Section 3.9

Noise and Vibration

Section 3.9
Noise and Vibration

This section presents a discussion of existing noise and vibration conditions in the project area in a regional and site-specific context. Potential impacts of the proposed project related to noise and vibration are also considered, and applicable mitigation is proposed.

This section is based on a review of previous noise and environmental studies performed in and immediately adjacent to the project area, including Brown-Buntin Associates (2001, 2011) and LSA Associates (2001). Noise levels resulting from project-related activities were predicted and compared to the established significance criteria. Significant noise impacts were found in instances where project-related noise levels were predicted to exceed these criteria. The assessment of potential construction noise impacts was conducted using methodology developed by the Federal Transit Administration (Federal Transit Administration 2006). Table 3.9-1 summarizes identified project impacts related to noise.

1 **Table 3.9-1. Summary of Project Impacts Related to Noise**

Project Impacts	Project Elements									Cumulative
	PBL	SBI	COL-EQC	Area M MH	Area M MR	RES SUB	RD	TRA	INF	
A. Permanent Increase in Noise due to Project Operations										
NOI-A1. The proposed project could result in exposure of persons to noise levels in excess of standards established in the County's Land Use Compatibility for Community Noise chart from operation of ventilation fans for underground parking structure at The Lodge at Pebble Beach, but not from operation of other project elements.	◉	○	○	○	○	○	○	○	○	◉
Mitigation Measures:	NOI-A1. Employ noise-reducing treatments on parking structure fan systems.									
B. Short-Term Noise Increases due to Construction										
NOI-B1. The proposed project would result in exposure of outdoor activity areas of noise-sensitive land uses to construction noise greater than 85 dB at a distance of 50 feet during construction.	◉ (Applies to proposed project as a whole)									◉
Mitigation Measures:	NOI-B1. Limit hours of construction activities. NOI-B2. Locate equipment as far from noise-sensitive receptors as practicable. NOI-B3. Use sound-control devices on combustion-powered construction equipment. NOI-B4. Shield/shroud any impact tools used during construction. NOI-B5. Shut off machinery when not in use during construction. NOI-B6. Use shortest practicable traveling routes during construction. NOI-B7. Disseminate essential information to residences and implement a complaint response/tracking program during construction. NOI-B8. Implement additional mitigation measures, as needed, to reduce exposure of outdoor activity areas of noise-sensitive land uses to sustained construction noise levels greater than 85 dBA during construction.									
C. Construction-Related Vibration										
NOI-C1. The proposed project could result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels during construction at The Lodge at Pebble Beach and Area M Spyglass Hill Option 1 (New Resort Hotel).	◉	○	○	○	○	○	○	○	○	—

Project Impacts	Project Elements									Cumulative
	PBL	SBI	COL-EQC	Area M MH	Area M MR	RES SUB	RD	TRA	INF	
Mitigation Measures:	NOI-C1. Limit construction activities that result in vibration to specified times, provide advance notice to adjacent residents of such schedules, and temporarily relocate residents if requested and if vibration testing demonstrates that levels exceed Federal Transit Administration vibration thresholds.									

Notes:
● = Significant unavoidable impact.
◉ = Significant impact that can be reduced to less than significant.
○ = Less-than-significant impact.
— = No impact or not applicable to the development site.
PBL – The Lodge at Pebble Beach; **SBI** – The Inn at Spanish Bay; **COL-EQC** – Collins Field–Equestrian Center–Special Events Area; **MH** – Area M Spyglass Hill—New Resort Hotel (Option 1); **MR** – Area M Spyglass Hill—New Residential Lots (Option 2); **RES SUB** – Residential Lot Subdivisions; **RD** – Roadway Improvements; **TRA** – Trail Improvements; **INF** – Infrastructure Improvements; **Cumulative** – Proposed Project's Contribution to Cumulative Impacts

Regulatory Setting

Federal

There are no federal regulations applicable to the proposed project concerning noise.

State

California requires each local government entity to implement a noise element as part of its general plan. California Code of Regulations, Title 24 (also known as the California Building Standards Code), has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The County of Monterey has developed noise compatibility standards based on these guidelines. The County's standards are addressed below.

Local

County of Monterey General Plan Noise Element and Noise

The proposed project lies within Monterey County. The County has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise-sensitive land uses. The 1982 Monterey County General Plan (General Plan), required by state law, serves as the jurisdiction's "blueprint" for land use and development. The plan is a comprehensive, long-term document that provides details for the physical development of the jurisdiction, sets forth policies, and identifies ways to put the policies into action. It provides an overall framework for development in the jurisdiction and protection of its natural and cultural resources. The General Plan's Noise Element contains planning guidelines relating to noise. It identifies goals and policies to support achievement of those goals, but is not legally enforceable.

The goals and policies contained in the General Plan apply throughout the jurisdiction. The Monterey County Noise Ordinance, part of the Monterey County Code, is legally enforceable. The following is a brief discussion of the General Plan policies and Noise Ordinance regulations implemented by the County in the project area to protect its citizens from the adverse impacts of noise.

Policy 22.2.1 of the Noise Element addresses land use compatibility for new developments. New developments must conform to the noise parameters established in Table 6 of the General Plan. The County's land use compatibility guidelines established in Table 6 of the General Plan are summarized in Table 3.9-2.

Table 3.9-2. Land Use Compatibility for Exterior Community Noise

	Noise Ranges, L_{dn} or CNEL (dB)[a, b]			
Land Use Category	**I**	**II**	**III**	**IV**
Passively used open spaces	50	50–55	55–70	70+
Auditoriums, concert halls, amphitheaters	45–50	50–65	65–70	70+
Residential—low-density single-family, duplexes, mobile homes	50–55	50–70	70–75	75+
Residential—multifamily	50–60	60–70	70–75	75+
Transient lodging—motels, hotels	50–60	60–70	70–80	80+
Schools, libraries, churches, hospitals, nursing homes	50–60	60–70	70–80	80+
Actively used open spaces—playgrounds, neighborhood parks	50–67	–	67–73	73+
Golf courses, riding stables, water recreation, cemeteries	50–70	–	70–80	80+
Office buildings, business commercial and professional	50–67	67–75	75+	–
Industrial, manufacturing, utilities, agriculture	50–70	70–75	75+	–

Source:
County of Monterey 1982.

Notes:
[a] L_{dn} = day-night level; CNEL = community noise equivalent level; dB = decibels
[b] Noise Ranges I to IV are defined as follows:

Noise Range I—Normally Acceptable. Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Noise Range II—Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Noise Range III—Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV—Clearly Unacceptable. New construction or development should generally not be undertaken.

In addition to the County's land use compatibility guidelines summarized above, the Monterey County Planning Department has established 60 decibels (dB) as the maximum acceptable noise level for residential uses (Monterey County 2005).

County of Monterey Health and Safety Noise Control Ordinance

Chapter 10.60.030 prohibits the operation of "any machine, mechanism, device, or contrivance which produces a noise level exceeding 85 dBA [A-weighted decibels], measured fifty feet [ft]" from the noise source. This ordinance is only applicable to noise generated within 2,500 feet of any occupied dwelling unit. For the purposes of this analysis, this standard is interpreted as applying to noise generated by construction equipment and activities.

Local Coastal Plan

In general, the existing LUP and CIP do not have specific requirements concerning noise. Noise is not mentioned specifically in the existing LUP. Section 20.147.130 of the existing CIP requires consideration of noise when analyzing new coastal accessways.

Environmental Setting

Terminology

The following is a brief background discussion of noise terminology:

- **Sound.** A vibratory disturbance created by a vibrating object that, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Maximum Sound Level (L_{max}).** The maximum sound level measured during the measurement period.
- **Minimum Sound Level (L_{min}).** The minimum sound level measured during the measurement period.
- **Equivalent Sound Level (L_{eq}).** The equivalent steady-state sound level that, in a stated period of time, would contain the same acoustical energy.
- **Percentile-Exceeded Sound Level (L_{xx}).** The sound level exceeded "x" percent of a specific time period. For instance, L_{10} is the sound level exceeded 10% of the time.
- **Day-Night Level (L_{dn}).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring from 10 p.m. to 7 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring from 7 p.m. to 10 p.m. and 10 dB added from 10 p.m. to 7 a.m.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, they are considered equivalent and are treated as such in this assessment. Human sound perception is generally such that a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. The County's exterior community noise standards are expressed as "L_{dn} or CNEL." In this report, references to these standards use the term L_{dn}.

Background Noise Level Measurements

Noise sources in the project area include recreation activities on golf course property, golf course maintenance activities, traffic from vehicles entering parking lots or access roads, and occasional aircraft overflights. The most significant and common source of noise in the project area is vehicles traveling on local roadways.

Background noise level measurements were conducted in the project area at four locations in June 1994 and one location in July 2010 to characterize the typical ambient noise levels in areas of Del Monte Forest where noise-sensitive uses are located. Typical noise sources in Del Monte Forest include local and distant traffic, wind in the trees, surf, birds overhead, dogs barking, landscape/golf course maintenance, construction activities, and occasional aircraft overflights. In general, development and the existing noise environment in Del Monte Forest have not changed significantly since the 1994 measurements were taken. It is assumed that ambient noise levels have not changed significantly since the 1994 measurements were taken. As described below, current traffic noise levels were modeled using existing traffic volumes for the purpose of impact assessment.

Monitoring equipment used to assess noise for the study consisted of a Larson-Davis Laboratories Model 820 sound level meter equipped with a Bruel & Kjaer Type 4176 microphone at locations where ambient noise levels from a combination of nearby and distant sources could be monitored. Noise level monitoring was conducted over a period of 5 days (Thursday through Monday), with the meters running continuously (24 hours per day) for the duration of monitoring. The additional noise monitoring conducted at the Spyglass Hotel Site in 2010 was conducted on a Saturday. Figure 3.9-1 shows the areas where 24-hour ambient noise level measurements have been conducted. The results of the ambient noise level measurements are presented in Table 3.9-3.

Table 3.9-3. Summary of Ambient Noise Survey Results within Del Monte Forest

Site	Site Description	Dates	Range (dBA)	Daily L_{dn} Values (dBA)[a]
K	Near 16th Green at Spyglass	June 2–6, 1994[b]	29–75	49.9–51.2
N	Near Stevenson Drive and Drake Road	June 2–6, 1994	18–69	42.7–45.7
I-2	Near Lisbon Lane and Viscaino Road	June 2–6, 1994	29–72	43.6–46.3
G	Above PBC Corporation Yard	June 2–6, 1994	20–74	41.4–46.5
M	Spyglass Hotel Site	July 17, 2010[c]	33–67	45.7

Source:
Brown-Buntin Associates 2001, 2011.

Notes:
[a] From midnight to midnight.
[b] June 2–6, 1994 was Thursday through Monday.
[c] July 17, 2010 was a Saturday.

Existing Traffic Noise Levels Near SR 1/SR 68 Interchange

Traffic noise level measurements were conducted within the project area at eight locations in August 1998 to characterize the traffic noise levels near the SR 1/SR 68 interchange where noise-sensitive uses are located. In general, the existing noise environment at this location has not significantly changed since the 1998 measurements were taken as explained here. Caltrans monitoring data for the segment of SR 68 west of SR 1 indicates that traffic peak hour volumes are the same in 2010 as they were in 1998 (2,300 vehicles) and average daily traffic is similar (28,000 vehicles in 1998 and 25,400 vehicles in 2010) (Caltrans 2011). Peak hour volumes along SR 68 west of SR 1 from 2006 to 2010 varied from 2,200 to 2,300 vehicles per hour (Caltrans 2011). Since traffic volumes are currently similar to those of 1998 for the roadway segment where noise monitoring was conducted, the prior monitoring data is considered representative of current conditions.

Monitoring equipment used to assess noise for the study consisted of a Larson-Davis Laboratories Model 700 sound level meter. Noise level monitoring was conducted over a period of 2 days (Thursday and Friday) adjacent to SR 68 near the community hospital entrance. Readings on 1 hour's duration in the afternoon peak period (3 p.m. to 7 p.m.) were monitored at three residences on the south side of SR 68, with one of these locations also monitored for a 20-minute duration in the evening between 7 p.m. and 10 p.m. Five other locations were monitored for a 20-minute duration in the afternoon hours between 12 p.m. and 7 p.m.: Beverly Manor, two residences on the south side of SR 68, the Community Hospital of the Monterey Peninsula, and an old fire station on the north side of SR 68. Noise monitoring locations are presented in Figure 3.9-2, and the results of the traffic noise monitoring are presented in Table 3.9-4.

Table 3.9-4. Summary of Traffic Noise Survey Results near SR 1/SR 68 Interchange[a]

Location	Start Time	Duration (minutes)	Sound Level (dBA L_{eq})	Noise Sources
NR-1	5:55 p.m.	60:00	68.1	NR-1 was approximately 10 feet above SR 68 with a clear line of sight. SR 68 traffic was stop-and-go eastbound and fast-moving westbound, with some construction trucks.
NR-2	1:20 p.m.	20:00	63.9	NR-2 was located at private fence with very dense vegetation between fence and SR 68. Fast moving traffic on SR 68 was approximately 40 miles per hour (mph).
NR-3	4:46 p.m.	60:00	67.7	There was thick vegetation between SR 68 and NR-3, but with clear line of sight to intersection traffic from NR-3. There was traffic in and out of Community Hospital of the Monterey Peninsula. SR 68 traffic was stop-and-go eastbound and fast-moving westbound with some trucks in both directions.
NR-4	3:10 p.m.	60:00	70.3	NR-4 was approximately 5 feet elevated from SR 68. There was very little vegetation between SR 68 and NR-4 with clear line of sight to SR 68 traffic from NR-4. SR 68 traffic was stop-and-go eastbound and fast-moving westbound with some trucks in both directions.
NR-4	8:12 p.m.	20:00	64.5	NR-4 was approximately 5 feet elevated from SR 68. There was fast-moving light traffic from SR 68, approximately one car pass-by per 3 to 5 minutes, with no trucks observed.
NR-5	2:15 p.m.	20:00	68.4	NR-5 was on top of Scenic Drive Bridge with no direct line of sight to SR 68. Traffic was very light on Scenic Drive. There was slow-moving and stop-and-go eastbound traffic on SR 68and faster traffic (approximately 40 mph) on westbound SR 68.
NR-6	1:50 p.m.	20:00	64.0	NR-6 was at Community Hospital of Monterey Peninsula parking lot approximately 10 feet lower in elevation than SR 68. There was thick vegetation between NR-6 and SR 68. Noise was from vehicles moving through parking lot and traffic on SR 68. Parking lot noise dominates all sound. There were some construction trucks on SR 68.
NR-7	2:40 p.m.	20:00	68.7	NR-7 was near an old fire station site with clear line of sight to SR 68 traffic. Noise was from braking noise from trucks and cars stacking along SR 68, slow-moving SR 68 traffic eastbound, faster-moving SR 68 traffic on westbound SR 68, and some construction noise.
NR-8	4:15 p.m.	20:00	68.7	NR-8 was elevated above SR 68. Traffic on SR 68 is the dominant source.

Location	Start Time	Duration (minutes)	Sound Level (dBA L_{eq})	Noise Sources

Source:
LSA Associates 2001.
Note:
[a] Noise measurements were taken on August 6 and 7, 1998, at or near the right-of-way boundary because of private property accessibility issues. All locations are west of the proposed SR 1/SR 68/17-Mile Drive Intersection Reconfiguration.

Sensitive Receptors

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, guest lodgings, libraries and certain types of passive recreational uses, such as parks to be used for reading, conversation, meditation, and similar uses (Federal Transit Administration 2006). As a matter of practice, frequent human use is considered to occur at exterior locations where people are exposed to roadway noise for at least one hour on a regular basis (noise-sensitive land uses in the vicinity of the project area are discussed in Project Impacts and Mitigation Measures, below).

Trail and open space use in the project area are primarily used for active recreation (hiking, equestrian use, etc.). Recreationalists in these areas are not considered noise sensitive receptors for this analysis because they are mobile through the open space or along trails and would thus be exposed to noise levels only from project sources or roadways for a short duration of time in any one location, and then would have attenuated noise levels as they moved away from the noise source location.

Impacts Analysis

Methodology

Approach

This analysis evaluates noise and vibration impacts at the sensitive receptors from the short-term construction and long-term operation of multiple elements in the project area. These impacts are determined through comparison to the significance criteria in the following section. Where impacts are identified, appropriate mitigation measures are provided to reduce them to be less than significant.

For the noise analysis, traffic noise impacts were evaluated using existing and predicted traffic volumes provided by the project traffic engineers (Fehr & Peers 2011) and a spreadsheet model based on the FHWA's Traffic Noise Model. Noise impacts associated with facility operations, such as the parking lots, driving range, and equestrian center were evaluated qualitatively, while maintenance equipment, ventilation noise and the Corporation Yard were evaluated based on measured noise levels associated with existing activities.

For the vibration analysis, vibration levels associated with excavation of the subterranean parking garages were evaluated using FTA guidance and methodology (Federal Transit Administration 2006). There are no commonly accepted thresholds for acceptable levels of ground vibration. However, the U.S. Department of Transportation suggests vibration damage thresholds of 0.20 inch per second for fragile buildings and 0.12 inch per second for extremely fragile historic buildings. Vibration annoyance thresholds are expressed as vibration noise levels (L_V), which are measured in vibration decibels (VdB). FTA thresholds are categorized by land use and frequency of events. Construction activities such as bulldozing and grading would be considered frequent events (more than 70 vibration events per day). FTA's annoyance threshold for frequent events for Category 2 land uses (residences and buildings where people normally sleep, such as homes, hospitals, and hotels) is 72 VdB, and its threshold for Category 3 land uses (institutional land uses such as schools, libraries, and churches) is 75 VdB (Federal Transit Administration 2006). For the purposes of this assessment, exposure of fragile or historic buildings to ground vibration in excess of 0.20 inch per second, exposure of other building structures to ground vibration in excess of 0.5 inch per second, or violation of the annoyance thresholds discussed above would result in a significant impact.

Criteria for Determining Significance

In accordance with CEQA, the State CEQA Guidelines, Monterey County plans and policies, and agency and professional standards, a project impact would be considered significant if the project would:

Long-Term Noise Increases

- Expose persons to or generate noise levels in excess of standards established in the County's Land Use Compatibility for Exterior Community Noise chart **and** result in a significant increase in noise levels over existing noise levels (i.e., >5-dB increase in noise where existing noise levels are less than 60 dBA L_{dn}, >3-dB increase in noise where existing noise levels are between 60 and 65 dBA L_{dn}, or a >1.5-dB increase in noise where existing noise levels are more than 65 dBA L_{dn}).
- The proposed project is considered to adversely contribute to a significant impact only if one of the above criteria is satisfied, and the proposed project contributes 1 dB or more increase to the impact. 1 dB is the limit of measurement for noise modeling and thus represents the smallest increment of change that can be reliably predicted.

Short-Term Noise Increases

- Expose outdoor activity areas of noise-sensitive land uses to construction noise of more than 85 dB at 50 feet.

Vibration

- Expose persons to or generate excessive groundborne vibration or groundborne noise levels.

Project Impacts and Mitigation Measures

A. Long-Term Noise Increases

Impact NOI-A1: The proposed project could result in exposure of persons to noise levels in excess of standards established in the County's Land Use Compatibility for Community Noise

chart from operation of ventilation fans for underground parking structure at The Lodge at Pebble Beach, but not from operation of other project elements. (Less than significant with mitigation)

Traffic Noise

Traffic noise levels for existing (2011) and future (2015) conditions have been modeled for receivers at various locations in the project area using the FHWA Traffic Noise Model. This model calculates an L_{dn} value based on the daily traffic volume that is predicted to occur. The traffic data used in this analysis (vehicle volume, truck mix, vehicle speed, and day/night traffic distribution) were based on data provided by the project traffic consultant (Fehr & Peers 2011) and PBC. Noise exposure at 50 and 100 feet from roadway centerlines was calculated for existing (2011) and the first operational year (2015) conditions. The results of noise modeling are presented in Table 3.9-5.

The results in Table 3.9-5 indicate that traffic noise levels with the proposed project in 2015 are expected to increase between 1 and 5 dB over existing (2011) conditions, with the largest project-related noise increases expected to occur on Spyglass Hill Road from proposed development in Area M Spyglass Hill[1]. Table 3.9-5 also indicates that the proposed project's contribution to noise level increases (i.e., changes in noise levels between 2015 with and without the project) are between 0 and 4 dB, with the largest project-related noise contribution expected to occur on Spyglass Hill Road. Table 3.9-2 shows the standards for exterior noise exposure in the Noise Element. The SR 1/SR 68/17-Mile Drive Intersection Reconfiguration would assist in improving the level of service in the project area, accommodate growth up to 2035, and help eliminate traffic safety issues. The results of prior noise monitoring conducted near this intersection are summarized above in Table 3.9-4, and monitoring locations are shown in Figure 3.9-2. Sensitive noise receptors near the intersection include 12 existing residences along the south side of SR 68, west of the intersection between the intersection and the Community Hospital of the Monterey Peninsula. The Community Hospital of the Monterey Peninsula and Beverly Manor (a convalescent home) are located along the north side of SR 68, west of the intersection. However, there are no noise-sensitive land uses directly adjacent to the SR 1/SR 68/17-Mile Drive intersection.

The reconfiguration is an intersection improvement project, and future increases in traffic volumes are not expected to result from the roadway improvement itself. Therefore, no project-related noise impacts are anticipated as a result of the improvement. Changes in roadway configuration caused by the improvement could affect noise exposure along the roadway. The roadway configuration changes are all east of the Scenic Drive overcrossing and all the noise-sensitive land uses are west of the overcrossing; as a result, no noise impacts are expected due to the roadway improvement (LSA Associates 2001). Therefore, traffic noise impacts from the SR 1/SR 68/17-Mile Drive Intersection Reconfiguration are considered less than significant.

The overall project will also contribute limited traffic along SR 68 where existing hourly noise levels at residential fence lines along the south side of SR 68 range from 64 to 70 dBA L_{eq} based on baseline monitoring. Modeling of the existing (2011) and 2015 with-project noise levels indicates that the increase of L_{dn} noise levels along SR 68 would be approximately 1 dB, with the modeled L_{dn} of 67–68 dBA at 50 feet from SR 68 for both existing (2011) and 2015 with-project conditions, which is a less

[1] This impact was evaluated with Option 1 (Area M Spyglass Hill New Resort Hotel) because Option 1 would generate more trips than Option 2 (Area M Spyglass Hill New Residential Lots).

than significant impact per the significance criteria (< 1.5 dBA increase when existing noise levels are > 65 dBA).

As shown in Table 3.9-5, some of the traffic levels adjacent to open space areas will exceed the normally and conditionally acceptable ranges for passive open space (50–55 dBA) shown in Table 3.9-2 within 50 feet of the roadways but none of the with-project increases exceed 5 dBA change above existing levels. In three locations (along SR 68, along David Avenue between Congress Road and SR 68, and 17-Mile Drive between Stevenson Drive and Palmero Way) there would be noise levels of more than 55 dBA at 100 feet from the roadway. There are no existing or planned trails within 100 feet of David Avenue between Congress Road and SR 68. The only trail on the west side of SR 68 in Del Monte Forest is Haul Road, south of the SFB Morse Gate, which is within designated open space.

A foot path from The Lodge at Pebble Beach crosses 17-Mile Drive at the intersection with Stevenson Drive and then follows Stevenson Drive, but this trail is not located in an open space forest area and the application of an open space noise criterion is not appropriate. Thus, along some trails in open space areas in Del Monte Forest, recreationalists would experience noise above 55 dBA for a distance of no more than 100 feet, except for the last portion of the new trail along Haul Road where noise will exceed 55 dBA for more than 100 feet (but the proposed project's contribution to noise levels along SR 68 at 100 feet from the roadway is minimal and less than the significance criteria, as shown in Table 3.9-5). Overall, recreationalists would experience noise above the 55 dBA standard for only the immediate adjacent area to certain roadways and then would have noise levels that meet the conditionally allowable standard for the remainder of their trail transit through open space. Due to the limited duration of noise exposure and the limited area affected, this is considered a less-than-significant impact.

All predicted noise levels identified in Table 3.9-5 are within the normally and conditionally acceptable ranges established in the Noise Element[2] (Table 3.9-2), for defined noise-sensitive uses. As a result, the impacts related to traffic noise are considered less than significant.

Parking Lot Noise

The proposed project includes reconfiguring the existing parking facility at The Lodge at Pebble Beach, a new employee parking lot at The Inn at Spanish Bay, and parking associated with new guest units at The Lodge at Pebble Beach and The Inn at Spanish Bay. Noise from vehicles entering and exiting parking lots would also be audible at homes adjacent to the lots. However, noise from vehicle parking lot use is anticipated to be less than the noise produced by passing vehicles traveling at higher speeds on the surrounding roadways, and generally would not be audible over traffic noise from the nearby surrounding roadways. Therefore, noise from parking lot use is considered less than significant.

[2] Parks, trails, and other open spaces are excluded because these locations are primarily used for active recreation and thus are not considered noise sensitive for the analysis; frequent human use would not occur at these locations. Frequent human use is considered to occur at exterior locations where people are exposed to roadway noise for at least one hour on a regular basis.

Table 3.9-5. Traffic Noise Exposure at Typical Residential Setbacks, Existing (2011) and 2015 Conditions

Roadway	Segment Location	Existing Noise (2011) (dB L_{dn})		2015 Noise (dB L_{dn})				Change		Project Contribution	
				No Project		With Project[a]		2015 With Project minus Existing		2015 With Project minus 2015 No Project	
		Existing 50 feet	Existing 100 feet	50 feet	100 feet	50 feet	100 feet	50 feet	100 feet	50 feet	100 feet
17-Mile Drive	Congress Road–SR 68	56	51	57	51	58	52	2	1	1	1
17-Mile Drive	West of Congress Road	57	51	57	52	58	53	1	2	1	1
17-Mile Drive	Forest Lodge Road–Spanish Bay Road	55	49	55	50	57	51	2	2	2	1
Forest Lodge Road	17-Mile Drive–Congress Road	58	53	59	53	59	53	1	0	0	0
Forest Lodge Road	Congress Road–Congress Avenue	59	53	60	54	60	54	1	1	0	0
David Avenue	Congress Avenue–SR 68	61	55	61	56	61	56	0	1	0	0
Congress Road	SFB Morse Drive–Forest Lodge Road	54	49	55	49	55	50	1	1	0	1
Sloat Road	Lopez Road–Forest Lodge Road	59	53	59	53	60	54	1	1	1	1
SFB Morse Drive	Congress Road–SR 68	57	52	58	52	58	52	1	0	0	0
Congress Road	Bird Rock Road–SFB Morse Drive	55	49	56	50	56	50	1	1	0	0
Lopez Road	South of Sloat Road	57	51	58	52	58	53	1	2	0	1
Sloat Road	Stevenson Road–Lopez Road	52	46	54	48	55	50	3	4	1	2
Sunridge Road	Constanilla Way–Scenic Drive	58	52	59	53	59	53	1	1	0	0
17-Mile Drive	At SR 1 Gate	60	54	60	54	60	55	0	1	0	1
Spyglass Hill Road	West of Stevenson Drive	51	45	52	46	56	50	5	5	4	4
Stevenson Drive	North of Spyglass Hill Road	53	48	54	49	56	50	3	2	2	1
Stevenson Drive	Spyglass Hill Road–Forest Lake Road	55	49	56	50	57	51	2	2	1	1
Forest Lake Road	North of Stevenson Drive	56	50	57	51	57	51	1	1	0	0
17-Mile Drive	South of Stevenson Drive	58	52	58	53	59	53	1	1	1	0
Cortez Road	North of Stevenson Drive/17-Mile Drive	50	44	52	46	53	47	3	3	1	1
17-Mile Drive	Stevenson Drive–Palmero Way	60	54	60	55	61	55	1	1	1	0
17-Mile Drive	East of Palmero Way	61	55	61	55	62	56	1	1	1	1
San Antonio Road	North of Ocean Avenue	57	51	57	52	58	52	1	1	1	0
SR 68	South of Skyline Forest Drive	68	62	68	62	68	62	0	0	0	0
SR 68	North of David Avenue	67	60	67	61	67	61	0	1	0	0

Note:

[a] This impact was evaluated with Option 1 (Area M Spyglass Hill New Resort Hotel) because Option 1 would generate more trips than Option 2 (Area M Spyglass Hill New Residential Lots).

Corporation Yard Noise

The proposed residential lot subdivision at the Corporation Yard would locate 10 residential housing units in the general vicinity of the Corporation Yard, more than 100 feet from the main access road to the Corporation Yard area (Figure 2-27). Corporation Yard activities would include the use of trucks and equipment associated with green waste, composting and recycling and general maintenance as it occurs today.

Noise measurements were conducted at 50 feet from the center of Haul Road passing the existing wood processing yard on March 6, 1996[3] to quantify noise from Corporation Yard passby activities without implementation of the proposed project. Current equipment and activities at the Corporation Yard are similar to those analyzed in the 1996 and 2001 noise measurements. Therefore, these noise measurements are considered representative of the current Corporation Yard area. The measurement site afforded an unobstructed view of the roadway, and vehicles or equipment were operated in the same manner as if they were being operated on the main Corporation Yard access road. The L_{max} during passbys was measured, along with the sound exposure level (SEL) of individual passbys. Table 3.9-6 summarizes measured values. Although not all vehicles or equipment that enter or exit the Corporation Yard were monitored, a representative sample of such vehicles or equipment was obtained.

Table 3.9-6. Measured Noise Levels from Service and Construction/Maintenance Vehicle or Equipment Passbys at PBC Corporation Yard Access Road (March 6, 1996)

	Measured at 50 feet from Haul Road[a]	
Description	**Maximum Level (dBA)**	**SEL (dBA)[b]**
Caterpillar 928F loader[c]	74	84.0
Diesel truck (six-cylinder Ford with turbocharger)	72	82.8
Diesel truck (six-cylinder Ford with turbocharger)	74	81.5
Diesel truck (six-cylinder Ford with turbocharger)	70	79.1
Pickup (Dodge)	59	64.9
Pickup (Dodge)	61	69.5

Source:
Brown-Buntin Associates 2001.

Notes:
[a] The noise levels measured at this location are representative of the noise levels that would occur at 50 feet from the Corporation Yard access road in an open area.
[b] The SEL represents the total acoustical energy generated during a noise event such as a vehicle passby or aircraft overflight. The SEL is not actually "heard," but is used in the L_{dn} calculation.
[c] The Caterpillar (CAT) 928F loader replaced a noisier Clark loader in 1997. Noise levels from the CAT 928F were measured by PBC on April 11, 2001.

To estimate noise from passby operations at the Corporation Yard with the proposed project, L_{dn} values for equipment that would be used is based on the monitored SEL data summarized in Table

[3] Noise level measurements were conducted by PBC on April 11, 2001 for the Caterpillar (CAT) 928F loader that replaced a noisier Clark loader in 1997. The CAT 928F produces maximum noise levels of 68 to 74 dBA at a distance of 50 feet. The estimated sound exposure level for a typical passby by the CAT 928F is 84 dBA.

3.9-6. These assumed L_{dn} calculations are representative of a worse-case condition and are presented in Table 3.9-7.

Table 3.9-7. Summary of L_{dn} Calculations for Vehicle/Equipment Passbys at 50 Feet from PBC Corporation Yard Access Road

Description	Passbys/Day	Measured SEL (dBA)[a]	Calculated L_{dn} (dBA)
Caterpillar 928F loader	4	84.0	40.6
Five 10-yard diesel dump trucks (similar to buses and delivery trucks)	12	82.8	44.2
Miscellaneous vehicles (automobiles, pickups, jeeps, etc.)	200	69.5	43.1
	Total L_{dn} from vehicle/equipment passbys = 47.6 dB at 50 feet		

Source:
Brown-Buntin Associates 2001.
Note:
[a] Highest SEL values from Table 3.9-6.

As indicated in Table 3.9-7, activities from the passby operations at the Corporation Yard are anticipated to be below the County's standard of 60 dBA L_{dn} and would not represent a significant change in outdoor noise levels for noise-sensitive uses. Therefore, noise impacts from passby operations at the Corporation Yard are considered less than significant.

Operations that would occur within the Corporation Yard include the use of trucks and equipment as it occurs today except the activities would be relocated to the back side of the PBC offices onsite, further away from the proposed residential lots. The area of the Corporation Yard where such activities would be concentrated is between 300 and 400 feet from the southern boundary of the proposed housing area, behind a row of buildings. These structures provide some acoustical shielding of potential noise sources. The estimate of noise associated with operations at the Corporation Yard is based on the monitored SEL data summarized in Table 3.9-6. These assumed L_{dn} calculations are representative of a worst-case condition and are presented in Table 3.9-7.

During the noise survey conducted on March 6, 1996, only the movement of the Clark loader around the Corporation Yard was audible and measurable at the location of the proposed housing area. As noted above, the Clark loader has been replaced by a quieter CAT 928F loader. The other potential sources of noise are primarily located inside buildings or are acoustically shielded from the proposed housing area by intervening buildings. Such sources of noise may be occasionally audible at the housing area, but would not result in a significant noise impact because of the noise attenuation over distance and relatively low noise generation levels (Table 3.9-7). Additionally, as described in Chapter 2, Project Description, a landscaped berm would be installed along the south side of the residential development to provide a buffer from activity in the Corporation Yard. Therefore, noise from operations within the Corporation Yard is considered less than significant.

Driving Range Noise

The proposed project would relocate the Pebble Beach Driving Range from Area V to Collins Field (Figure 2-13). Noise-generating activities resulting from driving range operations would include persons using the driving range, traffic from vehicles entering parking lots or access roads, and

driving range maintenance activities. These activities are intermittent; therefore, the cumulative noise levels resulting from these activities are generally very low. Driving range maintenance activities are expected to generate the most noise. Noise from persons playing on driving ranges and putting greens would be limited primarily to noise from audible voices and conversation. Golfing activities are not typically associated with noise and are not noise-generating activities. Voices would be occasionally audible at the closest residences to the east and south of the driving range. However, noise levels from audible voices would be well below the County's standard and would not represent a significant change in outdoor noise levels for noise-sensitive uses. Collins Field is currently used for a variety of events, including high school activities and special events. Therefore, noise from driving range activities is considered less than significant.

Equestrian Center Noise

The existing Equestrian Center would be removed and replaced by similar buildings and facilities (e.g., barns, clubhouse, staff housing) within the current Equestrian Center site (Figure 2-12). The closest existing residences would be to the southwest, across Portola Road, and the closest proposed residences would be to the north along Drake Road (Area U residential lot subdivision). Noise from the Equestrian Center activities would result primarily from vehicles (including trucks and vehicles hauling trailers) entering the facility, crowd activity, animals, and public address systems used during special events. These are all existing sources associated with the existing facility. The remodeled Equestrian Center would not be expected to increase noise levels in excess of applicable noise standards or result in a significant noise impact.

Maintenance Equipment Noise

The proposed project includes several residential lot subdivisions near and adjacent to existing golf course facilities that are regularly maintained. Noise measurements were conducted within The Links at Spanish Bay maintenance area and at the course itself on June 2, 1994, to quantify noise levels generated by typical golf course maintenance activities. The results of golf course maintenance equipment monitoring are presented in Table 3.9-8.

Table 3.9-8. Summary of Golf Course Maintenance Noise Level Measurements[a]

Equipment	Measured Noise Level at 50 feet (dBA L_{eq})
Stiner riding mower (84-inch)	61–69
Toro Groundsmaster mower (92-inch)	67–75
Shindaiwa EB 45 blower	65–73
Toro Reelmaster 5100 D mower	67–76
Ford wheel tractor model 2810	59–73

Source:
Brown-Buntin Associates 2001.
Note:
[a] Noise level measurements were taken at The Links at Spanish Bay, June 2, 1994, to establish typical golf course maintenance noise.

As shown in Table 3.9-8, typical golf course maintenance equipment produces noise levels between 59 and 76 dBA at a distance of 50 feet. Because the equipment is used intermittently, the noise exposure resulting from golf course maintenance activities would be well below 60 dBA L_{dn} and

would not represent a significant change in outdoor noise levels for noise-sensitive uses. Therefore, noise impacts from maintenance equipment are considered less than significant.

Ventilation Noise

The proposed project includes underground parking structures at The Lodge at Pebble Beach and the Area M Spyglass Hill (Option 1 New Resort Hotel). The mechanical ventilation equipment associated with the underground parking structures is the only long-term aspect of the proposed project anticipated to potentially generate noise levels approaching the County's exterior standard of 60 dBA L_{dn}. Because of the relatively large distances between the proposed Area M Spyglass Hill New Resort Hotel and the closest noise-sensitive uses, noise from the operation of the proposed hotel would not be expected to exceed applicable noise standards or result in a significant noise impact.

At The Lodge at Pebble Beach, new ventilation fans could be located in the basement parking proposed at New Colton Building. Transient lodging is located within about 100 feet from the proposed parking structure site. No ventilation fans are currently planned for Parking and Circulation Reconstruction across from The Lodge meeting facility because of the open-air nature of the lowest parking level. If ventilation fans were to be required in the final design they have the potential to produce audible noise at the closest existing homes to the northwest.

To estimate the noise generated, noise measurements were conducted at the existing Casa Palmero underground parking garage, which is larger than either of the facilities proposed at The Lodge at Pebble Beach. These measurements indicate that an exhaust fan generates a noise level of 62.4 dBA L_{dn} at 50 feet from the fan outlet, while the supply fan generates 55.4 dBA L_{dn} at 50 feet from the inlet vent. It is anticipated that operation of both fans concurrently would generate a combined noise level of 63 dBA L_{dn} at a distance of 50 feet. Point-source attenuation of 6 dB per doubling of distance, molecular absorption of 0.7 dB per 1,000 feet, and anomalous excess attenuation of 1 dB per 1,000 feet are assumed (Hoover and Keith 1996). With ambient noise levels in the range of 41 to 51 dB L_{dn}, there is potential for constant noise from the fans to be more than 5 dB greater than the ambient noise level at nearby noise-sensitive residential uses. Therefore, the noise impact of fan operation is considered potentially significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure NOI-A1: Employ noise-reducing treatments on parking structure fan systems.

The applicant will employ noise-reducing treatments on parking structure fan systems such that noise from the fans does not increase the ambient noise level by more than 5 dB at the nearest residences.

Noise from the fans and the ambient noise level will be expressed in terms of L_{dn}. Treatments may include (but are not limited to):

- Use of acoustical louvers for the supply and exhaust air vent openings.
- Acoustically lining the ductwork between the inlets and outlets of the fans.
- Acoustically shielding the fan inlets and outlets from the closest noise-sensitive receivers.

The applicant will submit a report to the County detailing the noise control design of the fan systems and how the appropriate noise reduction will be achieved prior to issuance of building permits for the parking facility.

B. Short-Term Noise Increases

Impact NOI-B1: The proposed project would result in exposure of outdoor activity areas of noise-sensitive land uses to construction noise greater than 85 dB at a distance of 50 feet during construction. (Less than significant with mitigation)

Potential noise impacts resulting from construction of the proposed project were evaluated by estimating the amount of noise generated on the theoretical worst-case day of construction activity. A detailed inventory of construction equipment that would be used for the proposed project is not available at this time; therefore, this noise analysis is based on construction equipment anticipated to be used during construction activities.

Table 3.9-9 lists the noise generation levels for various types of equipment typically used on construction projects. The list, compiled by FTA (2006), was used in this analysis to estimate construction noise. The magnitude of construction noise impacts was assumed to depend on the type of construction activity, noise level generated by various pieces of construction equipment, duration of the activity, distance between the activity and noise-sensitive receivers, and any shielding effects that might result from local barriers, including topography.

Table 3.9-9. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level at 50 feet from Source (dBA)
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane, derrick	**88**
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Jackhammer	**88**
Loader	85
Paver	**89**
Pneumatic tool	85
Pump	76
Roller/sheep's foot	74
Saw	76
Scraper	**89**
Shovel	82
Truck	**88**

Source:
Federal Transit Administration 2006.
Note:
Equipment identified in boldface text exceeds 85 dB at 50 feet.

A worst-case assumption is that the three loudest pieces of equipment would operate simultaneously and continuously over at least a 1-hour period, which would result in a combined noise level. Based on the noise levels summarized in Table 3.9-9, Table 3.9-10 presents the estimated sound levels from construction activities as a function of distance. Simultaneous operation of a paver, scraper, and truck, for a combined noise level of 93 dBA at 50 feet is assumed. Point-source attenuation of 6 dB per doubling of distance, molecular absorption of 0.7 dB per 1,000 feet, and anomalous excess attenuation of 1 dB per 1,000 feet are assumed (Hoover and Keith 1996).

Table 3.9-10 indicates that the construction significance criteria of 85 dBA would be exceeded at a distance of 125 feet or less from construction activities.

Table 3.9-10. Estimated Construction Noise in the Vicinity of an Active Construction Site

Distance to Receptor (feet)	Sound Level at Receptor (dBA)
50	**93**
100	**87**
125	85
400	74
600	70
800	68
1,000	65
1,500	61
2,000	58
2,500	55
3,000	52
4,000	48
5,280	44
7,500	37

Sources:
Noise levels summarized in Table 3.9-9.
Assumptions based on Hoover and Keith 1996.
Notes:
Equipment identified in boldface text exceeds 85 dB at 50 feet.
The following assumptions were made:

- Basic sound level dropoff rate: 6.0 dB per doubling of distance.
- Molecular absorption coefficient: 0.7 dB per 1,000 feet.
- Anomalous excess attenuation: 1.0 dB per 1,000 feet.
- Reference sound level: 93 dBA.
- Distance for reference sound level: 50 feet.

This calculation does not include the effects, if any, of local shielding, which may reduce sound levels further. Estimates are based on a combined noise source of a paver, scraper, and truck.

Table 3.9-11 summarizes anticipated construction-related noise levels at active construction sites where distances to noise-sensitive receptors are known. Where distances to noise-sensitive receptors are unknown (areas marked "NA"), any noise-sensitive land uses that may be located within 125 feet of active construction activities could be exposed to noise levels above the significance criteria of 85 dBA and could experience a significant noise impact. Therefore, this impact is considered significant, but would be reduced to less than significant with implementation of the following mitigation measures.

Table 3.9-11. Construction Noise Levels at Noise-Sensitive Land Uses in the Project Area

Project Development Areas	Distance of Noise-Sensitive Land Uses from Proposed Construction Activities	Construction Noise Level (dBA)
The Lodge at Pebble Beach	Private residences approximately 250 feet across Fairway One Reconstruction	79
	Transient lodging facilities adjacent to New Colton Building	NA[a]
	Pebble Beach townhouses near Parking and Circulation Reconstruction	NA[a]
The Inn at Spanish Bay	Existing transient lodging facilities at the Inn	**87**
Collins Field–Equestrian Center–Special Events Area	Residences approximately 100 feet to the southwest, directly across Sombria Lane/Portola Road	**87**
	Residences approximately 100 feet to the southwest, directly across Alva Lane	**87**
	Residences approximately 100 feet to the southeast, directly across Ondulado Road	**87**
Area M Spyglass Hill	In preserve, no noise-sensitive land uses in the area	NA[b]
Residential Lot Subdivisions		
F-2	No noise-sensitive land uses in or adjacent to the area	NA[b]
I-2	Residential developments/subdivisions located across Viscaino Road and Ronda Road	NA[a]
J	Residences located across Spyglass Woods Drive	NA[a]
K	No noise-sensitive land uses in or adjacent to the area	NA[b]
L	No noise-sensitive land uses in or adjacent to the area	NA[b]
U	Residence located along south border on Portola Road	NA[a]
V	Residences located across Forest Lake Road	NA[a]
Collins Residence	Residences located along south border and across Alva Lane	NA[a]
Corporation Yard	No noise-sensitive land uses in the area	NA[b]
Roadway Improvements		
SR 1/SR 68/17-Mile Drive	Residences along the south side of SR 68 west of the intersection reconfiguration area between the development site and the Community Hospital of the Monterey Peninsula	**79–91**
17-Mile Drive/Congress Road	Residences to north across golf links and to south/southwest	NA[a]
Lopez Road/Congress Road	No residences	NA[b]
Lopez Road/Sunridge Road	Residences located to the northwest, 250 feet away	79
Portola Road/Stevenson Drive	No residences	NA[b]

[a] Distance to noise-sensitive land use is unknown. Residences within 125 feet of an active construction site could have noise levels that exceed the significance criterion of 85 dBA (Table 3.9-10) and could experience a significant noise impact.

[b] There are no known noise-sensitive land uses in the general area.

Mitigation Measure NOI-B1: Limit hours of construction activities.

The applicant will ensure the construction specifications limit activities to the hours between 8 a.m. and 6 p.m. on weekdays and between 9 a.m. and 5 p.m. on Saturdays. Construction will not be allowed on Sundays or national holidays. These requirements will be included in all relevant construction contracts and shown on construction plans.

Mitigation Measure NOI-B2: Locate construction equipment as far from noise-sensitive receptors as practicable.

The applicant will ensure the construction specifications locate all stationary noise-generating equipment, such as pumps and generators, as far as possible from nearby noise-sensitive receptors, as practicable. Where possible, noise-generating equipment will be shielded from nearby noise-sensitive receptors by noise-attenuating buffers such as structures or haul truck trailers. Stationary noise sources located closer than 500 feet from noise-sensitive receptors will be equipped with noise-reducing engine housings. Portable acoustic barriers will be placed around noise-generating equipment located within 200 feet of residences. Water tanks and equipment storage, staging, and warm-up areas would be located as far from noise-sensitive receptors as possible. These requirements will be included in all relevant construction contracts and shown on construction plans.

Mitigation Measure NOI-B3: Use sound-control devices on combustion-powered construction equipment.

The applicant will ensure the construction specifications specify all construction equipment powered by gasoline or diesel engines has sound-control devices at least as effective as those originally provided by the manufacturer. No equipment would be permitted to have an unmuffled exhaust. These requirements will be included in all relevant construction contracts and shown on construction plans.

Mitigation Measure NOI-B4: Shield/shroud any impact tools used during construction.

The applicant will ensure the construction specifications specify that any impact tools used during demolition of existing infrastructure are shrouded or shielded. These requirements will be included in all relevant construction contracts and shown on construction plans.

Mitigation Measure NOI-B5: Shut off machinery when not in use during construction.

The applicant will ensure the construction specifications specifythat any mobile noise-generating equipment or machinery is shut off when not in use. These requirements will be included in all relevant construction contracts and shown on construction plans.

Mitigation Measure NOI-B6: Use shortest practicable traveling routes during construction.

The applicant will ensure the construction specifications specify that construction vehicles accessing the site use the shortest possible route to and from local freeways, provided the routes do not expose additional receptors to noise. The applicant will ensure that all planned routes are reviewed and approved by the Monterey County Public Works Department. These requirements will be included in all relevant construction contracts and shown on construction plans.

Mitigation Measure NOI-B7: Disseminate essential information to residences and implement a complaint response/tracking program during construction.

The applicant and the construction contractor will ensure that residents within 500 feet of the construction area are notified of the construction schedule in writing before construction begins. The project applicant and construction contractor will designate a noise disturbance coordinator who is responsible for responding to complaints regarding construction noise. The coordinator will determine the cause of any complaint and ensure that reasonable measures are implemented to correct the problem. A contact telephone number for the noise disturbance coordinator will be posted conspicuously on construction site fences and will be included in the written notification of the construction schedule sent to nearby residents. These requirements will be included in all relevant construction contracts and shown on construction plans.

Mitigation Measure NOI-B8: Implement additional mitigation measures, as needed, to reduce exposure of outdoor activity areas of noise-sensitive land uses to sustained construction noise levels greater than 85 dBA during construction.

Throughout the construction period, the contractor will implement additional noise mitigation measures at the request of the County, as needed, such that construction noise levels do not exceed 85 dBA (at the nearest outdoor activity area of a noise-sensitive land use). Additional measures might include changing the location of stationary noise-generating equipment, shutting off idling equipment, rescheduling construction activity, installing acoustic barriers around stationary sources of construction noise, temporarily relocating residents where practicable, using alternative equipment or construction methods that produce less noise, and other site-specific measures as appropriate. These requirements will be included in all relevant construction contracts and shown on construction plans

C. Vibration

Impact NOI-C1: The proposed project could result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels during construction at The Lodge at Pebble Beach and Area M Spyglass Hill Option 1 (New Resort Hotel). (Less than significant with mitigation)

Because of its intrusive nature, excavation of the subterranean parking garages would create seismic waves that radiate along the ground surface and downward into the earth. These surface waves can be felt as ground vibration. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance.

As seismic waves travel outward from a source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The peak rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude and is referred to as the peak particle velocity (PPV).

General construction activities are not anticipated to generate significant levels of groundborne vibration or groundborne noise. However, construction activities at the subterranean parking garages that would be located at The Lodge at Pebble Beach and Area M Spyglass Hill New Resort Hotel are anticipated to generate groundborne vibration. Because of the relatively large distances

between the proposed Area M Spyglass Hill New Resort Hotel and the closest noise-sensitive uses, groundborne noise and vibration from the construction of proposed Spyglass Hill Hotel would not be expected to exceed the FTA's vibration threshold of or result in a significant vibration impact.

At The Lodge at Pebble Beach site, the nearest sensitive receptors are located approximately 25 feet from where the subterranean parking garage would be excavated. Project-specific data regarding particular equipment that would be used during excavation and construction of the subterranean parking garages is not available at this time. Therefore, it was assumed that excavation would include the use of a bulldozer, which has a base PPV of 0.089 inch per second at 25 feet and an L_V of 87 VdB at 25 feet (Federal Transit Administration 2006). The construction-related PPV is below the USDOT's suggested vibration damage threshold of 0.12 inch per second for extremely fragile historic buildings; therefore, the construction-related vibration is not expected to damage building structures adjacent to the construction site. However, the vibration noise levels exceed the FTA annoyance vibration criterion of 72 VdB for a Category 2 land use. The groundborne vibration impact related to human annoyance is considered potentially significant. Implementation of Mitigation Measure NOI-C1 would reduce this impact to a less-than-significant level.

Mitigation Measure NOI-C1. Limit construction activities that result in vibration to specified times, provide advance notice to adjacent residents of such schedules, and temporarily relocate residents if requested and if vibration testing demonstrates that levels exceed Federal Transit Administration vibration thresholds.

The applicant and construction contractor will ensure that construction scheduling identifies the times and duration of vibration-causing effects due to construction of underground parking garages. These construction activities will be limited to a specified period during the day, as determined by the applicant and construction contractor with approval from the Monterey County Planning Department, with advance notice given to adjacent residents. The project applicant will offer residents who will be exposed to vibration levels exceeding threshold levels temporary relocation offsite during subterranean parking garage construction and excavation activities. These requirements will be included in all relevant construction contracts and shown on construction plans.

Cumulative Impacts and Mitigation Measures

Noise

The impact zone for noise is 1) Del Monte Forest for stationary noise sources because it is the area in which the proposed project could substantially contribute stationary sources of noise, and 2) Del Monte Forest and SR 68 for traffic noise because it is the location where the proposed project could substantially contribute noise. Traffic contributions along other regional roadways, other than SR 68, are more limited and thus analysis of noise contributions in these locations was not required or completed.

The methodology for determining cumulative impacts is described under Analysis of Cumulative Impacts at the beginning of Chapter 3. Cumulative noise impact is evaluated for the traffic noise that would result from the cumulative traffic growth in the project area and on SR 68.

A. Permanent Increases in Noise due to Project Operations

Impact NOI-A1(C). Cumulative development might result in exposure of persons to noise levels in excess of standards established in the County's Land Use Compatibility for Community Noise chart within Del Monte Forest or along SR 68, but the proposed project's contribution would be less than significant with mitigation.

Cumulative development could contribute stationary sources of noise as well as increase resulting traffic noise within Del Monte Forest and along SR 68.

Within Del Monte Forest, cumulative development other than the proposed project would be limited to residential development, which is not expected to result in significant operational noise impacts at the residential sites themselves (traffic noise discussed separately below). The proposed project would have significant operational stationary noise impacts related to ventilation noise associated with the underground parking structure, which could increase noise levels by more than 5 dB. However, this increase in noise can be addressed by implementation of Mitigation Measure NOI-A1 (see Project Impacts and Mitigation Measures), which would employ noise-reducing treatments on the parking structure fan systems. There are no cumulative operational noise contributors at the location of this parking structure.

Traffic noise levels for existing (2011) and 2030 conditions have been modeled for receivers at various locations in the project area using the FHWA Traffic Noise Model. This model calculates an L_{dn} value based on the daily traffic volume that is predicted to occur. The traffic data used in this analysis (vehicle volume, truck mix, vehicle speed, and day/night traffic distribution) were based on data provided by the project traffic consultant (Fehr & Peers 2011) and PBC. Noise exposure at 50 and 100 feet from roadway centerlines was calculated for existing (2011) and cumulative (2030) conditions. The results of noise modeling are presented in Table 3.9-12.

Table 3.9-12. Traffic Noise Exposure at Typical Residential Setbacks, Existing (2011) and 2030 Conditions

		Existing Noise (dB L_{dn})		Estimated Noise in 2030 (dB L_{dn})				Change		Project Contribution	
		Existing		No Project		With Project[a]		2030 With Project minus Existing		2030 With Project minus 2030 No Project	
Roadway	Segment Location	50 feet	100 feet	50 feet	100 feet	50 feet	100 feet	50 feet	100 feet	50 feet	100 feet
17-Mile Drive	Congress Road–SR 68	56	51	58	52	58	52	2	1	0	1
17-Mile Drive	West of Congress Road	57	51	58	52	59	53	2	2	1	1
17-Mile Drive	Forest Lodge Road–Spanish Bay Road	55	49	55	50	57	51	2	2	2	1
Forest Lodge Road	17-Mile Drive–Congress Road	58	53	59	53	59	53	1	0	0	0
Forest Lodge Road	Congress Road–Congress Avenue	59	53	60	54	60	54	1	1	0	0
David Avenue	Congress Avenue–SR 68	61	55	62	56	62	56	1	1	0	0
Congress Road	SFB Morse Drive–Forest Lodge Road	54	49	55	49	56	50	2	1	1	1
Sloat Road	Lopez Road–Forest Lodge Road	59	53	59	54	60	54	1	1	1	0
SFB Morse Drive	Congress Road–SR 68	57	52	58	52	58	53	1	1	0	1
Congress Road	Bird Rock Road–SFB Morse Drive	55	49	56	50	56	51	1	2	0	1
Lopez Road	South of Sloat Road	57	51	58	52	59	53	2	2	1	1
Sloat Road	Stevenson Road–Lopez Road	52	46	54	48	55	50	3	4	1	2
Sunridge Road	Constanilla Way–Scenic Drive	58	52	59	53	59	53	1	1	0	0
17-Mile Drive	At SR 1 Gate	60	54	60	55	61	55	1	1	1	0
Spyglass Hill Road	West of Stevenson Drive	51	45	52	46	56	50	5	5	4	4
Stevenson Drive	North of Spyglass Hill Road	53	48	55	49	56	50	3	2	1	1
Stevenson Drive	Spyglass Hill Road–Forest Lake Road	55	49	56	50	57	52	2	3	1	2
Forest Lake Road	North of Stevenson Drive	56	50	57	51	57	51	1	1	0	0
17-Mile Drive	South of Stevenson Drive	58	52	59	53	59	53	1	1	0	0
Cortez Road	North of Stevenson Drive/17-Mile Drive	50	44	52	46	53	47	3	3	1	1
17-Mile Drive	Stevenson Drive–Palmero Way	60	54	61	55	61	55	1	2	0	1
17-Mile Drive	East of Palmero Way	61	55	62	56	62	56	1	1	0	0
San Antonio Road	North of Ocean Avenue	57	51	58	52	58	52	1	1	0	0

Roadway	Segment Location	Existing Noise (dB L_{dn})		Estimated Noise in 2030 (dB L_{dn})				Change		Project Contribution	
		Existing		No Project		With Project[a]		2030 With Project minus Existing		2030 With Project minus 2030 No Project	
		50 feet	100 feet	50 feet	100 feet	50 feet	100 feet	50 feet	100 feet	50 feet	100 feet
SR 68	South of Skyline Forest Drive	68	62	70	64	70	64	2	2	0	0
SR 68	North of David Avenue	67	60	68	61	68	62	1	2	0	1

Notes:

[a] This impact was evaluated with Option 1 (Area M Spyglass Hill New Resort Hotel) because Option 1 would generate more trips than Option 2 (Area M Spyglass Hill New Residential Lots).

The results in Table 3.9-12 indicate that traffic noise levels with the proposed project in 2030 are expected to increase between 1 and 5 dB over existing (2011) conditions, with the largest project-related noise increases expected to occur on Spyglass Hill Road from proposed development in Area M Spyglass Hill[4]. Table 3.9-12 also indicates that the proposed project's contribution to noise level increases (i.e., changes in noise levels between 2030 with and without the proposed project) are between 0 and 4 dB, with the largest project-related noise contribution expected to occur on Spyglass Hill Road. Table 3.9-2 shows the standards for exterior noise exposure in the Noise Element.

The overall project will also contribute limited traffic along SR 68 where existing hourly noise levels at residential fence lines along the south side of SR 68 range from 64 to 70 dBA L_{eq} based on baseline monitoring. Modeling of the existing (2011) and 2030 with-project noise levels indicates that the increase of L_{dn} noise levels along SR 68 would be up to 2 dB, with the modeled L_{dn} of 67-68 dBA at 50 feet from SR 68 for existing (2011) conditions and 68 to 70 dBA at 50 feet for 2030 with-project conditions. This 2 dB change would be a significant cumulative impact because it is more than a 1.5 dB increase and existing noise levels exceed 65 dBA. Table 3.9-12 also indicates that the proposed project's contribution to noise level increases (i.e., changes in noise levels between 2030 with and without the proposed project) would be 0 dB at 50 feet. Because the proposed project contribution is less than the measurable threshold of 1 dB, the proposed project's contribution does not represent a significant impact.

For all locations other than SR 68, all predicted traffic noise levels identified in Table 3.9-12 are within the normally and conditionally acceptable ranges established in the Noise Element (Table 3.9-2) for uses other than open space.

As shown in Table 3.9-12, some of the traffic levels adjacent to open space areas will exceed the normally and conditionally acceptable ranges for passive open space (50–55 dBA) shown in Table 3.9-2 within 100 feet of the roadways but none of the with-project increases exceed 5 dBA change above existing levels. In three locations (along SR 68, along David Avenue between Congress Road and SR 68, and 17-Mile Drive east of Palmero Way) there would be noise levels over 55 dBA at 100 feet from the roadway. There are no existing or planned trails within 100 feet of David Avenue between Congress Road and SR 68. The only trail on the west side of SR 68 in Del Monte Forest is Haul Road, south of the SFB Morse Gate, which is within designated open space. There is a trail up Pescadero Canyon that crosses 17-Mile Drive and is parallel to 17-Mile Drive east of Carmel Way. Thus, along some trails in open space areas in Del Monte Forest, recreationalists would experience noise above 55 DBA for a distance of up to 100 feet, and beyond 100 feet for a portion of the Haul Road and the trail along 17-Mile Drive east of Carmel Way (but the proposed project's contribution to noise levels at these two locations are minimal and less than the significance criteria, as shown in Table 3.9-12). Overall, recreationalists would experience noise above the 55 dBA standard for only the immediate adjacent area to certain roadways and then would have noise levels that meet the conditionally allowable standard for the remainder of their trail transit through open space. Due to the limited duration of noise exposure and the limited area affected, the proposed project's contribution to cumulative traffic noise impacts on open space use by recreationalist is less than significant.

[4] This impact was evaluated with Option 1 (Area M Spyglass Hill New Resort Hotel) because Option 1 would generate more trips than Option 2 (Area M Spyglass Hill New Residential Lots).

Therefore, although cumulative development impacts related to long-term noise are considered to be potentially significant, the proposed project's contribution would not be considerable.

B. Short-Term Noise Increases due to Construction

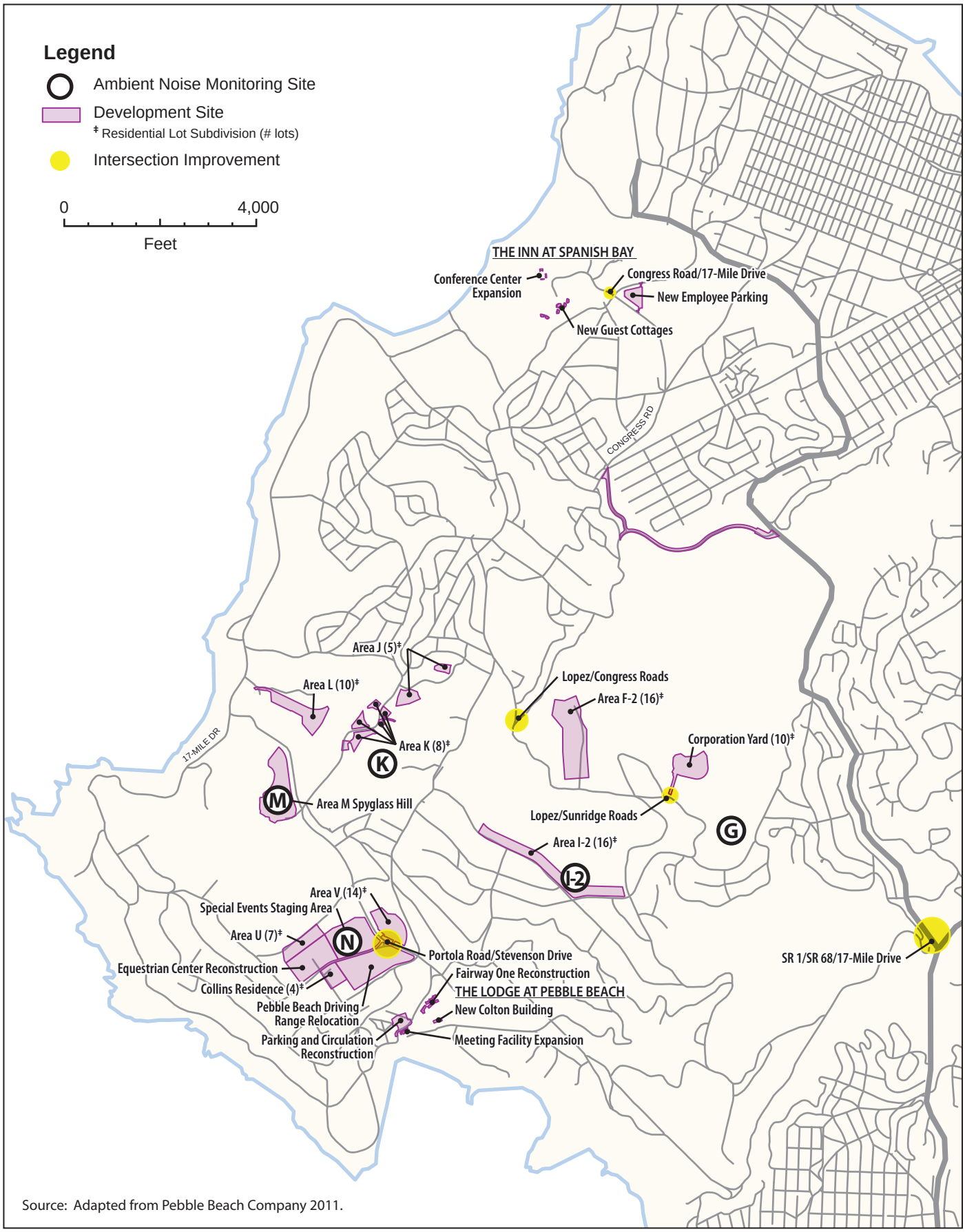
Impact NOI-B1(C). Cumulative development in Del Monte Forest might result in exposure of outdoor activity areas of noise-sensitive land uses to construction noise greater than 85 dB at a distance of 50 feet during construction, but the proposed project's contribution would be reduced to a less-than-significant level with mitigation.

Cumulative development in Del Monte Forest other than the proposed project would be very limited and would consist of single-family residences. As discussed under Project Impacts and Mitigation Measures, short-term increases in noise due to construction could occur in several project locations (see Table 3.9-11). However, this increase in noise can be addressed by implementation of Mitigation Measures NOI-B1 through NOI-B8 (see Project Impacts and Mitigation Measures), which would include a variety of measures to reduce construction noise, including but not limited to limiting the hours of construction, locating construction equipment away from noise sensitive receptors, use of special noise-reducing equipment, and adherence to noise-reduction procedures. Therefore, although cumulative development impacts related to short-term noise are considered to be potentially significant, the proposed project's contribution would not be considerable.

C. Construction-Related Vibration

Impact NOI-C1(C). Cumulative contributions of construction-related vibration at the same time as the proposed project are unlikely and the proposed project would not contribute to a significant cumulative vibration impact during construction.

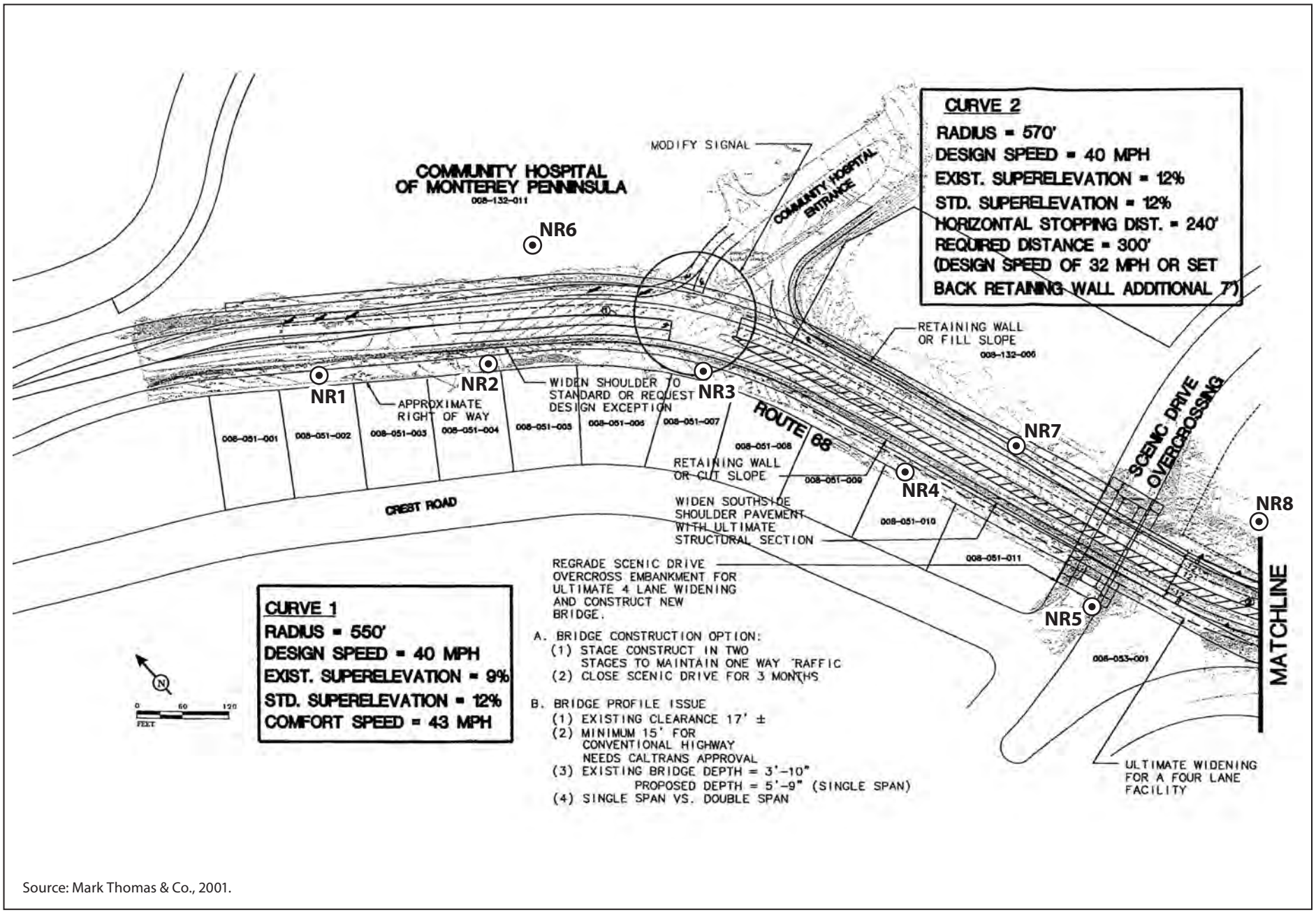
This is a project-level impact only and is discussed under Project Impacts and Mitigation Measures.



Source: Adapted from Pebble Beach Company 2011.

Graphics ... 00106.11 (10-11)

Figure 3.9-1
Ambient Noise Monitoring Locations in the Project Area



Source: Mark Thomas & Co., 2001.

Graphics ... 00106.11 (10-11)

Figure 3.9-2
Noise Monitoring Locations for SR 1/SR 68/17-Mile Drive Intersection Improvements