IV. Environmental Impact Analysis

H. Noise

1. Introduction

This section of the Draft EIR analyzes the potential noise and vibration impacts associated with the proposed Project. Specifically, the analysis describes the existing noise environment in the vicinity of the Project Site, estimates future noise and vibration levels at surrounding sensitive land uses resulting from construction and operation of the proposed Project, identifies the potential for significant impacts, and provides mitigation measures to address significant impacts. In addition, this section of the Draft EIR evaluates the potential cumulative noise and vibration impacts resulting from the proposed Project together with related projects and other future growth. The analysis is based, in part, on the *Noise Memo,* prepared for the proposed Project by Newson Brown Acoustics, LLC (June 22, 2016), as well as the noise calculation worksheets both of which are included in Appendix F of this Draft EIR.

2. Environmental Setting

a. Noise and Vibration Fundamentals

(1) Noise

(a) Fundamentals of Sound and Environmental Noise

Noise is commonly defined as sound that is undesirable because it interferes with speech communication and hearing, causes sleep disturbance, or is otherwise annoying (unwanted sound). The decibel (dB) is a conventional unit for measuring the amplitude of sound as it accounts for the large variations in sound pressure amplitude and reflects the way people perceive changes in sound amplitude.[1] Human hearing is not equally sensitive to sound at all frequencies. Therefore, to approximate this human frequency-dependent response, the A-weighted filtering system is used to adjust measured sound levels (dBA). The term "A-weighted" refers to filtering the noise signal in a manner that corresponds to

[1] *All sound levels measured in decibel (dB), as identified in the noise calculation worksheets included in Appendix F of this Draft EIR and in this section of the Draft EIR, are relative to* $2x10^{-5}$ *N/m*^{2}.

the way the human ear perceives sound. Examples of various sound levels in different environments are shown in Table IV.H-1 on page IV.H-3.

People commonly judge the relative magnitude of sound sensation using subjective terms, such as "loudness" or "noisiness." A change (increase) in sound level of 3 dB is considered "just perceptible," a change in sound level of 5 dB is considered "clearly noticeable," and a change (increase) of 10 dB is typically recognized as "twice as loud."[2]

(b) Outdoor Sound Propagation

In an outdoor environment, sound energy attenuates through the air as a function of distance. Such attenuation is called "distance loss" or "geometric spreading" and is based on the type of source configuration (i.e., a point source or a line source). The rate of sound attenuation for a point source, such as a piece of mechanical or electrical equipment (e.g., air conditioner or bulldozer), is 6 dBA per doubling of distance from the noise source to the receptor at acoustically "hard" sites and at a rate of 7.5 dBA per doubling of distance from the noise source to the receptor at acoustically "soft" sites.[3] For example, an outdoor condenser fan that generates a sound level of 60 dBA at a distance of 50 feet from a point source at an acoustically hard site would attenuate to 54 dBA at a distance of 100 feet from the point source and attenuate to 48 dBA at 200 feet from the point source. The rate of sound attenuation for a line source, such as a constant flow of traffic on a roadway, is 3 dBA and 4.5 dBA per doubling of distance from the point source to the receptor for hard and soft sites, respectively.[4]

In addition, structures (e.g., buildings and solid walls) and natural topography (e.g., hills and berms) that obstruct the line-of-sight between a noise source and a receptor further reduce the noise level if the receptor is located within the "shadow" of the obstruction, such as behind a sound wall. This type of sound attenuation is known as "barrier insertion loss." If a receptor is located behind the wall but still has a view of the source (i.e., the line-of-sight is not fully blocked), some barrier insertion loss would still occur but to a lesser extent. Additionally, a receptor located on the same side of the wall as a noise source may actually experience an increase in the perceived noise level as the wall reflects noise back to the receptor, thereby compounding the noise. Noise barriers can provide noise level reductions ranging from approximately 5 dBA (where the barrier just breaks the line-of-sight between the source and receiver) to an upper range of 20 dBA

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[2] *Bies & Hansen, Engineering Noise Control, 1988, Table 2.1.*

[3] *Caltrans, Technical Noise Supplement (TeNS), 2013, Chapter 2.1.4.*

[4] *Caltrans, Technical Noise Supplement (TeNS), 2013, Chapter 2.1.4.*

Table IV.H-1
Typical Noise Levels

Common Outdoor Activities	Noise Levels (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-Over at 1,000 feet		
	100	
Gas Lawn Mower at 3 feet		
	90	
Diesel Truck at 50 feet at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
Gas Lawn Mower at 100 feet	**70**	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	**60**	
		Large Business Office
Quiet Urban Daytime	**50**	Dishwasher Next Room
Quiet Urban Nighttime	**40**	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
	0	

Source: Caltrans, Technical Noise Supplement (TeNS), Table 2-5, 2013.

with a more substantial barrier.[5] Additionally, structures with closed windows can further attenuate exterior noise by a minimum of 20 dBA to 30 dBA.[6]

(c) Environmental Noise Descriptors

Several rating scales have been developed to analyze the adverse effect of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise is dependent upon the total acoustical energy content, as well as the time and duration of occurrence. The most frequently used noise descriptors, including those used by the City of West Hollywood (City), are summarized below.

[5] *Caltrans, Technical Noise Supplement (TeNS), 2013, Chapter 2.1.4.*

[6] *Caltrans, Technical Noise Supplement (TeNS), 2013, Chapter 2.1.4, Table 7-1.*

Equivalent Sound Level (L_{eq}). L_{eq} is a measurement of the acoustic energy content of noise averaged over a specified time period. Thus, the L_{eq} of a time-varying sound and that of a steady sound are the same if they deliver the same amount of energy to the receptor's ear during exposure. L_{eq} for 1-hour periods, during the daytime or nighttime hours, and 24-hour periods are commonly used in environmental assessments. For evaluating community impacts, this rating scale does not vary regardless of whether the noise occurs during day or night.

Maximum Sound Level (L_{max}). L_{max} represents the maximum sound level measured during a measurement period.

Statistical Sound Level (L_n). L_n is a statistical description of the sound level that is exceeded over some fraction of a given period of time. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. L_{90} noise level represents the noise level that is exceeded 90 percent of the time and, for environmental noise, is representative of background ambient noise level.

Community Noise Equivalent Level (CNEL). CNEL is the time average of all A-weighted sound levels for a 24-hour period with a 10-dBA adjustment (upward) added to the sound levels that occur between the hours of 10:00 P.M. and 7:00 A.M. (nighttime), and a 5-dBA adjustment (upward) added to the sound levels which occur between the hours of 7:00 P.M. and 10:00 P.M. (evening). These penalties attempt to account for increased human sensitivity to noise during the nighttime and evening periods, particularly where sleep is the most probable activity. CNEL has been adopted by the State of California to define the community noise environment for development of the community noise element of a General Plan and is also used by the City for land use planning in the City's General Plan 2035.[7]

Day/Night Average Sound Level (L_{dn}). L_{dn} is the time average of all A-weighted sound levels for a 24-hour period, similar to the CNEL. L_{dn} includes a 10-dBA adjustment (upward) added to the sound levels that occur between the hours of 10:00 P.M. and 7:00 A.M. (nighttime). Unlike CNEL, L_{dn} does not include the 5-dBA adjustment (upward) to the sound levels, which occur between the hours of 7:00 P.M. and 10:00 P.M. (evening). L_{dn} is typically within one dBA of CNEL, and the two measurements are often used interchangeably for the purposes of defining the community noise environment and measuring A-weighted sound levels for a 24-hour period.

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[7] *State of California, General Plan Guidelines, 2003; City of West Hollywood, West Hollywood General Plan 2035, Chapter 10 Safety and Noise, September 6, 2011.*

(2) Ground-Borne Vibration

Vibration is commonly defined as an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root-mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal and is typically used for evaluating potential building damage.[8] The RMS velocity is defined as the square-root of the average of the squared amplitude of the vibration signal and is typically more suitable for evaluating human response to ground-borne vibration.[9] The RMS vibration velocity level can be presented in inch per second or in VdB (a decibel unit referenced to 1 micro-inch per second).[10] Ground-borne vibration generated by man-made activities (e.g., road traffic, construction operations) typically weakens with greater horizontal distance away from the source of the vibration.

b. Regulatory Framework

Various government agencies have established noise regulations and policies to protect residents from potential hearing damage and other adverse effects associated with noise and ground-borne vibration. The City of West Hollywood General Plan 2035 establishes L_{dn}/CNEL guidelines for land use compatibility and includes a number of goals, objectives, and policies for land use planning purposes. Standards and guidelines that may be applicable to the proposed Project are discussed below. There are no City-adopted regulations or policies that relate to ground-borne vibration; therefore, the ground-borne vibration standards and guidelines from the Federal Transit Administration (FTA) and the California Department of Transportation (Caltrans) are used for this analysis. The regulations and policies that are relevant to project construction and operation noise are discussed below.

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[8] *Vibration levels are described in the noise calculation worksheets included in Appendix F of this Draft EIR and in this section of the Draft EIR in terms peak particle velocity level in the unit of inches per second.*

[9] *Federal Transit Administration (FTA), "Transit Noise and Vibration Impact Assessment," May 2006, Section 7.1.2.*

[10] *VdB (velocity level in decibel) = 20 x Log (V / V_{ref}), where V is the RMS velocity amplitude in micro-inch per second and V_{ref} is the reference velocity amplitude of $1x10^{-6}$ inch per second (1 micro-inch per second). All vibration levels described in decibel (VdB) in the noise calculation worksheets included in Appendix F of this Draft EIR and in this section of the Draft EIR are RMS and referenced to 1 micro-inch per second.*

(1) Applicable State Noise Standards

The State of California has adopted noise compatibility guidelines for general land use planning. The types of land uses addressed by the state and the acceptable noise categories for each land use are included in the *State of California General Plan Guidelines,* which is published and updated by the Governor's Office of Planning and Research. California Government Code Section 65302(f) requires that each City include a Noise Element as part of its general plan, based on the state's General Plan Guidelines published by the Governor's Office of Planning and Research (OPR). The level of acceptability of the noise environment is dependent upon the activity associated with the particular land use. For example, according to the state, an exterior noise environment up to 65 dBA CNEL is "normally acceptable" for single- and multi-family residential uses, without special noise insulation requirements. In addition, noise levels up to 75 dBA CNEL are "conditionally acceptable" with special noise insulation requirements, while noise levels at 75 dBA CNEL and above are "clearly unacceptable" for residential and hotel uses.[11] In addition, California Building Standards Code (California Code of Regulations Title 24, Part 2, Chapter 12, Section 1207) requires that where the ambient noise environment exceeds 60 dBA, CNEL measures should be implemented to achieve an interior noise environment (i.e., a habitable room) not to exceed 45 dBA CNEL. For non-residential uses, the 2016 California Green Building Standards Code requires that where the ambient noise environment exceeds 65 dBA CNEL or 65 dBA L_{eq}, measures should be implemented to achieve an interior noise environment not to exceed 50 dBA $L_{eq(1\text{-hour})}$.

(2) City of West Hollywood Regulations and Policies

The City of West Hollywood General Plan 2035 (General Plan) establishes L_{dn}/CNEL guidelines for land use compatibility and includes a number of goals, objectives, and policies for land use planning purposes. The City also has regulations to control unnecessary, excessive and annoying noise, as set forth in Chapter 9.08, Noise, of the City of West Hollywood Municipal Code (WHMC). These regulations are described further below.

(a) City of West Hollywood General Plan Noise Element

The overall purpose of the General Plan is to guide policy makers in making land use determinations and in preparing noise ordinances that would limit exposure of citizens to excessive noise levels. The Safety and Noise Element of the General Plan provides policies regarding stationary, ambient, and mobile sources of noise through state-

[11] *State of California, Governor's Office of Planning and Research, General Plan Guidelines, October 2003, p. 250.*

mandated and approved standards and noise thresholds. The following Safety and Noise Element policies and objectives are applicable to the proposed Project:[12]

- SN-3.2: Require the inclusion of noise-reducing design features in development projects to address the impact of noise on residential development.
- SN-3.3: Review development proposals to ensure that noise standards and compatibility criteria set forth in the General Plan are met.
- SN-3.6: Require development projects to implement mitigation measures, where necessary, to reduce noise levels to meet the adopted standards and criteria. Such measures may include, but are not limited to, berms, walls, and sound attenuating architectural design and construction methods.
- SN-3.7: Require new development to meet adopted noise standards and regulations.
- SN-5.1: Work to minimize stationary noise impacts on sensitive receptors and noise emanating from construction activities, private developments/residences, landscaping activities, night clubs and bars, and special events.
- SN-5.3: Require that entertainment uses, restaurants, and bars engage in responsible management and operation to control the activities of their patrons on-site and within reasonable and legally justifiable proximity to minimize noise impacts on adjacent residences.
- SN-5.4: Require mitigation as needed for development of new nightclubs, bars, and other high noise-generating uses adjacent to residences, schools, senior citizen housing, and other noise-sensitive uses.

The City's noise compatibility guidelines are provided in Table IV.H-2 on page IV.H-8.

Pursuant to Mitigation Measure 3.9-1 of the 2035 General Plan Final EIR, the City has determined that the City should use the following thresholds and procedures for CEQA analysis of proposed projects:[13]

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[12] *City of West Hollywood, West Hollywood General Plan 2035, September 6, 2011, Chapter 10 Safety and Noise.*

[13] *Final Program Environmental Impact Report City of West Hollywood General Plan and Climate Action Plan, October 2010, Volume 1, Chapter 3.9.5.*

Table IV.H-2
City of West Hollywood Noise/Land Use Compatibility Matrix

Land Use Category	Community Noise Exposure L_{dn} or CNEL, dBA						
	55	60	65	70	75	80	
Residential							
Transient Lodging—Motel, Hotel							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial, and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

	ZONE A—Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved meet conventional Title 24 construction standards, No special noise insulation requirements.
	ZONE B—Conditionally Acceptable: New construction or development should be undertaken only after a detailed noise analysis is made and noise reduction measures are identified and included in the project design.
	ZONE C—Normally Unacceptable: New construction or development is discouraged. If new construction is proposed, a detailed analysis is required, noise reduction measures must be identified, and noise insulation features included in the design.
	ZONE D—Clearly Unacceptable: New construction or development should not be undertaken.

Source: City of West Hollywood, West Hollywood General Plan 2035, Table 10-2: Noise/Land Use Compatibility Matrix, 2011.

- The City shall apply the noise standards specified in Table 10-1 and Table 10-2 of the Safety and Noise Element to proposed projects analyzed under CEQA.

- In addition to the foregoing, an increase in ambient noise levels is assumed to be a significant noise concern if a proposed project causes ambient noise levels to exceed the following:

  - Where the existing ambient noise level is less than 60 dB, a project-related permanent increase in ambient noise levels of 5 dB L_{dn} or greater.[14]

  - Where the existing ambient noise level is greater than 60 dB, a project-related permanent increase in ambient noise levels of 3 dB L_{dn} or greater.

  - A project-related temporary increase in ambient noise levels of 10 dB L_{eq} or greater.

(b) City of West Hollywood Noise Control Ordinance

Chapter 9.08, *Noise,* of the WHMC (Noise Ordinance) establishes acceptable ambient sound levels to regulate intrusive noises within specific land use zones and provides procedures and criteria for the measurement of the sound level of noise sources. These procedures recognize and account for differences in the perceived level of different types of noise and/or noise sources. The following sections of the Noise Ordinance are applicable to the proposed Project.

(i) Section 9.08.040—Prohibited Noises—General Standard

Unless otherwise permitted in Chapter 9.08 of the WHMC, no person shall make, permit to made or cause to suffer any noises, sounds or vibrations that in view of the totality of the circumstances are so loud, prolonged and harsh as to be annoying to reasonable persons of ordinary sensitivity and to cause or contribute to the unreasonable discomfort or disturbance of any persons within the vicinity.

(ii) Section 9.08.050—Prohibited Noises—Specific Examples

Notwithstanding any other provisions of Chapter 9.08 of the WHMC, the following acts and the causing or permitting thereof, are declared to be in violation of the WHMC.

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[14] *L_{dn} is 24-hour average noise descriptor similar to CNEL, with the exception that the L_{dn} noise level does not include the 5 dB penalty to the evening hours (7 P.M. to 10 P.M.). In general, L_{dn} noise level is within 1 dB of CNEL noise level.*

a. *Amplified Sound, Radios, and Musical Instruments, etc.* The using, operating or permitting to be played, used or operated between the hours of 10:00 P.M. and 8:00 A.M. of any radio, musical instrument, stereo, television set, or instrument or device similar to those heretofore specifically mentioned for the production or reproduction of sound in volume sufficiently loud as to be plainly audible at a distance of 25 feet or more therefrom.

c. *Loading and Unloading Waste in or near Residential District*. Loading, unloading, opening, closing or other handling of boxes, containers, building materials, or similar objects in a residential district or within 50 feet of a residential district, between the hours of 10:00 P.M. and 8:00 A.M., excluding normal handling of solid recycling containers by a franchised collector pursuant to Title 15.

d. *Construction.* (1) Construction between the hours of 7:00 P.M. and 8:00 A.M. on weekdays; or at any time on Saturday (except, between the hours of 8:00 A.M. and 7:00 P.M., interior construction is permissible); or at any time on Sunday, New Year's Day, Martin Luther King Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day; all except as provided in subsection (d) of Section 9.08.060. (2) To minimize the disturbance to the surrounding community, the motor and engines for construction related vehicles and equipment shall not be left idling and shall be turned off when not in use.

i. *Commercial Establishments Adjacent to Residential Property.* Notwithstanding any provision of this code to the contrary, continuous, repeated or sustained noise from the premises of any commercial establishment which is adjacent to one or more residential dwelling units, including any outdoor area part of or under the control of the establishment, between the hours of 10:00 P.M. and 8:00 A.M. that is plainly audible from the residential dwelling unit's property line.

(iii) Section 19.20.090—Noise Mitigation

A. *Maximum Noise Level*. Proposed development and land uses shall comply with the requirements of the city's Noise Control Ordinance in Chapter 9.08 of the WHMC.

C. *Commercial Project Mitigation*. Developers of commercial projects adjacent to residential zoning districts or existing residential uses shall incorporate noise mitigating techniques to ensure that noise from the

proposed commercial activities is abated to acceptable levels in compliance with Chapter 9.08 of the Municipal Code.

D. *Mechanical Equipment.* Equipment located on the rooftop of a structure shall be enclosed or incorporate other elements to prevent adverse noise that might be heard by persons on adjacent properties.

(3) Ground-Borne Vibration

The City currently does not have any adopted standards, guidelines, or thresholds relative to ground-borne vibration. As such, available guidelines from the FTA and Caltrans are utilized to assess impacts due to ground-borne vibration. As discussed above, in most circumstances common ground-induced vibrations related to roadway traffic and construction activities pose no threat to buildings or structures.[15,16]

(a) Federal Transit Administration Vibration Standards

The FTA has published a technical manual titled, "Transit Noise and Vibration Impacts Assessment," which provides ground-borne vibration impact criteria with respect to building damage during construction activities.[17] As discussed above, building vibration damage is measured in PPV described in the unit of inches per second. Table IV.H-3 on page IV.H-12 provides the FTA vibration criteria applicable to construction activities. According to FTA guidelines, a vibration criterion of 0.20 PPV should be considered as the significant impact level for non-engineered timber and masonry buildings. Structures or buildings constructed of reinforced concrete, steel, or timber, have a vibration damage criterion of 0.50 PPV pursuant to the FTA guidelines.

In addition to the FTA Construction Vibration Impact Criteria for Building Damage, the FTA guidance manual also provides vibration criteria for human annoyance for various uses. These criteria were established primarily for rapid transit (rail) projects and, as indicated in Table IV.H-4 on page IV.H-12, are based on the frequency of vibration events. Specific criteria are provided for three land use categories: (1) Vibration Category 1—High Sensitivity; (2) Vibration Category 2—Residential; and (3) Vibration Category 3—Institutional.

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[15] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, Chapter 7.*

[16] *Caltrans, "Transportation Related Earthborne Vibrations," February 2002.*

[17] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006.*

Table IV.H-3
FTA Construction Vibration Impact Criteria for Building Damage

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

Source: Federal Transit Administration, 2006.

Table IV.H-4
FTA Vibration Impact Criteria for Human Annoyance

Land Use Category	Ground-Borne Vibration Impacts Levels (VdB)		
	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Building where vibration would interfere with interior operations	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

[a] *"Frequent Events" are defined as more than 70 vibration events of the same source per day.*

[b] *"Occasional Events" are defined as between 30 and 70 vibration events of the same source per day.*

[c] *"Infrequent Events" are defined as fewer than 30 vibration events of the same source per day.*

[d] *This criterion limit is based on the levels that are acceptable for most moderately sensitive equipment such as optical microscopes.*

Source: Federal Transit Administration, 2006.

(b) Caltrans Vibration Standards

Caltrans provides guidance associated with construction-related ground-borne vibration in its Transportation and Construction Vibration Guidance Manual (2013).[18] With respect to potential building damage, Caltrans provides limit on ground-borne vibration based on the age and/or physical condition of the structures that are located in close proximity to construction activity. Table IV.H-5 on page IV.H-13 presents the Caltrans

[18] *California Department of Transportation (Caltrans), Transportation and Construction Vibration Guidance Manual, 2013.*

Table IV.H-5
Caltrans Construction Vibration Impact Criteria for Building Damage

Building Category	Maximum PPV (in/sec) from Continuous/Frequent Intermittent Sources
Extremely fragile buildings, ruins, ancient monuments	0.08
Fragile buildings	0.10
Historic and some old buildings	0.25
Older residential structures	0.30
New residential structures	0.50
Modern industrial/commercial buildings	0.50

Source: Caltrans, 2013.

guidelines with respect to vibration damage threshold criteria. As indicated therein, modern industrial/commercial buildings can endure vibration levels up to a maximum of 0.5 PPV, older residential structures have a lower vibration limit of 0.3 PPV, and historic structures have a much lower vibration limit of 0.25 inch per second PPV. With respect to human annoyance, Caltrans guidance manual shows that vibration velocity levels greater than 0.04 PPV for continuous/frequent intermittent sources are distinctly perceptible to humans as shown in Table IV.H-6 on page IV.H-14. Vibration velocity levels for continuous/ frequent intermittent sources become strongly perceptible when reaching 0.10 PPV.

c. Existing Conditions

As discussed in Section II, Project Description, of this Draft EIR, the Project Site is located in a highly urbanized area with a mix of residential and commercial uses and is subject to typical urban noises, such as noise generated by traffic, heavy machinery, and day-to-day outdoor activities. The predominant source of noise in the vicinity of the Project Site is vehicular traffic on adjacent roadways, particularly Sunset Boulevard, which is a major thoroughfare roadway that has high volumes of traffic, which borders the Project Site to the north. Existing ambient noise sources in the vicinity of the Project Site include traffic on local roadways, commercial activities, surface parking lot activities, and other miscellaneous noise sources associated with typical urban activities.

(1) Existing Ambient Noise Levels

Some land uses are considered more sensitive to intrusive noise than others based on the types of activities typically involved at the receptor location. The General Plan states that residences, schools, hospitals, religious facilities, theaters, concert halls, libraries, offices, and parks are considered sensitive because the presence of excessive

Table IV.H-6
Caltrans Construction Vibration Impact Criteria for Human Annoyance

Building Category	Maximum PPV (in/sec) from Continuous/Frequent Intermittent Sources
Barely Perceptible	0.01
Distinctly Perceptible	0.04
Strongly Perceptible	0.10
Severe	0.40

Source: Caltrans, 2013.

noise may interrupt normal activities typically associated with their use. Based on a review of the land uses in the Project area, a total of four noise sensitive receptor locations were selected to represent noise sensitive uses near the Project Site. The monitoring locations[19] surround the Project Site and thereby provide baseline measurements for uses in all directions. In addition, the monitoring locations provide an adequate basis to evaluate potential impacts beyond the monitoring locations and receptors in the same direction. The locations of the four noise-sensitive receptors are identified as R1 through R4 in Figure IV.H-1 on page IV.H-15 and described in Table IV.H-7 on page IV.H-16.

To establish baseline noise conditions, existing ambient noise levels were monitored at the four representative receptor locations in the vicinity of the Project Site identified in Table IV.H-5 on page IV.H-13. The baseline noise monitoring program was conducted on August 9, 2016 using a Quest Technologies Model 2900 Integrating/Logging Sound Level Meter.[20] Two 15-minute measurements were conducted at each of the receptor locations during daytime and nighttime hours. The daytime ambient noise levels were taken between 10:00 A.M. and 1:00 P.M., and the nighttime ambient noise levels were taken between 10:00 P.M. and 1:00 A.M.

Table IV.H-8 on page IV.H-16 provides a summary of the ambient noise measurements taken at the five noise receptor locations (i.e., the four representative receptor locations and the Project Site). Based on field observations, the ambient noise at the measurement locations is dominated by local traffic (from adjacent roadways) and, to a

[19] *A noise monitoring location is a noise sensitive receptor location, where a noise measurement was taken to establish baseline ambient noise levels in the immediate area.*

[20] *This sound meter meets and exceeds the minimum industry standard performance requirements for "Type 2" standard instruments as defined in the American National Standard Institute (ANSI) S1.4.*

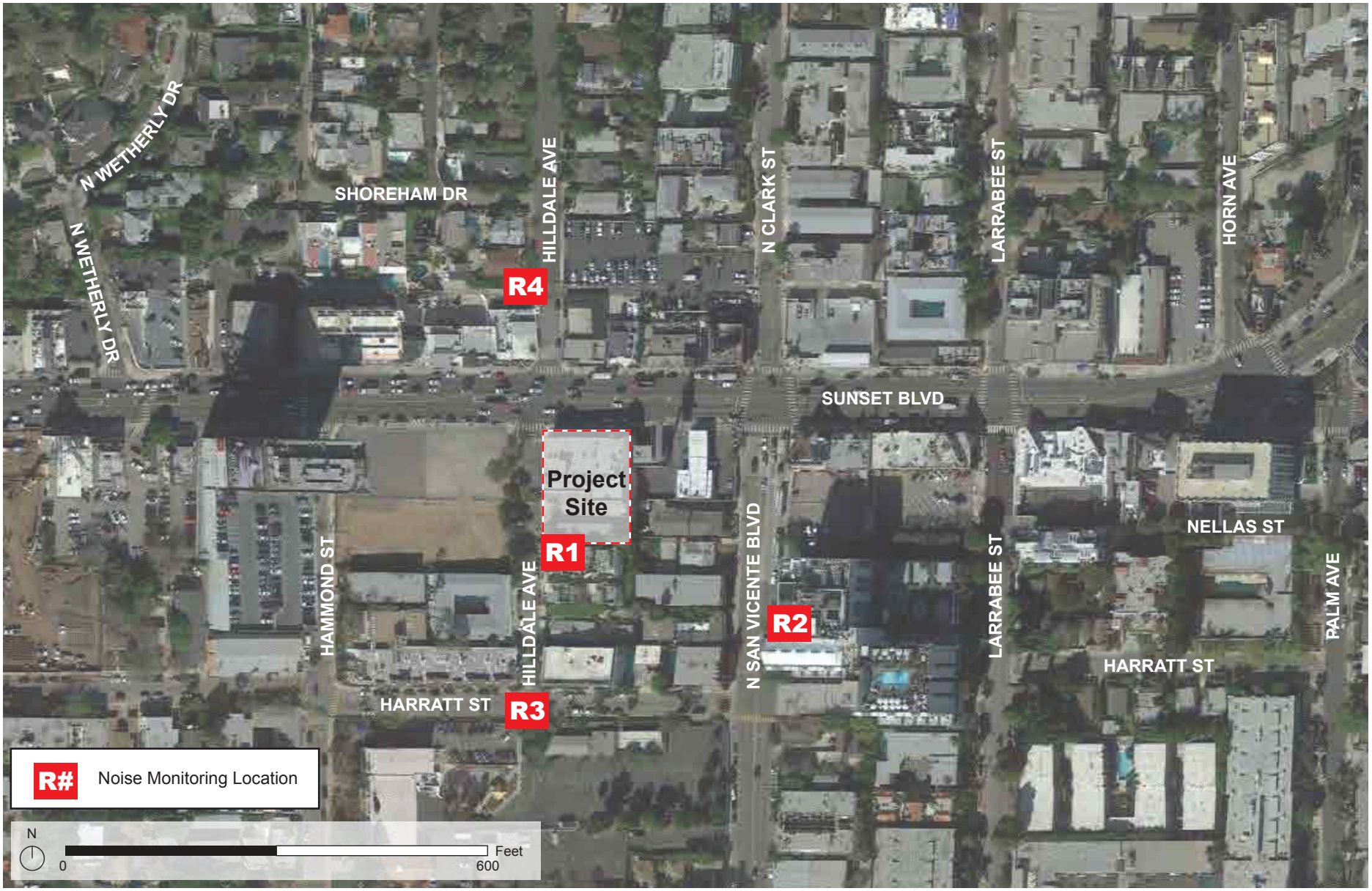

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Figure IV.H-1
Noise Monitoring Locations

Source: Google Earth, 2016; AES, 2016.

Table IV.H-7
Description of Noise Measurement Locations

Receptor Location	Description	Approximate Distance from Measurement Location to Nearest Project Site Boundary[a]	Nearest Noise-Sensitive Land Use(s)
R1	Multi-family residential uses on the east side of Hilldale Avenue, immediately south of the Project Site	10 feet	Residential
R2	The London West Hollywood Hotel on the east side of San Vicente Boulevard, one block east of the Project Site	220 feet	Hotel
R3	West Hollywood Elementary School on the south side of Harratt Street, one block south of the Project Site	265 feet	School
R4	Single-family residential uses on the west side of Hilldale Avenue, one block north of the Project Site and north of Sunset Boulevard	220 feet	Residential

[a] *Distances are estimated using Google Earth.*

Source: Acoustical Engineering Services (AES), 2016.

Table IV.H-8
Existing Ambient Noise Levels

Receptor Location	Noise-Sensitive Land Use	Measured Noise Levels (L_{eq} (dBA))		CNEL[a] (24-hour)
		Daytime Hours (7:00 A.M.–10:00 P.M.)	Nighttime Hours (10:00 P.M.–7:00 A.M.)	
R1	Residential	55.7	54.5	59.4
R2	Hotel	71.5	66.8	72.9
R3	School	59.1	54.7	60.6
R4	Residential	60.1	63.5	67.7

[a] *Estimated based on short-term (15-minute) noise measurement based on FTA procedures.*

Source: AES, 2016. See Appendix F of this Draft EIR.

lesser extent, helicopter flyovers and other typical urban noises. As indicated in Table IV.H-8, the existing daytime ambient noise levels at the off-site noise receptor locations ranged from 55.7 dBA (L_{eq}) at receptor location R1 to 71.5 dBA (L_{eq}) at receptor location R2. The measured nighttime ambient noise levels ranged from 54.5 dBA (L_{eq}) at receptor location R1 to 66.8 dBA (L_{eq}) at receptor location R2.

In addition to the ambient noise measurements in the vicinity of the Project Site, the existing traffic noise on local roadways in the surrounding area was calculated to quantify the 24-hour CNEL noise levels using information provided in the Traffic Study prepared for the proposed Project.[21] Twenty (20) roadway segments were selected for the existing off-site traffic noise analysis included in this section based on proximity to noise-sensitive uses along the roadway segments and potential increases in traffic volumes from the proposed Project. Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) and traffic volume data from the Traffic Study prepared for the proposed Project. The TNM traffic noise prediction model calculates the hourly L_{eq} noise levels based on specific information including the hourly traffic volume, vehicle type mix, vehicle speed, and lateral distance between the noise receptor and the roadway. To calculate the 24-hour CNEL levels, the hourly L_{eq} levels were calculated during daytime hours (7:00 A.M. to 7:00 P.M.), evening hours (7:00 P.M. to 10:00 P.M.), and nighttime hours (10:00 P.M. to 7:00 A.M.).

The traffic noise prediction model calculates the 24-hour CNEL noise levels based on specific information, including Average Daily Traffic (ADT); percentages of day, evening, and nighttime traffic volumes relative to ADT; vehicle speed; and distance between the noise receptor and the roadway. Vehicle mix/distribution information used in the noise calculations is shown in Table IV.H-9 on page IV.H-18.

Table IV.H-10 on page IV.H-19 provides the calculated CNEL for the analyzed local roadway segments based on existing traffic volumes. As shown in the table, the existing CNEL due to surface street traffic volumes ranges from 57.7 dBA CNEL along Hilldale Avenue (south of Sunset Boulevard) to 73.0 dBA CNEL along Doheny Drive (south of Santa Monica Boulevard). Currently, the existing traffic-related noise levels along some local street segments in the vicinity of the Project Site, including Doheny Drive, Hammond Street, Hilldale Avenue, San Vicente Boulevard (north of Cynthia Street), Horn Avenue, Holloway Drive, Cynthia Street, Santa Monica Boulevard (west of Doheny Drive), fall within the conditionally acceptable noise levels for residential uses (i.e., between 60 and 70 dBA CNEL). The existing traffic noise levels along portions of Doheny Drive (south of Santa Monica Boulevard), San Vicente Boulevard (south of Cynthia Street), Santa Monica Boulevard (east of Doheny Drive), and Sunset Boulevard are between 70 dBA CNEL and 75 dBA CNEL, which are considered normally unacceptable for residential uses.

[21] *Gibson Transportation Consulting, Inc., Transportation Study for the Arts Club West Hollywood Project, 2017.*

Table IV.H-9
Vehicle Mix for Traffic Noise Model

Vehicle Type	Percent of Average Daily Traffic (ADT)			Total Percent of ADT per Vehicle Type
	Daytime Hours (7 A.M.–7 P.M.)	Evening Hours (7 P.M.–10 P.M.)	Nighttime Hours (10 P.M.–7 A.M.)	
Automobile	77.6	9.7	9.7	97.0
Medium Truck[a]	1.6	0.2	0.2	2.0
Heavy Truck[b]	0.8	0.1	0.1	1.0
Total	80.0	10.0	10.0	100.0

[a] *Medium Truck—Trucks with 2 axles.*

[b] *Heavy Truck—Trucks with 3 or more axles.*

Source: AES, 2016. See Appendix F of this Draft EIR.

(2) Existing Ground-Borne Vibration Levels

Based on field observations, the primary source of existing ground-borne vibration in the vicinity of the Project Site is vehicular travel (e.g., standard cars, refuse trucks, delivery trucks, construction trucks, school buses, and transit buses) on local roadways. According to the FTA technical study "Federal Transit Administration: Transit Noise and Vibration Impacts Assessments," typical road traffic-induced vibration levels are unlikely to be perceptible by people. Specifically, the FTA study reports that "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads."[22] Trucks and buses typically generate ground-borne vibration velocity levels of around 63 VdB (at 50 feet distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road. Per the FTA, 75 VdB is the dividing line between barely perceptible (with regard to ground vibration) and distinctly perceptible.[23] Therefore, existing ground vibration environment in the vicinity of the Project Site is generally below the perceptible level. However, ground vibration associated with heavy trucks traveling on road surfaces with irregularities, such as speed bumps and potholes, could reach the perceptible threshold.

[22] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, p. 7-1.*

[23] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, Figure 10-1.*

Table IV.H-10
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent Land Use	Approximate Distance to Roadway Center Line (feet)	Calculated Traffic Noise Levels[a] (CNEL (dBA))	Noise-Sensitive Land Uses	Existing Noise Exposure Compatibility Category[b]
Doheny Drive					
– North of Sunset Blvd.	Residential	30	66.6	Yes	Conditional Acceptable
– Between Sunset Blvd. and Santa Monica Blvd.	Residential	30	69.9	Yes	Conditional Acceptable
– South of Santa Monica Blvd.	Residential	30	73.0	Yes	Normally Unacceptable
Hammond Street					
– South of Sunset Blvd.	Residential, School	25	63.5	Yes	Conditional Acceptable
Hilldale Avenue					
– North of Sunset Blvd.	Residential	25	58.0	Yes	Normally Acceptable
– South of Sunset Blvd.	Residential	25	57.7	Yes	Normally Acceptable
San Vicente Boulevard					
– North of Sunset Blvd.	Residential, Commercial	25	62.8	Yes	Conditional Acceptable
– Between Sunset Blvd. and Cynthia St.	Residential, Hotel, School	40	68.7	Yes	Conditional Acceptable
– Between Cynthia St. and Santa Monica Blvd.	Residential, Commercial	40	70.2	Yes	Normally Unacceptable
– South of Santa Monica Blvd.	Park, Library, Commercial	45	70.7	Yes	Normally Unacceptable
Horn Avenue					
– North of Sunset Blvd.	Residential, Commercial	25	62.5	Yes	Conditional Acceptable
Holloway Drive					
– East of Sunset Blvd.	Residential, Church, Commercial	30	69.4	Yes	Conditional Acceptable
Cynthia Street					
– East of San Vicente Blvd.	Residential, Hotel	30	69.7	Yes	Conditional Acceptable
– East of San Vicente Blvd.	Residential, Hotel	30	68.4	Yes	Conditional Acceptable

Table IV.H-10 (Continued)
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent Land Use	Approximate Distance to Roadway Center Line (feet)	Calculated Traffic Noise Levels[a] (CNEL (dBA))	Noise-Sensitive Land Uses	Existing Noise Exposure Compatibility Category[b]
Santa Monica Boulevard					
– West of Doheny Dr.	Residential, Commercial	100	69.0	Yes	Conditional Acceptable
– Between Doheny Dr. and San Vicente Blvd.	Commercial	55	71.3	Yes	Conditional Acceptable
– East of San Vicente Blvd.	Commercial	50	71.5	Yes	Conditional Acceptable
Sunset Boulevard					
– West of Doheny Dr.	Residential, Commercial	45	72.7	Yes	Normally Unacceptable
– Between Doheny Dr. and San Vicente Blvd.	Commercial	45	72.9	Yes	Conditional Acceptable
– East of San Vicente Blvd.	Commercial	45	72.9	Yes	Conditional Acceptable

[a] *Detailed calculation worksheets are included in Appendix F of this Draft EIR.*

[b] *Noise compatibility is based on the most stringent land use, per City's land use compatibility as provided in Table IV.H-2 on page IV.H-8.*

Source: AES, 2016.

3. Project Impacts

a. Methodology

(1) On-Site Construction Activities

Construction noise impacts due to on-site construction activities associated with the proposed Project were evaluated by calculating the construction-related noise levels at representative sensitive receptor locations and comparing these estimated construction-related noise levels associated with construction of the proposed Project to the existing ambient noise levels (i.e., noise levels without construction noise from the proposed Project). Construction noise associated with the proposed Project was analyzed based on the proposed Project's potential construction equipment inventory, construction durations, and construction schedule. The construction noise model for the proposed Project is based on construction equipment noise levels as published by the FHWA's "Roadway Construction Noise Model (FHWA 2006)." The ambient noise levels at surrounding sensitive receptor locations were based on field measurement data (see Table IV.H-8 on page IV.H-16). The construction noise levels were then calculated for sensitive receptor locations based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance (as described above in Section 2.a(1)(b), Outdoor Sound Propagation). Additional noise attenuation was assigned to receptor locations where the line-of-sight to the Project Site was interrupted by the presence of intervening structures.

(2) Off-Site Construction Haul Trucks

Off-site construction noise impacts from haul trucks associated with the proposed Project were analyzed using the FHWA's TNM computer noise model. The TNM is the current Caltrans standard computer noise model for traffic noise studies. The model allows for the input of roadway, noise receivers, and sound barriers, if applicable. The construction-related off-site truck volumes were obtained from the Traffic Study prepared for the proposed Project, which is included in Appendix H of this Draft EIR. The TNM noise model calculates the hourly L_{eq} noise levels generated by construction-related haul trucks. Noise impacts were determined by comparing the predicted noise level with that of the existing ambient noise levels along the proposed Project's anticipated haul route(s), from the Project Site to the nearest freeway access.

(3) On-Site Stationary Noise Sources (Operation)

On-site stationary point-source noise impacts were evaluated by: (1) identifying the noise levels that would be generated by the proposed Project's stationary noise sources, such as rooftop mechanical equipment, outdoor activities (e.g., use of the outdoor plaza, dining terraces, and pool deck), parking facility, and loading dock; (2) calculating the noise level from each noise source at surrounding noise-sensitive receptor property line

locations; and (3) comparing such noise levels to ambient noise levels to determine significance.

(4) Off-Site Roadway Noise (Operation)

As discussed in Section 2.c, Existing Conditions, above, off-site roadway noise was analyzed using the FHWA TNM model and traffic data from the proposed Project's Traffic Study. Roadway noise conditions without the proposed Project were calculated and compared to noise levels that would occur with implementation of the proposed Project to determine Project-related noise impacts for operational off-site roadway noise.

(5) Construction Vibration

Ground-borne vibration impacts due to the proposed Project's construction activities were evaluated for both on-site and off-site construction activities by identifying potential vibration sources (i.e., construction equipment), estimating the vibration levels at the potentially affected receptor, and comparing the proposed Project's activities to the applicable vibration significance thresholds, as described below.

(6) Operational Vibration

The primary source of vibration related to operation of the proposed Project would include vehicle circulation within the proposed subterranean parking garage and off-site vehicular trips. However, as discussed above, vehicular-induced vibration is unlikely to be perceptible by people. The proposed Project would also include typical commercial-grade stationary mechanical equipment, such as air-handling units (mounted at the roof level), that would include appropriate vibration-attenuation mounts to reduce the vibration transmission. The proposed Project does not include land uses that would generate high levels of vibration. In addition, ground-borne vibration attenuates rapidly as a function of distance from the vibration source. Therefore, operation of the proposed Project would not increase the existing vibration levels in the immediate vicinity of the Project Site, and, as such, vibration impacts associated with operation of the proposed Project would be less than significant. Accordingly, the ground-borne vibration analysis presented in this section is limited to Project-related construction activities.

(7) Land Use Compatibility

The proposed Project's land use compatibility was evaluated based on the measured site ambient noise levels as compared to the City's Noise/Land Use Compatibility Matrix (as provided in Table IV.H-2 on page IV.H-8).

b. Significance Thresholds

Appendix G to the CEQA Guidelines provides a set of sample questions that address impacts with regard to noise. These questions are as follows:

Would the project result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two 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?
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

(1) Construction Noise

In the context of these questions from Appendix G to the CEQA Guidelines, the WHMC, and pursuant to Mitigation Measure 3.9-1 of the City's 2035 General Plan Final EIR, a project would normally have a significant impact on noise levels from construction if:

- Construction activities exceed the existing ambient exterior sound levels by 10 dBA (hourly L_{eq}) or more at a noise-sensitive use.

(2) Construction Vibration

The City currently does not have a significance threshold to assess vibration impacts during construction. Thus, Caltrans guidelines set forth in Caltrans' Transportation and Construction Vibration Guidance Manual, dated September 2013, are used to evaluate potential impacts related to construction vibration for both potential building damage and human annoyance. The Caltrans guidelines regarding construction vibration are the most

current guidelines and are commonly used in evaluating vibration impacts. Based on this Caltrans guidance, impacts relative to ground-borne vibration associated with potential building damage would be considered significant if any of the following future events were to occur:

- Project construction activities cause ground-borne vibration levels to exceed 0.5 PPV at the nearest off-site modern industrial/commercial buildings and newer residential structures.
- Project construction activities cause ground-borne vibration levels to exceed 0.3 PPV at the nearest off-site older residential structures.
- Project construction activities cause ground-borne vibration levels to exceed 0.25 PPV at the nearest off-site historic buildings.
- Project construction activities cause ground-borne vibration levels to exceed 0.10 PPV at fragile buildings.
- Project construction activities cause ground-borne vibration levels to exceed 0.08 PPV at extremely fragile historic buildings, ruins, and ancient monuments.

Based on Caltrans guidance, construction vibration impacts associated with human annoyance would be significant if the following were to occur:

- Project construction activities cause ground-borne vibration levels to exceed 0.1 PPV at off-site sensitive uses, including residential, hotel, and school uses.

(3) Operational Noise

In the context of the above questions from Appendix G of the CEQA Guidelines, the WHMC, and pursuant to Mitigation Measure 3.9-1 of the City's 2035 General Plan Final EIR, a project would normally have a significant impact on noise levels from operations if:

- The proposed project causes ambient noise levels to exceed the following:
  - Where the existing ambient noise level is less than 60 dB, a project-related permanent increase in ambient noise levels of 5 dB L_{dn}/CNEL or greater; or
  - Where the existing ambient noise level is greater than 60 dB, a project-related permanent increase in ambient noise levels of 3 dB L_{dn}/CNEL or greater.

As described above, WHMC Section 9.08.050 prohibits sound from the people gathering or outdoor amplified sound systems that is plainly audible at a distance of 50 feet

or more therefrom. However, the City of does not have quantitative noise limits (i.e., audibility) as applied to people gathering or outdoor amplified sound systems. However, as noted above the City's Noise Ordinance includes additional regulations on noise between the hours of 10:00 P.M. and 8:00 A.M. Therefore, to ensure compliance with WHMC Section 9.08.050 restrictions on noise that is "plainly audible" between the hours of 10:00 P.M. and 8:00 A.M., it has been determined that the significance threshold for the people gathering in the proposed Project's outdoor areas or from the proposed Project's outdoor amplified sound system between 10:00 P.M. and 8:00 A.M. (nighttime hours) would be 5 dBA below the lowest measured background sound level (L_{90}) at the property line of the affected noise-sensitive receptor during the nighttime hours. The L_{90} noise level is generally considered to represent the true background or ambient level as it excludes intermittent peak noise sources, such as a truck passing by or dog barking. Therefore, the proposed Project would have a significant impact on noise levels from people gathering or from outdoor amplified sound systems if:

- The noise level generated from the outdoor uses, including people gathering and amplified sound systems, at the property line of a noise-sensitive use exceeds the lowest background noise level (L_{90}) minus 5 dBA, during the nighttime hours between 10:00 P.M. and 8:00 A.M.

With regard to the questions from Appendix G of the CEQA Guidelines, as discussed in Section VII, Effects Found Not to be Significant, of this Draft EIR, the Project Site is not located within an airport land use plan or within two miles of a public or private airport or within the vicinity of a private airstrip. The Santa Monica airport, nearest to the Project Site, is approximately 6 miles to the southwest. Therefore, the proposed Project would not expose people residing or working in the Project area to excessive noise levels associated with a public or private airport or from a private airstrip. As such, no further analysis of airport operation-related noise is necessary.

c. Project Design Features

The following Project Design Features are proposed with regard to noise and vibration:

Project Design Feature H-1: Power construction equipment (including combustion engines), fixed or mobile, will be equipped with state-of-the-art noise shielding and muffling devices (consistent with manufacturers' standards). All equipment will be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.

Project Design Feature H-2: Project construction will not include the use of driven (impact) pile systems, except with respect to the use of drilled shoring piles, which will be temporary.

Project Design Feature H-3: All outdoor mounted mechanical equipment will be enclosed or screened from off-site noise-sensitive receptors to the maximum extent feasible.

Project Design Feature H-4: Outdoor amplified sound systems will be designed so as not to exceed the maximum noise level of 85 dBA (L_{eq-1hr}) at a distance of 30 feet from the amplified sound systems at the pool deck level during the daytime hours (8:00 A.M. to 10:00 P.M.) and 75 dBA (L_{eq-1hr}) during the nighttime hours (10:00 P.M. and 8:00 A.M.).

d. Analysis of Project Impacts

(1) Construction Noise

As discussed in Section II, Project Description, of this Draft EIR, construction of the proposed Project is anticipated to occur in a single phase over 32 months, beginning in late 2017/early 2018 and ending in 2020. Construction of the proposed Project would commence with demolition of the existing building and surface parking lot/subterranean parking garage, followed by grading and deeper excavation for the proposed subterranean parking garage. Building foundations would be laid, followed by building construction, paving/concrete installation, and landscape installation. It is estimated that up to approximately 48,000 cubic yards of export material (e.g., concrete and asphalt surfaces) and soil would be hauled from the Project Site during excavation. Construction delivery/haul trucks are anticipated to access the Project Site from Interstate 10 (I-10) via La Cienega Boulevard and Sunset Boulevard.

(a) On-Site Construction Noise

Noise impacts from Project-related construction activities occurring within or adjacent to the Project Site would be a function of the noise generated by construction equipment, the location of the equipment, the timing and duration of the noise-generating construction activities, and the relative distance to noise-sensitive receptors. Construction activities for the proposed Project would generally include demolition, site grading and excavation for the subterranean parking garage, and building construction. Each stage of construction would involve the use of various types of construction equipment and would, therefore, have its own distinct noise characteristics. Demolition generally involves the use of backhoes, front-end loaders, and heavy-duty trucks. Grading and excavation typically requires the use of earth-moving equipment, such as excavators, front-end loaders, and heavy-duty trucks. Building construction typically involves the use of cranes, forklifts, concrete trucks, pumps, and delivery trucks. Noise from construction equipment would generate both steady-state and episodic noise that could be heard within and adjacent to

the Project Site. Construction noise is difficult to quantify because of the many variables involved, including the specific equipment types, size of equipment used, percentage of time each piece is in operation, condition of each piece of equipment, and number of pieces that would operate on the site.

Individual pieces of construction equipment anticipated to be used during construction of the proposed Project could produce maximum noise levels (L_{max}) of between 74 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in Table IV.H-11 on page IV.H-28. These maximum noise levels would occur when equipment is operating under full power conditions (i.e., the equipment engine at maximum speed). However, equipment used on construction sites typically operates under less than full power conditions, or part power. To more accurately characterize construction-period noise levels, the average (Hourly L_{eq}) noise level associated with each construction stage is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction stage.[24] These noise levels are typically associated with multiple pieces of equipment operating on part power, simultaneously.

Table IV.H-12 on page IV.H-29 provides the estimated construction noise levels at the off-site noise-sensitive receptors. To present a conservative impact analysis, the estimated noise levels were calculated for a scenario in which all pieces of construction equipment were assumed to operate simultaneously and be located at the construction area nearest to the affected receptors. These assumptions represent the worst-case noise scenario because construction activities would typically be spread out throughout the Project Site, and, thus, some equipment would be farther away from the affected receptors. In addition, the noise modeling assumes that construction noise is constant, when, in fact, construction activities and associated noise levels would fluctuate and generally be brief and sporadic, depending on the type, intensity, and location of construction activities.

As presented in Table IV.H-12, during demolition, construction activities would generate the highest noise as it is anticipated to have the highest number of construction equipment in the construction area compared to the proposed Project's other construction stages. Construction noise levels during the other stages of construction would be up to 9 dBA lower during the building construction stage. Therefore, the potential noise impacts (i.e., noise increase over the ambient level) would be highest during the demolition stage. As indicated in Table IV.H-12, the maximum estimated noise levels associated with construction of the proposed Project would be below the significance threshold at all off-site noise-sensitive receptor locations, except for noise-sensitive receptor R1. The

[24] *Pursuant to the FHWA Roadway Construction Noise Model User's Guide, 2006, the usage factor is the percentage of time during a construction noise operation that a piece of construction is operating at full power.*

Table IV.H-11
Construction Equipment Noise Levels

Equipment	Estimated Usage Factor[a] (%)	Typical Noise Level at 50 feet from Equipment (dBA (L_{max}))
Air Compressor	40	78
Asphalt Concrete Grinder	20	90
Cement and Mortar Mixer	50	80
Concrete Mixer Truck	40	79
Concrete Saw	20	90
Crane	16	81
Drill Rig	20	84
Forklift	10	75
Generator	50	81
Grader	40	85
Dump/Haul Truck	40	76
Excavator	40	81
Paver	50	77
Pump	50	81
Roller	20	80
Rubber Tired Loader	40	79
Tractor/Loader/Backhoe	40	80
Delivery Truck	40	74
Welders	40	74

[a] *Usage factor represents the percentage of time the equipment would be operating at full speed.*
Source: FHWA Roadway Construction Noise Model User's Guide, 2006.

estimated construction-related noise levels at noise-sensitive receptor R1 would exceed the significance threshold by between 22.4 to 31.6 dBA. Although construction activities for the proposed Project would occur during the daytime hours, as required by Section 9.08.50 of the WHMC, construction noise would exceed existing ambient sound levels by 10 dBA at noise-sensitive receptor R1 and would, therefore, be above the significance threshold specified for construction activities. As such, noise impacts associated with the proposed Project's on-site construction would be significant. Note that this analysis is based on exterior noise levels at the receptor locations and does not account for noise reduction associated with building features, including windows. Based on Caltrans data, buildings with single- and double-glazed windows would provide exterior to interior noise reduction

Table IV.H-12
Construction Noise Impacts

Off-Site Noise-Sensitive Receptor Location	Approximate Distance from Receptor to Project Construction Area (feet)	Estimated Construction Noise Levels by Construction Stage, L_{eq} (dBA)					Existing Daytime Ambient Noise Levels (L_{eq} (dBA))	Significance Threshold[a] (L_{eq} (dBA))	Maximum Noise Exceedance Above the Threshold (L_{eq} (dBA))	Sig. Impact?
		Demolition	Grading	Foundation	Building Construction	Paving/Concrete/Landscape				
R1	10	97.3	91.5	97.2	88.1	91.4	55.7	65.7	31.6	Yes
R2	220	64.9	59.8	62.5	58.8	57.9	71.5	81.5	—	No
R3	265	63.3	58.2	60.9	57.2	56.3	59.1	69.1	—	No
R4	225	69.9	64.8	67.5	63.8	62.9	60.1	70.1	—	No

[a] *Significance thresholds are equivalent to the measured daytime ambient noise levels (see Table IV.H-8 on page IV.H-16) plus 10 dBA, per the City General Plan. If the estimated construction noise levels exceed those significance thresholds, a construction-related noise impact is identified.*

Source: AES, 2016. See Appendix F of this Draft EIR.

of approximately 25 and 30 dBA, respectively.[25] Therefore, with the windows closed, the maximum short-term construction noise levels at the interior of the building at R1 would be approximately 72 dBA L_{eq} assuming single-glazed windows or 67 dBA L_{eq} assuming the more typical double-glazed windows.

(b) Off-Site Construction Noise

In addition to on-site construction noise sources, other noise sources may include materials delivery, concrete mixing, and haul trucks (construction trucks), as well as construction worker vehicles accessing the Project Site during construction. Typically, construction trucks generate higher noise levels than construction worker vehicles. The major noise sources associated with off-site construction trucks would be associated with delivery/haul trucks. It is anticipated that the construction delivery/haul trucks would access the Project Site from US-101 via San Vicente Boulevard and Santa Monica Boulevard or I-10 via La Cienega Boulevard and Sunset Boulevard.

Based on the Traffic Study prepared for the proposed Project, which is included in Appendix H of this Draft EIR, the peak period of construction with the highest number of construction trucks would occur during the site grading stage.[26] It is estimated that there would be a maximum of 43 construction trucks (haul and/or deliveries) coming to and leaving the Project Site (equal to 86 total trips) per day. The hourly truck trips were calculated based on an eight-hour period (typical workday) and a uniform distribution of trips, which would result in a maximum of 10 truck trips per hour. In addition, there would be a total of 50 worker trips to and from the Project Site on a daily basis during the grading stage. During other construction stages, there would be reduced and significantly less than the 86 truck trips under the site grading stage.

The Project-related construction trucks along the anticipated haul routes are estimated to generate noise levels of approximately 62.9 dB (L_{eq}) during the worst-case site grading stage. The estimated noise from the construction trucks would be below the existing daytime ambient noise level of 71.5 dBA (L_{eq}) measured along San Vicente Boulevard (measured at noise-sensitive receptor location R2). As described above, the estimated construction truck noise levels represent the worst-case construction stage (i.e., site grading stage). During other construction stages, the number of construction trucks would be lower, which would result in lower noise levels. Regardless, the estimated construction-related truck noise would be below the 10-dBA significance threshold.

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[25] *Caltrans, Technical Noise Supplement (TeNS), 2013, Chapter 2.1.4, Table 7-1*.

[26] *Gibson Transportation Consulting, Inc., Transportation Study for the Arts Club West Hollywood Project, 2017.*

Therefore, temporary noise impacts from off-site construction traffic would be less than significant

(2) Construction Vibration

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures and the type of construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies, depending on soil type, ground strata, and construction characteristics of the receptor buildings. The results from vibration can range from no perceptible effects at the lowest vibration levels to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. However, ground-borne vibrations from construction activities rarely reach levels that damage structures.

(a) Building Damage Impacts from On-Site Construction

With regard to potential building damage, the proposed Project would generate ground-borne construction vibration during building demolition and site excavation/grading activities when heavy construction equipment, such as large bulldozers, drill rigs, and loaded trucks, would be used. The FTA has published standard vibration velocities for various construction equipment operations. Table IV.H-13 on page IV.H-32 provides the estimated vibration levels (in terms of inch per second PPV) at the nearest off-site structures to the Project Site. It is noted that since impact pile driving methods would not be used during construction of the proposed Project, in accordance with Project Design Feature H-2 provided above, impact pile driving vibration is not included in the on-site construction vibration analysis. Installation of piles for shoring and foundation would utilize a drilling method to minimize vibration generation.

As indicated in Table IV.H-13, the estimated vibration velocity levels from all construction equipment would be well below the building damage significance threshold of 0.3 PPV for the single and two-story commercial building structures to the north and 0.5 PPV for the multi-story residential and commercial building structures to the south and southwest. However, the estimated vibration levels at the single-story commercial building immediately abutting the Project Site to the east would exceed the 0.3-PPV significance threshold. Therefore, vibration impacts associated with potential building damage would be significant without mitigation measures. This potential vibration impact would only occur when heavy construction equipment operates within 12 feet of the commercial buildings to the east. At a distance of 12 feet or greater, the estimated vibration from the construction equipment would be below the 0.3-PPV threshold.

Table IV.H-13
Construction Vibration Impacts—Building Damage

Nearest Off-Site Building Structure[a]	Estimated Vibration Velocity Levels at the outside of and adjacent to the Nearest Off-Site Structures from the Project Construction Equipment[b] (inch/second ((PPV))					Significance Threshold (PPV)	Sig. Impact?
	Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	0.089	0.089	0.076	0.035	0.003	—	—
Single- and two-story commercial buildings across the Project Site to the north (north side of Sunset Boulevard)	0.013	0.013	0.011	0.005	<0.001	0.3[c]	No
Multi-story residential building adjacent to Project Site to the south	0.267	0.267	0.228	0.105	0.009	0.5[d]	No
Single-story commercial building immediately abutting the Project Site to the east	1.133	1.133	0.968	0.446	0.038	0.3[c]	Yes
Multi-story residential building on west side of Hilldale Avenue, southwest of the Project Site	0.021	0.021	0.018	0.008	0.001	0.5[d]	No

[a] *Represents off-site building structures located nearest to the Project Site to the north, east, south, and west.*

[b] *Vibration level calculated based on FTA reference vibration level at a distance of 25 feet.*

[c] *Caltrans criteria for older residential buildings, applicable to the single- and two-story residential and commercial buildings.*

[d] *Caltrans criteria for newer residential structures and modern commercial buildings, applicable to multi-story (3 stories and higher) residential and commercial buildings.*

Source: FTA, 2006; Caltrans 2013; AES, 2016. See Appendix F of this Draft EIR.

(b) Human Annoyance Impacts from On-Site Construction

Table IV.H-14 on page IV.H-33 provides the estimated vibration levels at the off-site sensitive uses due to construction equipment operation and compares the estimated vibration levels to the specified significance thresholds for human annoyance. Per Caltrans guidance, the threshold of significance for human annoyance is 0.1 PPV. As indicated in

Table IV.H-14
Construction Vibration Impacts—Human Annoyance

Off-Site Receptor Location	Estimated Vibration Velocity Levels at the Off-Site Sensitive Uses Due to On-Site Construction Equipment Operation[a] (PPV)					Significance Threshold (PPV)	Sig. Impact?
	Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	0.089	0.089	0.076	0.035	0.003	—	—
R1	0.267	0.267	0.228	0.105	0.009	0.10[b]	Yes
R2	0.003	0.003	0.003	0.001	<0.001	0.10[b]	No
R3	0.003	0.003	0.002	0.001	<0.001	0.10[b]	No
R4	0.003	0.003	0.003	0.001	<0.001	0.10[b]	No

[a] *Vibration levels calculated based on FTA reference vibration level at a distance of 25 feet.*

[b] *Caltrans criteria for human annoyance.*

Source: FTA, 2006; AES, 2016. See Appendix F of this Draft EIR.

Table IV.H-14, the estimated ground-borne vibration levels from construction equipment would be below the significance thresholds for human annoyance at noise-sensitive receptor locations R2, R3 and R4. The estimated vibration levels at noise-sensitive receptor R1 would exceed the 0.1 PPV significance threshold. Therefore, vibration impacts during construction of the proposed Project would be significant without mitigation measures. However, it should be noted that these construction vibration impacts represent the worst-case scenario and would be brief and sporadic in nature. Construction equipment would not be in operation during the entire work day or operate along the southern construction boundary for sustained periods of time, and, thus, vibration levels would not be continuous in nature. In addition, these temporary construction vibration impacts would attenuate rapidly over short distances.

(3) Operational Noise

This section provides a discussion of potential operational noise impacts on nearby noise-sensitive receptors. Specific operational noise sources addressed herein include: (1) on-site stationary noise sources, including operation of the mechanical equipment (e.g., HVAC equipment), activities within the proposed outdoor spaces (e.g., outdoor plaza, dining terraces, and pool deck), and activities in and around the parking facility and loading dock; and (2) off-site mobile (roadway traffic) noise sources.

(a) On-Site Stationary Noise Sources

(i) Mechanical Equipment

As part of the proposed Project, new mechanical equipment (e.g., air ventilation equipment) would be located on the roof level and in the interior of the building. As provided above in Project Design Feature H-3, all outdoor mounted mechanical equipment would be enclosed or screened from off-site noise-sensitive receptors. Table IV.H-15 on page IV.H-35 presents the estimated noise levels at the off-site receptor locations from operation of the proposed Project's mechanical equipment. As indicated in Table IV.H-15, the estimated noise levels from the mechanical equipment would range from 37.2 dBA (CNEL) at receptor location R3 to 51.7 dBA (CNEL) at receptor location R1, and the noise impacts associated with proposed Project's mechanical equipment would result in a maximum increase of 0.7 dBA (CNEL) at receptor location R1. Accordingly, the estimated noise levels at all off-site receptor locations would be below the significance threshold of 5 dBA (CNEL) above ambient noise levels (applicable where the existing ambient noise level is less than 60 dBA). Therefore, noise impacts from mechanical equipment would be less than significant.

(ii) Outdoor Spaces

As discussed in Section II, Project Description, of this Draft EIR, the proposed Project would include various outdoor spaces, including an outdoor plaza, promenade, and an Arts Club access area at Level 1; outdoor office terraces at Levels 2, 3 and 4; outdoor terraces for members and guest of the Arts Club at Level 5; private terraces associated with the guest rooms at Level 6; dining and viewing terraces at Levels 7 and 8; and a pool terrace at Level 9 (including outdoor dining and pool deck space). Noise sources associated with outdoor uses typically include noise from people gathering and conversing. For this operational noise analysis, reference noise levels of 65 dBA for a male and 62 dBA for a female speaking in a raised voice were used for analyzing potential noise impacts from people gathering at the outdoor spaces.[27] In order to analyze a typical noise scenario, it was assumed that up to 50 percent of the people (half of which would be male and the other half female) would be talking at the same time. In addition, the hours of operation for use of the outdoor areas were assumed to be from 7:00 A.M. to 2:00 A.M.[28]

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[27] *Cyril M. Harris, Handbook of Acoustical Measurements and Noise Control, Third Edition, 1991, Table 16.1.*

[28] *Some of the outdoor areas would have hours of operation that would be shorter in duration (i.e., open later than 7:00 A.M. and close earlier than 2:00 A.M.; accordingly, the noise analysis represents a conservative analysis by basing impacts on the maximum hours of operation (i.e., 7:00 A.M. to 2:00 A.M.*

Table IV.H-15
Estimated Noise Levels from Mechanical Equipment

Receptor Location	Existing Ambient Noise Levels (dBA (CNEL))	Estimated Noise Levels from Mechanical Equipment (dBA (CNEL))	Ambient + Project Noise Levels (dBA (L_{eq}))	Significance Threshold[a] (dBA (L_{eq}))	Exceedance over Significance Threshold	Significant Impact?
R1	59.4	51.7	60.1	64.4	—	No
R2	72.9	38.8	72.9	75.9	—	No
R3	60.6	37.2	60.6	63.6	—	No
R4	67.7	39.0	67.7	70.7	—	No

[a] *Significance thresholds are equivalent to the existing ambient noise levels (see Table IV.H-8 on page IV.H-16) plus 5 dBA where the ambient level is less than 60 dBA or plus 3 dBA where the ambient level is equal to or greater than 60 dBA.*

Source: AES, 2016. See Appendix F of this Draft EIR.

An additional potential noise source associated with outdoor uses at the rooftop pool terrace would be the use of an outdoor sound system (e.g., music or other sounds broadcast through an outdoor mounted speaker system). The sound from the outdoor sound system, if used, would be heard by people in the immediate vicinity of the outdoor areas. As part of the proposed Project and as set forth in Project Design Feature H-4, the amplified sound system used in outdoor areas would be designed so as not to exceed the maximum noise levels of 75 to 85 dBA L_{eq} as indicated in Table IV.H-16 on page IV.H-36, thereby ensuring that the amplified sound system would not exceed the significance threshold at any off-site noise-sensitive receptor location.

Table IV.H-17 on page IV.H-37 presents the estimated noise levels at the off-site sensitive receptors, resulting from the use of outdoor areas during the daytime hours (8:00 A.M. to 10:00 P.M.). The estimated noise levels were calculated with the assumption that all of the outdoor spaces would be fully occupied and operating concurrently to represent a worst-case noise analysis. As presented in Table IV.H-17, the estimated noise levels from the outdoor uses result in a maximum noise increase of 0.9 dBA at noise-sensitive receptor location R1 and would be below the significance threshold (for the daytime hours) at all off-site noise-sensitive sensitive receptors. Also note that the analysis is based on exterior noise levels and does not account for noise reduction associated with building features, including windows. As described above, based on Caltrans data, buildings with single- and double-glazed windows would provide exterior to interior noise reduction of approximately 25 and 30 dBA, respectively.[29]

[29] *Caltrans, Technical Noise Supplement (TeNS), 2013, Chapter 2.1.4, Table 7-1.*

Table IV.H-16
Outdoor Uses Assumptions

Outdoor Space	Estimated Total Number of People	Amplified Sound System Levels (dBA (L_{eq}))
Level 1—Plaza, Promenade, and Arts Club Access Area	35	N/A
Level 2—Office Terraces	13	N/A
Level 3—Office Terraces	14	N/A
Level 4—Office Terraces	29	N/A
Level 5—Fitness Terraces	20	N/A
Level 6—Private Terraces	46	N/A
Level 7—Food and Beverage Terraces	168	N/A
Level 8—Food and Beverage Terraces	93	N/A
Level 9—Pool Deck	415	85 dBA (8 A.M. to 10 P.M.) 75 dBA (10 P.M. to 8 A.M.)

N/A = not applicable; assumed no amplified sound system at these areas.
Source: Gensler, 2016.

Table IV.H-18 on page on page IV.H-37 presents the estimated noise levels at the off-site noise-sensitive receptors, resulting from the use of outdoor areas during the nighttime hours (10:00 P.M. to 8:00 A.M.). For the nighttime noise analysis, it is assumed that the office terraces at Levels 2, 3 and 4 would not be occupied after 10:00 P.M. As presented in Table IV.H-18, the estimated noise levels from the outdoor uses during the nighttime hours would be below the significance threshold at all off-site noise-sensitive receptors. As such, noise impacts from the use of the outdoor areas would be less than significant without mitigation measures.

The proposed Project also includes approximately 2,916 square feet of touchdown and liftoff area on an elevated landing helipad. The helipad would be designed to only accommodate public service helicopters (i.e., police, fire and medical) and would only be used during emergency situations (i.e., medical emergencies or safety-related evacuations). The helipad would not be used for private helicopters transporting individuals to the Project Site or for use by private helicopters during special events. The rooftop helipad would result in sound impacts at nearby residential development, but such noise would occur on only an infrequent, emergency basis. Per Chapter 9.08.060(a) of the WHMC, the emission of sound in the performance of emergency work is exempt from noise standards and regulations; therefore, emergency helicopters would be exempted from the City's Noise Ordinance. Thus, based on the infrequent and emergency nature of such a use, adverse noise impacts related to helipad uses would be less than significant.

Table IV.H-17
Estimated Noise Levels from Outdoor Uses—Daytime Hours (8:00 A.M. to 10:00 P.M.)

Receptor Location	Existing Ambient Noise Levels (dBA (L_{eq}))	Estimated Noise Levels from Outdoor Uses (dBA (L_{eq}))	Ambient + Project Noise Levels (dBA (L_{eq}))	Significance Threshold[a]	Exceedance over Significance Threshold	Significant Impact?
R1	55.7	49.3	56.6	60.7	—	No
R2	71.5	39.1	71.5	74.5	—	No
R3	59.1	41.2	59.2	64.1	—	No
R4	60.1	38.3	60.1	63.1	—	No

[a] *Significance thresholds are equivalent to the existing ambient noise levels (see Table IV.H-4 on page IV.H-16) plus 5 dBA where the ambient level is less than 60 dBA or plus 3 dBA where the ambient level is equal to or greater than 60 dBA.*

Source: AES, 2016. See Appendix F of this Draft EIR.

Table IV.H-18
Estimated Noise Levels from Outdoor Uses—Nighttime Hours (10:00 P.M. to 8:00 A.M.)

Receptor Location	Existing Nighttime Ambient Noise Levels (dBA (L_{90}))	Estimated Noise Levels from Outdoor Uses (dBA (L_{eq}))	Significance Threshold[a]	Exceedance over Significance Threshold	Significant Impact?
R1	48.6	43.2	43.6	—	No
R2	58.4	34.4	53.4	—	No
R3	48.3	34.8	43.3	—	No
R4	50.9	37.6	45.9	—	No

[a] *Significance thresholds are equivalent to the existing lowest nighttime L_{90} ambient noise levels (see Table IV.H-8 on page IV.H-16) minus 5 dBA.*

Source: AES, 2016. See Appendix F of this Draft EIR.

(iii) Parking Facility

As discussed in Section II, Project Description, of this Draft EIR, a total of 354 parking spaces would be provided in a new five-level subterranean parking structure with a partial subterranean level, which would replace the existing two levels and a partial level of underground parking structure. Sources of noise within the subterranean parking structure would primarily include vehicular movements and engine noise, sounding of car horns, and slamming of car doors, tire squeals, doors opening and closing, people talking, and intermittent car alarms. Noise levels within the parking structure would fluctuate with the amount of automobile and human activity. The subterranean parking levels would be fully enclosed on all sides; therefore, noise generated within the parking garages would be

effectively shielded from off-site noise-sensitive receptor locations in immediate the vicinity of the Project Site. Table IV.H-19 on page IV.H-39 presents the estimated noise levels from the new parking structure at the off-site noise-sensitive receptor locations. As indicated in Table IV.H-19, the estimated noise levels emanating from the proposed Project's underground parking structure range from 17.9 dBA (CNEL) at noise-sensitive receptor location R2 to 46.6 dBA (CNEL) at noise-sensitive receptor location R1, and the noise impacts associated with proposed Project's parking structure would result in a maximum increase of 0.2 dBA (CNEL) at noise-sensitive receptor location R1. The estimated noise levels at all off-site receptor locations would be below the significance threshold of 5 dBA above ambient noise levels (applicable where the existing ambient noise level is less than 60 dBA). Therefore, noise impacts from parking operation would be less than significant.

(iv) Loading Dock/Trash Collection Area

The proposed Project's loading dock and trash collection area would be located within Level B1. Delivery and trash collection trucks would access the loading dock and trash collection area from Hilldale Avenue. Noise sources associated with the loading dock and trash collection area would include delivery/trash collection trucks and trash compactor operation. Based on measured noise levels from typical loading dock facilities and trash compactors, delivery/trash collection trucks and trash compactors could generate noise levels of approximately 71 dBA (L_{eq}) and 66 dBA (L_{eq}), respectively, at a distance of 50 feet. Noise generated within the loading dock would be effectively shielded from the off-site sensitive receptors, as it is located within the building. Table IV.H-20 on page IV.H-39 presents the estimated noise levels at the off-site receptor locations from the loading dock operation. As indicated in Table IV.H-20, the estimated noise from the loading dock range from 11.4 dBA (CNEL) at noise-sensitive receptor location R3 to 48.9 dBA (CNEL) at noise-sensitive receptor location R1, and the noise impacts associated with proposed Project's loading dock/trash collection area would result in a maximum increase of 0.4 dBA (CNEL) at noise-sensitive receptor location R1. The estimated noise levels from the loading dock at all off-site noise-sensitive receptor locations would be below the significance threshold of 5 dBA (CNEL) above ambient noise levels. Therefore, noise impacts from loading dock and trash collection area operations would be less than significant.

(b) Off-Site Mobile Noise Sources

(i) Existing Plus Project Condition

The analysis of traffic noise impacts provided above was based on the incremental increase in traffic noise levels attributable to the proposed Project as compared to the Future Without Project conditions. An additional analysis was performed to determine the

Table IV.H-19
Estimated Noise Levels from Parking Facility

Receptor Location	Existing Ambient Noise Levels (dBA (CNEL))	Estimated Noise Levels from Parking Facilities (dBA (CNEL))	Ambient + Project Noise Levels (dBA (CNEL))	Significance Threshold[a]	Exceedance over Significance Threshold	Significant Impact?
R1	59.4	46.6	59.6	64.4	—	No
R2	72.9	17.9	72.9	75.9	—	No
R3	60.6	24.7	60.6	63.6	—	No
R4	67.7	27.0	67.7	70.7	—	No

[a] *Significance thresholds are equivalent to the existing ambient noise levels (see Table IV.H-8 on page IV.H-16) plus 5 dBA where the ambient level is less than 60 dBA or plus 3 dBA where the ambient level is equal to or greater than 60 dBA.*

Source: AES, 2016. See Appendix F of this Draft EIR.

Table IV.H-20
Estimated Noise Levels from Loading Dock and Trash Collection Area

Receptor Location	Existing Ambient Noise Levels (dBA (CNEL))	Estimated Noise Levels from Loading Dock (dBA (CNEL))	Ambient + Project Noise Levels (dBA (CNEL))	Significance Threshold[a]	Exceedance over Significance Threshold	Significant Impact?
R1	59.4	48.9	59.8	64.4	—	No
R2	72.9	12.9	72.9	75.9	—	No
R3	60.6	11.4	60.6	63.6	—	No
R4	67.7	19.2	67.7	70.7	—	No

[a] *Significance thresholds are equivalent to the existing ambient noise levels (see Table IV.H-8 on page IV.H-16) plus 5 dBA where the ambient level is less than 60 dBA or plus 3 dBA where the ambient level is equal to or greater than 60 dBA.*

Source: AES, 2016. See Appendix F of this Draft EIR.

potential noise impacts based on the increase in noise levels due to Project-related traffic compared with the existing baseline traffic noise conditions.

As shown in Table IV.H-21 on page IV.H-40, when compared with existing conditions, the proposed Project would result in a maximum of 6.5 dBA (CNEL) increase in traffic noise along Hilldale Avenue (south of Sunset Boulevard). At other analyzed roadway segments, the proposed Project's traffic-related noise levels would not result in measurable increase. The estimated increase in traffic noise levels as compared to existing conditions would be above the 5-dBA CNEL significance threshold (applicable where the existing ambient noise level is less than 60 dBA). Therefore, traffic noise impacts under Existing

Table IV.H-21
Roadway Traffic Noise Impacts—Existing Plus Project Condition

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (dBA (CNEL))		Increase in Noise Levels due to Project (dBA (CNEL))	Significant Impact?
		Existing	Existing Plus Project		
Doheny Drive					
– North of Sunset Blvd.	Residential	66.6	66.6	0.0	No
– Between Sunset Blvd. and Santa Monica Blvd.	Residential	69.9	70.1	0.2	No
– South of Santa Monica Blvd.	Residential	73.0	73.0	0.0	No
Hammond Street					
– South of Sunset Blvd.	Residential, School	63.5	63.5	0.0	No
Hilldale Avenue					
– North of Sunset Blvd.	Residential	58.0	58.0	0.0	No
– South of Sunset Blvd.	Residential	57.7	64.2	6.5	Yes
San Vicente Boulevard					
– North of Sunset Blvd.	Residential, Commercial	62.8	62.8	0.0	No
– Between Sunset Blvd. and Cynthia St.	Residential, Hotel, School	68.7	68.8	0.1	No
– Between Cynthia St. and Santa Monica Blvd.	Residential, Commercial	70.2	70.3	0.1	No
– South of Santa Monica Blvd.	Park, Library, Commercial	70.7	70.8	0.1	No
Horn Avenue					
– North of Sunset Blvd.	Residential, Commercial	62.5	62.5	0.0	No
Holloway Drive					
– East of Sunset Blvd.	Residential, Church, Commercial	69.4	69.5	0.1	No
Cynthia Street					
– East of San Vicente Blvd.	Residential, Hotel	69.7	69.7	0.0	No
– East of San Vicente Blvd.	Residential, Hotel	68.4	68.4	0.0	No

Table IV.H-22 (Continued)
Roadway Traffic Noise Impacts—Future Plus Project Condition

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (dBA (CNEL))		Increase in Noise Levels due to Project (dBA (CNEL))	Significant Impact?
		Existing	Existing Plus Project		
Santa Monica Boulevard					
– West of Doheny Drive	Residential, Commercial	69.0	69.0	0.0	No
– Between Doheny Dr. and San Vicente Blvd.	Commercial	71.3	71.3	0.0	No
– East of San Vicente Blvd.	Commercial	71.5	71.5	0.0	No
Sunset Boulevard					
– West of Doheny Dr.	Residential, Commercial	72.7	72.7	0.0	No
– Between Doheny Dr. and San Vicente Blvd.	Commercial	72.9	73.0	0.1	No
– East of San Vicente Blvd.	Commercial	72.9	73.0	0.1	No

[a] *Detailed calculation worksheets are included in Appendix F of this Draft EIR.*

Source: AES, 2016.

Plus Project conditions would be significant. However, The Existing Plus Project traffic noise analysis is conservative as baseline ambient mobile noise levels are expected to increase by the time the proposed Project is completed (i.e., the traffic volumes and associated noise in 2020, which is the proposed Project's buildout year, would increase without the proposed Project due to ambient growth, as well as other related projects that would be completed by that year). For example, as indicated in Table IV.H-22 on page IV.H-43, the estimated future 2020 traffic noise level without the proposed Project along Hilldale Avenue (south of Sunset Boulevard) would be 64.7 dBA CNEL, as compared to the existing traffic noise level of 57.7 dBA CNEL, as indicated in Table IV.H-21.

(ii) Future Plus Project Condition

Future roadway noise levels were calculated along 20 roadway segments in the vicinity of the Project Site. The roadway noise levels were calculated using the traffic data provided in the Traffic Study prepared for the proposed Project, which is included in Appendix H of this Draft EIR. As discussed in the Traffic Study, the proposed Project is expected to generate a net increase of 1,961 daily weekday trips. As such, Project-related traffic would increase the existing traffic volumes along the roadway segments in the study area when compared with Future without Project conditions. This increase in roadway traffic was analyzed to determine if any traffic-related noise impacts would result from operation of the proposed Project.

Table IV.H-22 provides a summary of the roadway noise impact analysis. The calculated CNEL levels are conservatively calculated along the roadways and do not account for the presence of any physical sound barriers or intervening structures. As shown in Table IV.H-22, the proposed Project would result in a maximum increase of up to 2.3 dBA (CNEL) in traffic-related noise levels along Hilldale Avenue (south of Sunset Boulevard). At other analyzed roadway segments, the increase in traffic-related noise levels would be negligible, 0.1 dBA or lower. The increase in traffic noise levels would be well below the relevant 3-dBA CNEL significance threshold. Therefore, traffic noise impacts under Future Plus Project conditions would be less than significant.

(c) Composite Noise Level Impacts from Project Operations

In addition to considering the potential noise impacts to neighboring noise-sensitive receptors from each specific on-site and off-site noise source (e.g., mechanical equipment, outdoor areas, parking facility, and off-site traffic), an evaluation of potential composite noise level increases (i.e., noise levels from all on-site noise sources combined) at the analyzed noise-sensitive receptor locations was also performed. This evaluation of composite noise levels from all on-site noise sources, evaluated using the CNEL noise metric, was conducted to determine the proposed Project's contributions at the noise-sensitive receptor locations in the vicinity of the Project Site.

Table IV.H-22
Roadway Traffic Noise Impacts—Future Plus Project Condition

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (dBA (CNEL))		Increase in Noise Levels due to Project (dBA (CNEL))	Significant Impact?
		Future Without Project	Future Plus Project		
Doheny Drive					
– North of Sunset Blvd.	Residential	66.7	66.7	0.0	No
– Between Sunset Blvd. and Santa Monica Blvd.	Residential	70.9	71.1	0.1	No
– South of Santa Monica Blvd.	Residential	74.0	74.1	0.0	No
Hammond Street					
– South of Sunset Blvd.	Residential, School	65.6	65.6	0.0	No
Hilldale Avenue					
– North of Sunset Blvd.	Residential	58.1	58.1	0.0	No
– South of Sunset Blvd.	Residential	64.7	67.0	2.3	No
San Vicente Boulevard					
– North of Sunset Blvd.	Residential, Commercial	63.0	63.0	0.0	No
– Between Sunset Blvd. and Cynthia St.	Residential, Hotel, School	69.3	69.4	0.1	No
– Between Cynthia St. and Santa Monica Blvd.	Residential, Commercial	70.7	70.8	0.1	No
– South of Santa Monica Blvd.	Park, Library, Commercial	71.4	71.5	0.1	No
Horn Avenue					
– North of Sunset Blvd.	Residential, Commercial	62.6	62.6	0.0	No
Holloway Drive					
– East of Sunset Blvd.	Residential, Church, Commercial	69.8	69.9	0.1	No
Cynthia Street					
– East of San Vicente Blvd.	Residential, Hotel	70.0	70.0	0.0	No
– East of San Vicente Blvd.	Residential, Hotel	68.5	68.5	0.0	No

Table IV.H-22 (Continued)
Roadway Traffic Noise Impacts—Future Plus Project Condition

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (dBA (CNEL))		Increase in Noise Levels due to Project (dBA (CNEL))	Significant Impact?
		Future Without Project	Future Plus Project		
Santa Monica Boulevard					
– West of Doheny Dr.	Residential, Commercial	70.1	70.1	0.0	No
– Between Doheny Dr. and San Vicente Blvd.	Commercial	72.3	72.3	0.0	No
– East of San Vicente Blvd.	Commercial	72.3	72.3	0.0	No
Sunset Boulevard					
– West of Doheny Dr.	Residential, Commercial	73.1	73.1	0.0	No
– Between Doheny Dr. and San Vicente Blvd.	Commercial	73.5	73.5	0.0	No
– East of San Vicente Blvd.	Commercial	73.6	73.6	0.0	No

[a] *Detailed calculation worksheets are included in Appendix F of this Draft EIR.*

Source: AES, 2016.

Table IV.H-23 on page IV.H-46 presents the estimated composite noise levels in terms of CNEL at the off-site noise-sensitive receptor locations from the Project-related noise sources. As indicated in Table IV.H-23, the proposed Project would result in an increase in composite noise levels ranging from 2.5 dBA at noise-sensitive receptor location R3 and 4.5 dBA at noise-sensitive receptor location R1. No measureable noise increase would occur at noise-sensitive receptor locations R2 and R4. The composite noise levels increase from the proposed Project operation would be below the 5-dBA significance threshold at off-site noise-sensitive receptor locations R1 and R3. Therefore, composite noise level impacts due to Project operations would be less than significant.

Table IV.H-23
Composite Noise Impacts

Receptor Location	Existing Ambient Noise Levels (CNEL (dBA))	Calculated Project-Related Noise Sources (dBA (CNEL))					Project Composite Noise Levels (dBA (CNEL))	Ambient plus Project Noise Levels (dBA (CNEL))	Increase in Noise Levels due to Project (dBA (CNEL))	Sig. Impact?
		Traffic	Mechanical	Parking	Loading Dock	Outdoor Spaces				
R1	59.4	60.9	51.7	47.0	48.9	50.4	62.1	63.9	4.5	No
R2	72.9	52.4	38.8	18.0	12.9	40.8	52.8	72.9	0.0	No
R3	60.6	59.4	37.2	24.7	11.4	42.3	59.5	63.1	2.5	No
R4	67.7	45.1	39.0	36.7	19.2	42.0	47.8	67.7	0.0	No

Source: AES, 2016. See Appendix F of this Draft EIR.

4. Cumulative Impacts

As indicated in Section III, Environmental Setting, of this Draft EIR, there are 191 related projects identified in the vicinity of the Project Site. The proposed Project, together with the related projects and future growth, could contribute to cumulative noise impacts. The potential for cumulative noise impacts to occur is specific to the distance between each related project and their stationary noise sources, as well as the cumulative traffic that these projects would add to the surrounding roadway network.

a. Construction Noise

(1) On-Site Construction Noise

Noise from construction of development projects is typically localized and has the potential to affect noise-sensitive uses within 500 feet from the construction site, as construction noise would be attenuated by distance and intervening buildings, typical in an urban setting.[30] Thus, noise from construction activities for two projects within 1,000 feet of each other can contribute to a cumulative noise impact for receptors located midway between the two construction sites. As indicated in Section III, Environmental Setting, of this Draft EIR, a total of 191 related projects have been identified in the vicinity of the Project Site, including: 46 related projects within the City, 20 related projects within the City of Beverly Hills, and 125 related projects within the City of Los Angeles. All of the related projects within the Cities of Beverly Hills and Los Angeles are, at a minimum, 5,000 feet from the Project Site. The following three related projects are located within the City and are within 1,000 feet of the Project Site:

- Related Project No. 19 is an eight-unit condominium development located at 1223 Larrabee Street and is located approximately 880 feet northeast of the Project Site. There are existing noise-sensitive uses, including residential uses along Larrabee Street and Clark Street (north of Sunset Boulevard), which are located between Related Project No. 19 and the Project Site. The existing buildings located between Related Project No. 19 and the Project Site would provide measurable noise reduction from construction activities at the two locations. Therefore, no cumulative noise impacts would be expected in the event of concurrent construction of the proposed Project and Related Project No. 19.

- Related Project No. 43, a 165-room hotel with 4 residential suites and 30,000 square feet of restaurant, located at 8930 Sunset Boulevard, is located

[30] *The 500 foot radius metric included herein based on the City of Los Angeles, L.A CEQA Thresholds Guide, Chapter I.1 Construction Noise, 2006.*

across Hilldale Avenue to the west of the Project Site. There are existing noise-sensitive uses, including the residential uses on Hilldale Avenue (represented by noise-sensitive receptor R1), which is located adjacent to the Project Site and Related Project No. 43. As discussed above, the estimated Project-related construction noise levels at noise-sensitive receptor location R1 would be up to 97.3 dBA. The estimated noise level from construction activities associated with Related Project No. 43 at the adjacent residential uses on Hilldale Avenue would be approximately 86 to 100 dBA.[31] Therefore, in the event of concurrent construction of the proposed Project and Related Project No. 43, cumulative construction noise impacts associated with the proposed Project and Related Project No. 43 would exceed the 10-dBA significance threshold at noise-sensitive receptor location R1. Thus, construction noise impacts resulting from both projects would be cumulatively considerable and would be considered significant.

- Related Project No. 44 is a hotel, restaurant, retail and showroom development located at 9040 Sunset Boulevard and is located approximately 630 feet west of the Project Site. Related Project No. 44 is currently under construction with an estimated completion date of 2017. There are existing noise-sensitive uses, including the residential use on Hilldale Avenue, Hammond Street, and Harratt Street, in proximity to Related Project No. 44 and the proposed Project. There are existing commercial buildings, including a high-rise tower and multi-story parking structure (with a solid wall) located along the west side of Hammond Street, which would adequately reduce the construction noise resulting from both the proposed Project and Related Project No. 44 at the nearby noise sensitive use. Therefore, no cumulative noise impacts would be expected in the event of concurrent construction of the proposed Project and Related Project No. 44.

Based on the above, cumulative noise impacts at the nearby residential uses (i.e., sensitive receptors) located in proximity to the Project Site and Related Project No. 43 could occur. Construction-related noise levels from the related projects would be intermittent and temporary, and it is anticipated that, as with the proposed Project, the related projects would comply with the construction hours and other relevant provisions set forth in the WHMC. Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed mitigation measures for each individual related project and compliance with locally adopted and enforced noise ordinances. Nonetheless, if nearby Related Project No. 43 were to be constructed concurrently with the proposed Project, construction noise impacts from the proposed Project would be cumulatively considerable, and significant cumulative construction noise impacts could result.

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[31] *City of West Hollywood, West Hollywood Hotel 8950 Sunset Boulevard, Initial Study Mitigated Negative Declaration, September 2015.*

(2) Off-Site Construction Noise

In addition to the cumulative impacts of on-site construction activities, off-site construction haul trucks could have a potential to result in cumulative impacts if the trucks for the related projects and the proposed Project were to utilize the same haul route and would be constructed at the same time. Specifically, based on the existing daytime ambient noise level of 71.5 dBA (L_{eq}) measured along San Vicente Boulevard at noise-sensitive receptor location R2 (refer to Table IV.H-8 on page IV.H-16), it is estimated that up to 783 truck trips per hour could occur along San Vicente without exceeding the significance thresholds of 10 dBA above ambient noise levels (i.e., 81.5 dBA). Therefore, if the total number of trucks from the proposed Project and related projects were to add up to 784 truck trips per hour along San Vicente Boulevard, the estimated noise level from 784 truck trips per hour would be 81.5 dBA, which would exceed the ambient noise levels by 10 dBA and exceed the significance threshold. Since the proposed Project would generate approximately 10 truck trips per hour during its peak construction period (site grading), as presented in Section IV.J, Traffic, Access, and Parking, of this Draft EIR, truck traffic related to construction of the proposed Project and the related projects would not cumulatively add up to 784 or more hourly truck trips along San Vicente Boulevard. Therefore, cumulative noise due to construction truck traffic from the proposed Project and other related projects would not exceed the ambient noise levels along the haul route by 10 dBA. As such, cumulative noise impacts from off-site construction would be less than significant.

b. Construction Vibration

As previously discussed, ground-borne vibration decreases rapidly with distance. Potential vibration impacts due to construction activities are generally limited to buildings/structures that are located in proximity to the construction site (i.e., within 15 feet as related to building damage and 80 feet as related to human annoyance at residential uses). As indicated above, the nearest related project to the Project Site is Related Project No. 43, which is located across Hilldale Avenue to the west of the Project Site. The construction activities at Related Project No. 43 would be approximately 50 feet west of the Project Site. Due to the rapid attenuation characteristics of ground-borne vibration and given the distance of the nearest related project to the Project Site, there is no potential for a cumulative construction vibration impact with respect to building damage associated with ground-borne vibration from on-site sources.

With regard to human annoyance, as previously discussed, the estimated vibration levels for the proposed Project would exceed the 0.1 PPV significance threshold. However, such construction vibration impacts would be temporary and would attenuate rapidly over distance. Furthermore, the nearest residential uses to the proposed Project are located on Hilldale Avenue approximately 50 feet from the proposed Project and

Related Project No. 43. As provided in the vibration analysis for Related Project No. 43, the construction activities would generate a maximum vibration level of 0.031 PPV at 50 feet from the proposed Project's construction site, which would be well below the 0.1-PPV significance threshold.[32] Therefore, although the proposed Project itself would result in a significant unavoidable vibration impact related to human annoyance, cumulative construction vibration impacts related to the threshold for human annoyance would not be considered significant.

c. Operational Noise

The Project Site and surrounding area have been developed with uses that have previously generated, and would continue to generate, noise from a number of community noise sources, including mechanical equipment (e.g., HVAC systems), outdoor activity areas, and vehicle travel. Similar to the proposed Project, each of the related projects that has been identified in the vicinity of the Project Site would also generate stationary-source and mobile-source noise due to on-going day-to-day operations. All related projects are of a residential, retail, or commercial nature, and these uses are not typically associated with excessive exterior noise levels. However, each project would produce traffic volumes that are capable of generating roadway noise impacts. The potential cumulative noise impacts associated with on-site and off-site noise sources are addressed below.

(1) On-Site Stationary Noise Sources

Due to provisions set forth in the WHMC that limit stationary-source noise from items, such as roof-top mechanical equipment, noise levels would be less than significant at the property line for each related project. In addition, as discussed above, noise impacts associated with operations within the Project Site would be less than significant with implementation of the identified mitigation measures. Therefore, based on the distance of the related projects from the Project Site and the operational noise levels associated with the proposed Project, cumulative stationary-source noise impacts associated with operation of the proposed Project and related projects would be less than significant.

(2) Off-Site Mobile Noise Sources

The proposed Project and related projects in the area would produce traffic volumes (off-site mobile sources) that would generate roadway noise. Cumulative noise impacts due to off-site traffic were analyzed by comparing the projected increase in traffic noise levels from "Existing" conditions to "Future Plus Project" conditions to the applicable

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[32] *City of West Hollywood, West Hollywood Hotel 8950 Sunset Boulevard, Initial Study Mitigated Negative Declaration, September 2015.*

significance criteria. Future Plus Project conditions include traffic volumes from future ambient growth, related projects, and the proposed Project. The calculated traffic noise levels under "Existing" and "Future Plus Project" conditions are presented in Table IV.H-24 on page IV.H-52. As shown therein, cumulative traffic volumes would result in a maximum increase of 9.3 dBA (CNEL) along Hilldale Avenue (south of Sunset Boulevard), which would exceed the relevant 5-dBA significance threshold (applicable when existing noise levels are less than 60 dBA). The noise increase at all other roadway segments would be 2.2 dBA or lower. Although the future cumulative traffic noise without the proposed Project (future growth and related projects) along Hilldale Avenue would already exceed the 5-dBA significance threshold, the contribution from the Project would be cumulatively considerable. Therefore, cumulative noise impacts due to off-site mobile noise sources associated with the proposed Project, future growth, and related projects would be significant, without mitigation measures. Note that traffic noise level increases are based on increases in traffic volumes. In general, doubling of traffic volumes results in an increase of 3.0 dBA and tripling of traffic volumes results in an increase of 4.8 dBA. Due to the configuration of Hilldale Avenue, which dead ends approximately 150 feet south of Sunset Boulevard, and the limited driveways that access this street segment, the traffic volumes on this street segment are notably low. Based on the existing traffic volumes on this street segment, in order to not exceed the 5-dBA significance threshold, the cumulative traffic volume along Hilldale Avenue south of Sunset Boulevard would be limited to approximately three times the existing traffic volume or approximately 1,400 trips per day. Related Project No. 43 alone, adds approximately 2,100 trips per day to this segment. Thus, the 5-dBA threshold is already exceeded without the Project.

(3) Summary of Cumulative Operational Noise Impacts

As discussed above, cumulative operational noise impacts from on-site sources would be less than significant; however, cumulative operational noise impacts from off-site sources would be considered significant. Therefore, the proposed Project and related projects would result in the exposure of persons to or generation of noise levels in excess of standards established by the City or in a substantial permanent increase in ambient noise levels in the vicinity of the Project Site above levels existing without the proposed Project and the related projects.

Table IV.H-24
Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing (2016)	Future (2020) Plus Project		
Doheny Drive					
– North of Sunset Blvd.	Residential	66.6	66.7	0.1	No
– Between Sunset Blvd. and Santa Monica Blvd.	Residential	69.9	71.1	1.1	No
– South of Santa Monica Blvd.	Residential	73.0	74.1	1.1	No
Hammond Street					
– South of Sunset Blvd.	Residential, School	63.5	65.6	2.2	No
Hilldale Avenue					
– North of Sunset Blvd.	Residential	58.0	58.1	0.2	No
– South of Sunset Blvd.	Residential	57.7	67.0	9.3	Yes
San Vicente Boulevard					
– North of Sunset Blvd.	Residential, Commercial	62.8	63.0	0.1	No
– Between Sunset Blvd. and Cynthia St.	Residential, Hotel, School	68.7	69.4	0.7	No
– Between Cynthia St. and Santa Monica Blvd.	Residential, Commercial	70.2	70.8	0.6	No
– South of Santa Monica Blvd.	Park, Library, Commercial	70.7	71.5	0.7	No
Horn Avenue					
– North of Sunset Blvd.	Residential, Commercial	62.5	62.6	0.1	No
Holloway Drive					
– East of Sunset Blvd.	Residential, Church, Commercial	69.4	69.9	0.5	No
Cynthia Street					
– East of San Vicente Blvd.	Residential, Hotel	69.7	70.0	0.3	No
– East of San Vicente Blvd.	Residential, Hotel	68.4	68.5	0.1	No

Table IV.H-24 (Continued)
Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing (2016)	Future (2020) Plus Project		
Santa Monica Boulevard					
– West of Doheny Dr.	Residential, Commercial	69.0	70.1	1.2	No
– Between Doheny Dr. and San Vicente Blvd.	Commercial	71.3	72.3	0.9	No
– East of San Vicente Blvd.	Commercial	71.5	72.3	0.9	No
Sunset Boulevard					
– West of Doheny Dr.	Residential, Commercial	72.7	73.1	0.4	No
– Between Doheny Dr. and San Vicente Blvd.	Commercial	72.9	73.5	0.6	No
– East of San Vicente Blvd.	Commercial	72.9	73.6	0.6	No

[a] *Detailed calculation worksheets are included in Appendix F of this Draft EIR.*

Source: AES, 2016.

5. Mitigation Measures

a. Construction

As analyzed above, construction of the proposed Project has the potential to result in significant noise impacts on sensitive receptors. Therefore, the following measures, based in part on those recommended by Mitigation Measure 3.9-2 of the 2035 General Plan Final EIR, are included to minimize the construction-related noise levels:[33]

Mitigation Measure H-1: The Project shall implement the following measures during construction period:

- The project contractor shall, to the extent feasible, schedule construction activities to avoid the simultaneous operation of construction equipment so as to minimize noise levels resulting from operating several pieces of high noise level emitting equipment.
- Construction equipment shall be properly maintained per manufacturers' specifications and fitted with the best available noise suppression devices (i.e., mufflers, silencers, wraps, etc.).
- All impact tools shall be shrouded or shielded, and all intake and exhaust ports on power equipment shall be muffled or shielded.
- Construction operations and related activities associated with the Project shall comply with the operational hours outlined in the WHMC Noise Ordinance.
- Construction equipment shall not be idled for extended periods of time in the vicinity of noise-sensitive receptors.
- Fixed and/or stationary equipment shall be located as far as possible from noise-sensitive receptors (e.g., generators, compressors, cement mixers).
- A temporary and impermeable sound barrier shall be erected along the Project's southern property line and along the southern portion of the eastern and western property lines. The temporary sound barrier shall have a minimum surface weight of 2 pounds per square foot or greater and be designed to provide a minimum 10-dBA noise reduction at the residential uses on Hilldale Avenue (i.e., the noise-sensitive receptor location R1) to the south and

[33] *Final Program Environmental Impact Report City of West Hollywood General Plan and Climate Action Plan, October 2010, Volume 1, Chapter 3.9.5.*

southwest and the residential uses adjacent to the Project Site to the east.

- Music (i.e., workers' radios) from the construction site shall not be audible at off-site noise-sensitive receptor locations.

Mitigation Measure H-2: The contractor shall employ the following construction methods to minimize the generation of ground-borne vibration at the commercial building adjacent to the Project Site to the east:

- Prior to start of construction, the Applicant shall retain services of a qualified architect to visit the single-story commercial building adjacent to the Project Site to the east, inspect and document the apparent physical condition of the building, including, but not limited to, the building structure, interior wall, and ceiling finishes.
- The Applicant shall submit a demolition vibration control plan to ensure that the demolition process shall not result in damage to the adjacent single-story commercial building to the east. In the event damage occurs to the building due to construction vibration, the noted building damage shall be repaired to the conditions before construction, as required.
- The Applicant shall retain the services of a qualified vibration consultant to monitor ground-borne vibration at the exterior of the single-story commercial building immediately abutting the Project Site to the east during site excavation (when the use of heavy construction equipment, such as a large bulldozer, drill rig, or loaded truck occurs) within 12 feet of this building. If the measured ground-borne vibration levels exceed 0.3 inch/second peak particle velocity (PPV) at the adjacent building, the Project contractor shall evaluate and employ alternative construction methods, so that the ground-borne vibration levels would be below 0.3 inch/second PPV at the adjacent building to the east.

b. Operation

As discussed above, operation of the proposed Project would result in a significant impact related to off-site sources. There are no feasible mitigation measures to reduce the significant off-site Existing Plus Project and cumulative operational noise impacts. Typical noise mitigation to reduce traffic noise would be a noise barrier to block the line-of-sight between the receptor and the roadway. However, the impacted property is privately-owned, thereby creating access constraints and limitations relative to additional mitigation. Therefore, cumulative off-site traffic noise along Hilldale Avenue (south of Sunset Boulevard) would be significant and unavoidable.

6. Level of Significance After Mitigation

a. Construction Noise

(1) On-Site Construction Noise

Implementation of Mitigation Measure H-1 provided above would reduce the proposed Project's and cumulative construction noise levels to the extent feasible. Specifically, implementation of Mitigation Measure H-1 (e.g., installation of temporary sound barriers) would reduce the noise generated by on-site construction activities at the noise-sensitive uses to the south and east as represented by noise-sensitive receptor location R1 by a minimum 10 dBA. In addition, these impacts are anticipated to be brief and sporadic, depending on the type, intensity, and location of construction activities. However, construction-related noise levels at noise-sensitive receptor location R1 would still exceed the 10-dBA significance threshold above the ambient noise levels, by up to 21.5 dBA when the construction equipment is operating adjacent to the noise-sensitive receptor location. Therefore, construction noise impacts associated with on-site noise sources would remain significant and unavoidable, even with implementation of mitigation. In addition, in the worst case scenario, cumulative construction noise impacts associated with on-site noise sources would remain significant and unavoidable if nearby Related Project No. 43 were to be constructed concurrently with the proposed Project.

As discussed above, this analysis is based on exterior noise levels at the receptor locations and does not account for noise reduction associated with building features, including windows. Based on Caltrans data, buildings with single- and double-glazed windows would provide exterior to interior noise reduction of approximately 25 and 30 dBA, respectively.[34] Therefore, with implementation of Mitigation Measure H-1, with the windows closed, the maximum short-term construction noise levels at the interior of the building at R1 would be approximately 62 dBA L_{eq} assuming single-glazed windows or 57 dBA L_{eq} assuming the more typical double-glazed windows.

(2) Off-Site Construction Noise

Noise impacts from off-site construction traffic would be less than significant under both the proposed Project- and cumulative-levels.

[34] *Caltrans, Technical Noise Supplement (TeNS), 2013, Chapter 2.1.4, Table 7-1*.

b. Construction Vibration

(1) On-Site Construction Vibration

Implementation of Mitigation Measure H-2 would ensure the vibration levels at the adjacent commercial building immediately abutting the Project Site to the east would be reduced to below the 0.3 PPV significance threshold, which would reduce vibration impacts from on-site construction with respect to building damage to a less-than-significant level.

Additional mitigation measures considered to reduce vibration impacts from on-site construction activities with respect to human annoyance (residential uses adjacent to the Project Site) included the installation of a wave barrier, which is typically a trench or a thin wall made of sheet piles installed in the ground (essentially a subterranean sound barrier to reduce noise). However, constructing a wave barrier to reduce the proposed Project's construction-related vibration impacts would, in and of itself, generate ground-borne vibration from the excavation equipment. In addition, wave barriers must be very deep and long to be effective, and are not generally considered cost effective for temporary applications, such as construction.[35] Thus, there are no feasible mitigation measures that could be implemented by the proposed Project to reduce the temporary vibration impacts from on-site construction associated with human annoyance to a less-than-significant level. Therefore, the proposed Project's vibration impacts from on-site construction activities with respect to human annoyance would remain significant and unavoidable. However, the analysis contained herein represents the worst case scenario and impacts would be temporary, intermittent, and limited to daytime hours when large construction equipment (e.g., large bulldozer, drilling for shoring) is operating within 25 feet of the residences to the south of the Project Site, where the construction-related vibration is estimated to be less than 0.1 PPV.[36]

c. Operational Noise

Project-level impacts with regard to on-site operational noise would be less than significant.

However, the estimated Project-level noise increase under Existing Plus Project conditions and the estimated cumulative noise increase due to off-site traffic would result in significant impact along Hilldale Avenue south of Sunset Boulevard. As discussed above, there are no feasible mitigation measures to reduce the significant off-site cumulative operational noise impact. Typical noise mitigation to reduce traffic noise would be a noise

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[35] *Caltrans, Transportation- and Construction-Induced Vibration Guidance Manual, June 2004.*

[36] *Calculated based on reference vibration levels provided by FTA.*

barrier to block the line-of-sight between the receptor and the roadway. However, the impacted property is privately-owned, thereby creating access constraints and limitations relative to additional mitigation. Therefore, cumulative off-site traffic noise along Hilldale Avenue (south of Sunset Boulevard) would be significant and unavoidable.