4.10 NOISE

This section evaluates the potential short-term and long-term noise and vibration impacts associated with the construction and operation of the modified Dana Point Harbor Hotels Project (Modified Project). The noise monitoring data sheets, traffic noise modeling printouts, and heating, ventilation, and air conditioning (HVAC) specifications are provided in Appendix L of this Revised Draft Environmental Impact Report (EIR).

4.10.1 Technical Background

The following provides an overview of the characteristics of sound and fundamentals of vibration.

4.10.1.1 Characteristics of Sound

Sound is increasing in the environment and can affect quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations (or cycles per second) of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound and describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike units of measurement that use a linear scale (e.g., inches or pounds), decibels use a scale based on powers of 10.

For example, 10 decibels (dB) is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound-pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is

produced by a line source, such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in California are L_{eq} and the Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on dBA. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance, when assessing the annoyance factor, include the maximum instantaneous noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Another noise scale often used together with L_{max} in noise ordinances for enforcement purposes is noise standards in terms of percentile noise levels. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half of the time the noise level exceeds this level, and half of the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category, audible impacts, refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally involve a change of 3 dB or greater because that level has been found to be barely perceptible in exterior environments. The second category, potentially audible impacts, refers to a change in the noise level between 1 and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category involves changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is

replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will potentially result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less-developed areas. Table 4.10.A lists definitions of acoustical terms, and Table 4.10.B shows common sound levels and their noise sources.

Table 4.10.A: Definitions of Acoustical Terms

Term	Definition
Decibel, dB	A unit of noise level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted unless reported otherwise.)
L_2, L_8, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dB to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dB to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter during a designated time interval using fast-time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time; usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris 1991).

Table 4.10.B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near-Freeway Auto Traffic	70	Moderately Loud	Reference Level
Average Office	60	Quiet	½ as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	¼ as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	⅛ as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA Associates, Inc. (2004).

4.10.1.2 Fundamentals of Vibration

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors where the motion may be discernible. However, without the effects associated with the shaking of a building, there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as motion of building surfaces, the rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Building damage is not a factor for normal operation and construction activities with the occasional exception of blasting and pile driving during construction.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Impacts with ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet (ft) of the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 ft (Federal Transit

Administration [FTA] *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual).[1] When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. For most projects, it is assumed that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, construction activities have the potential to result in ground-borne vibration that could be perceptible and annoying.

Ground-borne vibration has the potential to disturb people as well as damage buildings. As stated in the FTA Manual, although it is very rare for ground-borne vibration to cause even cosmetic building damage, there is potential for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings. Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). RMS is best for characterizing human response to building vibration, and PPV is used to characterize the potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

$$L_V = 20 \log_{10} [V/V_{ref}]$$

where L_v is the vibration velocity in decibels (VdB), V is the RMS velocity amplitude, and V_{ref} is the reference velocity amplitude, or 1×10^{-6} inches/second (in/sec) used in the United States.

4.10.2 Scoping Process

4.10.2.1 Original Project Scoping

The City of Dana Point (City) received eight comment letters during the September 25, 2020, through October 26, 2020, public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Revised Draft EIR. There were no specific comments related to noise or vibration made in relation to the IS/NOP during the public review period.

4.10.2.2 Modified Project Scoping

A Supplemental NOP for the Modified Project was circulated for public review from July 19, 2024, through August 19, 2024. Four comment letters were received during the public review for the Modified Project. Copies of the Supplemental NOP and comment letters received in response to the Supplemental NOP are included within Appendix A of this Revised Draft EIR. No comment letters included comments related to noise.

[1] Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual.* FTA Report No. 0123. September. Website: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed November 2024).

4.10.3 Existing Environmental Setting

4.10.3.1 Existing Noise Environment

The noise levels at the Modified Project site and surrounding areas are dominated by traffic on Dana Point Harbor Drive and local roadways in the project area. Other sources of noise in the project area include commercial, parking, and boating activities.

4.10.3.2 Land Uses in the Project Vicinity

The existing Dana Point Marina Inn is on the central portion of the Modified Project site and two boater services buildings with surface parking reserved for boaters are located on the southern portion of the project site. The surrounding uses include the following:

- **North:** Single-family residences, commercial uses, and Heritage Park.
- **East:** Commercial (restaurant and retail).
- **South:** Marina uses (existing boat docks).
- **West:** Parking lot across Island Way and Marina uses (existing boat docks).

The closest single-family residential building from the project boundary sits atop the coastal bluffs north of the project site approximately 215 ft away, and is separated topographically by nearly 120 vertical feet.

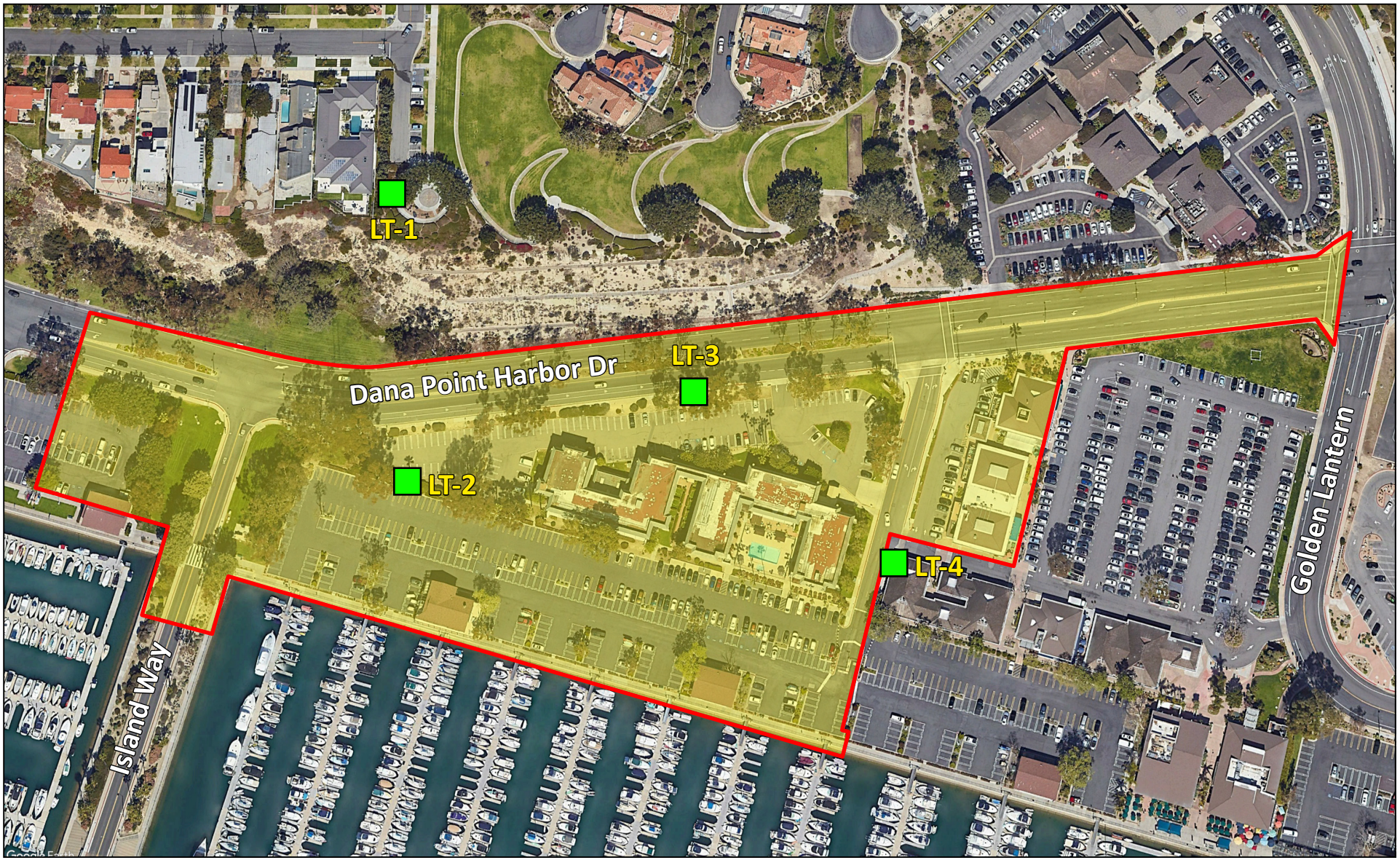
4.10.3.3 Existing Noise Level Measurements

Four long-term (24-hour) noise level measurements were conducted from October 22 to 24, 2024, using Larson Davis Spark 706RC dosimeters to document the existing noise environment within the project area. Table 4.10.C summarizes the results of the long-term noise level measurements along with a description of the measurement locations and noise sources that occurred during the measurements. As shown in Table 4.10.C, the calculated CNEL levels range between 54.7 and 64.5 dBA. In addition, the daytime noise levels ranged from 49.6 to 68.8 dBA L_{eq}, evening noise levels ranged from 45.5 to 62.1 dBA L_{eq}, and nighttime noise levels ranged from 41.4 to 59.6 dBA L_{eq}. The long-term noise level measurement survey sheets along with the hourly L_{eq} results are provided in Appendix L of this Revised Draft EIR. Figure 4.10.1 shows the long-term monitoring locations.

4.10.3.4 Modeled Existing Traffic Noise Levels

The guidelines included in the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (1977; FHWA RD-77-108)[2] were used to evaluate traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime (7:00 a.m. to 7:00 p.m.), evening (7:00 p.m. to 10:00 p.m.), and nighttime hours (10:00 p.m. to 7:00 a.m.). The resultant noise levels are weighted and summed over 24-hour periods to determine the community noise equivalent level (CNEL) values.

[2] FHWA. 1977. Highway Traffic Noise Prediction Model, FHWA RD 77-108.



LSA

LEGEND

Project Site Boundary

LT-1 Long-term Noise Monitoring Location

0 70 140

FEET

SOURCE: Google Earth 2024

FIGURE 4.10.1

Dana Point Harbor Hotels

Noise Monitoring Locations

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Table 4.10.C: Long-Term Ambient Noise Monitoring Results

Monitor No.	Location	Noise Level (dBA)				Noise Sources
		Day	Evening	Night	CNEL	
		L_{eq}	L_{eq}	L_{eq}		
LT-1	34400 Old Golden Lantern. Doris Walker Overlook. On a tree approximately 270 ft north of the Dana Point Harbor Drive centerline.	49.6-57.7	45.5-48.4	41.9-48.7	54.7	Faint traffic noise from Dana Point Harbor Drive and other roadways in the vicinity.
LT-2	24800 Dana Point Harbor Drive. Near the western end of parking lot on a palm tree approximately 110 ft south of the Dana Point Harbor Drive centerline and 235 ft east of Island Way centerline.	56.1-59.9	52.3-54.5	41.4-53.5	58.3	Light traffic on Dana Point Harbor Drive.
LT-3	24800 Dana Point Harbor Drive. On a tree between the parking lot and Dana Point Harbor Drive. Approximately 55 ft south of the Dana Point Harbor Drive centerline and 90 ft west of the parking lot driveway.	61.6-68.8	58.2-62.1	46.3-58.7	64.5	Light traffic on Dana Point Harbor Drive and faint traffic on Pacific Coast Highway from the east.
LT-4	34485 Golden Lantern. Near the northwest corner of the building. On a light pole approximately 300 ft south of the Dana Point Harbor Drive centerline	55.3-65.3	48.9-53.4	46.4-59.6	61.2	Faint traffic from Dana Point Harbor Drive and very light traffic on Casitas Place.

Source: Compiled by LSA Associates, Inc. (2024).
Note: Long-term (24-hour) noise level measurements were conducted from October 22, 2024, at 10:00 a.m. to October 24, 2024, at 10:00 a.m.
[1] Daytime hours are from 7:00 a.m. to 7:00 p.m.
[2] Evening hours are from 7:00 p.m. to 10:00 p.m.
[3] Nighttime hours are from 10:00 p.m. to 7:00 a.m.
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level

The existing weekday and Saturday average daily traffic (ADT) volumes were derived from the Traffic Impact Analysis for the Dana Point Harbor Hotels Project[3] in Appendix N of this Revised Draft EIR. The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments. Table 4.10.D provides the existing weekday and Saturday modeled traffic noise levels in the project vicinity. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the locations where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix L of this Revised Draft EIR.

[3] LSA Associates, Inc. 2025. Traffic Impact Analysis for the Dana Point Harbor Hotels Project. March.

Table 4.10.D: Existing (2024) Weekday and Saturday Traffic Noise Levels

Roadway Segment	Weekday Conditions					Saturday Conditions				
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Dana Point Harbor Drive West of Island Way	5,710	< 50	< 50	< 50	56.9	8,510	< 50	< 50	60	58.7
Dana Point Harbor Drive between Island Way and Casitas Place	8,860	< 50	< 50	61	58.8	11,250	< 50	< 50	71	59.9
Dana Point Harbor Drive between Casitas Place and Golden Lantern	9,835	< 50	< 50	67	59.0	11,965	< 50	< 50	75	59.8
Dana Point Harbor Drive between Golden Lantern and Puerto Place	12,535	< 50	< 50	101	61.7	14,735	< 50	< 50	111	62.4
Dana Point Harbor Drive between Puerto Place and Pacific Coast Highway	13,700	< 50	< 50	106	62.2	16,720	< 50	61	120	63.1
Del Obispo Street between Pacific Coast Highway and Stonehill Drive	14,490	< 50	81	170	65.9	13,240	< 50	77	160	65.5
Del Obispo Street North of Stonehill Drive	11,560	< 50	71	147	64.9	11,520	< 50	71	146	64.9
Golden Lantern North of Pacific Coast Highway	12,310	< 50	62	124	63.5	13,410	< 50	65	131	63.8
Golden Lantern between Pacific Coast Highway and Del Prado Avenue	7,310	< 50	< 50	89	61.5	8,920	< 50	< 50	100	62.3
Golden Lantern between Del Prado Avenue and Dana Point Harbor Drive	7,075	< 50	< 50	87	61.3	9,650	< 50	< 50	106	62.7
Pacific Coast Highway West of Golden Lantern Street	19,430	< 50	79	166	65.9	19,150	< 50	78	164	65.8
Pacific Coast Highway East of Golden Lantern Street	21,100	< 50	83	175	66.2	19,380	< 50	79	166	65.8
Pacific Coast Highway West of Del Obispo Street	29,060	< 50	105	218	66.8	26,000	< 50	98	202	66.3
Pacific Coast Highway East of Del Obispo Street	41,120	68	131	273	68.2	37,030	65	122	255	67.7
Stonehill Drive West of Del Obispo Street	20,540	< 50	101	214	67.4	21,170	< 50	103	218	67.5
Stonehill Drive between Del Obispo Street and Camino Capistrano	25,255	57	115	245	68.3	27,760	60	123	261	68.7
Del Prado Avenue West of Golden Lantern	5,560	< 50	< 50	73	61.1	6,010	< 50	< 50	76	61.4
Del Prado Avenue East of Golden Lantern	4,930	< 50	< 50	67	60.5	4,770	< 50	< 50	66	60.4

Source: Compiled by LSA Associates, Inc. (2024).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily trips
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

4.10.4 Regulatory Setting

The following provides the applicable noise and vibration standards used to assess potential impacts for the Modified Project, which are partially derived from those discussed in the 2021 Draft EIR.

4.10.4.1 Federal Regulations

Federal Transit Administration. Vibration standards included in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual) (2018) are used to evaluate vibration impacts because both the County and City do not have vibration standards. Table 4.10.E provides the criteria for assessing the potential for interference or annoyance from vibration levels in a building, while Table 4.10.F lists the potential vibration building damage criteria associated with construction activities.

Table 4.10.E: Interpretation of Vibration Criteria for Detailed Analysis

Land Use	Max L_v (VdB)[1]	Description of Use
Workshop	90	Vibration that is distinctly felt. Appropriate for workshops and similar areas not as sensitive to vibration.
Office	84	Vibration that can be felt. Appropriate for office and similar areas not as sensitive to vibration.
Residential Day	78	Vibration that is barely felt. Adequate for computer equipment and low-power optical microscopes (up to 20X).
Residential Night and Operating Rooms	72	Vibration is not felt, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power optical microscopes (100X) and other equipment of low sensitivity.

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018)
[1] As measured in 1/3-octave bands of frequency over the frequency range 8 to 80 hertz.
FTA = Federal Transit Administration
Hz = hertz
L_v = velocity in decibels
VdB = vibration velocity decibels

Table 4.10.F: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
FTA = Federal Transit Administration
in/sec = inch/inches per second
PPV = peak particle velocity

4.10.4.2 State Regulations

State of California Noise Requirements. The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element, which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research (OPR). The

purpose of the Noise Element, as defined by the OPR guidelines, is to limit the exposure of the community to excessive noise levels. In addition, the *State CEQA Guidelines* include thresholds of significance for analyzing environmental noise impacts.

4.10.4.3 Regional Regulations

There are no regional regulations related to noise that applicable to the Modified Project.

4.10.4.4 Local Regulations

County of Orange Code of Ordinances. Due to the project site being owned by the County of Orange and the requirements of the Dana Point Harbor Revitalization Plan and District Regulations General Provision 4 in Chapter 3 of the District Regulations, the County of Orange Code of Ordinances is applicable related to noise control. The County's Noise Ordinance, Division 6[4] is designed to control unnecessary, excessive, and annoying sound from sources on private property by specifying noise levels that cannot be exceeded. Table 4.10.G show the County's exterior and interior noise level limits for noise from one property to adjacent residential land uses.

Table 4.10.G: County of Orange—Noise Standards

Land Use	Location	Time Period	L_{50}[1]	L_{25}[2]	L_8[3]	L_2[4]	L_{max} (anytime)[5]
Residential	Exterior	7:00 AM to 10:00 PM	55	60	65	70	75
		10:00 PM to 7:00 AM	50	55	60	65	70
	Interior	7:00 AM to 10:00 PM	—	—	55	60	65
		10:00 PM to 7:00 AM	—	—	45	50	55

Source: General Plan—County Code of Ordinances (County of Orange 2024).
Note: In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by 5 dBA. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.
1 The noise standard for a cumulative period of more than 30 minutes in any hour.
2 The noise standard plus 5 dBA for a cumulative period of more than 15 minutes in any hour.
3 The noise standard plus 10 dBA for a cumulative period of more than 5 minutes in any hour.
4 The noise standard plus 15 dBA for a cumulative period of more than 1 minute in any hour.
5 The noise standard plus 20 dBA or the maximum measured ambient noise level for any period of time.
dBA = A-weighted decibels
L_{max} = maximum instantaneous noise level

Section 4-6-7(e) of the County Code of Ordinances limits construction activities to not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturdays, or any time on Sunday or a Federal holiday. Construction during the allowable hours is exempt from the noise level limits specified in Sections 4-6-5 and 4-6-6 of the County's Code of Ordinances.[5]

4 County of Orange. 2024. County Code of Ordinances. October 29.
5 Ibid.

City of Dana Point General Plan. The City has established exterior and interior noise standards in the Noise Element of the General Plan[6] from mobile noise sources for various land uses and has policies to meet the City's noise-related goals. The City's exterior and interior noise standards mobile noise sources are shown in Table 4.10.H, which show an interior noise standard of 45 dBA CNEL for hotel, motel, and transient lodging uses. The City does not have exterior noise standards for hotel, motel, and transient lodging uses. The following goals and policies are applicable to the Modified Project:

> **Goal 1:** Provide for measures to reduce noise impacts from transportation noise sources.
>
> > **Policy 1.1:** Require construction of barriers to mitigation sound emissions where necessary or feasible.
>
> **Goal 2:** Incorporate noise considerations into land use planning decisions.
>
> > **Policy 2.4:** Require noise reduction techniques in site and architectural design and construction where noise reduction is necessary.

Table 4.10.H: City Interior and Exterior Noise Standards

Land Use Categories		Noise Standards (dBA CNEL)	
Designations	**Uses**	**Interior[1]**	**Exterior[2]**
Residential (all)	Single-Family, Duplex, Multiple-Family	45[3]	65
	Mobile Homes	--	65[4]
Neighborhood Commercial, Community Commercial, Visitor/ Recreation Commercial, Commercial/Residential, Professional/ Administrative, Industrial/ Business Park, Open Space, Harbor Marine Land	Hotel, Motel, Transient Lodging	45	--
	Commercial Retail, Bank, Restaurant	55	--
	Office Building, Research and Development, Professional Offices, City Office Building	50	--
	Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	--
	Gymnasium (Multipurpose)	50	--
	Sports Club	55	--
	Manufacturing, Warehousing, Wholesale, Utilities	65	--
	Movie Theaters	45	--
Community Facility	Hospital, Schools' Classroom	45	65
	Church, Library	45	--
Recreation/Open Space	Parks	--	65

Source: City of Dana Point General Plan, Noise Element, Table N-2, Interior and Exterior Noise Standards.

[1] Indoor environment also includes bathrooms, toilets, closets, corridors.

[2] Outdoor environment is limited to private yards of single-family residences, multifamily private patio or balcony that is served by a means of exit from inside the dwelling (balconies 6 feet deep or less are exempt), mobile home park, park's picnic area, and school's playground.

[3] Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided per Chapter 12, Section 1205 of the UBC.

[4] Exterior noise levels should be such that interior noise levels will not exceed 45 dBA CNEL.

CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
UBC = Uniform Building Code

[6] City of Dana Point. 1991. General Plan. July 9. Website: https://www.danapoint.org/home/showpublisheddocument/28638/637027764764870000 (accessed November 2024).

City of Dana Point Municipal Code. Sections 11.10.010 and 11.10.12 of the City's Municipal Code[7] have established exterior and interior noise standards to control unnecessary, excessive, and annoying sound from stationary sources affecting residential property. The City's exterior and interior stationary noise source standards are the same as the County's shown in Table 4.10.G above.

Section 11.10.014(e) of the City's Municipal Code[8] prohibits construction and grading activities between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturdays, or any time on Sunday or a Federal holiday. Section 11.10.014 (Special Provisions) exempts activities identified therein, including construction activities, during the allowable hours from the noise level limits specified in Sections 11.10.010 and 11.10.12 of the City's Municipal Code.[9] Additionally, Section 8.01.250 (Time of Grading Operations) of the City's Municipal Code[10] further limits the grading and equipment operations within 0.5 mile of a structure for human occupancy to only within the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday. Consequently, because the project site is within 0.5 mile of residential uses, grading and equipment operations may only occur between the hours of 7:00 a.m. and 5:00 p.m. during the weekdays and not at all on Saturdays, Sundays, and City of Dana Point-recognized holidays.

Dana Point Harbor Revitalization Plan. The general development policies in Section 8.1.1 of the Dana Point Harbor Revitalization Plan (DPHRP) have noise-related policies that are applicable to the project because the project site is within the boundaries of the DPHRP. The following are the noise-related policies that are applicable to the project:

> **Policy 8.1.1-24:** Prior to the issuance of any Grading or Building Permits, OC Dana Point Harbor shall prepare or obtain an acoustical analysis report and appropriate plans which demonstrate that the noise levels generated by Harbor land uses during their operation shall be controlled in compliance with the Orange County Codified Ordinance, Division 6 (Noise Control). The report shall be prepared under the supervision of a County-certified acoustical consultant and shall describe the noise generation potential of the use during its operation and the noise mitigation measures, if needed which shall be included in the plans and specifications for the project to assure compliance with the Orange County Codified Ordinance, Division 6 (Noise Control).
>
> **Policy 8.1.1-25:** Prior to approval of project plans, OC Dana Point Harbor shall confirm that the plans and specifications stipulate that stockpiling and vehicle staging areas shall be located as far as practical from noise-sensitive receptors during construction activities.
>
> **Policy 8.1.1-32:** OC Dana Point Harbor shall confirm that grading and drainage plans are reviewed with a geotechnical report and that the plans include the following notes:
>
> a. All construction vehicles and equipment, fixed or mobile and operated within 1,000 feet of a dwelling shall be equipped with proper operation and maintained mufflers;

7 City of Dana Point. 2024. Municipal Code. July 7.
8 Ibid.
9 Ibid.
10 Ibid.

b. All operations shall comply with the County's Noise Ordinance; and

c. Stockpiling and/or vehicle staging areas shall be located as far away as practical from dwellings.

4.10.5 Methodology

Evaluation of noise and vibration impacts associated with the Modified Project includes the following:

- Determination of the short-term construction noise and vibration impacts.
- Determination of the long-term off-site and on-site traffic noise impacts.
- Determination of the long-term stationary noise impacts from project operations.
- Determination of the required mitigation measures to reduce short-term construction–related noise and vibration impacts and long-term stationary and mobile source noise impacts.

The evaluation of noise and vibration impacts was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the Orange County Code of Ordinances, the City of Dana Point Noise Element and Municipal Code, and FTA criteria.

4.10.6 Thresholds of Significance

The thresholds for noise and vibration impacts used in this analysis are consistent with Appendix G of the *State CEQA Guidelines*. The Modified Project would have a significant noise and vibration impact if it would result in:

Threshold 4.10.1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Threshold 4.10.2: Generation of excessive groundborne vibration or groundborne noise levels?

Threshold 4.10.3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Initial Study prepared in September 2020 for the Original Project, included as Appendix B to this Revised Draft EIR, substantiated that there would be no impacts associated with Threshold 4.10.3 because the project site was not located within the vicinity of a private airstrip or airport land use plan. This condition has not changed since the preparation of the 2021 Draft EIR. As such, this threshold will not be addressed in the following analysis of the Modified Project, and the impact conclusion reached in the Initial Study remains applicable to the Modified Project.

4.10.7 Project Impacts

Threshold 4.10.1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact.

4.10.7.1 Short-Term Off-Site Construction Noise Impacts

Two types of short-term noise impacts would occur during construction of the Modified Project. First, construction crew commutes and the transport of construction equipment and materials to the site for the Modified Project would incrementally increase noise levels on roads leading to the Modified Project site. The pieces of heavy equipment for construction activities will be moved on site once and will remain for the duration of each construction phase of the Modified Project, and therefore, will not add to the daily traffic volume in the project vicinity. Although there would be a relatively high single-event noise exposure potential causing intermittent noise nuisance (passing trucks at 50 ft would generate up to a maximum of 84 dBA), the effect on longer-term (hourly or daily) ambient noise levels would be small because the hourly/daily construction-related vehicle trips are small compared to the existing daily traffic volume on Dana Point Harbor Drive, Golden Lantern, and Del Prado Avenue. The building construction phase would generate the most trips out of all of the construction phases, at 255 trips per day based on the California Emissions Estimator Model (CalEEMod) (Version 2022.1) results contained in Appendix D of this Revised Draft EIR. Roadways that would be used to access the Modified Project site would include Dana Point Harbor Drive, Golden Lantern, and Del Prado Avenue. Based on Table 4.10.D, Dana Point Harbor Drive, Golden Lantern, and Del Prado Avenue have estimated existing weekday/Saturday ADT volumes of 5,710/8,510, 7,075/8,920, and 4,930/4,770, respectively, near the Modified Project site. Based on the information above, construction-related traffic would increase noise levels by up to 0.2 dBA. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, short-term construction-related noise impacts associated with worker commute and equipment transport to the Modified Project site would be less than significant, consistent with the Original Project.

The second type of short-term noise impact is related to noise generated from construction activities. Construction is performed in distinct steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. The Modified Project anticipates demolition, site preparation, grading, building construction, paving, and architectural coating phases of construction. These various sequential phases change the character of the noise generated on the Modified Project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.10.I lists the maximum noise levels (L_{max}) recommended for noise impact assessments for typical

Table 4.10.I: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor[1]	Maximum Noise Level (L_{max}) at 50 ft[2]
Backhoe	40	80
Compactor (ground)	20	80
Compressor (air)	40	80
Crane	16	85
Dozer	40	85
Drill Rig Truck	20	84
Dump Truck	40	84
Excavator	40	85
Flatbed Truck	40	84
Forklift	20	85
Front-End Loader	40	80
Generator	50	82
Grader	40	85
Impact Pile Driver	20	95
Jackhammer	20	85
Pavement Scarafier	20	85
Paver	50	85
Pickup Truck	40	55
Pneumatic Tools	50	85
Pump	50	77
Rock Drill	20	85
Roller	20	85
Scraper	40	85
Tractor	40	84
Welder/Torch	40	73

Source: *FHWA Highway Construction Noise Handbook,* Table 9.1 (FHWA 2006).
Note: The noise levels reported in this table are rounded to the nearest whole number.
[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] Maximum noise levels were developed based on Spec 721.560 from the CA/T program to be consistent with the City of Boston, Massachusetts, Noise Code for the "Big Dig" project.
CA/T = Central Artery/Tunnel
FHWA = Federal Highway Administration
ft = foot/feet
L_{max} = maximum instantaneous noise level

construction equipment included in the FHWA Highway Construction Noise Handbook[11] based on a distance of 50 ft between the equipment and a noise receptor.

Table 4.10.J lists the anticipated construction equipment for each construction phase based on the CalEEMod (Version 2022.1) results contained in Appendix D of this Revised Draft EIR. Table 4.10.J shows the combined noise level at 50 ft from all of the equipment in each phase, and the L_{eq} noise level for each equipment at 50 ft based on the quantity, reference L_{max} noise level at 50 ft, and the acoustical usage factor. As shown in Table 4.10.J, construction noise levels would reach up to 92.0 dBA L_{eq} at a distance of 50 ft.

[11] Federal Highway Administration (FHWA). 2006. *FHWA Highway Construction Noise Handbook*. Roadway Construction Noise Model, FHWA HEP-06-015. DOT-VNTSC-FHWA-06-02. NTIS No. PB2006-109012. August.

Table 4.10.J: Summary of Construction Phase, Equipment, and Noise Levels

Construction Phase	Construction Equipment	Quantity	Reference Noise Level at 50 ft (dBA L_{max})	Acoustical Usage Factor[1] (%)	Noise Level at 50 ft (dBA L_{eq})	Combined Noise Level at 50 ft (dBA L_{eq})
Demolition	Dozer	2	85	40	84.0	89.4
	Excavator	3	85	40	85.8	
	Dump Truck	2	84	40	83.0	
	Front End Loader	1	80	40	76.0	
Site Preparation	Dozer	3	85	40	85.8	87.3
	Backhoe	4	80	40	82.0	
Grading	Grader	1	85	40	81.0	91.2
	Excavator	2	85	40	84.0	
	Backhoe	2	80	40	79.0	
	Scraper	2	85	40	84.0	
	Dozer	1	85	40	81.0	
	Compactor (ground)	1	80	20	73.0	
	Dump Truck	2	84	40	83.0	
	Front End Loader	1	80	40	76.0	
	Drill Rig Truck	2	84	20	80.0	
	Generator	1	82	50	79.0	
	Compressor (air)	1	80	40	76.0	
Building Construction	Man Lift	3	85	20	82.8	92.0
	Generator	1	82	50	79.0	
	Crane	1	85	16	77.0	
	Welder / Torch	1	73	40	69.0	
	Backhoe	3	80	40	80.8	
	Pumps	2	77	50	77.0	
	Dump Truck	4	84	40	86.0	
	Dump Truck	1	84	40	80.0	
	Front End Loader	2	80	40	79.0	
	Excavator	4	85	40	87.0	
Paving	Paver	2	85	50	85.0	87.8
	Pavement Scarafier	2	85	20	81.0	
	Roller	2	85	20	81.0	
Architectural Coating	Compressor (air)	1	80	40	76.0	76.0

Source: Compiled by LSA Associates, Inc. (2024).

[1] The acoustical usage factor is the percentage of time during a construction noise operation that a piece of construction equipment operates at full power.

dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

As shown in Table 4.10.K, the closest residential, park, and commercial property lines are located approximately 440 ft, 285 ft, and 360 ft, respectively, from the center of the Modified Project and would be exposed to noise levels that reach up to 73.1, 76.9, and 74.9 dBA L_{eq}, respectively. Although noise generated by project construction activities would be higher than the ambient noise levels and may result in a temporary increase in the ambient noise levels, construction noise would stop once project construction of the Modified Project is completed. Also, construction-related noise levels would be below the FTA noise level standards of 80 dBA L_{eq} for residential uses and 85 dBA L_{eq} for commercial uses. Construction activities shall be limited to between the hours of 7:00 a.m. and 8:00 p.m., Monday through Saturday pursuant to Section 4-6-7(e) of the County Code of Ordinances and Section 11.10.014 of the City's Municipal Code.

Table 4.10.K: Summary of Construction Noise Levels

Land Use	Direction	Reference Noise Level (dBA L_{eq}) at 50 ft	Distance[1] (ft)	Noise Level (dBA L_{eq})
Residence	North	92.0	440	73.1
Park	North	92.0	285	76.9
Commercial	North	92.0	500	72.0
Commercial	East	92.0	360	74.9
Commercial	West	92.0	1,125	65.0

Source: Compiled by LSA Associates, Inc. (2024).
[1] Distance from the center of the Modified Project site to the off-site property line.
dBA L_{eq} = average A-weighted hourly noise level
ft = foot/feet

In addition, grading and equipment operations shall be limited to between the hours of 7:00 a.m. and 5:00 p.m. during the weekdays pursuant to Section 8.01.250 (Time of Grading Operations) of the City's Municipal Code. The implementation of construction hour limits, as summarized in Regulatory Compliance Measure (RCM) 4.10-1, would minimize disturbance to nearby land uses. Therefore, noise generated from project construction activities under the Modified Project, consistent with the Original Project, would be less than significant. No mitigation measures are required.

As discussed in Chapter 3.0, Project Description, Surf Lodge is estimated to be completed in August 2027 (a 22-month construction schedule), and Dana House Hotel is estimated to be completed in May 2028 (a 32-month construction schedule). The final 6 to 8 months of construction at each hotel would be devoted to installing interior finishings and furnishings. By the time Surf Lodge is open, exterior construction activities at Dana House Hotel would be limited to the application of architectural coatings, landscaping, and other minor exterior finishing work as most of the remaining construction would take place inside the hotel. As described above, implementation of construction hour limits, as summarized in RCM 4.10-1 would minimize disturbance at Surf Lodge.

4.10.7.2 Long-Term Off-Site Traffic Noise Impacts

The guidelines included in the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77 108)[12] were used to evaluate traffic-related noise conditions along roadway segments in the project vicinity. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. The existing (2024) and opening year (2028) weekday and Saturday without and with Project ADT volumes were derived from the *Traffic Impact Analysis for the Dana Point Harbor Hotels Project*[13] in Appendix N of this Revised Draft EIR. The standard vehicle mix for Southern California roadways was used for traffic on these roadway segments. Tables 4.10.L, 4.10.M, 4.10.N, and 4.10.O provide the Existing (2024) Weekday with and without Project, Existing (2024) Saturday with and without Project, Opening Year (2028) Weekday with and without Project, and Opening Year (2028) Saturday with and without project traffic noise levels, respectively, in the project vicinity. These noise levels represent the worst-case scenario, which assumes no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix L of this Revised Draft EIR.

As shown in Tables 4.10.L, 4.10.M, 4.10.N, and 4.10.O, project-related traffic associated with the Modified Project would increase noise by up to 0.4 dBA. Noise level increases below 3 dBA would not be considered perceptible to the human ear in an outdoor environment as well as being below the increase thresholds presented in Section 4.10.3. Therefore, traffic noise from project-related traffic associated with the Modified Project on off-site sensitive receptors would be less than significant, and no mitigation measures are required.

4.10.7.3 Long-Term Off-Site Stationary Noise Impacts

HVAC Operations. The operation of the Modified Project would include a rooftop heating, ventilation, and air conditioning (HVAC) system for each hotel and packaged terminal air conditioner (PTAC)/heat pump for each hotel room. The HVAC equipment could operate 24 hours per day. Each rooftop HVAC unit would generate a noise level of 92 dBA L_{eq} at 3 ft. Each PTAC/heat pump HVAC unit would generate an average noise level of 63.1 dBA L_{eq} at 3 ft. Rooftop HVAC equipment at both Surf Lodge and Dana House Hotel would be appropriately screened, which would provide a minimum noise reduction of 5 dBA. Of the 169 rooms at Surf Lodge, an estimated 75 PTAC/heat pumps would be exposed to residences north of the Modified Project site. Similarly, of the 130 rooms at Dana House Hotel, an estimated 65 PTAC/heat pumps would be exposed to residences north of the Modified Project site. The specifications of the rooftop HVAC equipment and PTAC/heat pump, including the reference noise level, are provided in Appendix L of this Revised Draft EIR. The average distance from on-site HVAC equipment at Surf Lodge to the residences north of the Modified Project site is approximately 345 ft while the average distance from on-site HVAC equipment at Dana House Hotel to the residences north of the Modified Project site is

[12] FHWA. 1977. Highway Traffic Noise Prediction Model, FHWA RD 77-108.
[13] LSA Associates, Inc. 2025. Traffic Impact Analysis for the Dana Point Harbor Hotels Project. March.

Table 4.10.L: Existing (2024) Weekday Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Conditions
Dana Point Harbor Drive West of Island Way	5,710	< 50	< 50	< 50	56.9	5,730	< 50	< 50	< 50	56.9	0.0
Dana Point Harbor Drive between Island Way and Casitas Place	8,860	< 50	< 50	61	58.8	9,530	< 50	< 50	64	59.1	0.3
Dana Point Harbor Drive between Casitas Place and Golden Lantern	9,835	< 50	< 50	67	59.0	10,595	< 50	< 50	70	59.3	0.3
Dana Point Harbor Drive between Golden Lantern and Puerto Place	12,535	< 50	< 50	101	61.7	12,990	< 50	< 50	103	61.8	0.1
Dana Point Harbor Drive between Puerto Place and Pacific Coast Highway	13,700	< 50	< 50	106	62.2	14,155	< 50	< 50	108	62.3	0.1
Del Obispo Street between Pacific Coast Highway and Stonehill Drive	14,490	< 50	81	170	65.9	14,530	< 50	81	170	65.9	0.0
Del Obispo Street North of Stonehill Drive	11,560	< 50	71	147	64.9	11,620	< 50	71	147	64.9	0.0
Golden Lantern North of Pacific Coast Highway	12,310	< 50	62	124	63.5	12,350	< 50	62	124	63.5	0.0
Golden Lantern between Pacific Coast Highway and Del Prado Avenue	7,310	< 50	< 50	89	61.5	7,490	< 50	< 50	90	61.6	0.1
Golden Lantern between Del Prado Avenue and Dana Point Harbor Drive	7,075	< 50	< 50	87	61.3	7,365	< 50	< 50	89	61.5	0.2
Pacific Coast Highway West of Golden Lantern Street	19,430	< 50	79	166	65.9	19,530	< 50	79	166	65.9	0.0
Pacific Coast Highway East of Golden Lantern Street	21,100	< 50	83	175	66.2	21,140	< 50	83	175	66.2	0.0
Pacific Coast Highway West of Del Obispo Street	29,060	< 50	105	218	66.8	29,100	< 50	105	218	66.8	0.0
Pacific Coast Highway East of Del Obispo Street	41,120	68	131	273	68.2	41,480	68	131	275	68.2	0.0
Stonehill Drive West of Del Obispo Street	20,540	< 50	101	214	67.4	20,540	< 50	101	214	67.4	0.0
Stonehill Drive between Del Obispo Street and Camino Capistrano	25,255	57	115	245	68.3	25,275	57	115	245	68.3	0.0
Del Prado Avenue West of Golden Lantern	5,560	< 50	< 50	73	61.1	5,660	< 50	< 50	73	61.1	0.0
Del Prado Avenue East of Golden Lantern	4,930	< 50	< 50	67	60.5	4,930	< 50	< 50	67	60.5	0.0

Source: Compiled by LSA Associates, Inc. (2024).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

Table 4.10.M: Existing (2024) Saturday Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Conditions
Dana Point Harbor Drive West of Island Way	8,510	< 50	< 50	60	58.7	8,530	< 50	< 50	60	58.7	0.0
Dana Point Harbor Drive between Island Way and Casitas Place	11,250	< 50	< 50	71	59.9	12,110	< 50	< 50	74	60.2	0.3
Dana Point Harbor Drive between Casitas Place and Golden Lantern	11,965	< 50	< 50	75	59.8	12,915	< 50	< 50	78	60.1	0.3
Dana Point Harbor Drive between Golden Lantern and Puerto Place	14,735	< 50	< 50	111	62.4	15,305	< 50	59	114	62.5	0.1
Dana Point Harbor Drive between Puerto Place and Pacific Coast Highway	16,720	< 50	61	120	63.1	17,285	< 50	62	122	63.2	0.1
Del Obispo Street between Pacific Coast Highway and Stonehill Drive	13,240	< 50	77	160	65.5	13,290	< 50	77	160	65.5	0.0
Del Obispo Street North of Stonehill Drive	11,520	< 50	71	146	64.9	11,600	< 50	71	147	64.9	0.0
Golden Lantern North of Pacific Coast Highway	13,410	< 50	65	131	63.8	13,460	< 50	65	131	63.8	0.0
Golden Lantern between Pacific Coast Highway and Del Prado Avenue	8,920	< 50	< 50	100	62.3	9,160	< 50	< 50	102	62.4	0.1
Golden Lantern between Del Prado Avenue and Dana Point Harbor Drive	9,650	< 50	< 50	106	62.7	10,025	< 50	< 50	108	62.8	0.1
Pacific Coast Highway West of Golden Lantern Street	19,150	< 50	78	164	65.8	19,290	< 50	79	165	65.8	0.0
Pacific Coast Highway East of Golden Lantern Street	19,380	< 50	79	166	65.8	19,430	< 50	79	166	65.9	0.1
Pacific Coast Highway West of Del Obispo Street	26,000	< 50	98	202	66.3	26,050	< 50	98	203	66.4	0.1
Pacific Coast Highway East of Del Obispo Street	37,030	65	122	255	67.7	37,480	65	123	257	67.8	0.1
Stonehill Drive West of Del Obispo Street	21,170	< 50	103	218	67.5	21,170	< 50	103	218	67.5	0.0
Stonehill Drive between Del Obispo Street and Camino Capistrano	27,760	60	123	261	68.7	27,790	60	123	261	68.7	0.0
Del Prado Avenue West of Golden Lantern	6,010	< 50	< 50	76	61.4	6,150	< 50	< 50	78	61.5	0.1
Del Prado Avenue East of Golden Lantern	4,770	< 50	< 50	66	60.4	4,770	< 50	< 50	66	60.4	0.0

Source: Compiled by LSA Associates, Inc. (2024).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

Table 4.10.N: Opening Year (2028) Weekday Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Conditions
Dana Point Harbor Drive West of Island Way	5,830	< 50	< 50	< 50	57.0	5,850	< 50	< 50	< 50	57.0	0.0
Dana Point Harbor Drive between Island Way and Casitas Place	9,035	< 50	< 50	62	58.9	9,705	< 50	< 50	65	59.2	0.3
Dana Point Harbor Drive between Casitas Place and Golden Lantern	10,025	< 50	< 50	68	59.0	10,785	< 50	< 50	71	59.4	0.4
Dana Point Harbor Drive between Golden Lantern and Puerto Place	12,790	< 50	< 50	102	61.8	13,245	< 50	< 50	104	61.9	0.1
Dana Point Harbor Drive between Puerto Place and Pacific Coast Highway	13,975	< 50	< 50	107	62.3	14,430	< 50	< 50	109	62.4	0.1
Del Obispo Street between Pacific Coast Highway and Stonehill Drive	16,730	< 50	89	187	66.5	16,770	< 50	89	187	66.5	0.0
Del Obispo Street North of Stonehill Drive	12,810	< 50	75	157	65.3	12,870	< 50	76	157	65.3	0.0
Golden Lantern North of Pacific Coast Highway	13,700	< 50	66	133	63.9	13,740	< 50	66	133	63.9	0.0
Golden Lantern between Pacific Coast Highway and Del Prado Avenue	7,455	< 50	< 50	90	61.6	7,635	< 50	< 50	91	61.7	0.1
Golden Lantern between Del Prado Avenue and Dana Point Harbor Drive	7,215	< 50	< 50	88	61.4	7,505	< 50	< 50	90	61.6	0.2
Pacific Coast Highway West of Golden Lantern Street	22,290	< 50	86	182	66.5	22,390	< 50	86	182	66.5	0.0
Pacific Coast Highway East of Golden Lantern Street	23,280	< 50	89	187	66.6	23,320	< 50	89	187	66.6	0.0
Pacific Coast Highway West of Del Obispo Street	31,410	< 50	110	229	67.2	31,450	< 50	110	229	67.2	0.0
Pacific Coast Highway East of Del Obispo Street	44,010	70	136	286	68.5	44,380	71	137	287	68.5	0.0
Stonehill Drive West of Del Obispo Street	20,970	< 50	102	217	67.5	20,970	< 50	102	217	67.5	0.0
Stonehill Drive between Del Obispo Street and Camino Capistrano	26,780	59	120	255	68.5	26,805	59	120	255	68.5	0.0
Del Prado Avenue West of Golden Lantern	5,670	< 50	< 50	74	61.1	5,770	< 50	< 50	74	61.2	0.1
Del Prado Avenue East of Golden Lantern	5,040	< 50	< 50	68	60.6	5,040	< 50	< 50	68	60.6	0.0

Source: Compiled by LSA Associates, Inc. (2024).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily trips
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

Table 4.10.O: Opening Year (2025) Saturday Traffic Noise Levels Without and With Project

Roadway Segment	Without Project Traffic Conditions					With Project Traffic Conditions					
	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	ADT	Centerline to 70 dBA CNEL (ft)	Centerline to 65 dBA CNEL (ft)	Centerline to 60 dBA CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase from Baseline Conditions
Dana Point Harbor Drive West of Island Way	8,680	< 50	< 50	61	58.7	8,700	< 50	< 50	61	58.8	0.1
Dana Point Harbor Drive between Island Way and Casitas Place	11,480	< 50	< 50	72	60.0	12,340	< 50	< 50	75	60.3	0.3
Dana Point Harbor Drive between Casitas Place and Golden Lantern	12,205	< 50	< 50	76	59.9	13,155	< 50	< 50	79	60.2	0.3
Dana Point Harbor Drive between Golden Lantern and Puerto Place	15,025	< 50	59	112	62.5	15,595	< 50	60	115	62.6	0.1
Dana Point Harbor Drive between Puerto Place and Pacific Coast Highway	17,060	< 50	61	121	63.1	17,625	< 50	63	124	63.3	0.2
Del Obispo Street between Pacific Coast Highway and Stonehill Drive	15,580	< 50	85	178	66.2	15,630	< 50	85	178	66.2	0.0
Del Obispo Street North of Stonehill Drive	12,660	< 50	75	155	65.3	12,740	< 50	75	156	65.3	0.0
Golden Lantern North of Pacific Coast Highway	14,910	< 50	69	140	64.3	14,960	< 50	69	141	64.3	0.0
Golden Lantern between Pacific Coast Highway and Del Prado Avenue	9,100	< 50	< 50	102	62.4	9,340	< 50	< 50	103	62.5	0.1
Golden Lantern between Del Prado Avenue and Dana Point Harbor Drive	9,835	< 50	< 50	107	62.8	10,210	< 50	< 50	109	62.9	0.1
Pacific Coast Highway West of Golden Lantern Street	22,060	< 50	86	180	66.4	22,200	< 50	86	181	66.4	0.0
Pacific Coast Highway East of Golden Lantern Street	21,610	< 50	84	178	66.3	21,660	< 50	85	178	66.3	0.0
Pacific Coast Highway West of Del Obispo Street	28,370	< 50	103	214	66.7	28,430	< 50	104	214	66.7	0.0
Pacific Coast Highway East of Del Obispo Street	39,950	67	128	268	68.0	40,400	68	129	270	68.1	0.1
Stonehill Drive West of Del Obispo Street	21,620	< 50	104	221	67.6	21,620	< 50	104	221	67.6	0.0
Stonehill Drive between Del Obispo Street and Camino Capistrano	29,530	62	128	272	68.9	29,560	62	128	272	69.0	0.1
Del Prado Avenue West of Golden Lantern	6,140	< 50	< 50	77	61.5	6,280	< 50	< 50	79	61.6	0.1
Del Prado Avenue East of Golden Lantern	4,870	< 50	< 50	67	60.5	4,870	< 50	< 50	67	60.5	0.0

Source: Compiled by LSA Associates, Inc. (2024).
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot/feet

approximately 585 ft. Table 4.10.P summarizes the information above and the calculated noise levels generated from on-site HVAC equipment. As shown in Table 4.10.P, HVAC noise levels would reach up to 48.2 dBA L_{eq} at the closest residences to the north. This noise level would not exceed the City's daytime and nighttime noise standards of 55 and 50 dBA L_{eq}, respectively. Therefore, noise generated from on-site HVAC equipment at the closest residence to the north would be less than significant under the Modified Project. No mitigation is required.

Outdoor Event Areas, Outdoor Speakers, and Live Music. The Modified Project includes a variety of speakers and outdoor active areas. The areas include outdoor dining and lounge areas with both limited and full food service menus, and event spaces. The proposed hours of these outdoor dining and lounge areas would range from 7:00 a.m. to 11:00 p.m. for full food service and 7:00 a.m. to 1:00 a.m. for limited food service. The use of outdoor event spaces, primarily associated with Dana House Hotel, would vary. The events at the outdoor areas possibly could include the following:

- Wedding receptions
- Seminars/lectures
- Milestone celebrations and award ceremonies
- Business functions
- Summer movie nights (once a week)
- Summer concert series (once a week)
- Live DJ and entertainment on weekends
- Local restaurant events and food truck festivals

In addition to noise associated with people talking, raised voices, and the clanking of dishes, the proposed outdoor event areas would contain a variety of speakers. The potential noise impacts from operation of the speakers would be heavily dependent on the volume setting and directionality of each speaker. For reference, the noise levels generated from the speakers would be required to limit daytime average noise levels to a composite level of 79 dBA L_{eq} at a distance of 25 ft in order to remain in compliance with the County's exterior daytime L_{eq} standard of 55 dBA L_{eq} at the nearest residence located 400 ft from the closest speaker. The composite level would need to be reduced by 5 dBA L_{eq} to 74 dBA L_{eq} at 25 ft in order to comply with the nighttime L_{eq} standard of 50 dBA L_{eq}. The proposed speakers would be used for background music as well as live music and entertainment. While one individual outdoor area may comply with the County's noise requirements, it is important to note that when multiple activities or events occur simultaneously, the compounded noise level would have the potential to increase noise and result in a potential significant impact.

Due to the variety and location of the proposed speakers, the variety and size of proposed events, and the shielding provided by the proposed buildings, Mitigation Measure 4.10-1 would require an acoustical study prepared by a qualified acoustical consultant to confirm compliance with the City and County exterior daytime and nighttime noise standards from noise monitoring during three (3) peak activity weekends once the hotels are open. If it is discovered that noise levels exceed the City and County's exterior noise level requirements, additional measures recommended by a qualified acoustical consultant would be implemented as necessary to ensure compliance with such requirements. Such measures may include, but not be limited to: posting signage to identify hours in

Table 4.10.P: HVAC Noise Levels

Land Use	Direction	Equipment	No. of Units	Reference Noise Level (dBA L_{eq}) at 3 ft	Reference Noise Level (dBA L_{eq}) at 3 ft	Distance[1] (ft)	Distance Attenuation (dBA)	Shield (dBA)	Noise Level (dBA L_{eq})	Combined Noise Level (dBA L_{eq})
Residential	North	Surf Lodge – Rooftop HVAC	1	92.0	92.0	345	41.2	5[1]	45.8	48.2
		Surf Lodge – PTAC/Heat Pump	75	63.1	81.9	345	41.2	0	40.6	
		Dana House – Rooftop HVAC	1	92.0	92.0	585	45.8	5[1]	41.2	
		Dana House – PTAC/Heat Pump	65	63.1	81.2	585	45.8	0	35.4	

Source: LSA Associates, Inc. (2024).

[1] Average distance from HVAC equipment to the property line.

[2] The rooftop HVAC unit would be appropriately screened, which would provide a minimum noise reduction of 5 dBA.

dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level
ft = foot/feet
PTAC = packaged terminal air conditioner
HVAC = heating, ventilation, and air conditioning

which noise level requirements are more strict, keeping all kitchen and service area doors closed when not in use, limiting the number of simultaneous events or places with amplified music, reducing the speaker noise levels, directing speakers away from sensitive receptors, using highly directional speakers, and installing noise barriers. With the implementation of MM 4.10-2, noise levels generated by the outdoor activity areas and exterior speakers would be less than significant under the Modified Project, as with the Original Project.

4.10.7.4 Long-Term On-Site Noise Impacts

While the City does not have specific exterior noise level standards for hotel uses, the Modified Project has the potential to be exposed to noise levels that exceed the City's General Plan interior noise standard from surrounding roadways and commercial uses. The following sections provide further details regarding consistency with the General Plan noise standards.

Exterior Traffic Noise Levels. The proposed on-site hotel uses would be exposed to traffic noise impacts primarily from Dana Point Harbor Drive. Although the California Environmental Quality Act (CEQA) does not require an analysis of the effects of the environment on a project, the following analysis is provided to disclose noise levels experienced by future guests. The analysis is also provided to determine consistency with the City's General Plan Noise Element standards.

The measured noise levels of 58.3 and 64.5 dBA CNEL at LT-2 and LT-3 shown in Table 4.10.H were conducted approximately 110 ft and 55 ft from the Dana Point Harbor Drive centerline, respectively. Surf Lodge and Dana House Hotel would be located approximately 63 ft and 115 ft from the Dana Point Harbor Drive centerline and would be exposed to existing noise levels of 58.0 and 63.6 dBA CNEL, respectively. A 0.4 dBA was added to the existing noise levels to adjust noise levels to Opening Year 2028 Weekday with project conditions based on Tables 4.10.L and 4.10.O. Exterior noise levels at Surf Lodge and Dana House Hotel under the Opening Year 2028 Weekday with project conditions would be 58.4 and 64.0 dBA CNEL, respectively. An additional 1.1 dBA was added to the Opening Year 2028 Weekday with project conditions to adjust to the Opening Year 2028 Saturday with project conditions based on Tables 4.10.N and 4.10.O. Exterior noise levels at Surf Lodge and Dana House Hotel under the Opening Year 2028 Saturday with project conditions would be 59.5 and 65.1 dBA CNEL, respectively.

Interior Traffic Noise Impacts. Based on the United States Environmental Protection Agency's (EPA) Protective Noise Levels (1978), with a combination of exterior walls, doors, and windows, standard construction for Southern California (warm climate) residential buildings would provide more than 24 dBA in exterior-to-interior noise reduction with windows and doors closed and 12 dBA or more with windows and doors open (the national average is 25 dBA with windows and doors closed and 15 dBA with windows and doors open). With windows and doors closed, interior noise levels would reach up to 41.1 dBA CNEL (65.1 dBA – 24 dBA = 41.1 dBA). This noise level does not exceed the City's General Plan Noise Element interior noise standard of 45 dBA CNEL. In order to confirm that the necessary reduction is achieved and to comply with the City's General Plan Noise Element interior noise standard of 45 dBA CNEL, a Final Acoustical Report shall be prepared based on final architectural plans and window specifications to document the expected interior noise levels as required by RCM 4.10-2, which is further detailed in Section 4.10.9 below.

In addition, with windows and doors open, interior noise levels would reach up to 53.1 dBA CNEL (65.1 dBA – 12 dBA = 53.1 dBA). This noise level exceeds the City's General Plan Noise Element interior noise standard of 45 dBA CNEL. Mechanical ventilation (e.g., air conditioning) would be required so that windows and doors can remain closed for a prolonged period of time to maintain the interior noise standard. Therefore, the Modified Project, would comply with the City's General Plan Noise Element interior noise standard of 45 dBA CNEL with the implementation of RCMs 4.10-2 and 4.10-3.

Threshold 4.10.2: Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact.

4.10.7.5 Short-Term Off-Site Construction Vibration Impacts

Vibration levels calculated in RMS velocity are best for characterizing human response to building vibration, whereas vibration levels in PPV are best for characterizing damage potential. This construction vibration impact analysis discusses the level of human annoyance using vibration levels in VdB, which uses an RMS velocity, and assesses the potential for building damage using vibration levels in PPV (in/sec), which uses peak vibration velocity.

Table 4.10.Q shows the reference vibration levels at a distance of 25 ft for each type of standard construction equipment from the FTA Manual (2018). Construction of the Modified Project is expected to require the use of large bulldozers, loaded trucks, and jack hammers, which would generate ground-borne vibration of up to 87 VdB (0.089 PPV [in/sec]), 86 VdB (0.076 PPV [in/sec]), and 79 VdB (0.035 PPV [in/sec]) when measured at 25 ft, respectively. Pile drivers, vibratory rollers, and other heavy-tracked construction equipment would not be used during construction of the Modified Project.

Table 4.10.Q: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 Ft	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer[2]	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks	**0.076**	**86**
Jackhammer	**0.035**	**79**
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
[1] RMS vibration velocity in decibels (VdB) is 1 µin/sec.
[2] Equipment shown in bold is expected to be used on site.
µin/sec = microinches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

The distance to the nearest buildings for the vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts normally occur within the buildings. The formula for vibration transmission is provided below.

$$L_vdB\ (D) = L_vdB\ (25\ feet) - 30\ Log\ (D/25)$$

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Construction Vibration Human Annoyance Potential. Table 4.10.R lists the projected vibration levels from various construction equipment expected to be used from the center of the Modified Project site to the nearest buildings in the project vicinity. As shown in Table 4.10.R, the closest residential and commercial buildings are approximately 460 ft and 395 ft, respectively, from the center of the Modified Project site and would experience a vibration level of up to 49 VdB and 51 VdB. This vibration level would not have the potential to result in community annoyance because vibration levels would not exceed the FTA community annoyance thresholds of 78 VdB for daytime residences and 84 VdB for uses that are not as sensitive to vibration. Other building structures that surround the Modified Project site would experience lower vibration levels because they are farther away.

Table 4.10.R: Potential Construction Vibration Annoyance

Land Use	Direction	Equipment/ Activity	Reference Vibration Level (VdB) at 25 ft	Distance to Structure (ft)[1]	Vibration Level (VdB)
Residence	North	Large bulldozers	87	460	49
		Loaded trucks	86	460	48
		Jackhammer	79	460	41
Commercial	North	Large bulldozers	87	640	45
		Loaded trucks	86	640	44
		Jackhammer	79	640	37
Commercial	East	Large bulldozers	87	395	51
		Loaded trucks	86	395	50
		Jackhammer	79	395	43
Commercial	West	Large bulldozers	87	1,125	37
		Loaded trucks	86	1,125	36
		Jackhammer	79	1,125	29

Source: Compiled by LSA Associates, Inc. (2024).
Note: The FTA community annoyance thresholds are 78 VdB for daytime residences and 84 VdB for uses that are not as sensitive to vibration.
[1] Distance from the center of the Modified Project site to the building structure.
ft = foot/feet
FTA = Federal Transit Administration
VdB = vibration velocity decibels

Construction Vibration Damage Potential. Similarly, Table 4.10.S lists the projected vibration levels from various construction equipment expected to be used on the Modified Project site at the project construction boundary to the nearest buildings in the project vicinity. As shown in Table 4.10.S, the closest residential and commercial buildings are approximately 215 ft and 55 ft, respectively, from the project construction boundary and would experience a vibration level of up to 0.004 PPV (in/sec) and 0.191 PPV (in/sec), respectively. This vibration level would not result in building damage because commercial and residential buildings would be constructed equivalent to or better than nonengineered timber and masonry and vibration levels would not exceed the FTA vibration damage threshold of 0.20 PPV (in/sec). Other building structures that surround the Modified Project site would experience lower vibration levels because they are farther away and would be constructed equivalent to or better than nonengineered timber and masonry. Therefore, vibration levels generated from project construction associated with the Modified Project, consistent with the Original Project, would be less than significant. No mitigation measures are required.

Table 4.10.S: Potential Construction Vibration Damage

Land Use	Direction	Equipment/ Activity	Reference Vibration Level at 25 ft	Distance to Structure (ft)[1]	Vibration Level
			PPV (in/sec)		PPV (in/sec)
Residential	North	Large bulldozers	0.089	215	0.004
		Loaded trucks	0.076	215	0.003
		Jackhammer	0.035	215	0.001
Commercial	North	Large bulldozers	0.089	135	0.007
		Loaded trucks	0.076	135	0.006
		Jackhammer	0.035	135	0.003
Commercial	East	Large bulldozers	0.089	15	0.191
		Loaded trucks	0.076	15	0.164
		Jackhammer	0.035	15	0.075
Commercial	West	Large bulldozers	0.089	350	0.002
		Loaded trucks	0.076	350	0.001
		Jackhammer	0.035	350	0.001

Source: Compiled by LSA Associates, Inc. (2024).
Note: The FTA-recommended building damage threshold is 0.20 PPV (in/sec) at the receiving nonengineered timber and masonry building.
[1] Distance from the project construction boundary to the building structure.
ft = foot/feet
in/sec = inches per second
FTA = Federal Transit Administration
PPV = peak particle velocity

4.10.8 Level of Significance Prior to Mitigation

Construction noise and vibration impacts as well as off-site traffic noise impacts would all be less than significant under the Modified Project. Off-site stationary noise impacts have the potential to exceed the applicable standards. Therefore, under the Modified Project, off-site stationary noise impacts would be potentially significant prior to mitigation (MM 4.10-1).

4.10.9 Regulatory Compliance Measures and Mitigation Measures

Implementation of the following regulatory compliance and mitigation measures would reduce or minimize construction and operational noise under the Modified Project. The City considers regulatory compliance measures to be mandatory as they are not considered mitigation measures.

RCM 4.10-1 **Construction Noise.** Prior to issuance of grading and building permits, the Project Applicant shall submit grading plans and building plans for review and approval by the County of Orange's (County) Building Official, or designee. These plans shall require construction activities to be limited to between the hours of 7:00 a.m. and 5:00 p.m., Monday through Saturday pursuant to Section 4-6-7(e) of the County Code of Ordinances and Section 11.10.014 of the City's Municipal Code. No construction shall be permitted outside of these hours or on Sundays and federal holidays. Additionally, grading and equipment operations may only occur between the hours of 7:00 a.m. and 5:00 p.m. during the weekdays and not at all on Saturdays, Sundays, and federal holidays.

RCM 4.10-2 **Final Acoustical Report.** Prior to issuance of any building permits, the Project Applicant shall submit a Final Acoustical Report, prepared by a qualified acoustical consultant, to be reviewed and approved by the County of Orange Building Official and the City of Dana Point Building Official, or their respective designees. The County and City Building Officials, or their respective designees, shall verify that the Final Acoustical Report demonstrates that all sensitive rooms with exterior façades comply with the City's General Plan Noise Element interior noise standard. Noise reduction techniques that may be incorporated into construction plans in order to reduce interior noise levels include, but are not limited to, incorporation of upgraded windows and doors, improved wall construction, or reduced window and door sizes should oversized windows and doors be originally designed.

RCM 4.10-3 **Mechanical Ventilation Requirements.** Provide mechanical ventilation (e.g., an air-conditioning system) to all noise-sensitive rooms to ensure that windows can remain closed for a prolonged period of time.

MM 4.10-1 **Operations Compliance Inspection and Monitoring.** A qualified acoustical consultant shall prepare an acoustical study to confirm compliance with the City of Dana Point and County of Orange exterior daytime and nighttime noise standards from noise monitoring during three (3) peak activity weekends once the hotels are open. If it is discovered that noise levels exceed the City and County's exterior noise level requirements, additional measures recommended by a qualified acoustical consultant shall be implemented as necessary to ensure compliance with such requirements. Such measures may include, but not be limited to:

- Posting signage to identify hours in which noise level requirements are more strict;
- Keeping all kitchen and service area doors closed when not in use;

- Limiting the number of simultaneous events or places with amplified music;
- Reducing the speaker noise levels;
- Directing speakers away from sensitive receptors;
- Using highly directional speakers, and
- Installing noise barriers.

4.10.10 Level of Significance after Mitigation

The level of significance would remain less than significant after mitigation under the Modified Project.

4.10.11 Cumulative Impacts

A cumulative noise impact would occur if multiple sources of noise from cumulative projects combine to create impacts in close proximity to a sensitive receptor. Because construction noise and vibration are localized and rapidly attenuate within an urban environment, the identified cumulative projects are located too far from the project site to contribute to cumulative impacts related to noise levels due to construction activities. Construction activities at any related project site would not result in a noticeable increase in noise to sensitive receptors adjacent to the Modified project site. Furthermore, all related projects would be required to comply with both the County's and the City's Noise Ordinances. Therefore, as with the Original Project, cumulative construction noise impacts would be considered less than significant under the Modified Project.

Cumulative operational noise impacts could occur as a result of increased traffic volumes on local roadways due to future growth from cumulative projects in the project area. Cumulative traffic noise impacts are based on the difference between existing traffic volumes and future traffic volumes after buildout of the Modified Project and in combination with related projects currently being proposed or built in the vicinity of the project site. Derived from Tables 4.10.L, 4.10.M, 4.10.N, and 4.10.O, the cumulative traffic noise increase associated with the Modified Project would reach up to 0.7 dBA along roadway segments in the project vicinity for all Existing and Opening Year scenarios. A noise level increase less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, the Modified Project would not contribute substantially to cumulative roadway noise impacts and would have a less than cumulatively considerable impact.