APPENDIX E

NOISE STUDY

City of Malibu

Rancho Malibu Resort Project

Noise Study

October 2012

rincon

Environmental Scientists Planners Engineers

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October 19, 2012
Project No. 11-98710

J.J. O'Brien
GREEN ACRES, LLC
c/o: Bruce McBride
a California Limited Liability Company
P.O. Box 6528
Malibu, California 90264

NOISE STUDY
Rancho Malibu Resort Project
Malibu, California

Dear Mr. O'Brien:

Rincon Consultants, Inc. is pleased to submit the attached Noise Study for the proposed Rancho Malibu Resort project in Malibu, California. The proposed project could potentially result in noise levels that would exceed the maximum noise limits in the City of Malibu's General Plan Noise Element. Mitigation was provided, recommending timing restriction on heavy-duty truck deliveries to the project site, and timing limits on the use of outdoor amplified sound systems on the project site in order to reduce noise levels produced by the proposed project to below the City's the maximum noise limits. As such, impacts related to noise as a result of the proposed project would not be significant, with the incorporation of recommended mitigation. If you have any questions regarding this study or if we can provide you with other environmental consulting services, please feel free to contact us.

Sincerely,

RINCON CONSULTANTS, INC.

Chris Bersbach
Environmental Planner

Joe Power, AICP
Principal

Rancho Malibu Resort Project

Noise Study

Prepared for:

GREEN ACRES, LLC
a California Limited Liability Company
P.O. Box 6528
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Prepared with the assistance of:

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Rancho Malibu Resort Project
Noise Study

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RANCHO MALIBU RESORT PROJECT
MALIBU, LOS ANGELES COUNTY
NOISE STUDY

This report is an analysis of the potential noise impacts of the proposed Rancho Malibu Resort project located in Malibu, California in Los Angeles County. The report has been prepared by Rincon Consultants, Inc. under contract to Green Acres, LLC for use by the City of Malibu, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the proposed project's potential temporary noise impacts relating to construction activity and long-term noise impacts associated with operation of the proposed project, including roadway noise from vehicle trips generated by the proposed project.

PROJECT DESCRIPTION

The Rancho Malibu Resort project would involve the development of a 146-room luxury hotel and related facilities, which would be located at 4000 Malibu Canyon Road in Malibu, California. The project site totals 27.8 acres, and is located at the junction of Malibu Canyon Road and Pacific Coast Highway (State Route 1) in the City of Malibu, Los Angeles County, California.

The main hotel would be approximately 167,062 square feet. The hotel would include a lobby, restaurant, bar, library, banquet facilities, and retail shops on the first floor, a basement level containing a spa, and fitness center with a second basement level with additional retail floor area. The 146 guestrooms would include 12 suites located on the second floor of the hotel and 134 suites in 21 separate casita-type buildings, totaling 177,736 square feet. The project would include outdoor pool and function lawn facilities, which may involve late-night outdoor amplified sound during events at the proposed hotel.

The proposed hotel would provide 543 parking spaces. Of those 543 spaces, 54 parking spaces would be provided in two separate at-grade parking lots. A 166,827 square foot, multi-level parking structure would provide 489 parking spaces. All public vehicular access to the hotel parking spaces would be provided by a single driveway located on Malibu Canyon Road, approximately 680 feet north of the Pacific Coast Highway centerline. The main hotel entrance and exit is near the curvature of Malibu Canyon Road. In addition to the main hotel access, a 26-foot wide fire access road is provided around the hotel site. The project site is located approximately 600 feet from a bus service stop (Metropolitan Transportation Authority [Metro] Route 534), which operates along Civic Center Way.

Construction of the proposed project would last for approximately 24 months.

SETTING

Overview of Sound Measurement

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels

to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB, and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dB change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dB per doubling of distance from point sources (such as industrial machinery). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dB per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dB per doubling of distance.

In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest RMS (root mean squared) sound pressure level within the measuring period, and Lmin is the lowest RMS sound pressure level within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Two commonly used noise metrics – the Day-Night average level (Ldn) and the Community Noise Equivalent Level (CNEL) – recognize this fact by weighting hourly Leqs over a 24-hour period. The Ldn is a 24-hour average noise level that adds 10 dB to actual nighttime (10 p.m. to 7 a.m.) noise levels to account for the greater sensitivity to noise during that time period. The CNEL is identical to the Ldn, except it also adds a 5 dB penalty for noise occurring during the evening (7 p.m. to 10 a.m.).

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each of these uses. The City of Malibu General Plan Noise Element includes a variety of land use and development types that are noise sensitive. Noise sensitive land uses include single and multiple family residences, schools, libraries, medical facilities, retirement/rest homes, and places of religious worship. The predominant land uses in the City are noise sensitive residential uses.

Noise-sensitive receptors near the project site include :

- Condominiums located approximately 400 feet east of the project site boundary, across Civic Center Way;
- Single-family residences located in the Malibu Knolls neighborhood approximately 700 feet east of the project site boundary, across Civic Center Way;
- Our Lady of Malibu Church, located approximately 350 feet north of the project site boundary, across Civic Center Way;
- Webster Elementary School, located approximately 550 feet northeast of the project site boundary, across Civic Center Way; and
- Housing at Pepperdine University, the closest of which is the Brock House, located approximately 1,600 feet northwest of the project site boundary, across Malibu Canyon Road.

In addition to these existing sensitive receptors, there are single-family residential units proposed on the Crummer Site Subdivision project site, located south of the project site, across Pacific Coast Highway. Based on the current proposal for the Crummer Site Subdivision, the nearest residential units would be approximately 350 feet south of the project site boundary.

It should be noted that the distances provided above are from the proposed project site boundary. Actual distances from on-site sources of noise, such as the outdoor pool and function lawn facilities, would be greater. Analysis of potential future noise levels at nearby sensitive receptors will be based on the distance between these receptors and anticipated noise sources.

Project Site Setting

The most common and primary existing sources of noise in the project site vicinity are motor vehicles (e.g., automobiles, buses, trucks, and motorcycles) along Pacific Coast Highway, Malibu Canyon Road, and Civic Center Way. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to noise sensitive uses. Additional sources of noise in the project site vicinity include activities associated with nearby institutional, residential, and recreational uses. There are no existing sources of noise on the project site, as the site is currently undeveloped.

A community noise survey was conducted on July 16, 1992, to document the existing noise environment within Malibu. Noise measurements were conducted at 10 sites that were representative of residential, commercial and public use areas, including the intersection of Pacific Coast Highway and Malibu Canyon Road. Each site was measured for 15 minutes. The quantities measured are in Leq, Lmin, and Lmax. The noise measurement results for this intersection are summarized in Table 1.

Table 1
City of Malibu General Plan Noise Measurements

		Noise Levels (in dBA)		
Location	Time	Leq	Lmin	Lmax
PCH and Malibu Canyon Road	10:54 a.m.	68	51	75

Source: City of Malibu General Plan Noise Element

The Malibu City General Plan Noise Element provides noise contours, which represent lines of equal noise exposure. The contours provide a visualization of estimates of sound level. Land forms and man-made structures have very complex effects on sound transmission and on noise contours. Generally, barriers between a source and receiver absorb or reflect noise resulting in a quieter environment. Where barriers or land forms do not interrupt the noise transmission path from source to receiver, the contours prove to be good estimates of the average noise level. In areas where barriers or land forms interrupt the sound transmission, the noise contours overestimate the extent to which a source intrudes into the community. The noise contour distances describe worst-case conditions because they do not account for any obstructions to the noise path, such as walls, berms, or buildings. The General Plan Noise Element included analysis of 16 roadway segments. Table 2 provides the results of the analysis along Pacific Coast Highway and Malibu Canyon Road near the project site. Table 3 provides the results of the analysis for similar roadway segments during the summer months, which are the peak traffic months.

Table 2
Roadway Noise Contours

	Distance to CNEL from Roadway Centerline				
Roadway Segment	**75′**	**70′**	**65′**	**60′**	**55′**
PCH west of Cross Creek, east of Civic Center Way	0.0	87.0	172.3	351.7	708.2
PCH west of Civic Center Way, east of Ramirez Canyon Road	0.0	73.8	143.0	291.5	590.6
Malibu Canyon Road north of PCH, south of Civic Center Way	0.0	0.0	50.6	103.5	215.3
Malibu Canyon Road north of Civic Center Way	0.0	0.0	81.5	169.3	350.0

Source: City of Malibu General Plan Noise Element; Harland Bartholomew & Associates, 1992

Table 3
Roadway Noise Contours – Summer Months

	Distance to CNEL from Roadway Centerline				
Roadway Segment	**75′**	**70′**	**65′**	**60′**	**55′**
PCH west of Cross Creek, east of Civic Center Way	51.7	92.2	183.6	374.9	752.9
PCH west of Civic Center Way, east of Ramirez Canyon Road	0.0	78.0	152.4	310.8	628.5

Source: City of Malibu General Plan Noise Element; Harland Bartholomew & Associates, 1992

Note that the data in Tables 1, 2, and 3 represent noise levels circa 1992. In order to determine existing noise levels on the project site, two weekday afternoon 20-minute noise measurements and two evening 20-minute noise measurements were taken on the project site using an ANSI Type II integrating sound level meter in March 2012. These on-site noise measurements provide

existing sound levels, which are primarily due to roadway noise from Pacific Coast Highway and Malibu Canyon Road. Table 4 identifies the on-site noise measurement locations and measured noise levels. Figure 1 shows noise measurement locations.

Table 4
On-Site Noise Monitoring Results

Measurement Location		Primary Noise Source	Sample Time	Leq (dBA)
1	North side of Pacific Coast Highway, approximately 750 feet east of Malibu Canyon Road, and 40 feet from roadway centerline	Traffic on Pacific Coast Highway	Weekday afternoon peak hour	76.0
			Weekday evening (off-peak)	70.8
2	East side of Malibu Canyon Road, approximately 200 feet north of Pacific Coast Highway, and 100 feet from roadway centerline	Traffic on Malibu Canyon Road	Weekday afternoon peak hour	66.9
			Weekday evening (off-peak)	56.0

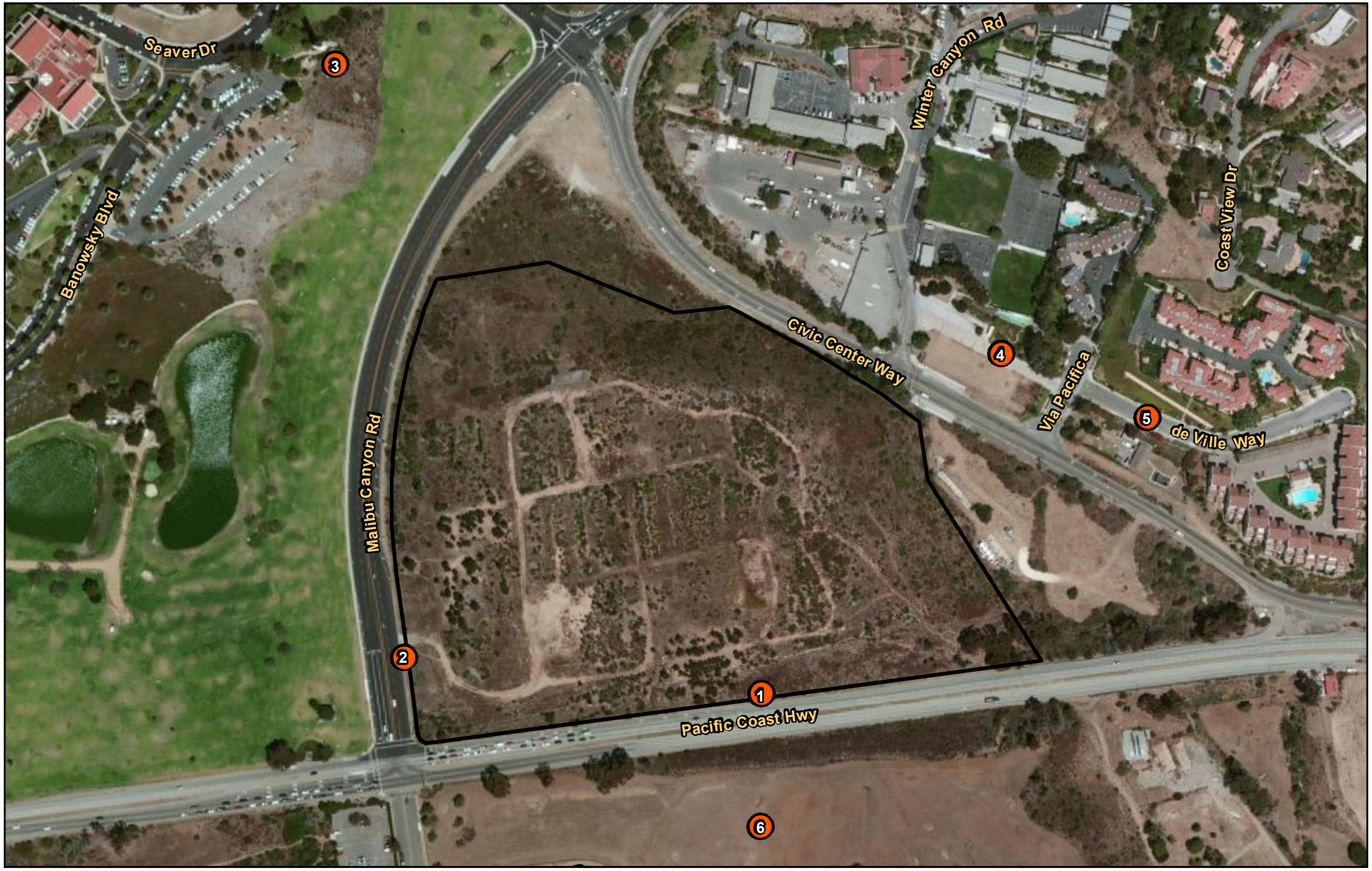
Source: Field visit using ANSI Type II Integrating sound level meter.
See Appendix for noise monitoring data sheets

In addition, four noise measurements were taken at or near the existing sensitive receptors described above, in order to establish baseline noise levels at these locations. Table 5 identifies the off-site sensitive receptor noise measurement locations and measured noise levels. Figure 1 shows noise measurement locations.

Table 5
Sensitive Receptor Noise Monitoring Results

Measurement Location		Primary Noise Source	Sample Time	Leq (dBA)
3	Pepperdine University main lawn, approximately 350 feet east of Malibu Canyon Road	Traffic on Malibu Canyon Road	Weekday afternoon peak hour	57.6
4	Northeast of Civic Center Way, south of the nearest residences in the Malibu Knolls neighborhood	Traffic on Civic Center Way	Weekday afternoon peak hour	59.1
5	Northeast of Civic Center Way, near condominiums south of the Malibu Knolls neighborhood	Traffic on Civic Center Way	Weekday afternoon peak hour	58.6
6	Approximate location of future residential use on Crummer Site Subdivision	Traffic on Pacific Coast Highway	Weekday afternoon peak hour	61.2

Source: Field visit using ANSI Type II Integrating sound level meter.
See Appendix for noise monitoring data sheets.



Legend

Site Boundary

Noise Measurement Location

N

0 160 320 Feet

Noise Measurement Locations

Figure 1

Regulatory Setting

In 1976, the California Department of Health, State Office of Noise Control published a recommended noise/land use compatibility matrix which many jurisdictions have adopted as a standard in their general plan noise elements. This matrix indicates that residential land uses and other noise sensitive receptors generally should locate in areas where outdoor ambient noise levels do not exceed 65 to 70 dBA (CNEL or Ldn).

The City of Malibu has adopted noise standards policies in its General Plan Noise Element. These policies establish both interior and exterior noise limits for non-transportation noise sources and transportation noise sources, and are shown in Table 6 and Table 7. The noise level standard for outdoor activity areas of new hotel uses (transient housing) is 60 dBA Ldn. A maximum noise exposure for indoor living areas in new residential units is not to exceed 45 dBA Ldn.

Table 6
Maximum Exterior Noise Limits – Non-Transportation Sources

Receiving Land Use Category	General Plan Land Use Districts	Time Period	Noise Level dBA	
			Leq	Lmax
Rural	All RR Zones and PRF, CR, AH, OS	7:00 a.m. to 7:00 p.m.	55	75
		7:00 p.m. to 10:00 p.m.	50	65
		10:00 p.m. to 7:00 a.m.	40	55
Other Residential	All SFR, MFR and MFBF Zones	7:00 a.m. to 7:00 p.m.	55	75
		7:00 p.m. to 10:00 p.m.	50	65
		10:00 p.m. to 7:00 a.m.	45	60
Commercial, Institutional	CN, CC, CV, CG, and I Zones	7:00 a.m. to 7:00 p.m.	65	85
		7:00 p.m. to 7:00 a.m.	60	70

Table 7
Maximum Allowable Noise Exposure – Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	Leq/dB[2]
Residential	50 [3]	45	-
Transient housing	60 [3]	45	-
Hospitals, long term in-patient medical treatment and care facilities	60 [3]	45	-
Theaters, auditoria, music halls	60 [3]	-	35
Churches and meeting halls	60 [3]	-	40
Office buildings	60 [3]	-	45
Schools, libraries and museums, child care	60 [3]	-	45
Playgrounds and neighborhood parks	70	-	-

1: Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
2: As determined for a typical worst-case hour during periods of use.
3: Where it is not possible to reduce noise in outdoor activity areas to 50 dB Ldn/CNEL or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

IMPACT ANALYSIS

Methodology and Significance Thresholds

Construction noise estimates are based upon noise levels reported in the U.S. Environmental Protection Agency document *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. Reference noise levels from that document were then used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation). Construction noise level estimates do not account for the presence of intervening structures or topography, which could reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative estimate of actual construction noise.

Noise levels associated with existing and future traffic along area roadways were calculated using the Traffic Noise Model Version 2.5 Look-Up Tables (U.S. Department of Transportation, Federal Highway Administration [FHWA], April 2004) (noise modeling data sheets can be viewed in the Appendix). The model calculations are based on traffic data from the traffic study completed for the proposed project by Overland Traffic Consultants (November 2011).

For traffic-related noise, impacts are considered significant if project-generated traffic results in exposure of sensitive receptors to an unacceptable increase in noise levels. Recommendations contained in the May 2006 Transit Noise and Vibration Impact Assessment created by the Federal Transit Administration (FTA) were used to determine whether or not increases in roadway noise would be significant. The allowable noise exposure increase changes with increasing noise exposure, such that lower ambient noise levels have a higher allowable noise exposure increase. Table 8 shows the significance thresholds for increases in traffic-related noise levels caused either by the project alone or by cumulative development.

Table 8
Significance of Changes in Operational Roadway Noise Exposure

Ldn or Leq in dBA	
Existing Noise Exposure	**Allowable Noise Exposure Increase**
45-50	7
50-55	5
55-60	3
60-65	2
65-74	1
75+	0

If sensitive receptors would be exposed to traffic noise increases exceeding the above criteria, impacts would be considered significant. Impacts related to onsite activities are considered significant if project activities would potentially create noise levels exceeding City standards.

Temporary Construction Noise

Project construction could intermittently generate high noise levels on and adjacent to the project site during the construction period. As identified in the project description, the construction period would have a duration of approximately 24 months. Temporary noise impacts associated with construction may adversely affect adjacent residential and institutional noise sensitive uses. The main sources of noise during construction activities would be the heavy machinery used in grading and clearing the site. As shown in Table 9, average noise levels associated with the use of heavy equipment at construction sites can range from about 78 to 88 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and phase of construction (USEPA, 1971).

Table 9
Typical Noise Levels at Construction Sites

Construction Phase	Average Noise Level at 50 Feet	
	Minimum Required Equipment Onsite	All Pertinent Equipment Onsite
Ground Clearing	84 dBA	84 dBA
Excavation	78 dBA	88 dBA
Foundation/Conditioning	88 dBA	88 dBA
Laying Sub-base, Paving	78 dBA	79 dBA
Finishing and Cleanup	84 dBA	84 dBA

Source: Bolt, Beranek, and Newman, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," prepared for the U.S. Environmental Protection Agency, 1971.

The residences to the east of the project site, Our Lady of Malibu Church to the north of the project site, Webster Elementary School located northeast of the project site, and Pepperdine University to the west of the project site are noise-sensitive uses that may experience a temporary noise annoyance during construction. The closest sensitive receptor to project construction would be Our Lady of Malibu Church located approximately 350 feet north of the project site boundary, across Civic Center Way.

Based on the project plans, construction activities may occur within approximately 600 feet of Our Lady of Malibu Church, 650 feet of the nearest residences to the east of the project site, 750 feet of Webster Elementary School, and 950 feet of Pepperdine University. Construction noise levels were extrapolated using the line-of-sight method of sound attenuation described above, and are shown in Table 10. The estimated noise level using this method results in a conservative reasonable worst case noise estimate, which does not account for potential attenuation resulting from noise barriers such as buildings or topography.

Table 10
Construction Noise at Sensitive Receptors

Receptor	Distance from Construction	Maximum Noise Level at Receptor	Maximum Exterior Noise Limit[1]	Threshold Exceeded?
Our Lady of Malibu Church	600 feet	67 dBA	85 dBA	No
Residences Across Civic Center Way	650 feet	66 dBA	75 dBA	No
Webster Elementary School	750 feet	65 dBA	85 dBA	No
Pepperdine University	950 feet	63 dBA	85 dBA	No

[1] *From Table 6, based on anticipated construction hours between 7:00 a.m. and 7:00 p.m.*

Using this methodology, the maximum on-site construction noise levels are not expected to exceed the maximum exterior noise limits. Therefore, construction-related impacts would be less than significant.

In addition, project construction would result in up to 150 vehicle trips per day from workers commuting to the project site during the 24-month construction period, and approximately 136 soil hauling truck trips per day over the 10-week grading period. These added construction worker trips would be temporary, and would cease at the close of the construction period. In addition, relative to existing traffic levels, the addition of 150 worker trips to the project site is not expected to result in a substantial noise impact. Similarly, the added 136 soil hauling trips would take place during the approximately 10-week grading period. A specific haul route for soil export from the project site during construction has not yet been identified, but would be most likely to utilize Malibu Canyon Road and Pacific Coast Highway, depending on whether the destination of the exported material is north or south of the project site. Both of these roadways carry a substantial volume of existing traffic, and would not be expected to experience a significant noise impact to nearby sensitive receptors due to the addition of the proposed temporary soil hauling truck trips.

Long-Term Operational Noise Exposure

The proposed project would introduce new hotel, restaurant, and retail uses on the project site. Existing sensitive uses near the project site and proposed new uses on-site may periodically be subject to noise associated with operation of the proposed project, including stationary equipment, such as ventilation and heating systems, delivery trucks, parking lot noise, and other general activities associated with the proposed uses.

HVAC Equipment. Noise levels from commercial HVAC equipment can reach 100 dBA at a distance of three feet (USEPA, 1971). These units usually have noise shielding cabinets, placed on the roof or mechanical equipment rooms and are not usually significant sources of noise impacts. Typically, the shielding and location of these units reduces noise levels to no greater than 55 dBA at 50 feet.

Based on the project plans, the proposed new uses would be located a minimum of 600 feet from Our Lady of Malibu Church, approximately 650 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 1,600 feet from the nearest residential receptor on the Pepperdine University campus. Based on an attenuation rate of 6 dB per doubling of distance, this would result in an external noise level at the nearest existing sensitive receptor (600 feet) of 34 dBA, which would not exceed any of the City's maximum exterior noise limits, shown in Table 6; therefore, noise from HVAC systems are would result in a less than significant impact.

In addition, the proposed new uses would be located a minimum of 350 feet from proposed single-family residential units on the Crummer Site Subdivision south of the project site, across Pacific Coast Highway. Based on an attenuation rate of 6 dB per doubling of distance, this would result in an external noise level at the nearest proposed sensitive receptor of 38 dBA, which would not exceed any of the City's maximum exterior noise limits.

Delivery Trucks. On-site activities would include the use of delivery trucks and trash hauling. Delivery trucks and trash hauling trucks would access the site from Malibu Canyon Road. The California Motor Vehicle Code establishes maximum sound levels for trucks operating at speeds less than 35 miles per hour (Section 23130). The maximum sound level established by the code is 86 dBA at 50 feet. However, average noise levels for single idling trucks generally range from 60 to 65 dB Leq at a distance of 100 feet, and maximum noise levels associated with heavy truck passages range from 70 to 75 dB Lmax at a distance of 100 feet. Maximum noise levels generated by passages of medium duty delivery trucks generally range from 55 to 65 dB at a distance of 100 feet, depending on whether or not the driver is accelerating.

Proposed parking areas and loading zones are located a minimum of 600 feet from Our Lady of Malibu Church, approximately 650 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 1,600 feet from the nearest residential receptor on the Pepperdine University campus. Based on an attenuation rate of 6 dB per doubling of distance, the sound level at the nearest sensitive receptor (600 feet) from idling delivery trucks would be approximately 50 dB Leq, and the maximum sound level at the nearest residential unit (650 feet) would be 49 dB Leq. The maximum sound level at the nearest sensitive receptor (600 feet) from delivery trucks (assuming heavy-duty trucks) would be approximately 60 dB Lmax, and the maximum sound level at the nearest residential unit (650 feet) would be 59 dB Lmax. Because delivery truck trips to the proposed hotel would be a sporadic source of noise, the maximum exterior noise limits (Lmax) shown in Table 6 are the appropriate threshold for these noise sources; noise from delivery truck trips would not exceed the maximum exterior noise limits (Lmax) for residential or institutional land uses shown in Table 6 at the nearest sensitive receptors. Operational noise impacts would be less than significant.

In addition, the proposed parking areas and loading zones would be located a minimum of 350 feet from proposed single-family residential units on the Crummer Site Subdivision south of the project site, across Pacific Coast Highway. Based on an attenuation rate of 6 dB per doubling of distance, this would result in an external noise level from idling delivery trucks at the nearest proposed sensitive receptor of 54 dB Leq, and a maximum external noise level from delivery

trucks (assuming heavy-duty trucks) at the nearest proposed sensitive receptor of 64 dB Lmax. Because delivery truck trips to the proposed hotel would be a sporadic source of noise, the maximum exterior noise limits (Lmax) shown in Table 6 are the appropriate threshold for these noise sources; noise from delivery truck trips would not exceed the maximum exterior noise limits (Lmax) for residential land uses shown in Table 6 at the proposed sensitive receptors on the Crummer Site between the hours of 7:00 a.m. and 10:00 p.m. Between 10:00 p.m. and 7:00 a.m., delivery truck trips could exceed the City's maximum exterior noise limits. With incorporation of Mitigation Measure N-1 below, operational noise impacts from delivery truck trips to and from the project site would be less than significant.

N-1 **Heavy-Duty Delivery Truck Trip Timing.** Deliveries from heavy-duty trucks, including refrigerator trucks, trash and recycling pick-ups, and parking lot sweeping, shall be restricted to daytime operating hours (7:00 a.m. to 10:00 p.m.).

Outdoor Function Areas. The proposed hotel would include an outdoor pool and function lawn facilities. The outdoor pool would be located near the center of the project site, surrounded by buildings proposed as part of the hotel development. The function lawn facilities would be located near the western boundary of the project site, approximately 700 feet north of the intersection of Malibu Canyon Road and Pacific Coast Highway, and on the eastern portion of the project site, approximately 150 feet north of Pacific Coast Highway, and 400 feet southwest of Civic Center Way. In addition to noise from use and activities, other potential noise associated with the outdoor pool and function lawn facilities would include amplified sound during events at the proposed hotel (music, television sound, and announcements broadcast through a loudspeaker system).

Based on the project plans, the proposed outdoor pool would be located a minimum of 850 feet from Our Lady of Malibu Church, approximately 800 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 2,200 feet from the nearest residential receptor on the Pepperdine University campus. The western function lawn would be located a minimum of 800 feet from Our Lady of Malibu Church, approximately 1,200 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 1,650 feet from the nearest residential receptor on the Pepperdine University campus. The eastern function lawn would be located a minimum of 900 feet from Our Lady of Malibu Church, approximately 700 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 2,500 feet from the nearest residential receptor on the Pepperdine University campus. Based on a sound attenuation rate of 6 dB per doubling of distance, amplified sound from the proposed outdoor pool could exceed the City's maximum exterior noise limits if it were above 79 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 74 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 69 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m. Amplified sound from the western function lawn could exceed the City's maximum exterior noise limits if it were above 83 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 78 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 73 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m. Amplified sound from the eastern function lawn could exceed the City's maximum exterior noise limits if it were above 78 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 73 dBA (at 50 feet from the speaker/source) between

7:00 p.m. and 10:00 p.m., or above 68 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m.

In addition, the proposed outdoor pool would be located a minimum of 600 feet from proposed single-family residential units on the Crummer Site Subdivision south of the project site, across Pacific Coast Highway. The western function lawn would be located a minimum of 900 feet from proposed single-family residential units on the Crummer Site Subdivision. The eastern function lawn would be located a minimum of 400 feet from proposed single-family residential units in the Crummer Site Subdivision. Based on an attenuation rate of 6 dB per doubling of distance, amplified sound from the proposed outdoor pool could exceed the City's maximum exterior noise limits at these proposed uses if it were above 77 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 72 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 67 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m. Amplified sound from the western function lawn could exceed the City's maximum exterior noise limits at these proposed uses if it were above 80 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 75 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 70 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m. Amplified sound from the eastern function lawn could exceed the City's maximum exterior noise limits at these proposed uses if it were above 73 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 68 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 63 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m.

With respect to all noise sources generated by the outdoor services, the design and construction of the proposed hotel would be required to comply with the Noise Insulation Standards of Title 24 of the CCR, which ensure an acceptable interior noise environment (45 dBA) for the hotel uses of the project. In addition, proposed buildings and site topography would provide an attenuating effect on noise produced on the project site, and would therefore reduce noise exposure at nearby sensitive receptors; however, quantifying the attenuating effect of these proposed physical barriers on noise produced on-site is speculative at this time, and would therefore require review by a qualified acoustical consultant subsequent to project construction. Therefore, with incorporation of Mitigation Measure N-2 below, operational noise impacts from amplified sound at the proposed outdoor function areas would be less than significant.

N-2 **Amplified Sound Systems.** Based on a worst-case analysis, the sound output of the amplified sound systems for the outdoor pool and function lawn facilities would be limited to a maximum sound level (measured at 50 feet from the speaker/source) of:

- *73 dBA between 7:00 a.m. and 7:00 p.m.;*
- *68 dBA between 7:00 p.m. and 10:00 p.m.; and*
- *63 dBA between 10:00 p.m. and 7:00 a.m.*

Prior to issuance of occupancy permits, the project applicant should employ a qualified acoustical consultant to evaluate the noise-attenuating effect of on-site buildings and topography on noise levels produced at outdoor function areas. The level of attenuation determined by the acoustical consultant may be used to appropriately modify the maximum sound levels shown above in

order to allow higher noise levels at the proposed outdoor function areas without exceeding the City's maximum exterior noise limits.

The design of the outdoor amplified sound systems would be reviewed by a qualified acoustical consultant subsequent to project construction to ensure that the design would meet the project noise criteria.

Long-Term Regional Impacts

The proposed project would generate increased noise on area roadways due to increased traffic to and from the project site. The traffic noise analysis is based on the traffic estimates provided in the traffic study prepared by Overland Traffic Consultants (November 2011). Assumptions about traffic generated by the proposed project and future roadway conditions are consistent with the project traffic study. The primary roadways affected by project-added vehicle traffic would be Pacific Coast Highway and Malibu Canyon Road. Based on the project traffic study, other affected roadway segments (such as Civic Center Way and Cross Creek Road) would experience a comparatively small increase in vehicle trips. Roadway noise levels along these roadway segments were estimated using the Traffic Noise Model Version 2.5 Look-Up Tables (U.S. Department of Transportation, Federal Highway Administration [FHWA], April 2004).

Table 11 shows the existing and anticipated future (cumulative) noise levels at 50 feet from the centerline of roadway segments along project-area roadways, as well as estimated noise levels along roadways that would experience increases in noise due to project-generated traffic. The roadway segments shown in Table 11 represent the locations where the most substantial increase in traffic due to the project and cumulative development would occur. Traffic levels during the weekend mid-day peak hour were used, as these traffic levels represent the time during which the project would add the largest volume of new vehicles to area roadways. A noise model summary and results are included in the Appendix.

Table 11
Calculated Noise Associated with Traffic on Surrounding Roadways

Roadway	Projected Noise Level (dBA Leq)				Change In Noise Level (dBA Leq)		
	Existing (1)	Existing + Project (2)	Cumulative (3)	Cumulative + Project (4)	Due to Project Traffic (2-1)	Due to Project Traffic Under Future (2016) Conditions (4-3)	Due to Project and Future Traffic (4-1)
Pacific Coast Highway between Kanan Dume Road and Malibu Canyon Road	73.1	73.1	73.7	73.7	0.0	0.0	0.6
Pacific Coast Highway between Malibu Canyon Road and Cross Creek Road	73.5	73.6	74.0	74.1	0.1	0.1	0.6

Table 11
Calculated Noise Associated with Traffic on Surrounding Roadways

Roadway	Projected Noise Level (dBA Leq)				Change In Noise Level (dBA Leq)		
	Existing (1)	Existing + Project (2)	Cumulative (3)	Cumulative + Project (4)	Due to Project Traffic (2-1)	Due to Project Traffic Under Future (2016) Conditions (4-3)	Due to Project and Future Traffic (4-1)
Malibu Canyon Road between Pacific Coast Highway and Future Resort Access	69.4	69.8	69.9	70.4	0.4	0.5	1.0
Malibu Canyon Road between Future Resort Access and Civic Center Way	69.4	69.6	69.9	70.0	0.2	0.1	0.6

Estimates of noise generated by traffic from roadway centerline at 50 feet.
Refer to Appendix for full noise model output. Noise levels presented do not account for attenuation provided by existing barriers or future barriers; therefore, actual noise levels at sensitive receptor locations influenced by study area roadways may in many cases be lower than presented herein.
Source: Federal Highway Administration Traffic Noise Model Version 2.5 Look-Up Tables.

The guidelines shown in Table 8 are used to determine whether noise associated with increased traffic would be significant. Because existing roadway noise levels are between 65 and 74 dBA, a 1 dBA noise increase attributable to the project would be considered significant. As shown in Table 11, noise level increases associated with project traffic would range from 0.0 dBA to 0.4 dBA under existing plus project conditions. The increase in roadway noise levels under existing plus project conditions would not result in a noise increase greater than 1 dBA at any of the study area roadway segments. Therefore, the project's impact would be less than significant.

In addition, the project would contribute to a cumulative traffic noise increase, as shown in the final column of Table 8. The cumulative noise level increase would be from 0.6 dBA to 1.0 dBA, with the largest increase occurring on Malibu Canyon Road between Pacific Coast Highway and the future access road for the proposed project. However, the project's contribution to this cumulative increase would be 0.5 dBA, which would not exceed the FTA significance thresholds shown in Table 8. Therefore, the project's cumulative impact would be less than significant.

REFERENCES

Malibu, City of. General Plan Noise Element.

Malibu, City of. Municipal Code.

Overland Traffic Consultants. *Traffic Impact Analysis, Resort Hotel Development*. November 2011.

U.S. Department of Transportation, Federal Highway Administration. Traffic Noise Model version 2.5. April 2004.

U.S. Environmental Protection Agency. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. 1971.

Appendix

Federal Highway Administration [FHWA] Traffic Noise Model Version 2.5 Look-Up Tables noise modeling datasheets

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1		0	29Jan 94	8:16:33	1200	70.8	101.6	88.9	40.5	103.7	109.3	75.7	65.9	60.4	47.8	0	0
2		0	29Jan 94	8:46:25	1200	56	86.8	71.4	33.4	85	0	60.5	52.3	47.2	37	0	0

C:\LARDAV\SLMUTIL\5-3-12.bin Interval Data

Date	Time	Duration	Leq	**20-min Leq**	SEL	Lmax	Lmin	Peak	Uwpk	L(10)	L(33)	L(50)	L(90)	L(100)	L(100)
03May 12	16:41:11	1479.8	58	**57.6**	89.7	74.3	47.9	95.4	104	60.4	57.6	56.2	52.7	0	0
03May 12	17:25:47	1340.5	59.2	**59.1**	90.5	78.4	44.8	97	115.3	61.8	59.7	58.4	54.3	0	0
03May 12	17:51:02	1271	58.6	**58.6**	89.7	71.1	49	96.6	98	60.9	58.8	57.8	54.3	0	0
03May 12	18:40:11	1468.5	60.5	**61.2**	92.1	80.2	39.6	95.8	102.5	60.5	52.9	50.5	46	0	0

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing - PCH between Kanan Dume and Malibu Canyon

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	2994.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	166.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	166.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	73.1

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Project - PCH between Kanan Dume and Malibu Canyon

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	3030.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	168.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	168.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	73.1

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Cumulative - PCH between Kanan Dume and Malibu Canyon

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	3423.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	190.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	190.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	73.7

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

CumulativeProj - PCH between Kanan Dume and Malibu Canyon

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	3466.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	193.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	193.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	73.7

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing - PCH between Malibu Canyon and Cross Creek

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	3315.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	184.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	184.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	73.5

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Project - PCH between Malibu Canyon and Cross Creek

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	3401.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	189.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	189.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	73.6

□N□

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Cumulative - PCH between Malibu Canyon and Cross Creek

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	3724.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	207.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	207.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	74.0

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

CumulativeProj - PCH between Malibu Canyon and Cross Creek

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	3827.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	213.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	213.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	74.1

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing - Malibu Canyon between PCH and Future Resort Access

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1290.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	72.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	72.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	69.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Project - Malibu Canyon between PCH and Future Resort Access

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1421.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	79.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	79.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	69.8

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Cumulative - Malibu Canyon between PCH and Future Resort Access

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1432.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	80.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	80.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	69.9

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

CumulativeProj - Malibu Canyon between PCH and Future Resort Access

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1607.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	89.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	89.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	70.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing - Malibu Canyon between Future Resort Access and Civic Center

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1290.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	72.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	72.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	69.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Project - Malibu Canyon between Future Resort Access and Civic Center

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1347.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	75.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	75.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	69.6

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Cumulative - Malibu Canyon between Future Resort Access and Civic Center

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1434.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	80.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	80.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	69.9

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

CumulativeProj - Malibu Canyon between Future Resort Access and Civic Center

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1491.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	83.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	83.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	0.0
Average bus speed (mph):	0.0
Motorcycle volume (v/h):	0.0
Average Motorcycle speed (mph):	0.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: hard

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Distance from center of 12-ft wide, single lane roadway (ft):	75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):	70.0

RANCHO MALIBU RESORT PROJECT
MALIBU, LOS ANGELES COUNTY
NOISE STUDY

This report is an analysis of the potential noise impacts of the proposed Rancho Malibu Resort project located in Malibu, California in Los Angeles County. The report has been prepared by Rincon Consultants, Inc. under contract to Green Acres, LLC for use by the City of Malibu, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the proposed project's potential temporary noise impacts relating to construction activity and long-term noise impacts associated with operation of the proposed project, including roadway noise from vehicle trips generated by the proposed project.

PROJECT DESCRIPTION

The Rancho Malibu Resort project would involve the development of a 146-room luxury hotel and related facilities, which would be located at 4000 Malibu Canyon Road in Malibu, California. The project site totals 27.8 acres, and is located at the junction of Malibu Canyon Road and Pacific Coast Highway (State Route 1) in the City of Malibu, Los Angeles County, California.

The main hotel would be approximately 167,062 square feet. The hotel would include a lobby, restaurant, bar, library, banquet facilities, and retail shops on the first floor, a basement level containing a spa, and fitness center with a second basement level with additional retail floor area. The 146 guestrooms would include 12 suites located on the second floor of the hotel and 134 suites in 21 separate casita-type buildings, totaling 177,736 square feet. The project would include outdoor pool and function lawn facilities, which may involve late-night outdoor amplified sound during events at the proposed hotel.

The proposed hotel would provide 543 parking spaces. Of those 543 spaces, 54 parking spaces would be provided in two separate at-grade parking lots. A 166,827 square foot, multi-level parking structure would provide 489 parking spaces. All public vehicular access to the hotel parking spaces would be provided by a single driveway located on Malibu Canyon Road, approximately 680 feet north of the Pacific Coast Highway centerline. The main hotel entrance and exit is near the curvature of Malibu Canyon Road. In addition to the main hotel access, a 26-foot wide fire access road is provided around the hotel site. The project site is located approximately 600 feet from a bus service stop (Metropolitan Transportation Authority [Metro] Route 534), which operates along Civic Center Way.

Construction of the proposed project would last for approximately 24 months.

SETTING

Overview of Sound Measurement

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels

to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB, and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dB change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dB per doubling of distance from point sources (such as industrial machinery). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dB per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dB per doubling of distance.

In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest RMS (root mean squared) sound pressure level within the measuring period, and Lmin is the lowest RMS sound pressure level within the measuring period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Two commonly used noise metrics – the Day-Night average level (Ldn) and the Community Noise Equivalent Level (CNEL) – recognize this fact by weighting hourly Leqs over a 24-hour period. The Ldn is a 24-hour average noise level that adds 10 dB to actual nighttime (10 p.m. to 7 a.m.) noise levels to account for the greater sensitivity to noise during that time period. The CNEL is identical to the Ldn, except it also adds a 5 dB penalty for noise occurring during the evening (7 p.m. to 10 a.m.).

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each of these uses. The City of Malibu General Plan Noise Element includes a variety of land use and development types that are noise sensitive. Noise sensitive land uses include single and multiple family residences, schools, libraries, medical facilities, retirement/rest homes, and places of religious worship. The predominant land uses in the City are noise sensitive residential uses.

Noise-sensitive receptors near the project site include :

- Condominiums located approximately 400 feet east of the project site boundary, across Civic Center Way;
- Single-family residences located in the Malibu Knolls neighborhood approximately 700 feet east of the project site boundary, across Civic Center Way;
- Our Lady of Malibu Church, located approximately 350 feet north of the project site boundary, across Civic Center Way;
- Webster Elementary School, located approximately 550 feet northeast of the project site boundary, across Civic Center Way; and
- Housing at Pepperdine University, the closest of which is the Brock House, located approximately 1,600 feet northwest of the project site boundary, across Malibu Canyon Road.

In addition to these existing sensitive receptors, there are single-family residential units proposed on the Crummer Site Subdivision project site, located south of the project site, across Pacific Coast Highway. Based on the current proposal for the Crummer Site Subdivision, the nearest residential units would be approximately 350 feet south of the project site boundary.

It should be noted that the distances provided above are from the proposed project site boundary. Actual distances from on-site sources of noise, such as the outdoor pool and function lawn facilities, would be greater. Analysis of potential future noise levels at nearby sensitive receptors will be based on the distance between these receptors and anticipated noise sources.

Project Site Setting

The most common and primary existing sources of noise in the project site vicinity are motor vehicles (e.g., automobiles, buses, trucks, and motorcycles) along Pacific Coast Highway, Malibu Canyon Road, and Civic Center Way. Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to noise sensitive uses. Additional sources of noise in the project site vicinity include activities associated with nearby institutional, residential, and recreational uses. There are no existing sources of noise on the project site, as the site is currently undeveloped.

A community noise survey was conducted on July 16, 1992, to document the existing noise environment within Malibu. Noise measurements were conducted at 10 sites that were representative of residential, commercial and public use areas, including the intersection of Pacific Coast Highway and Malibu Canyon Road. Each site was measured for 15 minutes. The quantities measured are in Leq, Lmin, and Lmax. The noise measurement results for this intersection are summarized in Table 1.

Table 1
City of Malibu General Plan Noise Measurements

		Noise Levels (in dBA)		
Location	Time	Leq	Lmin	Lmax
PCH and Malibu Canyon Road	10:54 a.m.	68	51	75

Source: City of Malibu General Plan Noise Element

The Malibu City General Plan Noise Element provides noise contours, which represent lines of equal noise exposure. The contours provide a visualization of estimates of sound level. Land forms and man-made structures have very complex effects on sound transmission and on noise contours. Generally, barriers between a source and receiver absorb or reflect noise resulting in a quieter environment. Where barriers or land forms do not interrupt the noise transmission path from source to receiver, the contours prove to be good estimates of the average noise level. In areas where barriers or land forms interrupt the sound transmission, the noise contours overestimate the extent to which a source intrudes into the community. The noise contour distances describe worst-case conditions because they do not account for any obstructions to the noise path, such as walls, berms, or buildings. The General Plan Noise Element included analysis of 16 roadway segments. Table 2 provides the results of the analysis along Pacific Coast Highway and Malibu Canyon Road near the project site. Table 3 provides the results of the analysis for similar roadway segments during the summer months, which are the peak traffic months.

Table 2
Roadway Noise Contours

	Distance to CNEL from Roadway Centerline				
Roadway Segment	**75′**	**70′**	**65′**	**60′**	**55′**
PCH west of Cross Creek, east of Civic Center Way	0.0	87.0	172.3	351.7	708.2
PCH west of Civic Center Way, east of Ramirez Canyon Road	0.0	73.8	143.0	291.5	590.6
Malibu Canyon Road north of PCH, south of Civic Center Way	0.0	0.0	50.6	103.5	215.3
Malibu Canyon Road north of Civic Center Way	0.0	0.0	81.5	169.3	350.0

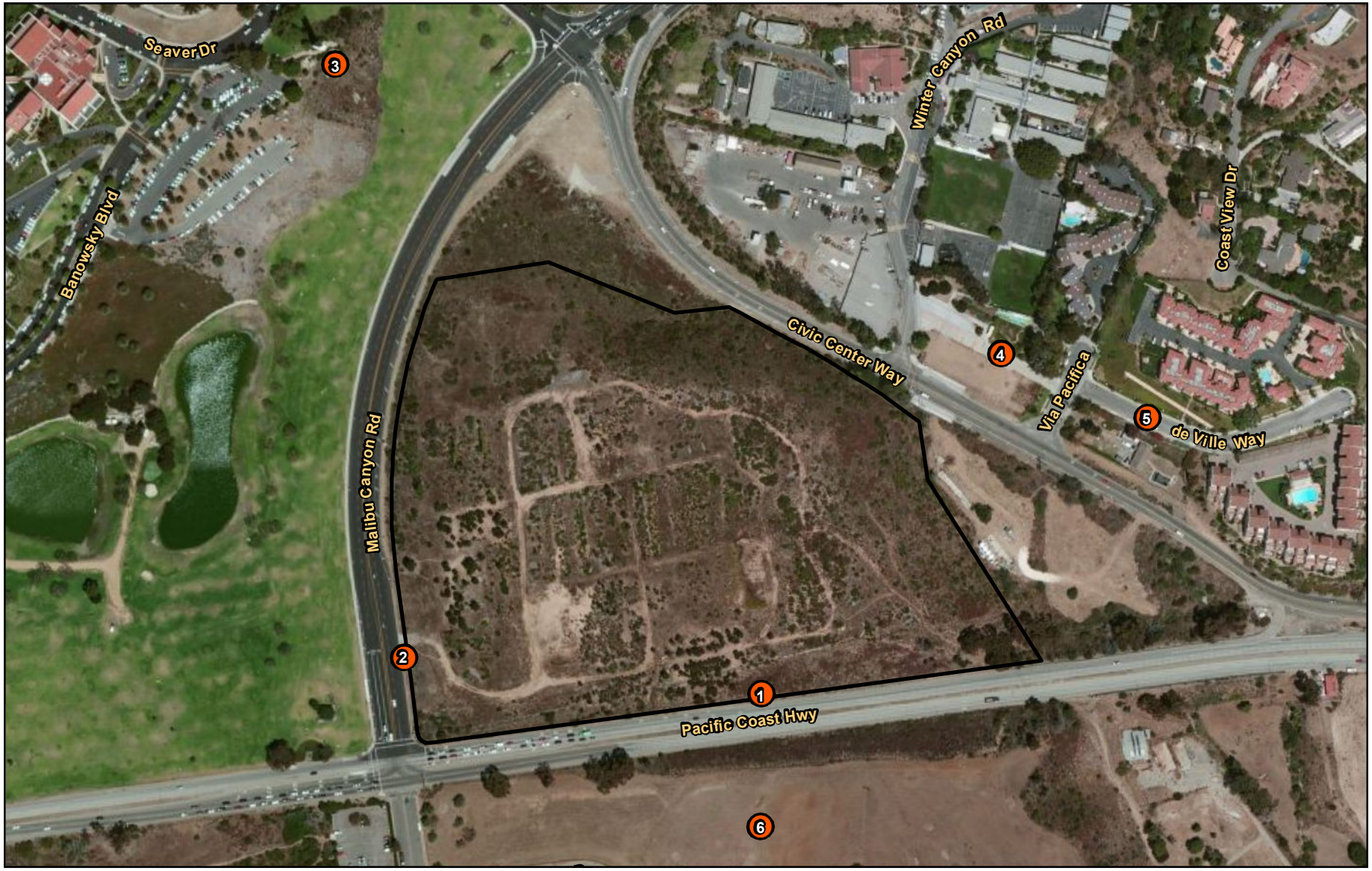
Source: City of Malibu General Plan Noise Element; Harland Bartholomew & Associates, 1992

Table 3
Roadway Noise Contours – Summer Months

	Distance to CNEL from Roadway Centerline				
Roadway Segment	**75′**	**70′**	**65′**	**60′**	**55′**
PCH west of Cross Creek, east of Civic Center Way	51.7	92.2	183.6	374.9	752.9
PCH west of Civic Center Way, east of Ramirez Canyon Road	0.0	78.0	152.4	310.8	628.5

Source: City of Malibu General Plan Noise Element; Harland Bartholomew & Associates, 1992

Note that the data in Tables 1, 2, and 3 represent noise levels circa 1992. In order to determine existing noise levels on the project site, two weekday afternoon 20-minute noise measurements and two evening 20-minute noise measurements were taken on the project site using an ANSI Type II integrating sound level meter in March 2012. These on-site noise measurements provide existing sound levels, which are primarily due to roadway noise from Pacific Coast Highway and Malibu Canyon Road. Table 4 identifies the on-site noise measurement locations and measured noise levels. Figure 1 shows noise measurement locations.



Legend

Site Boundary

Noise Measurement Location

N

0 160 320 Feet

Noise Measurement Locations

Figure 1

Table 4
On-Site Noise Monitoring Results

	Measurement Location	Primary Noise Source	Sample Time	Leq (dBA)
1	North side of Pacific Coast Highway, approximately 750 feet east of Malibu Canyon Road, and 40 feet from roadway centerline	Traffic on Pacific Coast Highway	Weekday afternoon peak hour	76.0
			Weekday evening (off-peak)	70.8
2	East side of Malibu Canyon Road, approximately 200 feet north of Pacific Coast Highway, and 100 feet from roadway centerline	Traffic on Malibu Canyon Road	Weekday afternoon peak hour	66.9
			Weekday evening (off-peak)	56.0

Source: Field visit using ANSI Type II Integrating sound level meter.
See Appendix for noise monitoring data sheets

In addition, four noise measurements were taken at or near the existing sensitive receptors described above, in order to establish baseline noise levels at these locations. Table 5 identifies the off-site sensitive receptor noise measurement locations and measured noise levels. Figure 1 shows noise measurement locations.

Table 5
Sensitive Receptor Noise Monitoring Results

	Measurement Location	Primary Noise Source	Sample Time	Leq (dBA)
3	Pepperdine University main lawn, approximately 350 feet east of Malibu Canyon Road	Traffic on Malibu Canyon Road	Weekday afternoon peak hour	57.6
4	Northeast of Civic Center Way, south of the nearest residences in the Malibu Knolls neighborhood	Traffic on Civic Center Way	Weekday afternoon peak hour	59.1
5	Northeast of Civic Center Way, near condominiums south of the Malibu Knolls neighborhood	Traffic on Civic Center Way	Weekday afternoon peak hour	58.6
6	Approximate location of future residential use on Crummer Site Subdivision	Traffic on Pacific Coast Highway	Weekday afternoon peak hour	61.2

Source: Field visit using ANSI Type II Integrating sound level meter.
See Appendix for noise monitoring data sheets.

Regulatory Setting

In 1976, the California Department of Health, State Office of Noise Control published a recommended noise/land use compatibility matrix which many jurisdictions have adopted as a standard in their general plan noise elements. This matrix indicates that residential land uses

and other noise sensitive receptors generally should locate in areas where outdoor ambient noise levels do not exceed 65 to 70 dBA (CNEL or Ldn).

The City of Malibu has adopted noise standards policies in its General Plan Noise Element. These policies establish both interior and exterior noise limits for non-transportation noise sources and transportation noise sources, and are shown in Table 6 and Table 7. The noise level standard for outdoor activity areas of new hotel uses (transient housing) is 60 dBA Ldn. A maximum noise exposure for indoor living areas in new residential units is not to exceed 45 dBA Ldn.

Table 6
Maximum Exterior Noise Limits – Non-Transportation Sources

Receiving Land Use Category	General Plan Land Use Districts	Time Period	Noise Level dBA	
			Leq	Lmax
Rural	All RR Zones and PRF, CR, AH, OS	7:00 a.m. to 7:00 p.m.	55	75
		7:00 p.m. to 10:00 p.m.	50	65
		10:00 p.m. to 7:00 a.m.	40	55
Other Residential	All SFR, MFR and MFBF Zones	7:00 a.m. to 7:00 p.m.	55	75
		7:00 p.m. to 10:00 p.m.	50	65
		10:00 p.m. to 7:00 a.m.	45	60
Commercial, Institutional	CN, CC, CV, CG, and I Zones	7:00 a.m. to 7:00 p.m.	65	85
		7:00 p.m. to 7:00 a.m.	60	70

Table 7
Maximum Allowable Noise Exposure – Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB	Leq/dB[2]
Residential	50 [3]	45	-
Transient housing	60 [3]	45	-
Hospitals, long term in-patient medical treatment and care facilities	60 [3]	45	-
Theaters, auditoria, music halls	60 [3]	-	35
Churches and meeting halls	60 [3]	-	40
Office buildings	60 [3]	-	45
Schools, libraries and museums, child care	60 [3]	-	45
Playgrounds and neighborhood parks	70	-	-

1: Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
2: As determined for a typical worst-case hour during periods of use.
3: Where it is not possible to reduce noise in outdoor activity areas to 50 dB Ldn/CNEL or less using practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

IMPACT ANALYSIS

Methodology and Significance Thresholds

Construction noise estimates are based upon noise levels reported in the U.S. Environmental Protection Agency document *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. Reference noise levels from that document were then used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation). Construction noise level estimates do not account for the presence of intervening structures or topography, which could reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative estimate of actual construction noise.

Noise levels associated with existing and future traffic along area roadways were calculated using the Traffic Noise Model Version 2.5 Look-Up Tables (U.S. Department of Transportation, Federal Highway Administration [FHWA], April 2004) (noise modeling data sheets can be viewed in the Appendix). The model calculations are based on traffic data from the traffic study completed for the proposed project by Overland Traffic Consultants (November 2011).

For traffic-related noise, impacts are considered significant if project-generated traffic results in exposure of sensitive receptors to an unacceptable increase in noise levels. Recommendations contained in the May 2006 Transit Noise and Vibration Impact Assessment created by the Federal Transit Administration (FTA) were used to determine whether or not increases in roadway noise would be significant. The allowable noise exposure increase changes with increasing noise exposure, such that lower ambient noise levels have a higher allowable noise exposure increase. Table 8 shows the significance thresholds for increases in traffic-related noise levels caused either by the project alone or by cumulative development.

Table 8
Significance of Changes in Operational Roadway Noise Exposure

Ldn or Leq in dBA	
Existing Noise Exposure	**Allowable Noise Exposure Increase**
45-50	7
50-55	5
55-60	3
60-65	2
65-74	1
75+	0

If sensitive receptors would be exposed to traffic noise increases exceeding the above criteria, impacts would be considered significant. Impacts related to onsite activities are considered significant if project activities would potentially create noise levels exceeding City standards.

Temporary Construction Noise

Project construction could intermittently generate high noise levels on and adjacent to the project site during the construction period. As identified in the project description, the construction period would have a duration of approximately 24 months. Temporary noise impacts associated with construction may adversely affect adjacent residential and institutional noise sensitive uses. The main sources of noise during construction activities would be the heavy machinery used in grading and clearing the site. As shown in Table 9, average noise levels associated with the use of heavy equipment at construction sites can range from about 78 to 88 dBA at 50 feet from the source, depending upon the types of equipment in operation at any given time and phase of construction (USEPA, 1971).

Table 9
Typical Noise Levels at Construction Sites

Construction Phase	Average Noise Level at 50 Feet	
	Minimum Required Equipment Onsite	All Pertinent Equipment Onsite
Ground Clearing	84 dBA	84 dBA
Excavation	78 dBA	88 dBA
Foundation/Conditioning	88 dBA	88 dBA
Laying Sub-base, Paving	78 dBA	79 dBA
Finishing and Cleanup	84 dBA	84 dBA

Source: Bolt, Beranek, and Newman, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," prepared for the U.S. Environmental Protection Agency, 1971.

The residences to the east of the project site, Our Lady of Malibu Church to the north of the project site, Webster Elementary School located northeast of the project site, and Pepperdine University to the west of the project site are noise-sensitive uses that may experience a temporary noise annoyance during construction. The closest sensitive receptor to project construction would be Our Lady of Malibu Church located approximately 350 feet north of the project site boundary, across Civic Center Way.

Based on the project plans, construction activities may occur within approximately 600 feet of Our Lady of Malibu Church, 650 feet of the nearest residences to the east of the project site, 750 feet of Webster Elementary School, and 950 feet of Pepperdine University. Construction noise levels were extrapolated using the line-of-sight method of sound attenuation described above, and are shown in Table 10. The estimated noise level using this method results in a conservative reasonable worst case noise estimate, which does not account for potential attenuation resulting from noise barriers such as buildings or topography.

Table 10
Construction Noise at Sensitive Receptors

Receptor	Distance from Construction	Maximum Noise Level at Receptor	Maximum Exterior Noise Limit[1]	Threshold Exceeded?
Our Lady of Malibu Church	600 feet	67 dBA	85 dBA	No
Residences Across Civic Center Way	650 feet	66 dBA	75 dBA	No
Webster Elementary School	750 feet	65 dBA	85 dBA	No
Pepperdine University	950 feet	63 dBA	85 dBA	No

[1] *From Table 6, based on anticipated construction hours between 7:00 a.m. and 7:00 p.m.*

Using this methodology, the maximum on-site construction noise levels are not expected to exceed the maximum exterior noise limits. Therefore, construction-related impacts would be less than significant.

In addition, project construction would result in up to 150 vehicle trips per day from workers commuting to the project site during the 24-month construction period, and approximately 136 soil hauling truck trips per day over the 10-week grading period. These added construction worker trips would be temporary, and would cease at the close of the construction period. In addition, relative to existing traffic levels, the addition of 150 worker trips to the project site is not expected to result in a substantial noise impact. Similarly, the added 136 soil hauling trips would take place during the approximately 10-week grading period. A specific haul route for soil export from the project site during construction has not yet been identified, but would be most likely to utilize Malibu Canyon Road and Pacific Coast Highway, depending on whether the destination of the exported material is north or south of the project site. Both of these roadways carry a substantial volume of existing traffic, and would not be expected to experience a significant noise impact to nearby sensitive receptors due to the addition of the proposed temporary soil hauling truck trips.

Long-Term Operational Noise Exposure

The proposed project would introduce new hotel, restaurant, and retail uses on the project site. Existing sensitive uses near the project site and proposed new uses on-site may periodically be subject to noise associated with operation of the proposed project, including stationary equipment, such as ventilation and heating systems, delivery trucks, parking lot noise, and other general activities associated with the proposed uses.

HVAC Equipment. Noise levels from commercial HVAC equipment can reach 100 dBA at a distance of three feet (USEPA, 1971). These units usually have noise shielding cabinets, placed on the roof or mechanical equipment rooms and are not usually significant sources of noise impacts. Typically, the shielding and location of these units reduces noise levels to no greater than 55 dBA at 50 feet.

Based on the project plans, the proposed new uses would be located a minimum of 600 feet from Our Lady of Malibu Church, approximately 650 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 1,600 feet from the nearest residential receptor on the Pepperdine University campus. Based on an attenuation rate of 6 dB per doubling of distance, this would result in an external noise level at the nearest existing sensitive receptor (600 feet) of 34 dBA, which would not exceed any of the City's maximum exterior noise limits, shown in Table 6; therefore, noise from HVAC systems are would result in a less than significant impact.

In addition, the proposed new uses would be located a minimum of 350 feet from proposed single-family residential units on the Crummer Site Subdivision south of the project site, across Pacific Coast Highway. Based on an attenuation rate of 6 dB per doubling of distance, this would result in an external noise level at the nearest proposed sensitive receptor of 38 dBA, which would not exceed any of the City's maximum exterior noise limits.

Delivery Trucks. On-site activities would include the use of delivery trucks and trash hauling. Delivery trucks and trash hauling trucks would access the site from Malibu Canyon Road. The California Motor Vehicle Code establishes maximum sound levels for trucks operating at speeds less than 35 miles per hour (Section 23130). The maximum sound level established by the code is 86 dBA at 50 feet. However, average noise levels for single idling trucks generally range from 60 to 65 dB Leq at a distance of 100 feet, and maximum noise levels associated with heavy truck passages range from 70 to 75 dB Lmax at a distance of 100 feet. Maximum noise levels generated by passages of medium duty delivery trucks generally range from 55 to 65 dB at a distance of 100 feet, depending on whether or not the driver is accelerating.

Proposed parking areas and loading zones are located a minimum of 600 feet from Our Lady of Malibu Church, approximately 650 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 1,600 feet from the nearest residential receptor on the Pepperdine University campus. Based on an attenuation rate of 6 dB per doubling of distance, the sound level at the nearest sensitive receptor (600 feet) from idling delivery trucks would be approximately 50 dB Leq, and the maximum sound level at the nearest residential unit (650 feet) would be 49 dB Leq. The maximum sound level at the nearest sensitive receptor (600 feet) from delivery trucks (assuming heavy-duty trucks) would be approximately 60 dB Lmax, and the maximum sound level at the nearest residential unit (650 feet) would be 59 dB Lmax. Because delivery truck trips to the proposed hotel would be a sporadic source of noise, the maximum exterior noise limits (Lmax) shown in Table 6 are the appropriate threshold for these noise sources; noise from delivery truck trips would not exceed the maximum exterior noise limits (Lmax) for residential or institutional land uses shown in Table 6 at the nearest sensitive receptors. Operational noise impacts would be less than significant.

In addition, the proposed parking areas and loading zones would be located a minimum of 350 feet from proposed single-family residential units on the Crummer Site Subdivision south of the project site, across Pacific Coast Highway. Based on an attenuation rate of 6 dB per doubling of distance, this would result in an external noise level from idling delivery trucks at the nearest

proposed sensitive receptor of 54 dB Leq, and a maximum external noise level from delivery trucks (assuming heavy-duty trucks) at the nearest proposed sensitive receptor of 64 dB Lmax. Because delivery truck trips to the proposed hotel would be a sporadic source of noise, the maximum exterior noise limits (Lmax) shown in Table 6 are the appropriate threshold for these noise sources; noise from delivery truck trips would not exceed the maximum exterior noise limits (Lmax) for residential land uses shown in Table 6 at the proposed sensitive receptors on the Crummer Site between the hours of 7:00 a.m. and 10:00 p.m. Between 10:00 p.m. and 7:00 a.m., delivery truck trips could exceed the City's maximum exterior noise limits. With incorporation of Mitigation Measure N-1 below, operational noise impacts from delivery truck trips to and from the project site would be less than significant.

N-1 **Heavy-Duty Delivery Truck Trip Timing.** Deliveries from heavy-duty trucks, including refrigerator trucks, trash and recycling pick-ups, and parking lot sweeping, shall be restricted to daytime operating hours (7:00 a.m. to 10:00 p.m.).

Outdoor Function Areas. The proposed hotel would include an outdoor pool and function lawn facilities. The outdoor pool would be located near the center of the project site, surrounded by buildings proposed as part of the hotel development. The function lawn would be located on the western boundary of the project site, approximately 700 feet north of the intersection of Malibu Canyon Road and Pacific Coast Highway. In addition to noise from use and activities, other potential noise associated with the outdoor pool and function lawn facilities would include amplified sound during events at the proposed hotel (music, television sound, and announcements broadcast through a loudspeaker system).

Based on the project plans, the proposed outdoor pool would be located a minimum of 800 feet from Our Lady of Malibu Church, approximately 900 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 2,200 feet from the nearest residential receptor on the Pepperdine University campus. The proposed function lawn would be located a minimum of 800 feet from Our Lady of Malibu Church, approximately 1,200 feet from the single-family residences and condominiums to the northeast of the project site, and approximately 1,600 feet from the nearest residential receptor on the Pepperdine University campus. Based on a sound attenuation rate of 6 dB per doubling of distance, amplified sound from the proposed outdoor pool could exceed the City's maximum exterior noise limits if it were above 80 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 75 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 70 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m. Amplified sound from the proposed function lawn could exceed the City's maximum exterior noise limits if it were above 83 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 78 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 73 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m.

In addition, the proposed outdoor pool would be located a minimum of 600 feet from proposed single-family residential units on the Crummer Site Subdivision south of the project site, across Pacific Coast Highway. The proposed function lawn would be located a minimum of 900 feet from proposed single-family residential units on the Crummer Site Subdivision. Based on an attenuation rate of 6 dB per doubling of distance, amplified sound from the proposed outdoor

pool could exceed the City's maximum exterior noise limits at these proposed uses if it were above 77 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 72 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 67 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m. Amplified sound from the proposed function lawn could exceed the City's maximum exterior noise limits at these proposed uses if it were above 80 dBA (at 50 feet from the speaker/source) between 7:00 a.m. and 7:00 p.m., above 75 dBA (at 50 feet from the speaker/source) between 7:00 p.m. and 10:00 p.m., or above 70 dBA (at 50 feet from the speaker/source) between 10:00 p.m. and 7:00 a.m.

With respect to all noise sources generated by the outdoor services, the design and construction of the proposed hotel would be required to comply with the Noise Insulation Standards of Title 24 of the CCR, which ensure an acceptable interior noise environment (45 dBA) for the hotel uses of the project. In addition, proposed buildings and site topography would provide an attenuating effect on noise produced on the project site, and would therefore reduce noise exposure at nearby sensitive receptors; however, quantifying the attenuating effect of these proposed physical barriers on noise produced on-site is speculative at this time, and would therefore require review by a qualified acoustical consultant subsequent to project construction. Therefore, with incorporation of Mitigation Measure N-2 below, operational noise impacts from amplified sound at the proposed outdoor function areas would be less than significant.

N-2 **Amplified Sound Systems.** Based on a worst-case analysis, the sound output of the amplified sound systems for the outdoor pool and function lawn facilities would be limited to a maximum sound level (measured at 50 feet from the speaker/source) of:

- *77 dBA between 7:00 a.m. and 7:00 p.m.;*
- *72 dBA between 7:00 p.m. and 10:00 p.m.; and*
- *67 dBA between 10:00 p.m. and 7:00 a.m.*

Prior to issuance of occupancy permits, the project applicant should employ a qualified acoustical consultant to evaluate the noise-attenuating effect of on-site buildings and topography on noise levels produced at outdoor function areas. The level of attenuation determined by the acoustical consultant may be used to appropriately modify the maximum sound levels shown above in order to allow higher noise levels at the proposed outdoor function areas without exceeding the City's maximum exterior noise limits.

The design of the outdoor amplified sound systems would be reviewed by a qualified acoustical consultant subsequent to project construction to ensure that the design would meet the project noise criteria.

Long-Term Regional Impacts

The proposed project would generate increased noise on area roadways due to increased traffic to and from the project site. The traffic noise analysis is based on the traffic estimates provided in the traffic study prepared by Overland Traffic Consultants (November 2011). Assumptions about traffic generated by the proposed project and future roadway conditions are consistent with the project traffic study. The primary roadways affected by project-added vehicle traffic would be Pacific Coast Highway and Malibu Canyon Road. Based on the project traffic study, other affected roadway segments (such as Civic Center Way and Cross Creek Road) would

experience a comparatively small increase in vehicle trips. Roadway noise levels along these roadway segments were estimated using the Traffic Noise Model Version 2.5 Look-Up Tables (U.S. Department of Transportation, Federal Highway Administration [FHWA], April 2004).

Table 11 shows the existing and anticipated future (cumulative) noise levels at 50 feet from the centerline of roadway segments along project-area roadways, as well as estimated noise levels along roadways that would experience increases in noise due to project-generated traffic. The roadway segments shown in Table 11 represent the locations where the most substantial increase in traffic due to the project and cumulative development would occur. Traffic levels during the weekend mid-day peak hour were used, as these traffic levels represent the time during which the project would add the largest volume of new vehicles to area roadways. A noise model summary and results are included in the Appendix.

Table 11
Calculated Noise Associated with Traffic on Surrounding Roadways

Roadway	Projected Noise Level (dBA Leq)				Change In Noise Level (dBA Leq)		
	Existing (1)	Existing + Project (2)	Cumulative (3)	Cumulative + Project (4)	Due to Project Traffic (2-1)	Due to Project Traffic Under Future (2016) Conditions (4-3)	Due to Project and Future Traffic (4-1)
Pacific Coast Highway between Kanan Dume Road and Malibu Canyon Road	73.1	73.1	73.7	73.7	0.0	0.0	0.6
Pacific Coast Highway between Malibu Canyon Road and Cross Creek Road	73.5	73.6	74.0	74.1	0.1	0.1	0.6
Malibu Canyon Road between Pacific Coast Highway and Future Resort Access	69.4	69.8	69.9	70.4	0.4	0.5	1.0
Malibu Canyon Road between Future Resort Access and Civic Center Way	69.4	69.6	69.9	70.0	0.2	0.1	0.6

Estimates of noise generated by traffic from roadway centerline at 50 feet.
Refer to Appendix for full noise model output. Noise levels presented do not account for attenuation provided by existing barriers or future barriers; therefore, actual noise levels at sensitive receptor locations influenced by study area roadways may in many cases be lower than presented herein.
Source: Federal Highway Administration Traffic Noise Model Version 2.5 Look-Up Tables.

The guidelines shown in Table 8 are used to determine whether noise associated with increased traffic would be significant. Because existing roadway noise levels are between 65 and 74 dBA, a 1 dBA noise increase attributable to the project would be considered significant. As shown in Table 11, noise level increases associated with project traffic would range from 0.0 dBA to 0.4 dBA under existing plus project conditions. The increase in roadway noise levels under existing plus project conditions would not result in a noise increase greater than 1 dBA at any of the study area roadway segments. Therefore, the project's impact would be less than significant.

In addition, the project would contribute to a cumulative traffic noise increase, as shown in the final column of Table 8. The cumulative noise level increase would be from 0.6 dBA to 1.0 dBA, with the largest increase occurring on Malibu Canyon Road between Pacific Coast Highway and the future access road for the proposed project. However, the project's contribution to this cumulative increase would be 0.5 dBA, which would not exceed the FTA significance thresholds shown in Table 8. Therefore, the project's cumulative impact would be less than significant.

REFERENCES

Malibu, City of. General Plan Noise Element.

Malibu, City of. Municipal Code.

Overland Traffic Consultants. *Traffic Impact Analysis, Resort Hotel Development*. November 2011.

U.S. Department of Transportation, Federal Highway Administration. Traffic Noise Model version 2.5. April 2004.

U.S. Environmental Protection Agency. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. 1971.

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Noise	
AMEC Comment Number	Response
1	The Noise study was revised to indicate the duration of the construction period. Due to the temporary nature of construction noise and the fact that the analysis reflects anticipated maximum average noise levels during the construction period, this revision did not affect the impact conclusion.
2	Based on the project description provided by the applicant, a specific haul route for soil export from the project site during construction has not yet been identified, but would be most likely to utilize Malibu Canyon Road and Pacific Coast Highway, depending on whether the destination of the exported material is north or south of the project site. A qualitative discussion of these temporary vehicle trips has been added to the noise study.
3	Noise levels associated with use of construction equipment backup warning devices would be anticipated to be lower in volume than the loudest equipment that would be in use on the project site during construction (Table 9). Therefore backup warning devices would not be expected to result in a potential impact anywhere that standard construction equipment would not result in unacceptable noise levels. Because on-site construction equipment was determined in the noise study not to result in significant impacts, backup warning devices would similarly result in a less than significant noise impact.
4	The noise study analyzes noise levels from outdoor events and conditions the project in order to avoid significant impacts from these noise sources based on City of Malibu maximum exterior noise limits for non-transportation sources. The City's maximum exterior noise limits are for operational (long-term) sources of noise; therefore, noise levels that would not exceed these standards would be less than significant, regardless of frequency. In addition, the likely frequency of these events has not been determined by the applicant, so analysis based on an anticipated frequency of outdoor events would be speculative at this time.
5	The site plans provided by the applicant indicate that outdoor events would be held at the outdoor pool located in the center of the project site, and at the function lawn located on the western boundary of the project site, near Malibu Canyon Road. Neither the site plans nor the project description provided identify an eastern event lawn.
6	The analysis of potential noise from outdoor function areas is based on a bare site using standard noise attenuation methodologies, which provides a reasonable worst-case estimate of potential noise at nearby sensitive receptors and analysis based on appropriate City maximum exterior noise limits. In order to account for potential attenuating effects of proposed buildings and topography and potentially allow higher noise levels to be produced at outdoor function areas without resulting in unacceptable noise levels at nearby sensitive receptors, Mitigation Measure N-2 was modified to recommend analysis of these attenuating effects subsequent to project construction.
7	The noise study was revised per this recommendation.
8	Table 1, 2, and 3 provide historical noise measurement data based on the most recent data available from the City of Malibu at the time of preparation of the noise study. Language in the noise study was revised to more clearly reflect the date of this data, and that on-site noise measurements were conducted to provide data on the existing noise environment.
9	Please refer to response to comment 8 above.
10	The noise study was revised per this recommendation.
11	The November 2011 traffic study prepared by Overland Traffic Consultants is the source provided by the applicant for existing and plus-project traffic conditions related to the proposed project. It is our understanding that this traffic study is being used for preparation of the project EIR, and therefore, our long-term regional noise analysis has been prepared consistent with the data therein.
12	The long-term regional noise analysis is based on traffic data (specifically, turning operations) provided in the November 2011 traffic study prepared by Overland Traffic Consultants. Assumptions about traffic generated by the proposed project and future roadway conditions, including signalization, are consistent with the project traffic study.
13	The noise study provides analysis of four roadway segments that would experience the most substantial increase in traffic, based on the November 2011 traffic study prepared by Overland Traffic Consultants. Project-generated vehicle trips on these four segments were determined to result in less than significant increases in roadway noise based on the FTA significance thresholds shown in Table 8 of the noise study. While the project would likely result in increased vehicle trips along other area roadways, these increases would not be substantial in comparison to the volume of vehicles trips that would be added to the four analyzed roadway segments. Language has been added to the noise study to briefly characterize this.