boundary near the top of the Dipper and Comet Express Ski Lifts. The Park includes Beginner, Intermediate and Advanced Trails. These are all located outside of the Lake Tahoe Basin within the USFS National Forest System. To quantify noise levels associated with the mountain bike parks, j.c. brennan & associates, Inc. utilized noise level data collected at the Cool Mountain Bike race which occurred on March 9, 2014. The race included approximately 150 participants ranging from kids 8-years and under to semi-pro racers. Noise level measurements were conducted at the starting line, and on the course. Noise measurement data collected at a distance of 50 feet from the starting line were 55 dBA Leq and 75 dBA Lmax. The noise measurement data collected at a distance of 50 feet from the course trail were 44 dBA Leq and 56 dBA Lmax. Assuming worst case noise levels of 55 dBA Leq, for a duration of 8-hours, would result in a CNEL of 50 dBA, at a distance of 50 feet. The mountain bike parks are expected to comply with the TRPA 50 dBA CNEL standard at the Plan Area boundaries.

CEQA and TRPA

Analysis: *Less than Significant; All Alternatives*

Noise levels associated with the activities at the East Peak Lake Basin area would comply with the 50 dBA CNEL standards at the plan area boundaries. Therefore, this impact is considered to be less than significant.

NEPA

Analysis: *No Adverse Effects, All Alternatives*

Noise effects associated with the Summer Epic Discovery activities within the East Peak Lake Basin area are discussed above under CEQA and TRPA.

IMPACT: NOISE-3: Sky Meadows Basin Activities Noise Impacts

Under the No Action Alternative, this analysis assumes that it represents a continuation of existing management practices without changes, additions, or upgrades to existing conditions. Based upon the existing noise measurements on the mountain, no exceedances of the standards is expected to occur.

Sky Meadows Zipline Canopy Tour

As discussed under the zipline analysis in the Adventure Peak area, the same analysis applies to the Sky Meadows Zipline Canopy Tour. If it is assumed that 1,000 people use the zipline in a day, the distance to the 50 dBA CNEL contour would be 67 feet. The zip line would comply with the TRPA 50 dBA CNEL standard at the Plan Area boundaries.

Sky Meadows Challenge Course

The project description describes the Sky Meadows Challenge Course as a self-guided ropes course consisting of a series of platforms and rope walkways/bridges which would be located between Sky Deck and the base of the Sky Express lift. Platforms would resemble those associated with the Mid-Station Zipline Canopy Tour and would be located on selected trees. This is considered more of a passive activity which would involve verbal interaction between individuals. Typical conversation between individuals at a distance of 14 to 21 feet with a raised voice is generally 65 dBA to 68 dBA. Assuming that continuous conversation occurs along the entire challenge course for an 8-hour period, at a level of 68 dBA. The CNEL would be 63 dBA at a distance of 21 feet. The distance to the 65 dBA CNEL contour would be less than 20 feet. Therefore, the noise levels associated with the challenge course would comply with the TRPA 50 dBA CNEL standard at the Plan Area boundaries.

Ridge Run Lookout Tower & Observation Deck

This facility would resemble a historic Forest Service Fire Lookout Tower and would offer scenic views and interpretive education. This is also considered a passive activity which would involve verbal interaction between individuals. Using the same methodology described above for the Challenge Course, the distance to the 65 dBA CNEL contour would be less than 20 feet. Therefore, the noise levels associated with the challenge course would comply with the TRPA 50 dBA CNEL standard at the Plan Area boundaries.

Sky Basin Coaster

Under the Sky Basin Coaster Alternative 1, a coaster would be installed in the Sky Meadows Basin rather than the Adventure Peak area. As with the Forest Flyer Coaster, the ride has a maximum capacity of approximately 400 people per hour, based upon 2 people per sled. Therefore, total number of operations in an 8-hour period would be 1,600 (400 x 8 / 2). Using the formula described above for the Forest Flyer Coaster, the calculated CNEL at a distance of 50 feet is 45.6 dBA. Therefore, the Sky Basin Coaster will comply with the TRPA standard of 50 dBA CNEL at the Plan Area boundaries.

CEQA and TRPA

Analysis: *Less than Significant; All Alternatives*

Noise levels associated with the activities at the Sky Meadows Basin area would comply with the 50 dBA CNEL standards at the plan area boundaries. Therefore, this impact is considered to be less than significant.

NEPA

Analysis: *No Adverse Effects, All Alternatives*

Noise effects associated with Sky Meadows Basin operations are discussed above under CEQA and TRPA.

IMPACT: NOISE-4: Construction Noise Impacts

Under the No Action Alternative, this analysis assumes that it represents a continuation of existing management practices without changes, additions, or upgrades to existing conditions. Based upon the existing noise measurements on the mountain, no exceedances of the standards are expected to occur.

Under the Proposed Action and Alternatives (Alternative 1 - Sky Basin Coaster instead of Forest Flyer Coaster), noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in typical construction would generate maximum noise levels, as indicated in Table 3.6-4, ranging from 77 to 94 dBA at a distance of 50 feet.

Noise would also be generated during the construction phases by increased truck traffic on area roadways and heavy equipment on the mountain. A significant project-generated noise source on the local roadways would be truck traffic associated with the transport of heavy materials, and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

CEQA and TRPA

Analysis: *Less than Significant; All Alternatives*

Under all Alternatives, the construction activities would be in compliance with the TRPA standards, provided that the construction activities comply with Chapter 68 of the TRPA code of ordinances, and occur between the hours of 8:00 a.m. and 6:30 p.m.

NEPA

Analysis: *No Adverse Effects, All Alternatives*

Noise effects associated with construction activities are discussed above under CEQA and TRPA.

Table 3.6-4

Typical Construction Equipment Noise Levels

Equipment Description	Noise Level, Lmax at 50 feet (dBA slow)
Auger Drill Rig	84
Backhoe	78
Blasting	94
Compactor	83
Concrete Mixer Truck	79
Concrete Pump Truck	81
Dozer	82
Dump Truck	76
Excavator	81
Front end Loader	79
Generator	81
Grader	85
Jackhammer	89
Paver	77
Pneumatic Tools	85
Pumps Rock Drill	81
Scraper	84
Tractor	84
Vibratory Concrete Mixer	80

Source: FHWA Construction Noise Model – 2006

IMPACT: NOISE-5: Traffic Noise Impacts

For the No Action Alternative, this analysis assumes that a continuation of existing management practices without changes, additions, or upgrades to existing conditions would occur. Based upon the existing noise measurements on the mountain, no exceedances of the standards are expected to occur.

Under the Proposed Action and Alternative (addition of Sky Basin Coaster), traffic noise levels will increase on portions of the local roadway network. Tables 3.6-5 and 3.6-6 show the changes in traffic noise levels due to the project under existing and Year 2035 conditions, respectively. In addition, these tables show the distances to the CNEL contours. All traffic noise analyses are based upon Friday summer peak hour p.m. traffic volumes provided by the traffic consultant and documented in Chapter 3.7. Peak hour traffic volumes were multiplied by 10 to establish ADT volumes.

CEQA and TRPA

Analysis: *Less than Significant; All Alternatives*

Under all Alternatives, the US 50 traffic noise levels do not exceed the TRPA threshold of 65 dBA CNEL at 300 feet from the roadway. In addition, Project related increases in traffic noise levels are less than 3 dBA along all roadways, and are not considered significant increases in ambient noise levels.

NEPA

Analysis: *No Adverse Effects, All Alternatives*

Noise effects associated with construction activities is discussed above under CEQA and TRPA.

Table 3.6-5

Existing and Existing Plus Project Traffic Noise Levels

Roadway	Segment	Existing CNEL @ 100 Feet	Existing Plus Project	Existing Plus Project Distance to Traffic CNEL Contours (feet)		
				55 dBA	60 dBA	65 dBA
US 50	Lake Pkwy - Kingsbury	63 dBA	63 dBA	367	170	79
US 50	Lake Pkwy - Casino Core	62 dBA	62 dBA	310	144	67
US 50	Casino Core - Stateline	63 dBA	63 dBA	319	148	69
US 50	Stateline to Friday Ave	63 dBA	63 dBA	341	158	73
US 50	Friday Ave - Park Ave.	63 dBA	63 dBA	347	161	75
US 50	Park Ave - Pioneer Tr.	64 dBA	64 dBA	403	187	87
US 50	Pioneer Tr. - Ski Run Blvd	63 dBA	63 dBA	338	157	73
Pioneer Trail	South of US 50	58 dBA	58 dBA	164	76	35
Park Ave	West of US 50	51 dBA	51 dBA	58	27	13
Park Ave.	East of US 50	55 dBA	56 dBA	109	51	23

Source: j.c. brennan & associates, Inc., and Fehr & Peers
Traffic Consultants - 2014

Table 3.6-6

2035 and 2035 Plus Project Traffic Noise Levels

Roadway	Segment	Year 2035 CNEL @ 100 Feet	Year 2035 Plus Project	Year 2035 Plus Project Distance to Traffic CNEL Contours (feet)		
				55 dBA	60 dBA	65 dBA
US 50	Lake Pkwy - Kingsbury	64	64	392	182	84
US 50	Lake Pkwy - Casino Core	63	63	331	154	71
US 50	Casino Core - Stateline	63	63	342	159	74
US 50	Stateline to Friday Ave	63	63	363	168	78
US 50	Friday Ave - Park Ave.	63	63	362	168	78
US 50	Park Ave - Pioneer Tr.	64	64	422	196	91
US 50	Pioneer Tr. - Ski Run Blvd	63	63	340	158	73
Pioneer Trail	South of US 50	59	59	179	83	38
Park Ave	West of US 50	52	52	68	31	15
Park Ave.	East of US 50	56	58	116	54	25

Source: j.c. brennan & associates, Inc., and Fehr & Peers
Traffic Consultants - 2014

IMPACT: NOISE-C1: Cumulative Noise Impacts

Cumulative noise effects may occur due to activities on the mountain, as well as the cumulative increase in traffic-related noise. The cumulative effects from traffic are described earlier and amount to very small increase in noise and do not exceed the TRPA standards for roadway noise levels. The noise levels associated with individual activities comply with the TRPA standards. Cumulative increases in noise levels associated with activities on the mountain are difficult to determine due to the fact that they are spread out over the mountain. However, if all activities occurred within close proximity to each other, the overall CNEL would be 63 dBA at a distance of 50 feet. The distance to the 50 dBA CNEL contour would be approximately 220 feet at its nearest point. Considering the fact that the activities are spread across the mountain and the setbacks associated with each activity, it is not expected that the cumulative noise levels will exceed any standards or contribute to a significant increase in noise levels.

CEQA and TRPA

Analysis: *Less than Significant; All Alternatives*

No cumulatively considerable significant impacts will result from the Epic Discovery Project and Alternatives.

NEPA

Analysis: *No Adverse Effects, All Alternatives*

No cumulatively considerable adverse effects will result from the Epic Discovery Project and Alternatives.