IV. Environmental Impact Analysis

G. Noise

1. Introduction

This section of the Draft EIR analyzes the potential noise and vibration impacts associated with the 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 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 Project together with related projects and other future growth. Noise calculation worksheets are included in Appendix I 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 the way the human ear perceives sound. Examples of various sound levels in different environments are shown in Table IV.G-1 on page IV.G-2.

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

Table IV.G-1
Typical Noise Levels

Common Outdoor Activities	Noise Levels (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-Over at 1000 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, 2009.

People commonly judge the relative magnitude of sound sensation using subjective terms, such as “loudness” or “noisiness.” A change 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.,

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

air conditioner or bulldozer), is 6 dBA per doubling of distance from the noise source to the receptor over acoustically "hard" sites (e.g., asphalt and concrete surfaces) and 7.5 dBA per doubling of distance from the noise source to the receptor over acoustically "soft" sites (e.g., soft dirt, grass or scattered bushes and trees).[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 with a more substantial/permanent 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 Los Angeles, are summarized below.

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

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[3] *Caltrans, Technical Noise Supplement (TeNS), 2009, Chapter 2.1.4.2.*

[4] *Caltrans, Technical Noise Supplement (TeNS), 2009, Chapter 2.1.4.2.*

[5] *Caltrans, Technical Noise Supplement (TeNS), 2009, Chapter 2.1.4.2.*

[6] *FHWA, Highway Traffic Noise Analysis and Abatement Policy and Guidance, 1995.*

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.

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 and to describe noise impacts in the *L.A. CEQA Thresholds Guide*.[7]

(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,

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[7] *State of California, General Plan Guidelines, 2003.*

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

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

[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*

(Footnote continued on next page)

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 citizens from adverse effects associated with noise and ground-borne vibration. The City of Los Angeles has adopted a number of regulations and policies, which are based in part on federal and state regulations and are intended to control, minimize, or mitigate environmental noise effects. 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) are used for this analysis. The regulations and policies that are relevant to project construction and operation noise are discussed below.

(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. 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, the 2019 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 Los Angeles Regulations and Policies

The Noise Element of the City of Los Angeles General Plan (General Plan) establishes CNEL guidelines for land use compatibility and includes a number of goals,

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Appendix I of this Draft EIR and in this section of the Draft EIR are in RMS and referenced to 1 micro-inch per second.

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

objectives, and policies for land use planning purposes. The City also has regulations to control unnecessary, excessive, and annoying noise, as set forth in the Los Angeles Municipal Code (LAMC) Chapter XI, Noise Regulation. In addition, the *L.A. CEQA Thresholds Guide* provides thresholds for determining noise impacts of a project. These regulations are described further below.

(a) Noise Element

The overall purpose of the Noise Element of the General Plan is to guide policymakers in making land use determinations and in preparing noise ordinances that would limit exposure of citizens to excessive noise levels. The following policies and objectives from the Noise Element of the General Plan are applicable to the Project:[12]

- Objective 2 (Non-airport): Reduce or eliminate non-airport related intrusive noise, especially relative to noise-sensitive uses.
- Policy 2.1: Enforce and/or implement applicable City, State, and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise and alleviate noise that is deemed a public nuisance.
- Objective 3 (Land Use Development): Reduce or eliminate noise impacts associated with proposed development of land and changes in land use.
- Policy 3.1: Develop land use policies and programs that will reduce or eliminate potential and existing noise impacts.

The City's noise compatibility guidelines are provided in Table IV.G-2 on page IV.G-7.

(b) City of Los Angeles Noise Regulations (Chapter XI of the LAMC)

Chapter XI, Noise Regulation, of the LAMC (referred to herein as the Noise Regulations) establishes acceptable ambient sound levels to regulate intrusive noises (e.g., stationary mechanical equipment and vehicles other than those traveling on public streets) 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. In accordance with the Noise Regulations, a noise level increase from certain regulated noise sources of 5 dBA over the existing or presumed ambient noise level at an adjacent property line is considered a violation of the Noise Regulations. The 5-dBA increase above ambient is

[12] *Noise Element of the Los Angeles City General Plan, adopted February 3, 1999.*

Table IV.G-2
City of Los Angeles Guidelines for Noise Compatible Land Use

Land Use	Community Noise Exposure: Day-Night Average Exterior Sound Level (CNEL dB)						
	50	55	60	65	70	75	80
Residential Single-Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditoriums, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playgrounds, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Buildings, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

A = Normally Acceptable: Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.

C = Conditionally Acceptable: New construction or development only after a detailed analysis of the noise mitigation is made and needed noise insulation features included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

N = Normally Unacceptable: New construction or development generally should be discouraged. A detailed analysis of the noise reduction requirements must be made and noise insulation features included in the design of a project.

U = Clearly Unacceptable: New construction or development generally should not be undertaken.

Source: California Department of Health Services (DHS).

applicable to City-regulated noise sources (e.g., mechanical equipment), and it is applicable any time of the day.[13]

The Noise Regulations state that the baseline ambient noise shall be the actual measured ambient noise level or the City's presumed ambient noise level, whichever is greater. The actual ambient noise level is the measured noise level averaged over a period of at least 15 minutes, L_{eq} (15-minute). The Noise Regulations indicate that in cases where the actual measured ambient conditions are not known, the City's presumed daytime

[13] *LAMC, Chapter XI, Section 112.02.*

(7:00 A.M. to 10:00 P.M.) and nighttime (10:00 P.M. to 7:00 A.M.) ambient noise levels defined in LAMC Section 111.03 should be used. The City's presumed ambient noise levels for specific land use zones, as set forth in LAMC Section 111.03, are provided in Table IV.G-3 on page IV.G-9.

To account for people's increased tolerance for short-duration noise events, the Noise Regulations provide a 5-dBA allowance for noise sources occurring more than 5 minutes but less than 15 minutes in any 1-hour period (for a total of 10 dBA above the ambient), and an additional 5-dBA allowance (total of 15 dBA above the ambient) for noise sources occurring 5 minutes or less in any 1-hour period. These additional allowances for short-duration noise sources are applicable to noise sources occurring between the hours of 7:00 A.M. and 10:00 P.M. (daytime hours). Furthermore, the Noise Regulations provide a reduction of 5 dBA for steady high-pitched noise or repeated impulsive noises.[14,15]

The LAMC also provides noise regulations with respect to vehicle-related noise, including Section 114.02, which prohibits the operation of any motor driven vehicles upon any property within the City in a manner that would cause the noise level on the premises of any occupied residential property to exceed the ambient noise level by more than 5 dBA; Section 114.03, which prohibits loading and unloading operating between the hours of 10:00 P.M. and 7:00 A.M., which causes any impulsive sound, raucous or unnecessary noise within 200 feet of any residential building; and Section 114.06, which requires vehicle theft alarm systems shall be silenced within five minutes.

In addition, the Noise Regulations (LAMC Section 112.05) set a maximum noise level from construction equipment (powered equipment or powered hand tools) operating between the hours of 7:00 A.M. and 10:00 P.M., in any residential zone of the City or within 500 feet thereof, of 75 dBA, measured at a distance of 50 feet from the source, unless compliance with this limitation is technically infeasible.[16] LAMC Section 41.40 prohibits construction noise that disturbs persons occupying sleeping quarters in any dwelling, hotel, or apartment or other place of residence between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, before 8:00 A.M. and after 6:00 P.M. on Saturday or national holiday, and at any time on Sunday. Construction hours may be extended with approval from the Executive Director of the Board of Police Commissioners. In general, the City of

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[14] *LAMC, Chapter XI, Article I, Section 111.02 (b).*

[15] *Impulsive sound as defined in the LAMC Section 111.01 (e) is sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples of impulsive sound shall include, but are not limited to, explosion, musical bass drum beats, or the discharge of firearms.*

[16] *In accordance with the Noise Regulations, "technically feasible" means that the established noise limitations can be complied with at a project site, with the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques employed during the operation of equipment.*

Table IV.G-3
City of Los Angeles Presumed Ambient Noise Levels

Zone	Daytime (7:00 A.M. to 10:00 P.M.) dBA (L_{eq})	Nighttime (10:00 P.M. to 7:00 A.M.) dBA (L_{eq})
Residential, School, Hospitals, Hotels	50	40
Commercial	60	55
Manufacturing (M1, MR1, and MR2)	60	55
Heavy Manufacturing (M2 and M3)	65	65

Source: LAMC Section 111.03.

Los Angeles Department of Building and Safety enforces noise ordinance provisions relative to noise generated by operation of equipment, and the Los Angeles Police Department enforces provisions relative to noise generated by people.

(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 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.[17,18]

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.[19] As discussed above, building vibration damage is measured in PPV described in the unit of inches per second. Table IV.G-4 on page IV.G-10 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.

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

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

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

Table IV.G-4
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: FTA, 2006.

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.G-5 on page IV.G-11, 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.

c. Existing Conditions

As discussed in Section II, Project Description, of this Draft EIR, the Project Site is located in a highly urbanized area. The predominant source of noise in the vicinity of the Project Site is vehicular traffic on adjacent roadways, particularly along Hollywood Boulevard along the northern boundary of the Project Site, which has high volumes of traffic. Ambient noise sources in the vicinity of the Project Site include traffic, transit, and trucks; commercial activities; surface parking lot activities; construction noise from developing properties in the area; and other miscellaneous noise sources associated with typical urban activities.

(1) Noise-Sensitive Receptors

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 *L.A. CEQA Thresholds Guide* states that noise-sensitive uses include residences, transient lodgings, schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks.[20] Similarly, the Noise Element of the General Plan

[20] *City of Los Angeles, L.A. CEQA Thresholds Guide, p. I.1-3.*

Table IV.G-5
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.

defines noise-sensitive land uses as single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodging, and other residential uses; houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves; and parks.[21] These uses are generally considered more sensitive to noise than commercial and industrial land uses.

Based on a review of the land uses in the vicinity of the Project Site, six noise receptor locations were selected to represent noise-sensitive uses within 500 feet of the Project Site. These locations represent areas with land uses that could qualify as noise-sensitive uses according to the definition of such uses in the *L.A. CEQA Thresholds Guide* and the General Plan. As discussed below, noise measurements were conducted at the six off-site locations around and adjacent to the Project Site to establish baseline noise conditions in the vicinity of the Project Site. The monitoring locations essentially 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 at the monitoring locations and receptors beyond in the same direction. The noise measurement locations are shown in Figure IV.G-1 on page IV.G-12 and described in Table IV.G-6 on page IV.G-13.

[21] *Noise Element, City of Los Angeles General Plan, Chapter IV, p. 4-1.*

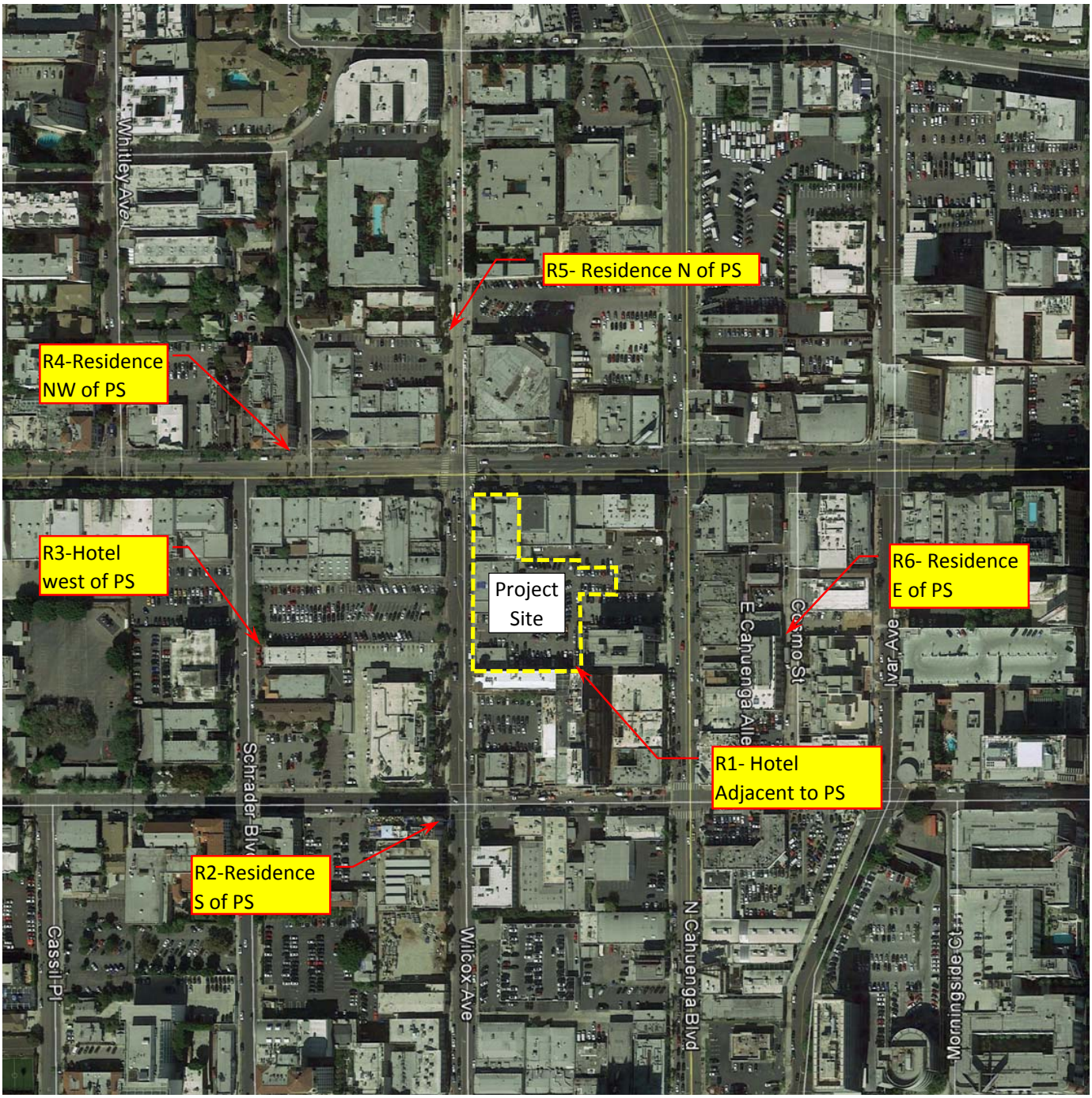

Figure IV.G-1
Noise Measurement Locations

Source: Acoustical Engineering Services, 2018.

Table IV.G-6
Description of Noise Measurement Locations

Receptor Location	Description	Approximate Distance from Measurement Location to Nearest Project Site Boundary (feet)[a]	Nearest Noise-Sensitive Land Use(s)
R1	Hotel uses adjacent to the Project Site, ambient noise measurement was made at the southeastern corner of the Project Site	Adjacent; Southeastern corner of the Project Site	Hotel
R2	Mama Shelter Hotel at the southwest corner of Wilcox Avenue and Selma Avenue	305	Hotel
R3	USA Hostel on the east side of Schrader Boulevard south of Hollywood Boulevard	430	Hotel
R4	Hillview Apartments building at the northwest corner of Hudson Avenue and Hollywood Boulevard	365	Residential
R5	Apartments building on the west side of Wilcox Avenue north of Hollywood Boulevard	330	Residential
R6	Cosmo Lofts building on the west side of Cosmo Street south of Hollywood Boulevard	405	Residential

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

Source: Acoustical Engineering Services (AES), 2020. See Appendix I of this Draft EIR.

(2) Ambient Noise Levels

To establish baseline noise conditions, existing ambient noise levels were monitored at six representative receptor locations (identified as R1 to R6) in the vicinity of the Project Site. The baseline noise monitoring program was conducted on January 10, 2018, using a Quest Technologies Model 2900 Integrating/Logging Sound Level Meter.[22] Although the ambient noise levels were measured in 2018, the measured levels are still valid, as there has been no new development adjacent to the Project Site or within the vicinity of the range of the sensitive receptors previously studied. Two 15-minute measurements were conducted at each of the receptor locations during daytime and nighttime hours. The daytime ambient noise levels were measured between 10:00 A.M. and 12:00 P.M., and the nighttime ambient noise levels were measured between 10:00 P.M. and 12:00 A.M. The

[22] *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. It also meets the requirement specified in Section 111.01(l) of the LAMC that instruments be "Type S2A" standard instruments or better. The sound meter was calibrated and operated according to the manufacturer's written specifications.*

ambient noise measurements were measured in accordance with the City's standards, which require ambient noise to be measured over a period of at least 15 minutes.[23]

Table IV.G-7 on page IV.G-15 provides a summary of the ambient noise measurements conducted at the six noise receptor locations. Based on field observations, the ambient noise at the measurement locations is dominated by local traffic and, to a lesser extent, helicopter flyovers and other typical urban noises. As indicated in Table IV.G-7, the existing daytime ambient noise levels at the off-site noise receptor locations ranged from 56.5 dBA (L_{eq}) at receptor location R1 to 70.9 dBA (L_{eq}) at receptor location R4. The measured nighttime ambient noise levels ranged from 55.0 dBA (L_{eq}) at receptor location R1 to 70.3 dBA (L_{eq}) at receptor location R4. Thus, the existing ambient noise levels at all off-site locations are above the City's presumed daytime and nighttime ambient noise levels of 50 dBA (L_{eq}) and 40 dBA (L_{eq}), respectively, for residential uses, as presented above in Table IV.G-3 on page IV.G-9.

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 by the Traffic Study prepared for the Project, and included as Appendix O.1 of this Draft EIR. Twenty-four 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 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 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.G-8 on page IV.G-16.

Table IV.G-9 on page IV.G-17 provides the calculated CNEL for the analyzed local roadway segments based on existing traffic volumes. As shown therein, the existing CNEL

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[23] *LAMC Section 111.01.*

Table IV.G-7
Existing Ambient Noise Levels

Receptor Location	Noise-Sensitive Land Use	Measured Noise Levels, L_{eq} (dBA)		CNEL (24-hour)[a]
		Daytime Hours (7:00 A.M.–10:00 P.M.)	Nighttime Hours (10:00 P.M.–7:00 A.M.)	
R1	Hotel	56.5	55.0	60.0
R2	Residential	66.8	63.4	69.0
R3	Hotel	61.4	57.6	63.3
R4	Residential	70.9	70.3	75.1
R5	Residential	64.0	61.8	67.0
R6	Residential	63.3	59.5	65.2

[a] *Estimated based on short-term (15-minute) noise measurement based on FTA procedures.*
Source: AES, 2018. See Appendix I of this Draft EIR.

due to surface street traffic volumes ranges from 65.0 dBA CNEL along Selma Avenue (east of Cahuenga Boulevard) to 73.6 dBA CNEL along Sunset Boulevard (just west of Wilcox Avenue to Cahuenga Boulevard). Currently, the existing traffic-related noise levels along some local street segments, including Wilcox Avenue, Argyle Avenue, Yucca Street, and Selma Avenue, fall within the conditionally acceptable noise levels for residential uses (i.e., between 60 and 70 dBA CNEL). The existing traffic noise levels along Cahuenga Boulevard, Vine Street, Franklin Avenue, Hollywood Boulevard, and Sunset Boulevard are between 70 dBA CNEL and 75 dBA CNEL, which are considered normally unacceptable for residential uses.

(3) 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 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."[24]

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

Table IV.G-8
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, 2020. See Appendix I of this Draft EIR.

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. In addition, the existing Metro Red Line alignment, an underground subway, runs under Hollywood Boulevard, along the Project Site's northern boundary. Vibration levels from the Metro Red Line operation was measured between 60 VdB and 67 VdB on the north side of Hollywood in the vicinity of the Project Site.[25] Per the FTA, 75 VdB is the dividing line between barely perceptible (with regards to ground vibration) and distinctly perceptible.[26] Therefore, existing ground vibration 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.

[25] *City of Los Angeles, Hollywood Cherokee Project Draft EIR, Chapter IV.G Noise, December 2014.*

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

Table IV.G-9
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent Sensitive Land Use	Approximate Distance to Roadway Center Line (feet)	Calculated Traffic Noise Levels, CNEL (dBA)[a]	Noise-Sensitive Land Uses	Existing Noise Exposure Compatibility Category[b]
Wilcox Avenue					
Between Franklin Ave. and Hollywood Blvd.	Residential	30	68.9	Yes	Conditionally Acceptable
Between Hollywood Blvd. and Sunset Blvd.	Hotel	30	69.6	Yes	Conditionally Acceptable
Cahuenga Boulevard					
Between US-101 and Franklin Ave.	Hotel	45	73.2	Yes	Normally Unacceptable
Between Franklin Ave. and Hollywood Blvd.	Hotel	40	72.5	Yes	Normally Unacceptable
Between Hollywood Blvd. and Sunset Blvd.	Commercial	35	72.3	No	Conditionally Acceptable
Vine Street					
Between Franklin Ave. and Hollywood Blvd.	Residential, Hotel	45	71.1	Yes	Normally Unacceptable
Between Hollywood Blvd. and Sunset Blvd.	Residential	45	72.0	Yes	Normally Unacceptable
Argyle Avenue					
Between Franklin Ave. and Hollywood Blvd.	Residential	35	68.6	Yes	Conditionally Acceptable
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	35	68.2	Yes	Conditionally Acceptable
Franklin Avenue					
Between Highland Ave. and Wilcox Ave.	Residential	30	71.4	Yes	Normally Unacceptable
Between Wilcox Ave. and Vine St.	Residential	30	73.3	Yes	Normally Unacceptable
Between Argyle Ave. and Bronson Ave.	Residential	35	73.2	Yes	Normally Unacceptable
Yucca Street					
Between Wilcox Ave. and Cahuenga Blvd.	Residential	30	65.6	Yes	Conditionally Acceptable
Between Cahuenga Blvd. and Argyle Ave.	Residential	35	66.0	Yes	Conditionally Acceptable
Hollywood Boulevard					
Between Highland Ave. and Wilcox Ave.	Hotel	45	71.2	Yes	Normally Unacceptable
Between Wilcox Ave. and Cahuenga Blvd.	Commercial	45	71.3	No	Conditionally Acceptable
Between Cahuenga Blvd. and Vine St.	Residential	45	70.9	Yes	Normally Unacceptable
Between Vine St. and Argyle Ave.	Hotel, Theater	45	71.4	Yes	Normally Unacceptable

Table IV.G-9 (Continued)
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent Sensitive Land Use	Approximate Distance to Roadway Center Line (feet)	Calculated Traffic Noise Levels, CNEL (dBA)[a]	Noise-Sensitive Land Uses	Existing Noise Exposure Compatibility Category[b]
Selma Avenue					
Between Highland Ave. and Wilcox Ave.	Residential, Hotel	30	66.9	Yes	Conditionally Acceptable
Between Wilcox Ave. and Cahuenga Blvd.	Hotel	30	65.5	Yes	Conditionally Acceptable
East of Cahuenga Blvd.	Residential, Hotel	30	65.0	Yes	Conditionally Acceptable
Sunset Boulevard					
Between Highland Ave. and Wilcox Ave.	Hotel, Church	40	73.6	Yes	Normally Unacceptable
Between Wilcox Ave. and Cahuenga Blvd.	Commercial	40	73.6	No	Conditionally Acceptable
Between Cahuenga Blvd. and Vine St.	Residential, School	40	73.3	Yes	Normally Unacceptable

[a] *Detailed calculation worksheets are included in Appendix I 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.G-2 on page IV.G-7.*

Source: AES, 2018.

3. Project Impacts

a. Thresholds of Significance

(1) State CEQA Guidelines Appendix G

In accordance with the State CEQA Guidelines Appendix G, the Project would have a significant impact related to noise if it would result in the:

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

Threshold (b): Generation of excessive groundborne vibration or groundborne noise levels; or

Threshold (c): For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?

(2) 2006 L.A. CEQA Thresholds Guide

In the context of these above questions from Appendix G to the CEQA Guidelines, the *L.A. CEQA Thresholds Guide* identifies the following factors to evaluate noise impacts:

(a) Construction Noise

A project would normally have a significant impact on noise levels from construction if:

- Construction activities lasting more than one day would exceed existing ambient exterior sound levels by 10 dBA (hourly L_{eq}) or more at a noise-sensitive use;
- Construction activities lasting more than 10 days in a three-month period would exceed existing ambient exterior noise levels by 5 dBA (hourly L_{eq}) or more at a noise-sensitive use; or
- Construction activities of any duration would exceed the ambient noise level by 5 dBA (hourly L_{eq}) at a noise-sensitive use between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, before 8:00 A.M. or after 6:00 P.M. on Saturday, or at any time on Sunday.

As discussed in Section II, Project Description, of this Draft EIR, Project construction is estimated to take approximately 24 months with an anticipated completion date of 2023. Therefore, since construction activities would occur over a period longer than 10 days for all phases, the corresponding significance criteria used in the construction noise analysis presented in this section of the Draft EIR is an increase in the ambient exterior noise levels by 5 dBA (hourly Leq) or more at a noise-sensitive use.

(b) Operational Noise

A project would normally have a significant impact on noise levels from operation if:

- The Project causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category (see Table IV.E 2 on page IV.E-7 for a description of these categories); or
- The Project causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 5 dBA in CNEL or greater; or
- Project-related operational on-site (i.e., non-roadway) noise sources, such as outdoor building mechanical/electrical equipment, outdoor activities, loading, trash compactor, or parking facilities, increase the ambient noise level (hourly L_{eq}) at noise-sensitive uses by 5 dBA based on LAMC Section 112.01(c), Section 112.02(a), Section 112.04(b), and Section 114.02(a).3.

The significance criteria used in the noise analysis for on-site operations presented below is an increase in the ambient noise level of 5 dBA (hourly L_{eq}) at the noise-sensitive uses, in accordance with the LAMC. The LAMC does not apply to off-site traffic (i.e., vehicle traveling on public roadways). Therefore, based on the L.A. CEQA Thresholds Guide, the significance criteria for off-site traffic noise associated with Project operations is an increase in the ambient noise level by 3 dBA or 5 dBA in CNEL (depending on the land use category) at noise-sensitive uses. In addition, the significance for composite noise levels (on-site and off-site sources) is also based on the *L.A. CEQA Thresholds Guide*, which is an increase in the ambient noise level of 3 dBA or 5 dBA in CNEL (depending on the land use category) for the Project's composite noise (both project-related on-site and off-site sources) at noise-sensitive uses.

(c) Airport Noise

A project would normally have a significant impact on noise levels from airport noise if:

- Noise levels at a noise sensitive use attributable to airport operations exceed 65 dB CNEL and the project increases ambient noise levels by 1.5 dB CNEL or greater.

(3) FTA Ground-Borne Vibration Standards and Guidelines

The City of Los Angeles currently does not have significance criteria to assess vibration impacts during construction. Thus, FTA guidelines set forth in FTA's Transit Noise and Vibration Assessment, dated May 2006, are used to evaluate potential impacts related to construction vibration for both potential building damage and human annoyance. The FTA guidelines regarding construction vibration are the most current guidelines and are commonly used in evaluating vibration impacts.

Based on this FTA 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 reinforced-concrete, steel, or timber building.
- Project construction activities cause ground-borne vibration levels to exceed 0.3 PPV at the nearest off-site engineered concrete and masonry building.
- Project construction activities cause ground-borne vibration levels to exceed 0.2 PPV at the nearest off-site non-engineered timber and masonry building.
- Project construction activities cause ground-borne vibration levels to exceed 0.12 PPV at buildings extremely susceptible to vibration damage, such as historic buildings.

Based on FTA guidance, construction vibration impacts associated with human annoyance would be significant if Project construction activities cause ground-borne vibration levels to exceed 72 VdB at off-site sensitive uses, including residential and hotel uses (applicable to frequent events; 70 or more vibration events per day).

In assessing impacts related to noise in this section, the City will use Appendix G as the thresholds of significance. The factors identified above from the *L.A. CEQA Thresholds Guide,* and the FTA Ground-Borne Vibration Standards and Guidelines will be used where applicable and relevant to assist in analyzing the Appendix G thresholds.

b. Methodology

(1) On-Site Construction Activities

Construction noise impacts due to on-site construction activities associated with the 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 Project to the existing ambient noise levels (i.e., noise levels without construction noise from the Project). Construction noise associated with the Project was analyzed based on the Project's potential construction equipment inventory, construction durations, and construction schedule. The construction noise model for the Project is based on construction equipment noise levels as published by the FHWA's "Roadway Construction Noise Model (FHWA 2006)."[27] The ambient noise levels at surrounding sensitive receptor locations were based on field measurement data (see Table IV.G-7 on page IV.G-15). 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 Subsection 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 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 Project, which is included in Appendix O.1 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 plus ambient with that of the existing ambient noise levels along the Project's anticipated haul route.

(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 Project's stationary noise sources, such as rooftop mechanical equipment, outdoor activities (e.g., use of the outdoor courtyard),

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[27] *The reference noise levels for construction equipment from the FHWA are based on measurements of newer construction equipment (published in 2006), rather than the noise levels from the Environmental Protection Agency report referenced in the L.A. CEQA Thresholds Guide (published in 1971).*

parking facilities, and trash compactor; (2) calculating the noise level from each noise source at surrounding sensitive receptor property line locations; and (3) comparing such noise levels to ambient noise levels to determine significance. The on-site stationary noise sources were calculated using the SoundPLAN (version 7.4) computer noise prediction model.[28] SoundPLAN is a 3-dimensional acoustic ray tracing program for outdoor noise propagation prediction developed by the German company, SoundPLAN GmbH. SoundPLAN is widely used by acoustical engineers as a noise modeling tool for environmental noise analysis.

(4) Off-Site Roadway Noise (Operation)

As discussed in Subsection 2.c, Existing Conditions, above, off-site roadway noise was analyzed using the FHWA TNM model and traffic data from the Project's Traffic Study, included as Appendix O.1 of this Draft EIR. Roadway noise conditions without the Project were calculated and compared to noise levels that would occur with implementation of the Project to determine Project-related noise impacts for operational off-site roadway noise.

(5) Construction Vibration

Ground-borne vibration impacts due to the Project's construction activities were evaluated by identifying potential vibration sources (i.e., construction equipment), estimating the vibration levels at the potentially affected receptor, and comparing the Project's activities to the applicable vibration significance thresholds, as described below. Vibration levels were calculated based on the FTA published standard vibration velocities for various construction equipment operations. In addition, vibration impacts are evaluated based on the maximum peak vibration levels generated by each type of construction equipment, per FTA guidance.[29]

(6) Operational Vibration

The primary source of vibration related to operation of the 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 Project would also include typical commercial-grade stationary mechanical equipment, such as air-condenser units (mounted at the roof level), that would include vibration-attenuation mounts to reduce the vibration transmission. The 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

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[28] *SoundPLAN GmbH, SoundPLAN version 8.0, 2017.*

[29] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, page 12-11.*

source. Therefore, operation of the 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 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 Project's land use compatibility was evaluated based on the measured Project site ambient noise levels as compared to the City of Los Angeles Guidelines for Compatible Land Use (as provided in Table IV.G-2 on page IV.G-7).[30]

c. Project Design Features

The following project design features are proposed with regard to noise and vibration:

Project Design Feature NOI-PDF-1: Project construction shall not include the use of driven (impact) pile systems.

Project Design Feature NOI-PDF-2: All outdoor mounted mechanical equipment shall be enclosed or screened from off-site noise-sensitive receptors.

Project Design Feature NOI-PDF-3: Outdoor amplified sound systems, if any, shall be designed so as not to exceed the maximum noise level of 75 dBA ($L_{eq\text{-}1hr}$) at a distance of 25 feet from the amplified speaker sound systems at the Ground Level (courtyards), 85 dBA ($L_{eq\text{-}1hr}$) at the Level 4 (pool deck and courtyard), and 95 dBA ($L_{eq\text{-}1hr}$) at Level 12 (sky deck). A qualified noise consultant shall provide written documentation that the design of the system complies with these maximum noise levels.

d. Analysis of Project Impacts

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

[30] *Noise Element of the Los Angeles City General Plan, adopted February 3, 1999.*

(1) Impact Analysis

(a) Construction Noise

As discussed above, Project construction is estimated to take approximately 24 months with an anticipated completion date of 2023. As such, since construction activities would occur over a period longer than 10 days for all phases, the corresponding significance criteria used in the construction noise analysis below is when the Project-related construction noise exceeds the ambient exterior noise levels by 5 dBA (hourly L_{eq}) or more at a noise-sensitive use.

Construction of the Project would commence with demolition of the existing buildings (with the exception of the Attie Building located at the northwest corner of the Project Site), and surface parking areas, followed by grading and excavation for the subterranean parking. Building foundations would then be constructed, followed by building construction, paving/concrete installation, and landscape installation. It is estimated that approximately 58,000 cubic yards of soil would be hauled from the Project Site during the excavation phase. Construction delivery/haul trucks would travel on approved truck routes between the Project Site and the Hollywood Freeway (US-101). Haul trucks arriving at the Project Site would travel westbound on Hollywood Boulevard then northbound on Highland Avenue to US-101. Haul trucks departing the Project Site would travel on US-101 to southbound on Cahuenga Boulevard then westbound to Hollywood Boulevard.

(i) 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 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.

Individual pieces of construction equipment anticipated to be used during construction of the Project could produce maximum noise levels (L_{max}) of 74 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in Table IV.G-10 on

page IV.G-27. 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 often operate 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 phase is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction phase.[31] These noise levels are typically associated with multiple pieces of equipment operating on part power, simultaneously.

Table IV.G-11 on page IV.G-28 provides the estimated construction noise levels for various construction phases 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 are periodic and fluctuate based on the construction activities.

As discussed above, since construction activities would occur over a period longer than 10 days for all phases, the corresponding significance criteria used in the construction noise analysis is when the construction-related noise exceeds the ambient L_{eq} noise level of 5 dBA at a noise-sensitive use. As presented in Table IV.G-11, construction activities would generate the highest noise during the demolition phase, as it is anticipated to have the highest noise generating construction equipment in the construction area compared to the Project's other construction stages. Therefore, the potential noise impacts (i.e., noise increase over the ambient level) would be highest during the demolition phase. As indicated in Table IV.G-11, the estimated noise levels during all stages of Project construction would be below the significance criteria at off-site receptor locations R2, R4, R5, and R6. Without implementation of mitigation, the estimated noise levels at receptor locations R1 and R3 would exceed the 5-dBA significance criteria by up to 35.8 dBA and 5.0 dBA, respectively. **Therefore, temporary noise impacts associated with the Project's on-site construction would be significant.**

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[31] *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.G-10
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	20	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.

(ii) 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. As described above, construction delivery/haul trucks would travel between the Project Site and US-101 via Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard.

Table IV.G-11
Construction Noise Impacts

Off-Site Receptor Location	Approximate Distance from Receptor to Project Construction Area (feet)	Estimated Construction Noise Levels by Construction Phases (L_{eq} (dBA))					Existing Daytime Ambient Noise Levels (L_{eq} (dBA))	Significance Criteria (L_{eq} (dBA))[a]	Maximum Noise Exceedance Above the Criteria (L_{eq} (dBA))	Sig. Impact?
		Demolition	Grading	Foundation	Building Construction	Paving/ Concrete/ Landscape				
R1	10	97.3	92.1	91.0	88.1	91.7	56.5	61.5	35.8	**Yes**
R2	305	65.0	64.3	62.7	59.0	60.4	66.8	71.8	0.0	**No**
R3	260	71.4	70.6	69.1	65.3	66.8	61.4	66.4	5.0	**Yes**
R4	415	57.4	56.9	55.3	51.4	52.8	70.9	75.9	0.0	**No**
R5	345	59.0	58.4	56.8	53.0	54.4	64.0	69.0	0.0	**No**
R6	335	59.2	58.7	57.0	53.2	54.6	63.3	68.3	0.0	**No**

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.G-7 on page IV.G-15) plus 5 dBA, per the L.A. CEQA Thresholds Guide for construction activities lasting longer than 10 days in a three-month period. If the estimated construction noise levels exceed those significance criteria, a construction-related noise impact is identified.*

Source: AES, 2020. See Appendix I of this Draft EIR.

The peak period of construction with the highest number of construction trucks would occur during the parking structure foundation phase.[32] Based on information provided by MATT Construction, the Project's construction consultant, this phase, there would be a maximum of 131 construction trucks (121 concrete trucks and 10 material delivery trucks) coming to and leaving the Project Site (equal to 262 total trips) per day. In addition, there would be a total of 100 worker trips to and from the Project Site on a daily basis during the foundation phase. There would also be construction delivery truck trips (up to 154 truck trips per day) during other construction phases of the Project, but such trips would be less than the 262 truck trips under the foundation phase.

Table IV.G-12 on page IV.G-30 provides the estimated number of construction-related trips, including haul/delivery trucks and worker vehicles, and the estimated noise levels along the anticipated haul route. As indicated in Table IV.G-12, the noise levels generated by construction trucks during all stages of Project construction would be consistent with the existing daytime ambient noise levels along the anticipated haul route and therefore would be below applicable 5-dBA significance criteria. **Therefore, temporary noise impacts from off-site construction traffic would be less than significant.**

(iii) Summary of Construction Noise Impacts

As discussed above, temporary noise impacts associated with the Project's on-site construction would be significant at two of the off-site receptor locations. The temporary noise impacts from off-site construction traffic would be less than significant. Therefore, Project construction would result in the exposure of persons to or generation of noise levels in excess of standards established by the City.

(b) Operational Noise

This section provides a discussion of potential operational noise impacts on nearby noise-sensitive receptors. Specific operational noise sources addressed herein include (a) on-site stationary noise sources, including outdoor mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment), activities within the proposed outdoor spaces (e.g., outdoor courtyards, roof level pool decks), parking facilities, loading dock, and trash compactor; and (b) off-site mobile (roadway traffic) noise sources.

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[32] *Gibson Transportation Consulting, Inc., June 2018, see Appendix O.1 of this Draft EIR.*

Table IV.G-12
Off-Site Construction Haul Truck Noise Levels

Construction Phase	Estimated Number of Construction Truck/Worker Trips per Day	Estimated Number of Construction Truck/Worker Trips per Hour[a]	Estimated Haul Truck Noise Levels Along the Project Haul Route (L_{eq} (dBA)) (Project/Project + Ambient)		
			Hollywood Boulevard	Highland Avenue	Cahuenga Boulevard
Demolition	40/24	5/12	58.7/71.2	58.7/71.2	58.7/71.2
Grading	106/60	22/30	64.1/71.7	64.1/71.7	64.1/71.7
Parking Structure Foundation	262/100	22/50	64.5/71.8	64.5/71.8	64.5/71.8
Building Construction	154/300	20/150	65.7/72.0	65.7/72.0	65.7/72.0
Paving/Concrete/Landscape	20/650	3/325	66.1/72.1	66.1/72.1	66.1/72.1
Existing Ambient Noise Levels Along the Project Haul Route, L_{eq} (dBA)[b]			70.9	70.9	70.9
Significance Criteria, L_{eq} (dBA)[c]			75.9	75.9	75.9
Maximum Exceedance over Significance Criteria, L_{eq} (dBA)			0.0	0.0	0.0
Significant Impact?			**No**	**No**	**No**

[a] *For construction trucks, the number of hourly trips is based on an hourly average, assuming a uniform distribution of trips over an 8-hour work day for the demolition, building construction, and paving/concrete/landscape phases; over a 5-hour work day for the grading phase; and over a 12-hour work day for the foundation phase. To present a conservative analysis, this assumes all of the workers (i.e., half of the trips) would arrive within one hour.*

[b] *Ambient noise levels along the haul route is based on measurements at nearby receptor locations (i.e., receptors R4 along Hollywood Boulevard). Ambient noise levels along Highland Avenue and Cahuenga Boulevard are estimated based on measurement at Receptor R4.*

[c] *Significance criteria are equivalent to the measured daytime ambient noise levels plus 5 dBA.*

Source: AES, 2020.

(i) On-Site Stationary Noise Sources

Mechanical Equipment

As part of the Project, new mechanical equipment (e.g., air ventilation equipment) would be located at the roof level and within the building structure (e.g., garage exhaust fans). Although operation of this equipment would generate noise, Project-related outdoor mechanical equipment would be designed so as not to increase the existing ambient noise levels by 5 dBA in accordance with the City's Noise Regulations. Specifically, the Project would comply with LAMC Section 112.02, which prohibits noise from air conditioning, refrigeration, heating, pumping, and filtering equipment from exceeding the ambient noise levels on the premises of other occupied properties by more than 5 dBA. In addition, as provided above in Project Design Feature NOI-PDF-2, all outdoor mounted mechanical equipment would be enclosed or screened from off-site noise-sensitive receptors.

Table IV.G-13 on page IV.G-32 presents the estimated noise levels at the off-site receptor locations from operation of the Project mechanical equipment. As indicated in Table IV.G-13, The estimated noise levels from the mechanical equipment would range from 27.7 dBA (L_{eq}) at receptor location R4 to 34.1 dBA (L_{eq}) at receptor location R1, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would be below the significance criteria of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient). **Therefore, noise impacts from mechanical equipment would be less than significant.**

Outdoor Spaces

As discussed in Section II, Project Description, of this Draft EIR, the Project would include various outdoor open space areas, including: two outdoor courtyards at Level 1 (ground level); a pool deck and a courtyard at Level 4; and a sky deck at Level 12. 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.[33] 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 10:00 P.M.

An additional potential noise source associated with outdoor uses would be the use of an outdoor sound system (e.g., music or other sounds broadcast through an outdoor mounted speaker system). As set forth in Project Design Feature NOI-PDF-3, the amplified sound system used in outdoor areas would be designed so as not to exceed the maximum noise levels of 75 to 95 dBA L_{eq} as indicated in Table IV.G-14 on page IV.G-32, thereby ensuring that the amplified sound system would not exceed the significance criteria (i.e., an increase of 5 dBA L_{eq}) at any off-site noise-sensitive receptor location. Table IV.G-14 presents the anticipated number of people at each of the outdoor spaces and the Project's maximum amplified sound levels.

Table IV.G-15 on page IV.G-33 presents the estimated noise levels at the off-site sensitive receptors resulting from the use of outdoor areas. 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.G-15, the estimated noise levels from the outdoor spaces would range from 48.7 dBA (L_{eq}) at receptor R2 to 61.0 dBA (L_{eq}) at receptor R5 and would be below the

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

Table IV.G-13
Estimated Noise Levels from Mechanical Equipment

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Mechanical Equipment, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria, dBA (L_{eq})[a]	Exceedance over Significance Criteria	Significant Impact?
R1	55.0	34.1	55.0	60.0	0.0	**No**
R2	63.4	32.8	63.4	68.4	0.0	**No**
R3	57.6	28.7	57.6	62.6	0.0	**No**
R4	70.3	27.7	70.3	75.3	0.0	**No**
R5	61.8	33.9	61.8	66.8	0.0	**No**
R6	59.5	33.0	59.5	64.5	0.0	**No**

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.G-7 on page IV.G-15) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

Source: AES, 2020. See Appendix I of this Draft EIR.

Table IV.G-14
Outdoor Use Analysis Assumptions

Outdoor Space	Estimated Total Number of People[a]	Amplified Sound System Levels, dBA (L_{eq})
Ground Level Courtyards	87	75 dBA at 25 feet
Level 4 – Pool Deck and Courtyard	680	85 dBA at 25 feet
Level 12 – Sky Deck	747	95 dBA at 25 feet

[a] *Based on maximum 15 square feet per person, per Building Code.*

Source: GMPA Architects, 2016.

significance criteria of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient noise level). **As such, noise impacts from the use of the outdoor areas would be less than significant.**

Parking Facilities

As discussed in Section II, Project Description, of this Draft EIR, the Project would include 420 vehicular parking spaces. Parking would be provided in two levels of subterranean, one level of at-grade, and two levels of above-ground parking. Sources of noise within the parking garage would primarily include vehicular movements and engine noise, doors opening and closing, and intermittent car alarms. Noise levels within the

Table IV.G-15
Estimated Noise Levels from Outdoor Uses

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 Criteria[a]	Exceedance over Significance Criteria	Significant Impact?
R1	55.0	52.3	56.9	60.0	0.0	**No**
R2	63.4	48.7	63.5	68.4	0.0	**No**
R3	57.6	55.9	59.8	62.6	0.0	**No**
R4	70.3	59.7	70.7	75.3	0.0	**No**
R5	61.8	61.0	64.4	66.8	0.0	**No**
R6	59.5	58.1	61.9	64.5	0.0	**No**

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.G-7 on page IV.G-15) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

Source: AES, 2020. See Appendix I of this Draft EIR.

parking garage would fluctuate with the amount of automobile and human activity. Since the subterranean parking levels would be fully enclosed on all sides, noise generated within the subterranean parking garage would be effectively shielded from off-site sensitive receptor locations in the immediate vicinity of the Project Site. The at- and above-grade parking levels would be located at the interior of the building and would be enclosed. Table IV.G-16 on page IV.G-34 presents the estimated noise levels from the at- and above-grade parking levels at the off-site receptor locations. As indicated in Table IV.G-16, the estimated noise levels from the Project parking garage would be below the significance criteria of 5 dBA (L_{eq}) above the ambient noise levels (based on the lowest measured ambient). **Therefore, noise impacts from the parking garage would be less than significant.**

Loading Dock and Trash Collection Areas

The Project loading dock and trash compactor would be located within building Level 1. Delivery trucks would access the loading docks through the entrance driveway from Wilcox Avenue. Noise sources associated with the loading dock and trash collection area would include delivery/trash collection trucks and operation of the trash compactor. 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.[34] The

[34] *RK Engineering Group, Inc., Wal-Mart/Sam's Club Reference Noise Level Study, 2003.*

Table IV.G-16
Estimated Noise Levels from Parking Facilities

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Parking Facilities, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria[a]	Exceedance over Significance Criteria	Significant Impact?
R1	55.0	19.5	55.0	60.0	0.0	**No**
R2	63.4	11.5	63.4	68.4	0.0	**No**
R3	57.6	34.9	57.6	62.6	0.0	**No**
R4	70.3	8.1	70.3	75.3	0.0	**No**
R5	61.8	8.5	61.8	66.8	0.0	**No**
R6	59.5	8.3	59.5	64.5	0.0	**No**

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.G-7 on page IV.G-15) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

Source: AES, 2020. See Appendix I of this Draft EIR.

loading dock and trash collection area would be buffered from the off-site sensitive receptors by being located within the building. Table IV.G-17 on page IV.G-35 presents the estimated noise levels at the off-site receptor locations from operation of the loading dock and trash compactor. As indicated in Table IV.G-17, the estimated noise from the loading dock and trash compactor range from 26.7 dBA (L_{eq}) at receptor location R4 to 50.2 dBA (L_{eq}) at receptor location R3. The estimated noise levels from the loading dock and trash compactor at all off-site receptor locations would be below the significance criteria of 5 dBA (L_{eq}) above ambient noise levels. **Therefore, noise impacts from loading dock and trash compactor operations would be less than significant.**

Summary of On-Site Stationary Noise Sources

Based on the above, on-site stationary noise impacts would not 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. Impacts would be less than significant and no mitigation measures are required.

(ii) Off-Site Mobile Noise Sources

Future Plus Project

Future roadway noise levels were calculated along 24 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 Project, which is included in Appendix O.1 of

Table IV.G-17
Estimated Noise Levels from Loading Dock and Trash Compactor

Receptor Location	Existing Ambient Noise Levels (dBA (L_{eq}))	Estimated Noise Levels from Loading Dock and Trash Compactor (dBA (L_{eq}))	Ambient + Project Noise Levels (dBA (L_{eq}))	Significance Criteria[a]	Exceedance over Significance Criteria	Significant Impact?
R1	56.5	40.7	56.6	61.5	0.0	**No**
R2	66.8	32.9	66.8	71.8	0.0	**No**
R3	61.4	50.2	61.7	66.4	0.0	**No**
R4	70.9	26.7	70.9	75.9	0.0	**No**
R5	64.0	27.9	64.0	69.0	0.0	**No**
R6	63.3	30.4	63.3	68.3	0.0	**No**

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.G-7 on page IV.G-15) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

Source: AES, 2020. See Appendix I of this Draft EIR.

this Draft EIR. As discussed in the Traffic Study, the Project is expected to generate a net increase of 1,625 daily 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 Project.

Table IV.G-18 on page IV.G-36 provides a summary of the roadway noise impact analysis. The calculated CNEL levels are conservatively calculated in front of the roadways and do not account for the presence of any physical sound barriers or intervening structures. As shown in Table IV.G-18, the Project would result in a maximum increase of up to 0.2 dBA (CNEL) in traffic-related noise levels along the roadway segments of Wilcox Avenue (between Franklin Avenue and Sunset Boulevard). At other analyzed roadway segments, the increase in traffic-related noise levels would be 0.1 dBA or lower. The increase in traffic noise levels would be below the relevant 3 dBA CNEL significance criteria. **Therefore, traffic noise impacts under Future Plus Project conditions would be less than significant.**

Existing Plus Project

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

Table IV.G-18
Roadway Traffic Noise Impacts—Future Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Future Without Project	Future Plus Project		
Wilcox Avenue					
Between Franklin Ave. and Hollywood Blvd.	Residential	69.3	69.5	0.2	**No**
Between Hollywood Blvd. and Sunset Blvd.	Hotel	70.3	70.5	0.2	**No**
Cahuenga Boulevard					
Between US-101 and Franklin Ave.	Hotel	73.9	74.0	0.1	**No**
Between Franklin Ave. and Hollywood Blvd.	Hotel	73.4	73.4	0.0	**No**
Between Hollywood Blvd. and Sunset Blvd.	Commercial	73.2	73.2	0.0	**No**
Vine Street					
Between Franklin Ave. and Hollywood Blvd.	Residential, Hotel	71.9	71.9	0.0	**No**
Between Hollywood Blvd. and Sunset Blvd.	Residential	72.8	72.8	0.0	**No**
Argyle Avenue					
Between Franklin Ave. and Hollywood Blvd.	Residential	69.3	69.3	0.0	**No**
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	68.7	68.7	0.0	**No**
Franklin Avenue					
Between Highland Ave. and Wilcox Ave.	Residential	71.9	71.9	0.0	**No**
Between Wilcox Ave. and Vine St.	Residential	73.8	73.9	0.1	**No**
Between Argyle Ave. and Bronson Ave.	Residential	73.6	73.6	0.0	**No**
Yucca Street					
Between Wilcox Ave. and Cahuenga Blvd.	Residential	66.4	66.4	0.0	**No**
Between Cahuenga Blvd. and Argyle Ave.	Residential	67.3	67.3	0.0	**No**

Table IV.G-18 (Continued)
Roadway Traffic Noise Impacts—Future Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Future Without Project	Future Plus Project		
Hollywood Boulevard					
Between Highland Ave. and Wilcox Ave.	Hotel	72.3	72.3	0.0	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Commercial	72.5	72.5	0.0	**No**
Between Cahuenga Blvd. and Vine St.	Residential	72.6	72.7	0.1	**No**
Between Vine St. and Argyle Ave.	Hotel, Theater	73.1	73.2	0.1	**No**
Selma Avenue					
Between Highland Ave. and Wilcox Ave.	Residential, Hotel	67.7	67.7	0.0	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Hotel	67.2	67.2	0.0	**No**
East of Cahuenga Blvd.	Residential, Hotel	65.9	65.9	0.0	**No**
Sunset Boulevard					
Between Highland Ave. and Wilcox Ave.	Hotel, Church	74.8	74.8	0.0	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Commercial	74.8	74.8	0.0	**No**
Between Cahuenga Blvd. and Vine St.	Residential, School	74.7	74.7	0.0	**No**

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

Source: AES, 2020.

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

As shown in Table IV.G-19 on page IV.G-39, when compared with existing conditions, the Project would result in a maximum of a 0.3 dBA (CNEL) increase in traffic noise along the roadway segment of Wilcox Avenue (between Franklin Avenue and Hollywood Boulevard). At other analyzed roadway segments, the increase in traffic-related noise levels would be 0.1 dBA or lower. The estimated increase in traffic noise levels as compared to existing conditions would be well below the relevant 3 dBA CNEL significance criteria. **Therefore, traffic noise impacts under Existing Plus Project conditions would be less than significant.**

Summary of Off-Site Mobile Noise Sources

Based on the above, off-site mobile noise impacts would not 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. Impacts would be less than significant and no mitigation measures are required.

(iii) Land Use Compatibility

Based on the current measured ambient noise levels, the exterior noise levels at the Project Site would range from approximately 69.0 dBA CNEL at the ground level facing Wilcox Avenue (measured at receptor location R2) to up to 75.1 dBA CNEL at the ground level facing Hollywood Boulevard (measured at receptor location R1). The proposed residential units would face Wilcox Avenue and the proposed commercial uses would face Hollywood Boulevard. According to the City of Los Angeles Guidelines for Noise Compatible Land Uses (refer to Table IV.G-2 on page IV.G-7), the Project Site would be considered “conditionally acceptable” for multi-family residential development (between 60 and 70 dBA CNEL) and “conditionally acceptable” for commercial development (between 67.5 and 77.5 dBA CNEL). In accordance with LAMC Section 91.1207.11.2 and Section 5.507 of the 2019 California Green Building Standards Code, the Project would include necessary noise insulation features, such as sound insulated glass windows and doors, to achieve an interior noise environment that does not exceed 45 dBA CNEL for residential uses and 50 dBA L_{eq} for non-residential uses. **Therefore, noise impacts associated with land use compatibility would be less than significant.**

Table IV.G-19
Roadway Traffic Noise Impacts—Existing Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing	Existing Plus Project		
Wilcox Avenue					
Between Franklin Ave. and Hollywood Blvd.	Residential	68.9	69.2	0.3	**No**
Between Hollywood Blvd. and Sunset Blvd.	Hotel	69.6	69.9	0.3	**No**
Cahuenga Boulevard					
Between US-101 and Franklin Ave.	Hotel	73.2	73.2	0.0	**No**
Between Franklin Ave. and Hollywood Blvd.	Hotel	72.5	72.5	0.0	**No**
Between Hollywood Blvd. and Sunset Blvd.	Commercial	72.3	72.3	0.0	**No**
Vine Street					
Between Franklin Ave. and Hollywood Blvd.	Residential, Hotel	71.1	71.1	0.0	**No**
Between Hollywood Blvd. and Sunset Blvd.	Residential	72.0	72.0	0.0	**No**
Argyle Avenue					
Between Franklin Ave. and Hollywood Blvd.	Residential	68.6	68.6	0.0	**No**
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	68.2	68.2	0.0	**No**
Franklin Avenue					
Between Highland Ave. and Wilcox Ave.	Residential	71.4	71.4	0.0	**No**
Between Wilcox Ave. and Vine St.	Residential	73.3	73.3	0.0	**No**
Between Argyle Ave. and Bronson Ave.	Residential	73.2	73.2	0.0	**No**
Yucca Street					
Between Wilcox Ave. and Cahuenga Blvd.	Residential	65.6	65.6	0.0	**No**
Between Cahuenga Blvd. and Argyle Ave.	Residential	66.0	66.0	0.0	**No**

Table IV.G-19 (Continued)
Roadway Traffic Noise Impacts—Existing Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing	Existing Plus Project		
Hollywood Boulevard					
Between Highland Ave. and Wilcox Ave.	Hotel	71.2	71.2	0.0	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Commercial	71.3	71.4	0.1	**No**
Between Cahuenga Blvd. and Vine St.	Residential	70.9	70.9	0.0	**No**
Between Vine St. and Argyle Ave.	Hotel, Theater	71.4	71.5	0.1	**No**
Selma Avenue					
Between Highland Ave. and Wilcox Ave.	Residential, Hotel	66.9	66.9	0.0	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Hotel	65.5	65.5	0.0	**No**
East of Cahuenga Blvd.	Residential, Hotel	65.0	65.0	0.0	**No**
Sunset Boulevard					
Between Highland Ave. and Wilcox Ave.	Hotel, Church	73.6	73.6	0.0	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Commercial	73.6	73.6	0.0	**No**
Between Cahuenga Blvd. and Vine St.	Residential, School	73.3	73.3	0.0	**No**

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

Source: AES, 2020.

(iv) 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 facilities, loading dock and trash compactor, 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 sensitive receptor locations was also performed. This evaluation of composite noise levels from all on-site project noise sources, evaluated using the CNEL noise metric, was conducted to determine the contributions at the noise-sensitive receptor locations in the vicinity of the Project Site.

Table IV.G-20 on page IV.G-42 presents the estimated composite noise levels in terms of CNEL at the off-site sensitive receptor locations from the Project-related noise sources. As indicated in Table IV.G-20, the Project would result in an increase in composite noise levels ranging from 0.1 dBA at receptor location R4 to 1.2 dBA at receptor location R5. The composite noise levels increase resulting from Project operation as measured at the off-site receptor location R4 would be below the 3-dBA significance threshold, as the composite (ambient plus Project) noise level (75.2 dBA CNEL) falls within the clearly unacceptable land use category (75 CNEL and higher). Additionally, the composite (Project plus ambient) noise levels increase for receptor locations R1, R2, R3, R5, and R6 would be well below the 5-dBA significance threshold, as the composite noise levels at these receptor locations fall within the conditionally acceptable (60 to 70 CNEL) land use category.

Project operations would not result in the 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. Therefore, the Project's operational noise impacts from on- and off-site sources would be less than significant

(2) Mitigation Measures

As analyzed above, construction of the Project would have the potential to result in significant noise impacts at the off-site sensitive receptor locations from on-site construction activities. Therefore, the following mitigation measure is provided to reduce construction-related noise impacts:

Table IV.G-20
Composite Noise Impacts

Receptor Location	Existing Ambient Noise Levels (CNEL (dBA))	Calculated Project-Related Noise Sources (CNEL (dBA))					Project Composite Noise Levels (CNEL (dBA))	Ambient plus Project Noise Levels (CNEL (dBA))	Increase in Noise Levels due to Project (CNEL (dBA))	Sig. Impact?
		Traffic	Mechanical	Parking	Loading/ Trash Compactor	Outdoor Spaces				
R1	60.0	44.5	40.8	26.2	37.9	51.2	52.5	60.7	0.7	**No**
R2	69.0	58.1	39.5	18.2	30.1	47.6	58.6	69.4	0.4	**No**
R3	63.3	43.4	35.4	41.6	47.4	54.8	56.0	64.0	0.7	**No**
R4	75.1	55.0	34.4	14.8	24.0	58.6	60.2	75.2	0.1	**No**
R5	67.0	57.4	40.6	15.2	25.2	59.9	61.9	68.2	1.2	**No**
R6	65.2	41.3	39.7	15.0	27.6	57.0	57.2	65.8	0.6	**No**

Source: AES, 2020. See Appendix I of this Draft EIR.

Mitigation Measure NOI-MM-1: A temporary and impermeable sound barrier shall be erected at the locations listed below. At plan check, building plans shall include documentation prepared by a noise consultant verifying compliance with this measure.

- Along the southern property line of the Project Site between the construction areas and the hotel building directly south of the Project Site (receptor R1). The temporary sound barrier (minimum sound transmission class 25) shall be designed to provide a minimum 15-dBA noise reduction at the ground level of receptor R1.
- Along the western property line of the Project Site between the construction areas and hotel west of the Project Site (receptor R3). The temporary sound barrier shall be designed to provide a minimum 6-dBA noise reduction at the ground level of receptor R3.

(3) Level of Significance After Mitigation

Implementation of Mitigation Measure NOI-MM-1 provided above would reduce the Project's construction noise levels to the extent feasible. Specifically, implementation of Mitigation Measure NOI-MM-1 (installation of temporary sound barrier) would reduce the noise generated by on-site construction activities at the off-site sensitive uses, by minimum 15 dBA at the hotel use on Wilcox Avenue (receptor location R1) and by minimum 6 dBA at the hotel use on the Schrader Boulevard (receptor location R3). The estimated construction-related noise levels at off-site sensitive receptor locations R3 would be reduced to below a level of significance with implementation of Mitigation Measure NOI-MM-1. However, construction-related noise levels at receptor location R1 would still exceed the 5 dBA significance criteria above the ambient noise levels, by up to 21 dBA under worst-case conditions when construction equipment is operating adjacent to the building. A 15 dBA noise reduction is a substantial reduction for the type of temporary noise barrier used during construction. However, there are no other feasible mitigation measures that could be implemented to further reduce the temporary noise impacts. **Therefore, construction noise impacts associated with on-site noise sources would remain significant and unavoidable, even with implementation of mitigation.**

Project-level impacts associated with off-site construction noise and operational noise would be less than significant without mitigation.

Threshold (b): Would the Project result in the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

(1) Impact Analysis

(a) Construction

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. However, ground-borne vibrations from construction activities rarely reach levels that damage structures.

(i) Building Damage Impacts from On-Site Construction

With regard to potential building damage, the 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.G-21 on page IV.G-45 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 Project, in accordance with Project Design Feature NOI-PDF-1 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 drilling methods to minimize vibration generation.

As discussed in Section IV.B. Cultural Resources, of the Draft EIR, the Attie Building is a historical resource and would remain as part of the Project. A significance criteria of 0.12 PPV is utilized for historic structures that are extremely susceptible to vibration damage. There are no other historic buildings or other structures extremely susceptible to vibration located in the close proximity (within 15 feet) of the Project construction site. The assessment of construction vibration provided below for potential building damage due to on-site construction compares the estimated vibration levels generated during construction of the Project to the 0.12-PPV significance criteria for buildings extremely susceptible to vibration (applicable to the Attie Building, a historic structure), the 0.2-PPV significance criteria for non-engineered timber and masonry building (applicable to the two-story buildings to the east and west of the Project Site), and the 0.3-PPV significance criteria for engineered concrete masonry building (applicable for the 3- and 4-story buildings to the south and north of the Project Site). In addition, the construction vibration analysis for potential building damage due to off-site construction activities (haul trips) conservatively

Table IV.G-21
Construction Vibration Impacts—Building Damage

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 (inch/second (PPV))[b]					Significance Criteria (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	—	—
4-story commercial building on the north side of Hollywood Boulevard, north of the Project Site	0.012	0.012	0.010	0.005	<0.001	**0.3[c]**	**No**
3-story hotel building to the south, adjacent to the Project Site	0.361	0.361	0.308	0.142	0.012	**0.3[c]**	**Yes**
2-story commercial building on the west side of Wilcox Avenue, west of the Project Site	0.024	0.024	0.020	0.009	0.001	**0.2[d]**	**No**
2-story commercial building on the south side of Hollywood Boulevard, adjacent to the Project Site to the east	0.523	0.523	0.446	0.206	0.018	**0.2[d]**	**Yes**
On-site Attie Building (historic structure)	0.523	0.523	0.446	0.206	0.018	**0.12[e]**	**Yes**

[a] *Represents off-site building structures located nearest to the Project Site to the north, south, east and west except for the Attie Building which is on-site and included for a conservative analysis.*

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

[c] *FTA criteria for engineered concrete and masonry buildings.*

[d] *FTA criteria for non-engineered timber and masonry buildings.*

[e] *FTA criteria for buildings extremely susceptible to vibration damage.*

Source: FTA, 2006; AES, 2020. See Appendix I of this Draft EIR.

compares the estimated vibration levels generated from haul truck activities to the 0.12-PPV significance criteria for buildings extremely susceptible to vibration damage.

As indicated in Table IV.G-21, the estimated vibration velocity levels from construction equipment would exceed the 0.12 PPV building damage significance criteria at the Attie Building, the 0.2 PPV criteria at the two-story building adjacent to the Project Site to the east, and the 0.3 PPV criteria at the three-story building adjacent to the Project Site

to the south. **Therefore, vibration impacts during construction of the Project to off-site and on-site building structures would be significant.**

(ii) Human Annoyance Impacts from On-Site Construction

Table IV.G-22 on page IV.G-47 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 criteria for human annoyance. Per FTA guidance, the significance criteria for human annoyance is 72 VdB for sensitive uses, including residential and hotel uses, assuming there are a minimum of 70 vibration events occurring during a typical construction day. As indicated in Table IV.G-22, the estimated ground-borne vibration levels from construction equipment would be below the significance criteria for human annoyance at all off-site sensitive receptor locations, with the exception of receptor location R1, the hotel adjacent to the Project Site. The estimated ground-borne vibration levels at receptor location R1 would be up to 99 VdB and would exceed the 72-VdB significance criteria. **Therefore, vibration impacts during construction of the Project to off-site receptors, pursuant to the significance criteria for human annoyance, would be significant.**

(iii) Building Damage and Human Annoyance Impacts from Off-Site Construction

As described above, construction delivery/haul trucks would travel between the Project Site and US-101 Freeway via Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard. Heavy-duty construction trucks would generate ground-borne vibration as they travel along the Project's anticipated haul route. Thus, an analysis of potential vibration impacts using the building damage and human annoyance criteria for ground-borne vibration along the anticipated local haul routes was conducted.

Regarding building damage, based on FTA data, the vibration generated by a typical heavy-duty truck would be approximately 63 VdB (0.00566 PPV) at a distance of 50 feet from the truck.[35] According to the FTA "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads." Nonetheless, there are existing buildings along the Project's anticipated haul route that are situated approximately 20 feet from the right-of-way and would be exposed to ground-borne vibration levels of approximately 0.022 PPV, as provided in the noise calculation worksheets included in Appendix I of this Draft EIR. This estimated vibration generated by construction trucks traveling along the anticipated haul route would be well below the most stringent building damage criteria of 0.12 PPV for buildings extremely susceptible to

[35] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, Figure 7-3.*

Table IV.G-22
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] (VdB)					Significance Criteria (VdB)	Sig. Impact?
	Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	87	87	86	79	58	—	—
R1	99	99	98	91	70	72	**Yes**
R2	54	54	53	46	25	72	**No**
R3	56	56	55	48	27	72	**No**
R4	50	50	49	42	21	72	**No**
R5	53	53	52	45	24	72	**No**
R6	53	53	52	45	24	72	**No**

[a] *Vibration levels calculated based on FTA reference vibration level at 25 distance.*
Source: FTA, 2006; AES, 2020. See Appendix I of this Draft EIR.

vibration. **Therefore, vibration impacts (pursuant to the significance criteria for building damage) from off-site construction activities (i.e., construction trucks traveling on public roadways) would be less than significant.**

As discussed above, per FTA guidance, the significance criteria for human annoyance is 72 VdB for sensitive uses, including residential and hotel uses. Based on FTA data, typical buses and trucks would generate vibration levels of approximately 63 VdB at 50 feet from the receptor.[36] The estimated vibration levels generated by construction trucks traveling along the anticipated haul route were assumed to be within 20 feet of the sensitive uses along Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard. As indicated in the noise calculation worksheets included in Appendix I of this Draft EIR, the temporary vibration levels could reach approximately 75 VdB periodically as trucks pass sensitive receptors along the anticipated haul route. There are residential uses along Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard (between the Project Site and US-101), which would be exposed to ground-borne vibration above the 72-VdB significance criteria from the construction trucks. **Therefore, potential vibration impacts with respect to human annoyance that would result from temporary and intermittent off-site vibration from construction trucks traveling along the anticipated haul route would be significant.**

[36] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, Figure 7-3.*

(iv) Summary of Construction Vibration Impacts

As discussed above, the estimated vibration levels from on-site construction equipment would exceed the building damage significance criteria of 0.12 PPV, 0.20 PPV and 0.3 PPV for the on- and off-site buildings, and vibration impacts (pursuant to the significance criteria for building damage) during construction of the Project would be significant. In addition, vibration impacts from on-site construction activities would be significant pursuant to the significance criteria for human annoyance.

(b) Operation

As described above, sources of vibration related to operation of the Project would include vehicle circulation, delivery trucks, and building mechanical equipment. As also discussed above, vehicular-induced vibration, including vehicle circulation within the subterranean parking area, would not generate perceptible vibration levels at off-site sensitive uses. Building mechanical equipment installed as part of the Project would include typical commercial-grade stationary mechanical equipment, such as air-condenser units (mounted at the roof level), that would include vibration-attenuation mounts to reduce vibration transmission so vibration would not be perceptible at the off-site sensitive receptors. **Therefore, operation of the Project would not increase the existing vibration levels in the immediate vicinity of the Project Site. As such, vibration impacts associated with operation of the Project would be less than significant.**

(2) Mitigation Measures

As discussed above, Project vibration levels generated from on-site construction activities would result in significant impacts with respect to both building damage and human annoyance. Therefore, the following mitigation measure is provided to reduce construction-related vibration impacts:

Mitigation Measure NOI-MM-2: Prior to start of construction, the Applicant shall retain the services of a structural engineer or qualified professional to visit the Attie Building, the 2-story commercial building on Hollywood Boulevard (adjacent to the Project Site to the east), and the 3-story hotel building on Wilcox Avenue (adjacent to the Project Site to the south) to inspect and document the apparent physical condition of the buildings' readily-visible features. In addition, the structural engineer shall establish baseline structural conditions of the building and prepare a shoring design.

Prior to start of construction, the Applicant shall retain the services of a qualified acoustical engineer to review proposed construction equipment and develop and implement a vibration monitoring

program capable of documenting the construction-related ground vibration levels at the Attie Building, the 2-story commercial building, and the 3-story hotel building during demolition, grading/excavation, and construction of the subterranean parking garage. The vibration monitoring system shall continuously measure and store the peak particle velocity (PPV) in inch/second. The system shall also be programmed for two preset velocity levels: a warning level of 0.10 PPV for the Attie Building, 0.16 PPV for the 2-story commercial building and 0.25 PPV for the 3-story hotel building and a regulatory level of 0.12 PPV for the Attie Building, 0.20 PPV for the 2-story commercial building, and 0.30 PPV for the 3-story hotel building. The system shall also provide real-time alert when the vibration levels exceed the two preset levels.

In the event the warning level (0.10 PPV for the Attie Building, 0.16 PPV for the 2-story commercial building, and 0.25 PPV for the 3-story hotel building) is triggered, the contractor shall identify the source of vibration generation, halt construction in the immediate vicinity, and provide feasible steps to reduce the vibration level, including but not limited to halting/staggering concurrent activities and utilizing lower vibratory techniques.

In the event the regulatory level (0.12 PPV for the Attie Building, 0.20 PPV for the 2-story commercial building, and 0.30 PPV for the 3-story hotel building) is triggered, the contractor shall halt the construction activities in the vicinity of the building and visually inspect the building for any damage. Results of the inspection must be logged and maintained by the contractor and submitted to the Los Angeles Department of Building and Safety. The contractor shall identify the source of vibration generation and provide feasible steps to reduce the vibration level. Construction activities may then restart.

In the event damage occurs to historic finish materials (applicable to the Attie Building) due to construction vibration, such materials shall be repaired in consultation with a qualified preservation consultant and, if warranted, in a manner that meets the Secretary of the Interior's Standards.

Vibration impacts associated with temporary and intermittent vibration from construction trucks traveling along the anticipated haul route would be significant with respect to human annoyance. In order to reduce the vibration levels to below the 72 VdB significance threshold, construction trucks would need to be minimum of 25 feet from the sensitive receptors. However, it would not be feasible to direct the trucks to be a minimum of 25 feet from the sensitive receptors along the anticipated haul route. Additionally, any alternative haul route between the Project Site and US-101 would also pass within 25 feet of similar sensitive receptors. As such, there are no feasible mitigation measures that would reduce the potential vibration impacts with respect to human annoyance.

(3) Level of Significance After Mitigation

(a) Construction

(i) On-Site Construction Vibration

With implementation of Mitigation Measure NOI-MM-2, would ensure the vibration levels at the exterior of the Attie Building, the 2-story commercial building, and the 3-story hotel building adjacent to the Project Site would not exceed the significance criteria, 0.12 PPV for the Attie Building, 0.20 PPV for the 2-story commercial building, and 0.30 PPV for the 3-story hotel building. Therefore, vibration impacts associated with the on-site construction activities would be reduced to a less than significant level.

Implementation of Mitigation Measure NOI-MM-2 would also reduce the vibration impacts with respect to human annoyance at the Hotel use (receptor location R1). However, project-level vibration impacts from on-site construction activities would still exceed the 72 VdB significance criteria. Other mitigation measures considered to reduce vibration impacts from on-site construction activities with respect to human annoyance 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, wave barriers must be very deep and long to be effective and are not considered cost effective for temporary applications, such as construction.[37] In addition, constructing a wave barrier to reduce the Project's construction-related vibration impacts would, in and of itself, generate ground-borne vibration from the excavation equipment. Thus, it is concluded that there are no feasible mitigation measures that could be implemented to reduce the temporary vibration impacts from on-site construction associated with human annoyance to a less-than-significant level. **Therefore, project-level vibration impacts from on-site construction activities with respect to human annoyance would remain significant and unavoidable.**

(ii) Off-Site Construction Vibration

Vibration levels generated by construction trucks (i.e., haul, delivery, and concrete trucks) along the Project's haul route (i.e., Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard) would be below the significance criteria for building damage. Therefore, vibration impacts with respect to building damage would be less than significant under both Project-level and cumulative-level.

Project vibration levels from construction trucks would exceed the significance criteria for human annoyance at sensitive receptors (e.g., residential and hotel uses) along

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

Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard. As noted above, in order to reduce this impact to a less than significant level, construction trucks would need to be a minimum of 25 feet from the sensitive receptors, which is not feasible, or an alternative haul route would be needed. No haul route between the Project Site and US-101 without similar sensitive receptors is available. Therefore, there are no feasible mitigation measures that would reduce the potential vibration human annoyance impacts. **Therefore, Project-level vibration impacts from off-site construction with respect to human annoyance would remain significant and unavoidable. Impacts would be temporary, intermittent, and limited to during daytime hours when the haul truck is traveling within 20 feet of a sensitive receptor.**

(iii) Operation

Project-level vibration impacts during operation would be less than significant without mitigation.

Threshold (c): For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?

(1) Impact Analysis

As discussed in Section VI, Other CEQA Considerations, and in the Initial Study (Appendix A of this Draft EIR), the Project Site would not expose people residing or working in the project area to excessive airport-related noise levels. The nearest airport is the Bob Hope Airport located approximately 6.5 miles north of the Project Site. Since the Project would not be located within an airport land use plan, within two miles of a public airport or public use airport, or within the vicinity of a private airstrip, impacts with regard to airport-related noise would not occur and would be clearly insignificant and unlikely to occur. Thus, no impact would occur with respect to **Threshold (c**.

(2) Mitigation Measures

No impact related to airstrip and airport noise would occur. Therefore, no mitigation measures are required.

(3) Level of Significance After Mitigation

No impact related to airstrip and airport noise would occur.

e. Cumulative Impacts

(1) Impact Analysis

The 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

(i) On-Site Construction Noise

As indicated in Section III, Environmental Setting, of this Draft EIR, 107 related projects have been identified in the vicinity of the Project Site. 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, based on the *L.A. CEQA Thresholds Guide* screening criteria. 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. While the majority of the related projects are located a substantial distance (greater than 1,000 feet) from the Project Site, the following 16 related projects are within 1,000 feet of the Project Site:

- Related Project No. 9 (Selma Hotel), Related Project No. 14 (Selma & Vine Office), Related Project No. 47 (Sunset + Wilcox Hotel), Related Project No. 57 (Hotel), Related Project No. 65 (TAO Restaurant), and Related Project No. 100 (Selma + Wilcox Hotel) have been constructed or under construction and would be completed prior to the Project construction and would not combine with the Project to result in a cumulative impact.

- Related Project No. 55 (Cahuenga Boulevard Hotel, approximately 600 feet southeast of the Project Site), Related Project No. 74 (Ivar Gardens Hotel, approximately 750 feet southeast of the Project Site), Related Project No. 84 (6400 Sunset Boulevard, approximately 970 feet south of the Project Site), and Related Project No. 105 (1719 Whitley Hotel, approximately 810 feet northwest of the Project Site are located a minimum of 500 feet from the Project Site with intervening development. Therefore, cumulative noise impacts would be less than significant and the Project's contribution would not be cumulative considerable.

- Related Project No. 17 (Hotel & Restaurant) is a hotel and restaurant development located at 6381 Hollywood Boulevard, approximately 300 feet northeast of the Project Site. There is a noise sensitive receptor located within 500 feet of the Related Project No. 17 and the Project Site, as represented by receptor location R6. Receptor location R6 is approximately 375 feet south of

the Related Project No. 17 and is shielded from the Related Project No. 17 by existing building structures along Hollywood Boulevard. Based on the noise analysis conducted for the Related Project No. 17, construction-related noise impacts would be less than significant for sensitive receptors within 400 feet of the Related Project No. 17.[38] As analyzed above in Subsection 3.c.(2)(a)(i) (see Table IV.G-11 on page IV.G-28), the estimated Project-related construction noise levels at receptor R6 would be 9.1 dBA below the significance criteria. Therefore, the Project would not contribute to cumulative construction-related noise impacts at receptor location R6, in the event of concurrent construction with the Related Project No. 17. As such, cumulative noise impacts at receptor location R6 would be less than significant and the Project's contribution would not be cumulatively considerable

- Related Project No. 22 (Hudson Building) is a mixed-use development located at 6523 Hollywood Boulevard, approximately 260 feet northwest of the Project Site. There is a noise sensitive receptor on Hollywood Boulevard adjacent to Related Project No. 22 (represented by receptor location R4). As analyzed above in Subsection 3.c.(2)(a)(i) (see Table IV.G-11 on page IV.G-28), the estimated Project-related construction noise levels at receptor R4 would be 18.5 dBA below the significance criteria. Therefore, the Project would not contribute to cumulative construction-related noise impacts at receptor location R4, in the event of concurrent construction with the Related Project No. 22. As such, cumulative noise impacts at receptor location R4 would be less than significant and the Project's contribution would not be cumulatively considerable

- Related Project No. 67 (Wilcox Hotel) is a hotel and retail development located at 1717 Wilcox Avenue, approximately 225 feet north of the Project Site. There is a noise sensitive receptor located within 500 feet of the Related Project No. 67 and the Project Site, as represented by receptor location R5. As analyzed above in Subsection 3.c.(2)(a)(i) (see Table IV.G-11 on page IV.G-28), the estimated Project-related construction noise levels at receptor R5 would be 10 dBA below the significance criteria. Therefore, the Project would not contribute to cumulative construction-related noise impacts at receptor location R5, in the event of concurrent construction with the Related Project No. 67. As such, cumulative noise impacts at receptor location R5 would be less than significant and the Project's contribution would not be cumulatively considerable.

- Related Project No. 75 (Selma Hotel) is a hotel development located at 6516 Selma Avenue, approximately 370 feet southwest of the Project Site. There is a noise sensitive receptor at the southwest corner of Wilcox Avenue and Selma Avenue, which is adjacent to the Related Project No. 75 (represented by receptor location R2). As analyzed above in Subsection 3.c.(2)(a)(i) (see

[38] *City of Los Angeles, 6381-6382 W. Hollywood Boulevard & 1708-1720 N. Cahuenga Boulevard, ENV-2008-4002-MND, 2009*

Table IV.G-11 on page IV.G-28), the estimated Project-related construction noise levels at receptor R2 would be 6.5 dBA below the significance criteria. Since Related Project No. 75 is adjacent to receptor location R2, the construction-related noise at receptor location R2 due to Related Project No. 75 would be higher than from the Project. Even with a conservative assumption that Related Project No. 75 construction noise would be below the significance threshold, the Project could add up to 1 dBA to the cumulative construction-related noise levels (due to the Project and Related Project No. 75) and exceed the 5 dBA significance threshold. As such, there is a potential for cumulative construction-related noise impacts at receptor location R2, in the event of concurrent construction with the Related Project No. 75, and noise impacts from the Project would be cumulatively considerable.

- Related Project No. 92 (1600 Schrader) is a hotel development located at 1600 Schrader Boulevard, approximately 285 feet southwest of the Project Site. Receptor location R2 has direct line-of-sight to both the Project and Related Project No. 92. As analyzed above in Subsection 3.c.(2)(a)(i) (see Table IV.G-11 on page IV.G-28), the estimated Project-related construction noise levels at receptor R2 would be 6.5 dBA below the significance criteria. However, Related Project No. 92 is approximately 85 feet from and has a direct line-of-sight to receptor location R2. Therefore, the construction-related noise at receptor R2 due to Related Project No. 92 would likely be higher than the Project. Even with a conservative assumption that Related Project No. 92 construction noise would be below the significance threshold, the Project could add up to 1 dBA to the cumulative construction-related noise levels (due to the Project and Related Project No. 92), which could exceed the 5 dBA significance threshold. As such, there is a potential for cumulative construction-related noise impacts at receptor location R2, in the event of concurrent construction with the Related Project No. 92, and noise impacts from the Project would be cumulatively considerable.

- Related Project No. 102 (1723 N. Wilcox Residential) is a residential development located at 1723 Wilcox Avenue, approximately 325 feet north of the Project Site. The nearest noise sensitive receptor located between the Related Project No. 102 and the Project Site are the multi-family uses just north of the Related Project No. 102 (represented by receptor location R5). As analyzed above in Subsection 3.c.(2)(a)(i) (see Table IV.G-11 on page IV.G-28), the estimated Project-related construction noise levels at receptor R4 would be 10.0 dBA below the significance criteria. Therefore, the Project would not contribute to cumulative construction-related noise impacts at receptor location R5, in the event of concurrent construction with the Related Project No. 102. As such, cumulative noise impacts at receptor location R5 would be less than significant and the project's contribution would not be cumulatively considerable

Construction-related noise levels from the related projects would be intermittent and temporary, and it is anticipated that, as with the Project, the related projects would comply with the construction hours and other relevant provisions set forth in the LAMC. 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. Based on the above, there would potentially be cumulative noise impacts at the nearby sensitive uses (e.g., residential and hotel uses) located in proximity to the Project Site and Related Project No. 75 and Related Project No. 92, in the event of concurrent construction activities. **As such, cumulative noise impacts from on-site construction would be significant, and the Project's contribution would be cumulatively considerable.**

(ii) Off-Site Construction Noise

In addition to the cumulative impacts of on-site construction activities, off-site construction haul trucks would have a potential to result in cumulative impacts if the trucks for the related projects and the Project were to utilize the same haul route. Specifically, based on the existing daytime ambient noise level of 70.9 dBA (L_{eq}) along the anticipated haul route, including Highland Avenue, Cahuenga Boulevard and Hollywood Boulevard (refer to Table IV.G-12 on page IV.G-30), it is estimated that up to 125 truck trips per hour could occur along Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard without exceeding the significance criteria of 5 dBA above ambient noise levels. Therefore, if the total number of trucks from the Project and related projects were to add up to 126 truck trips per hour along Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard, the estimated noise level from 126 truck trips per hour plus the ambient would be 75.9 dBA, which would exceed the ambient noise levels by 5 dBA and exceed the significance criteria.[39] While the Department of Building and Safety is trying to limit the number of projects using the same haul route to the extent feasible, there are several related projects in the vicinity of the Project Site, which could utilize the same haul route, such as, Related Project Nos. 17, 22, 55, 64, 67, 74, 75, 84, 92, 98, 102, and 105. Since the Project would generate up to 22 truck trips during peak construction period, it is conservatively assumed that truck traffic related to construction of the Project and other related projects would cumulatively add up to 126 or more hourly truck trips. Therefore, cumulative noise due to construction truck traffic from the Project and other related projects has the potential to exceed the ambient noise levels along the haul route by 5 dBA. **As such, cumulative noise impacts from off-site construction would be significant.**

[39] *It is estimated that with 125 truck trips, the cumulative noise level (74.1 dBA from construction traffic plus 70.9 dBA ambient) would be 75.8 dBA, which is 4.9 dBA above the ambient noise level of 70.9 dBA. With 126 truck trips, the cumulative noise level (74.2 dBA from construction traffic plus 70.9 dBA ambient) would be 75.9 dBA, which would exceed the ambient by 5.0 dBA.*

(iii) Summary of Cumulative Construction Noise Impacts

As discussed above, on-site and off-site construction activities from the Project and related projects have the potential to result in the exposure of persons to or generation of noise levels in excess of standards established by the City or result in a substantial temporary or periodic increase in ambient noise levels in the vicinity of the Project Site above levels existing without the Project and related projects. **Therefore, cumulative noise impacts from on-site and off-site construction activities would be significant.**

(b) Construction Vibration

(i) On-Site 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). Due to the rapid attenuation characteristics of ground-borne vibration and given the distance of the nearest related project to the Project Site (i.e., Related Project No. 22, approximately 260 feet northwest of the Project Site), there is no potential for a cumulative construction vibration impact with respect to both building damage and human annoyance associated with ground-borne vibration from on-site sources, in the event of concurrent construction. As discussed above, potential vibration impacts associated with Project-related on-site construction activities would be significant with respect to human annoyance. However, the Project would not contribute to the cumulative construction vibration impacts, as described above.

(ii) Off-Site Construction Vibration

As previously discussed, based on FTA data, the vibration generated by a typical heavy truck would be approximately 63 VdB (0.00566 PPV) at a distance of 50 feet from the truck.[40] In addition, according to the FTA "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads." As discussed above, there are existing buildings that are approximately 20 feet from the right-of-way of the anticipated haul route for the Project (i.e., Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard). These buildings are anticipated to be exposed to ground-borne vibration levels of approximately 0.022 PPV. Trucks from the related projects are expected to generate similar ground-borne vibration levels. Therefore, the vibration levels generated from off-site construction trucks associated with the Project and other related projects along the anticipated haul route would be below the most stringent

[40] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, Figure 7-3.*

building damage significance criteria of 0.12 PPV for buildings extremely susceptible to vibration. Therefore, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant.

As discussed above, potential vibration impacts associated with temporary and intermittent vibration from project-related construction trucks traveling along the anticipated haul route would be significant with respect to human annoyance. As related projects would be anticipated to use similar trucks as the Project, it is anticipated that construction trucks would generate similar vibration levels along the anticipated haul route. **Therefore, to the extent that other related projects use the same haul route as the Project, potential cumulative human annoyance impacts associated with temporary and intermittent vibration from haul trucks traveling along the designated haul route would be significant.**

(iii) Summary of Cumulative Construction Vibration Impacts

As discussed above, 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. In addition, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant.

Cumulative construction vibration impacts from on-site construction activities pursuant to the significance criteria for human annoyance would be less significant in the event concurrent construction of the Project and the related projects were to occur. In addition, to the extent that other related projects use the same haul route as the Project, potential cumulative human annoyance impacts associated with temporary and intermittent vibration from haul trucks traveling along the designated haul route would be significant. In order to reduce the vibration levels to below the 72 VdB significance threshold, construction trucks would need to be a minimum of 25 feet from the sensitive receptors. However, it would not be feasible to direct the truck to be a minimum of 25 feet from the sensitive receptors along the anticipated haul route. Additionally, any alternative haul route between the Project Site and US-101 would also pass within 25 feet of similar sensitive receptors. Furthermore, no haul route between the Project Site and US-101 without similar sensitive receptors is available. As such, there are no feasible mitigation measures that could be implemented to reduce the temporary vibration impacts from off-site construction associated with human annoyance to a less-than-significant level. **Therefore, cumulative construction vibration impacts from off-site construction activities with respect to human annoyance would be significant and unavoidable.**

(c) Operational Noise

The Project Site and surrounding area have been developed with uses that have previously generated, and will 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 Project, each of the related projects that have been identified in the vicinity of the Project Site would also generate stationary-source and mobile-source noise due to ongoing day-to-day operations. All related projects are of a residential, retail, commercial, or institutional 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.

(i) On-Site Stationary Noise Sources

Due to provisions set forth in the LAMC 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 analyzed above, noise impacts associated with operations within the Project Site would be less than significant. Specifically, the estimated noise levels from the Project's on-site stationary sources (see Table IV.G-20 on page IV.G-42) would be minimum 12 dBA below the significance threshold. Therefore, based on the distance of the related projects from the Project Site and the operational noise levels associated with the Project, cumulative stationary source noise impacts associated with operation of the Project and related projects would be less than significant.

(ii) Off-Site Mobile Noise Sources

The 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 significance criteria. Future Plus Project conditions include traffic volumes from future ambient growth, related projects, and the Project.[41] The calculated traffic noise levels under "Existing" and "Future Plus Project" conditions are presented in Table IV.G-22 on page IV.G-59. As shown therein, cumulative traffic volumes would result in an increase ranging from 0.4 dBA (CNEL) along the roadway segment of Franklin Avenue between Argyle Avenue and Bronson Avenue, to 1.8 dBA (CNEL) along the roadway segment of Hollywood Boulevard between Cahuenga Boulevard and Vine Street, which would be below the more stringent

[41] *Traffic volumes are presented in the Project's Traffic Study included as Appendix O.1 of this Draft EIR.*

Table IV.G-23
Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Cumulative Traffic (CNEL (dBA))	Significant Impact?
		Existing	Future Plus Project		
Wilcox Avenue					
Between Franklin Ave. and Hollywood Blvd.	Residential	68.9	69.5	0.6	**No**
Between Hollywood Blvd. and Sunset Blvd.	Hotel	69.6	70.5	0.9	**No**
Cahuenga Boulevard					
Between US-101 and Franklin Ave.	Hotel	73.2	74.0	0.8	**No**
Between Franklin Ave. and Hollywood Blvd.	Hotel	72.5	73.4	0.9	**No**
Between Hollywood Blvd. and Sunset Blvd.	Commercial	72.3	73.2	0.9	**No**
Vine Street					
Between Franklin Ave. and Hollywood Blvd.	Residential, Hotel	71.1	71.9	0.8	**No**
Between Hollywood Blvd. and Sunset Blvd.	Residential	72.0	72.8	0.8	**No**
Argyle Avenue					
Between Franklin Ave. and Hollywood Blvd.	Residential	68.6	69.3	0.7	**No**
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	68.2	68.7	0.5	**No**
Franklin Avenue					
Between Highland Ave. and Wilcox Ave.	Residential	71.4	71.9	0.5	**No**
Between Wilcox Ave. and Vine St.	Residential	73.3	73.9	0.6	**No**
Between Argyle Ave. and Bronson Ave.	Residential	73.2	73.6	0.4	**No**
Yucca Street					
Between Wilcox Ave. and Cahuenga Blvd.	Residential	65.6	66.4	0.8	**No**
Between Cahuenga Blvd. and Argyle Ave.	Residential	66.0	67.3	1.3	**No**

Table IV.G-23 (Continued)
Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Cumulative Traffic (CNEL (dBA))	Significant Impact?
		Existing	Future Plus Project		
Hollywood Boulevard					
Between Highland Ave. and Wilcox Ave.	Hotel	71.2	72.3	1.1	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Commercial	71.3	72.5	1.2	**No**
Between Cahuenga Blvd. and Vine St.	Residential	70.9	72.7	1.8	**No**
Between Vine St. and Argyle Ave.	Hotel, Theater	71.4	73.2	1.8	**No**
Selma Avenue					
Between Highland Ave. and Wilcox Ave.	Residential, Hotel	66.9	67.7	0.8	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Hotel	65.5	67.2	1.7	**No**
East of Cahuenga Blvd.	Residential, Hotel	65.0	65.9	0.9	**No**
Sunset Boulevard					
Between Highland Ave. and Wilcox Ave.	Hotel, Church	73.6	74.8	1.2	**No**
Between Wilcox Ave. and Cahuenga Blvd.	Commercial	73.6	74.8	1.2	**No**
Between Cahuenga Blvd. and Vine St.	Residential, School	73.3	74.7	1.4	**No**

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

Source: AES, 2020.

3-dBA significance criteria (applicable when noise levels fall within the normally unacceptable or clearly unacceptable land use category). Therefore, cumulative noise impacts due to off-site mobile noise sources associated with the Project, future growth, and related projects would be less than significant.

(iii) Summary of Cumulative Operational Noise Impacts

As discussed above, the Project and related projects would not 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 Project and the related projects. Therefore, cumulative operational noise impacts from on-site and off-site sources would be less than significant.

(d) Operational Vibration

Vibration levels from project operation are generally limited to building mechanical equipment and vehicle circulations and would be limited to immediate vicinity of the project sites. The related projects (mixed-use and commercial developments) would generate similar vibration levels as the Project, which would be limited to the related project sites. As described above, the nearest related projects are minimum 100 feet from the Project Site. Since ground-borne vibration decreases rapidly with distance, the related projects operation would not contribute to the cumulative vibration impacts due to distance between the Project and the related projects. As analyzed above, the Project operation would not increase in the existing vibration in the immediate vicinity of the Project Site. **Therefore, based on the distance of the related projects from the Project Site and the operational vibration levels associated with the Project, cumulative vibration impacts associated with operation of the Project and related projects would be less than significant**.

(e) Airstrip and Airport Noise

The Project and related projects are located in Hollywood. As discussed above, the nearest airport is the Bob Hope Airport located approximately 6.5 miles north of the Project Site. Since the Project and related projects would not be located within an airport land use plan, within two miles of a public airport or public use airport, or within the vicinity of a private airstrip, no cumulative impact with respect to airstrip and airport noise would occur.

(2) Mitigation Measures

(a) Construction Noise

As evaluated above, there would potentially be cumulative noise impacts at the nearby sensitive uses (e.g., residential and hotel uses) located in proximity to the Project Site and Related Project No. 75 and Related Project No. 92, in the event of concurrent construction activities. Implementation of Mitigation Measure NOI-MM-1 provided above would reduce the Project's construction noise levels to the extent feasible. In addition, mitigation measures for the related projects would also reduce the construction-related noise. However, even with these mitigation measures cumulative noise impacts would continue to occur and there are no other physical mitigation measures that would be feasible. As such, cumulative on-site noise impacts from on-site construction would be significant.

As analyzed above, cumulative noise impacts associated with off-site construction trucks from the Project and other related projects could occur. Conventional mitigation measures, such as providing temporary noise barrier walls to reduce the off-site construction truck traffic noise impacts, would not be feasible as the barriers would obstruct the access and visibility to the properties along the anticipated haul route. There are no other feasible mitigation measures to reduce the temporary significant noise impacts associated with the cumulative off-site construction trucks.

(b) Construction Vibration

As analyzed above, cumulative vibration impacts with respect to building damage associated with on-site construction equipment and off-site construction trucks would be less than significant. The vibration levels generated by off-site construction trucks would result in significant vibration impacts associated with human annoyance at sensitive receptors along the anticipated haul route under both Project and cumulative conditions. However, there are no feasible mitigation measures that would reduce these temporary vibration impacts associated with human annoyance from off-site construction trucks.

(c) Operational Noise

As discussed above, operation of the Project would not result in a significant noise impacts. Therefore, no mitigation measures are required.

(d) Operational Vibration

As discussed above, operation of the Project would not result in a significant cumulative vibration impacts. Therefore, no mitigation measures are required.

(e) Airstrip and Airport Noise

No cumulative impact with respect to airstrip and airport noise would occur. Therefore, no mitigation measures are required.

(3) Level of Significance After Mitigation

(a) Construction Noise

(i) On-Site Construction Noise

Implementation of Mitigation Measure NOI-MM-1 provided above would reduce the cumulative construction noise levels to the extent feasible. However, there are no other feasible mitigation measures that could be implemented to further reduce the temporary noise impacts. **Therefore, *cumulative* construction noise impacts associated with on-site noise sources would remain significant and unavoidable, even with implementation of mitigation.**

(ii) Off-Site Construction Noise

Cumulative noise due to construction truck traffic from the Project and other related projects would likely exceed the ambient noise levels along the haul route by 5 dBA. As discussed above, there are no feasible mitigation measures to reduce the temporary significant noise impacts associated with the cumulative off-site construction trucks. **As such, cumulative noise impacts from off-site construction would be significant and unavoidable.**

(b) Construction Vibration

(i) On-Site Construction Vibration

Cumulative on-site construction vibration impacts would be less than significant without mitigation**.**

(ii) Off-Site Construction Vibration

Cumulative off-site vibration impacts with respect to building damage would be less than significant without mitigation.

Cumulative vibration levels from construction trucks would exceed the significance criteria for human annoyance at sensitive receptors (e.g., residential and hotel uses) along Highland Avenue, Cahuenga Boulevard, and Hollywood Boulevard. As noted above, in order to reduce this impact to a less than significant level, construction trucks would need to be a minimum of 25 feet from the sensitive receptors, which is not feasible, or an

alternative haul route would be needed. No haul route between the Project Site and US-101 without similar sensitive receptors is available. Therefore, there are no feasible mitigation measures that would reduce the potential vibration human annoyance impacts. **Therefore, cumulative vibration impacts from off-site construction with respect to human annoyance would remain significant and unavoidable. Impacts would be temporary, intermittent, and limited to during daytime hours when the haul truck is traveling within 20 feet of a sensitive receptor.**

(c) Operational Noise

Cumulative impacts with regard to operational noise would be less than significant without mitigation.

(d) Operational Vibration

Cumulative impacts with regard to operational vibration would be less than significant without mitigation.