IV. Environmental Impact Analysis

H. Noise

1. Introduction

This section of the Draft EIR analyzes the potential noise and vibration impacts that would result from the Project. Specifically, the analysis describes the existing noise environment in the Project Site's vicinity, 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 G to 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.H-1 on page IV.H-2.

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

Table IV.H-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 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 (City), 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 that of a steady sound are the same if they deliver the same

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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.*

amount of energy to the receptor's ear during exposure. L_{eq} for one-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]

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

(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

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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 G to this Draft EIR and in this section of the Draft EIR in terms peak particle velocity level in the unit of inches per second.*

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 one micro-inch per second).[10] Ground-borne vibration generated by man-made activities (e.g., road traffic, construction operations) typically weakens with greater horizontal distance away from the source of the vibration.

b. Regulatory Framework

Various government agencies have established noise regulations and policies to protect citizens from adverse effects associated with noise and ground-borne vibration. The City 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) Federal

Under the authority of the Noise Control Act of 1972, the United States Environmental Protection Agency (USEPA) established noise emission criteria and testing methods published in Parts 201 through 205 of Title 40 of the Code of Federal Regulations that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, the USEPA issued guidance levels for the protection of public health and welfare in residential land use areas[11] of an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA. These guidance levels are not considered as standards or regulations and were developed without consideration of technical or economic feasibility. There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the Project.

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

[11] *United States Environmental Protection Agency, EPA Identifies Noise Levels Affecting Health and Welfare, April 1974, https://archive.epa.gov/epa/aboutepa/epa-identifies-noise-levels-affecting-healthand-welfare.html. Accessed August 2017.*

(2) State

The State of California has adopted noise compatibility guidelines for general land use planning (refer to Table IV.H-2 on page IV.H-7) and used by the City for Noise Compatible Land Use guidelines. 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.[12] In addition, the 2016 California Building Standards Code requires that where the ambient noise environment exceeds 65 dBA CNEL, measures should be implemented to achieve an interior noise environment of a residential use (habitable room) not to exceed 45 dBA CNEL. The 2016 California Green Building Standards Code also 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 of a non-residential use that would not exceed 50 dBA $L_{eq\ (1\text{-}hour)}$.

(3) 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, 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 and policies are described further below.

(a) Noise Element

The overall purpose of the Noise Element of the General Plan (Noise Element) 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 are applicable to the Project:

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

Table IV.H-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).

- 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.H-2 on page IV.H-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 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 (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.H-3 on page IV.H-9.

To account for people's increased tolerance for short-duration noise events, the Noise Regulations provide an additional 5-dBA allowance beyond the 5 dBA above ambient for noise sources occurring more than five 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 five 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]

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[13] *Los Angeles Municipal Code, Chapter XI, Section 112.02.*

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

Table IV.H-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.

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.

LAMC Section 112.01 prohibits the use or operation of a machine or device for the producing, reproducing or amplification of the human voice, music, or any other sound that causes the ambient noise level on the premises of any occupied property to be exceeded by more than 5 dBA.

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

[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.*

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 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.

(4) Ground-Borne Vibration

The City 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.H-4 on page IV.H-11 provides the FTA vibration criteria applicable to construction activities. According to FTA guidelines, a vibration criterion of 0.20 PPV should be considered as the significant impact level for non-engineered timber and masonry buildings. Structures or buildings constructed of reinforced concrete, steel, or timber, have a vibration damage criterion of 0.50 PPV pursuant to the FTA guidelines.

In addition to the FTA Construction Vibration Impact Criteria for Building Damage, the FTA guidance manual also provides vibration criteria for human annoyance for various uses. These criteria were established primarily for rapid transit (rail) projects and, as indicated in Table IV.H-5 on page IV.H-12, are based on the frequency of vibration events. Specific criteria are provided for three land use categories: (1) Vibration Category 1—High Sensitivity; (2) Vibration Category 2—Residential; and (3) Vibration Category 3—Institutional.

c. Existing Conditions

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

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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.H-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: Federal Transit Administration, Transit Noise and Vibration Impacts Assessment, Table 12-3, 2006.

along Sunset Boulevard and Gower Street along the northern and western boundaries of the Project Site, respectively, which have high volumes of traffic. Ambient noise sources in the vicinity of the Project Site include traffic, transit, and trucks; commercial 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 (hotels), schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks.[20] Similarly, the Noise Element 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, five 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*

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

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

Table IV.H-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, Transit Noise and Vibration Impacts Assessment, Table 8-1, 2006.

Guide and the General Plan. As discussed below, noise measurements were conducted at the five 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.H-1 on page IV.H-13 and described in Table IV.H-6 on page IV.H-14.

(2) Ambient Noise Levels

To establish baseline noise conditions, existing ambient noise levels were monitored at five representative receptor locations (identified as R1 to R5) in the vicinity of the Project Site. The baseline noise monitoring program was conducted on April 24, 2018 using a Quest Technologies Model 2900 Integrating/Logging Sound Level Meter.[22] Two 15-minute measurements were conducted at each of the receptor locations during daytime and

[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.*

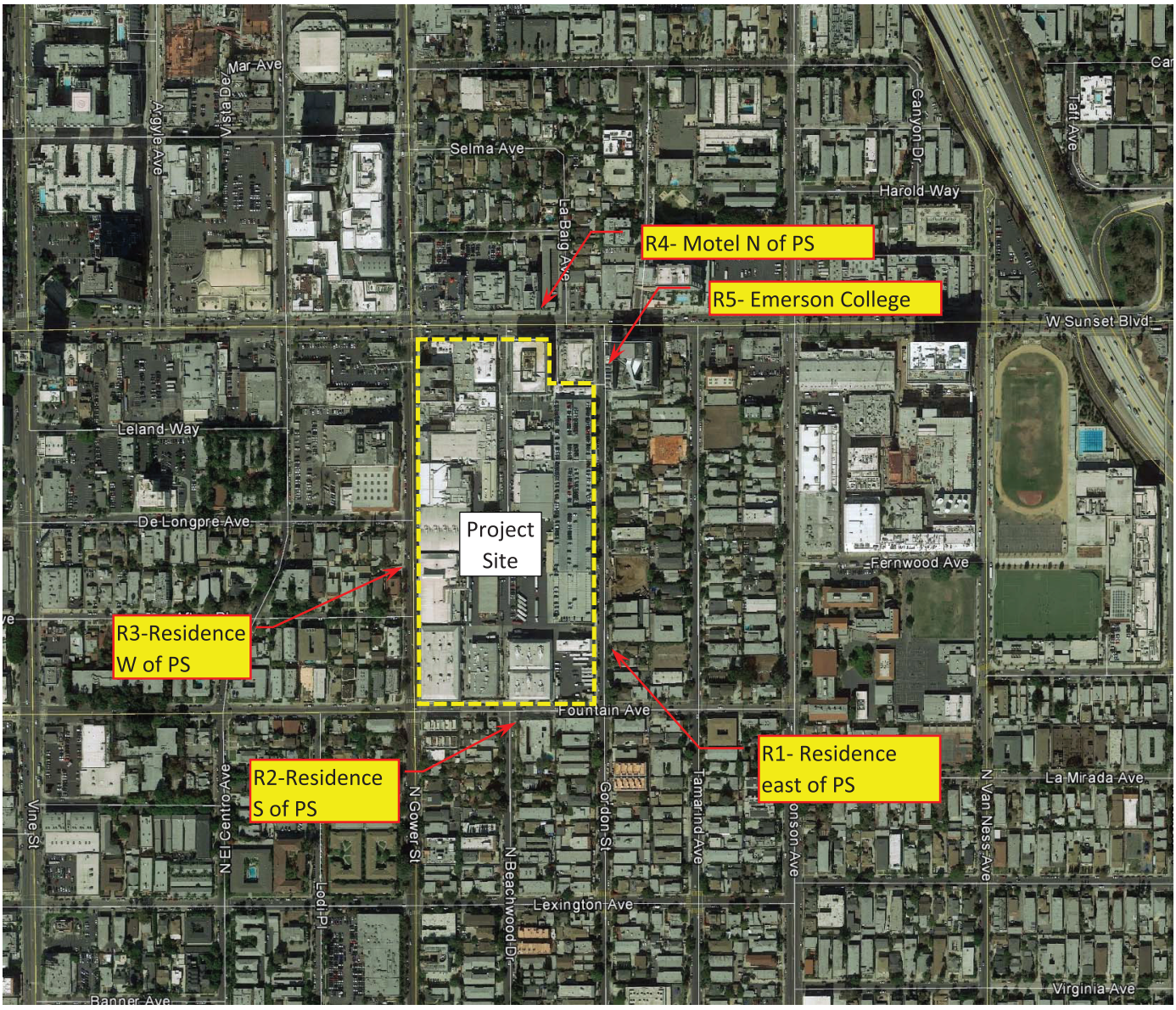

Figure IV.H-1
Noise Measurement Locations

Source: Acoustical Engineering Services, 2018.

Table IV.H-6
Description of Noise Measurement Locations

Receptor Location	Description	Approximate Distance from Measurement Location to Nearest Project Site Boundary[a]	Nearest Noise-Sensitive Land Use(s)
R1	Residential use on east side of Gordon Street east of the Project Site	60 feet	Residential
R2	Residential use on south side of Fountain Avenue south of the Project Site	65 feet	Residential
R3	Residential use on west side of Gower Street west of the Project Site	65 feet	Residential
R4	Motel use (Hollywood Palms Inn & Suites) at the northwest corner of La Baig Avenue and Sunset Boulevard, north of the Project Site	100 feet	Hotel
R5	School use (Emerson College) at the southeast corner of Gordon Street and Sunset Boulevard, east of the Project Site	60 feet	School

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

Source: Acoustical Engineering Services (AES), 2018. See Appendix G to this Draft EIR.

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 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.H-7 on page IV.H-15 provides a summary of the ambient noise measurements conducted at the five 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.H-7, the existing daytime ambient noise levels at the off-site noise receptor locations ranged from 61.1 dBA (L_{eq}) at receptor location R1 to 73.3 dBA (L_{eq}) at receptor location R4. The measured nighttime ambient noise levels ranged from

[23] *LAMC Section 111.01.*

Table IV.H-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	Residential	61.1	56.9	62.8
R2	Residential	66.2	59.8	66.6
R3	Residential	66.2	61.8	67.7
R4	Hotel	73.3	72.0	77.0
R5	School	67.6	63.5	69.3

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

56.9 dBA (L_{eq}) at receptor location R1 to 72.0 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, hotel and school uses, as presented above in Table IV.H-3 on page IV.H-9. Consistent with LAMC procedures, the measured existing ambient noise levels are used as the baseline conditions for the purposes of determining Project impacts.

The existing CNEL levels at the receptor locations ranged from 62.8 dBA (CNEL) at receptor R1 to 77.0 dBA (CNEL) at receptor R4. The existing ambient noise levels at receptor location R1 fall within the conditionally acceptable land use for residential uses (up to 65 dBA CNEL) and within the clearly unacceptable land use category at receptor location R4 for hotel uses (up to 80 dBA CNEL). In addition, based on the measured ambient noise levels surrounding the Project Site, the existing ambient noise levels at the Project Site are within the conditionally acceptable land use category for the proposed uses.

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 J of this Draft EIR. Twenty-six (26) 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.H-8 on page IV.H-17.

Table IV.H-9 on page IV.H-18 provides the calculated CNEL for the 26 analyzed local roadway segments based on existing traffic volumes. As shown therein, the existing CNEL due to surface street traffic volumes ranges from 59.2 dBA CNEL along Afton Place (between Vine Street and Gower Street) to 74.0 dBA CNEL along Sunset Boulevard (between Gower Street and Bronson Avenue). Currently, the existing traffic-related noise levels along the roadway segment of Bronson Avenue, Beachwood Drive, Gordon Street, Tamarind Avenue, De Longpre Avenue, and Afton Place, fall within the conditionally acceptable noise levels for residential uses (i.e., between 55 and 70 dBA CNEL). The existing traffic noise levels along Vine Street, Gower Street, Hollywood Boulevard, Sunset Boulevard, Fountain Avenue, and Santa Monica 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] Trucks and buses typically generate ground-borne vibration velocity levels of around 63 VdB (at 50 feet distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road. Per the FTA, 75 VdB is the dividing line between barely perceptible (with regards to ground vibration) and distinctly perceptible.[25] 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

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

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

Table IV.H-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, 2018. See Appendix G to this Draft EIR.

with irregularities, such as speed bumps and potholes, could reach the perceptible threshold.

Table IV.H-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]
Vine Street					
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	45	72.0	Yes	Normally Unacceptable
Between Sunset Blvd. and Fountain Ave.	Residential, Theater	45	72.5	Yes	Normally Unacceptable
Between Fountain Ave. and Santa Monica Blvd.	Residential, Hotel	45	72.2	Yes	Normally Unacceptable
Gower Street					
Between Hollywood Blvd. and Sunset Blvd.	Residential	35	70.7	Yes	Normally Unacceptable
Between Sunset Blvd. and Fountain Ave.	Residential	35	70.3	Yes	Normally Unacceptable
Between Fountain Ave. and Santa Monica Blvd.	Residential	35	70.3	Yes	Normally Unacceptable
Bronson Avenue					
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	35	68.7	Yes	Conditionally Acceptable
Between Sunset Blvd. and Fountain Ave.	Residential, School	35	68.4	Yes	Conditionally Acceptable
Between Fountain Ave. and Santa Monica Blvd.	Residential, Religious	35	68.1	Yes	Conditionally Acceptable
Beachwood Drive					
Between Fountain Ave. and Santa Monica Blvd.	Residential	30	59.5	Yes	Conditionally Acceptable
Gordon Street					
Between Sunset Boulevard and Fountain Ave.	Residential	30	64.6	Yes	Conditionally Acceptable
Between Fountain Ave. and Santa Monica Blvd.	Residential	30	60.9	Yes	Conditionally Acceptable
Tamarind Avenue					
Between Sunset Blvd. and Fountain Ave.	Residential	30	63.4	Yes	Conditionally Acceptable
Between Fountain Ave. and Santa Monica Blvd.	Residential	30	61.3	Yes	Conditionally Acceptable
Hollywood Boulevard					
Between Vine Street and Gower Street	Residential, Theater	40	71.5	Yes	Normally Unacceptable
Between Gower Street and Bronson Avenue	Hotel, Religious	40	71.4	Yes	Normally Unacceptable

Table IV.H-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]
Sunset Boulevard					
Between Vine Street and Gower Street	Residential	40	73.7	Yes	Normally Unacceptable
Between Gower Street and Gordon Street	Hotel	40	74.0	Yes	Normally Unacceptable
Between Gordon Street and Bronson Avenue	Residential, School	40	74.0	Yes	Normally Unacceptable
De Longpre Avenue					
Between Vine Street and Gower Street	Residential, Hospital	30	63.7	Yes	Conditionally Acceptable
Afton Place					
Between Vine Street and Gower Street	Residential	30	59.2	Yes	Conditionally Acceptable
Fountain Avenue					
Between Vine Street and Gower Street	Residential	30	70.4	Yes	Normally Unacceptable
Between Gower Street and Gordon Street	Residential	30	70.4	Yes	Normally Unacceptable
Between Gordon Street and Bronson Avenue	Residential	30	69.7	Yes	Conditionally Acceptable
Santa Monica Boulevard					
Between Vine Street and Gower Street	Religious, Theater	40	72.8	Yes	Normally Unacceptable
Between Gower Street and Bronson Avenue	School	40	73.0	Yes	Normally Unacceptable

[a] *Detailed calculation worksheets are included in Appendix G to this Draft EIR.*

[b] *Noise compatibility is based on the most stringent land use, per City's land use compatibility as provided in Table IV.H-2 on page IV.H-7.*

Source: AES, 2018.

3. Project Impacts

a. Thresholds of Significance

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;

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

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, expose people residing or working in the project area to excessive noise levels.

For this analysis, the Appendix G Thresholds listed above are relied upon. The analysis utilizes factors and considerations identified in the City's 2006 L.A. CEQA Thresholds Guide, as appropriate, to assist in answering the Appendix G Threshold questions.

The L.A. CEQA Thresholds Guide identifies the following to evaluate noise impacts:

(1) 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, construction of the Project would occur in phases, with buildout in 2028. 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 L_{eq}) or more at a noise-sensitive use.

(2) Operational Noise

Based on the L.A. CEQA Thresholds Guide and the LAMC, 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 (refer to Table IV.H-2 on page IV.H-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 for noise levels remaining within the "conditionally acceptable" or "normally acceptable"; 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, per the LAMC Noise Regulations (Sections 112.01, 112.02, 114.02).

The threshold of significance 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., vehicles traveling on public roadways). Therefore, based on the L.A. CEQA Thresholds Guide, the significance threshold 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. The threshold of 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.

(3) FTA Ground-Borne Vibration Standards and Guidelines

The City 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 the following were to occur (applicable to frequent events; 70 or more vibration events per day):

- Project construction activities cause ground-borne vibration levels to exceed 72 VdB at off-site sensitive uses, including residential, hotel and theater uses.

(4) 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.

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)."[26] The ambient noise levels at surrounding sensitive receptor locations were based on field measurement data (see Table IV.H-7 on page IV.H-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 J to this Draft EIR. The TNM noise model calculates the hourly L_{eq} noise levels generated by construction-related haul trucks. Noise impacts were determined by comparing the predicted noise level with that of the existing ambient noise levels along the Project's anticipated haul route(s).

(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), 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 8.0) computer noise prediction

[26] *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).*

model.[27] SoundPLAN is a 3-dimensional acoustic ray tracing program for outdoor noise propagation prediction.

(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 J of this Draft EIR. Roadway noise levels were calculated for various roadway segments based on the intersection traffic volumes. 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 above.

(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 (HVAC) equipment, mounted at the roof level or within the building, 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 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.

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

c. Project Design Features

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

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

Project Design Feature NOI-PDF-2: All outdoor mounted mechanical equipment shall be screened from off-site noise-sensitive receptors. The equipment screen shall be impermeable (i.e., solid material with minimum weight of 2 pounds per square feet) and break the line-of-sight from the equipment to the 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 85 dBA (L_{eq-1hr}) at a distance of 25 feet from the amplified speaker sound systems at Level 1 plaza, courtyard and paseo, and upper levels courtyard and terraces, and 90 dBA (L_{eq-1hr}) at Level 1 central plaza and Levels 6, 16 and 18 roof gardens. A qualified noise consultant shall provide written documentation that the design of the system complies with these maximum noise levels. The documentation shall be submitted during plan check for compliance.

Project Design Feature NOI-PDF-4: All loading docks shall be visually screened from off-site noise-sensitive receptors.

Project Design Feature NOI-PDF-5: Project construction shall not include the use of driven (impact) pile systems.

d. Analysis of Project Impacts

Threshold (a): Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

(1) Impact Analysis

(a) Construction Noise

As discussed above, Project construction is anticipated to occur in phases and be completed in 2028. 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 buildings and 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 280,000 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 would access US-101 via Sunset Boulevard, Gordon Street, Fountain Avenue and Gordon Street. Fountain Avenue and Gower would only be used for trucks leaving the Project Site.

(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.

As provided in Project Design Feature NOI-PDF-1 above, construction equipment are assumed to have proper noise muffling devices per the manufacturer's standards. 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.H-10 on page IV.H-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

Table IV.H-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	10	75
Generator	50	81
Grader	40	85
Dump/Haul Truck	40	76
Excavator	40	81
Paver	50	77
Pump	50	81
Roller	20	80
Rubber Tired Loader	40	79
Tractor/Loader/Backhoe	40	80
Delivery Truck	40	74
Welders	40	74

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

construction phase.[28] These noise levels are typically associated with multiple pieces of equipment operating on part power, simultaneously.

Table IV.H-11 on page IV.H-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

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

Table IV.H-11
Construction 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				
Construction Phase 1—Building A and Parking Structure									
R1	60	83.6	80.7	80.6	79.2	61.1	66.1	17.5	**Yes**
R2	65	83.0	80.1	80.1	78.6	66.2	71.2	11.8	**Yes**
R3	500	57.1	49.8	50.2	48.6	66.2	71.2	0.0	No
R4	185	75.2	72.5	72.9	71.1	73.3	78.3	0.0	No
R5	385	54.5	51.9	52.3	50.8	67.6	72.6	0.0	No
Construction Phase 2—Below Grade Parking									
R1	200	—[b]	71.9	72.3	70.4	61.1	66.1	6.0	**Yes**
R2	280	—[b]	59.3	59.8	57.9	66.2	71.2	0.0	No
R3	385	—[b]	51.9	52.3	50.7	66.2	71.2	0.0	No
R4	770	—[b]	46.2	46.7	45.0	73.3	78.3	0.0	No
R5	610	—[b]	48.2	48.6	47.1	67.6	72.6	0.0	No
Construction Phase 3—Buildings C and D									
R1	395	—[b]	51.4	52.1	50.3	61.1	66.1	0.0	No
R2	330	—[b]	62.8	63.5	61.7	66.2	71.2	0.0	No
R3	275	—[b]	54.3	54.9	53.4	66.2	71.2	0.0	No
R4	615	—[b]	47.8	48.5	46.8	73.3	78.3	0.0	No
R5	550	—[b]	48.7	49.5	47.9	67.6	72.6	0.0	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-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.*

[b] *Demolition for Phase 2 and Phase 3 would occur during Phase 1.*

Source: AES, 2020. See Appendix G to this Draft EIR.

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 threshold of significance 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.H-11 on page IV.H-28, 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.H-11, the estimated on-site noise levels during all phases of Project construction would be below the significance threshold at off-site receptor locations R3, R4, and R5. The estimated construction-related noise at receptors R1 and R2 would exceed the significance threshold prior to implementation of mitigation measures by 17.5 dBA and 11.8 dBA during Phase 1, respectively. The estimated construction-related noise at receptor R1 would exceed the significance threshold prior to implementation of mitigation measures by 6.0 dBA during Phase 2 construction.

There is potential for overlapping construction activities during Phase 1 and Phase 2 construction. The potential noise impacts from the overlapping construction activities are provided in Table IV.H-12 on page IV.H-30. As indicated therein, the estimated overlapping construction-related noise at receptors R3 through R5 would be below the significance threshold. However, the overlapping construction activities would exceed the significance threshold at receptors R1 and R2 by 13.9 dBA and 7.5 dBA, respectively. **Therefore, temporary noise impacts associated with the Project's on-site construction activities would be significant, and mitigation measures are required.**

(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

Table IV.H-12
Construction Noise Impacts—Overlapping Construction

Off-Site Receptor Location	Approximate Distance from Receptor to Project Construction Area (feet)	Estimated Construction Noise Levels Due to Overlapping Construction Phases[a] (L_{eq} (dBA))			Existing Daytime Ambient Noise Levels (L_{eq} (dBA))	Significance Criteria (L_{eq} (dBA))[b]	Maximum Noise Exceedance Above the Criteria (L_{eq} (dBA))	Sig. Impact?
		Overlapping 1	Overlapping 2	Overlapping 2				
R1	60	79.9	80.0	79.7	61.1	66.1	13.9	**Yes**
R2	65	78.7	78.7	78.6	66.2	71.2	7.5	**Yes**
R3	385	53.6	53.8	52.8	66.2	71.2	0.0	No
R4	185	71.1	71.1	71.1	73.3	78.3	0.0	No
R5	385	52.7	52.8	52.3	67.6	72.6	0.0	No

[b] *Overlapping Construction Phases:*

- *Overlapping 1: Phase 1 Building Construction and Phase 2 Grading.*
- *Overlapping 2: Phase 1 Building Construction and Phase 2 Mat Foundation.*
- *Overlapping 3: Phase 1 Building Construction and Phase 2 Building Construction*

[b] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-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 G to this Draft EIR.

between the Project Site and US-101 via Sunset Boulevard, Gordon Street, Fountain Avenue and Gower Street.

The peak period of construction with the highest number of construction trucks would occur during the concrete pour for Phase 1 and Phase 2 mat foundations.[29] The concrete pour for the mat foundations would be limited to approximately three or four days at each location (Building A, Below Grade Parking, and Buildings C and D) and would occur during the daytime construction hours of 7:00 A.M. to 7:00 P.M. During this phase, there would be a maximum of 574 construction trucks coming to and leaving the Project Site (equal to 1,148 total trips) per day. In addition, there would be a total of 60 worker trips to and from the Project Site on a daily basis during the mat foundation phase. There would also be construction haul/delivery truck trips (up to 315 truck trips per day) during other construction phases of the Project, but such trips would be less than the 1,148 truck trips under the mat foundation phase.

Table IV.H-13 on page IV.H-32 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(s) for the various construction phases. As indicated in Table IV.H-13, the noise levels generated by construction trucks during all stages of Project construction would be below the existing daytime ambient noise levels along Sunset Boulevard, Fountain Avenue and Gower Street. However, the estimated noise from project construction trucks would exceed the 5-dBA significance criteria for noise sensitive receptor (receptor location R1) along Gordon Street by up to 7.3 dBA during the grading, mat foundation, and building construction phases.

As described above, there is a potential for overlapping construction of Phase 1 and Phase 2. Therefore, the off-site construction-related traffic noise impacts associated with the overlapping construction activities are provided in Table IV.H-14 on page IV.H-33. As indicated in Table IV.H-14, the construction-related traffic with overlapping construction activities would be below the significance threshold along Sunset Boulevard and Gower Street; however, the significance threshold would be exceeded by up to 0.1 dBA along Fountain Avenue and up to 7.9 dBA along Gordon Street. **Therefore, temporary noise impacts from off-site construction traffic would be significant, and mitigation measures are required.**

[29] *Gibson Transportation Consulting, Inc., "Transportation Impact Study For The Sunset Gower Studios Preservation and Enhancement Plan Hollywood, California," October 2018. See Appendix J of this Draft EIR.*

Table IV.H-13
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 Routes (L_{eq} (dBA)) (Project/Project + Ambient)			
			Sunset Boulevard	Gordon Street	Fountain Avenue	Gower Street
Demolition	80/60	10/24	62.3/73.6	63.7/65.6	59.7/67.1	59.1/67.0
Grading - All Phases	314/60	40/24	68.0/74.4	69.4/70.0	65.1/68.7	64.5/68.4
Foundation—Phase 2A	832/60	70/24	70.4/75.1	71.8/72.2	67.4/69.9	66.8/69.5
Foundation—Phase 2B	1,148/60	96/24	71.7/75.6	73.1/73.4	68.8/70.7	68.1/70.3
Foundation—Phase 3	918/60	77/24	70.8/75.2	72.2/72.5	67.9/70.1	67.2/69.7
Building Construction—All Phases	60/400	8/160	63.6/73.7	65.0/66.5	62.3/67.7	61.7/67.5
Existing Ambient Noise Levels Along the Project Haul Routes, L_{eq} (dBA)[b]			73.3	61.1	66.2	66.2
Significance Criteria, L_{eq} (dBA)[c]			78.3	66.1	71.2	71.2
Maximum Noise Exceedance Above the Criteria, L_{eq} (dBA)[d]			0.0	7.3	0.0	0.0
Significant Impact?			**No**	**Yes**	**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, grading and building construction phases and over a 12-hour work day for the mat foundation phase. For worker vehicles, the number of hourly trips is based on 40 percent of the worker trips that would arrive in one hour to represent a conservative analysis.*

[b] *Ambient noise levels along the haul routes are based on measurements at nearby receptor locations (i.e., receptor R1 along Gordon Street, receptor R2 along Fountain Avenue, R3 along Gower Street, and R4 along Sunset Boulevard).*

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

[d] *Exceedance = Project plus Ambient – Significance Criteria.*

Source: AES, 2020.

Table IV.H-14
Off-Site Construction Haul Truck Noise Levels—Overlapping Construction

Overlapping Construction	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 Routes (L_{eq} (dBA)) (Project/Project + Ambient)			
			Sunset Boulevard	Gordon Street	Fountain Avenue	Gower Street
Phase 1 Building Construction and Phase 2 Grading	374/460	48/184	69.4/74.8	70.8/71.2	66.9/69.6	66.3/69.3
Phase 1 Building Construction and Phase 2 Foundation	1,208/460	104/184	72.4/75.9	73.8/74.0	69.7/71.3	69.0/70.8
Phase 1 Building Construction and Phase 2 Building Construction	120/800	16/320	66.7/74.2	68.0/68.8	65.3/68.8	64.7/68.5
Existing Ambient Noise Levels Along the Project Haul Routes, L_{eq} (dBA)[b]			73.3	61.1	66.2	66.2
Significance Criteria, L_{eq} (dBA)[c]			78.3	66.1	71.2	71.2
Maximum Noise Exceedance Above the Criteria, L_{eq} (dBA)[d]			0.0	7.9	0.1	0.0
Significant Impact?			**No**	**Yes**	**Yes**	**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, grading and building construction phases and over a 12-hour work day for the mat foundation phase. For worker vehicles, the number of hourly trips is based on 40 percent of the worker trips that would arrive in one hour to represent a conservative analysis.*

[b] *Ambient noise levels along the haul routes are based on measurements at nearby receptor locations (i.e., receptor R1 along Gordon Street, receptor R2 along Fountain Avenue, R3 along Gower Street, and R4 along Sunset Boulevard).*

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

[d] *Exceedance = Project plus Ambient - Significance Criteria.*

Source: AES, 2020.

(iii) Concurrent Construction and Operation

Portions of the Project Site would be completed and occupied while construction of the later Project components would be ongoing. Therefore, concurrent construction and operational noise impacts were evaluated. Based on a review of the Project, the reasonably anticipated maximum concurrent noise generation are expected to occur during operation of Building A, Parking Structure, and Subterranean Parking Structure (2024) and construction of Buildings C and D (Construction Phase 3). This development scenario results in the maximum amount of operational activity in terms of square footage developed on the Project Site and resultant daily vehicle trips. Table IV.H-15 on page IV.H-35 presents the estimated concurrent noise levels from on-site construction and operation. As indicated in Table IV.H-15, the estimated maximum concurrent construction and operation would not be below the 5-dBA significance threshold. **Therefore, temporary noise impacts associated with on-site concurrent construction and operation would be less than significant.**

With respect to off-site noise (i.e. construction and operation traffic), the dominate noise would be due to construction truck traffic. The estimated peak period would be during the Phase 3 foundation phase. As indicated in Table IV.H-13 on page IV.H-32, the estimated noise level from off-site construction traffic along Gordon Street, Fountain Avenue, and Gower Street would be 72.2 dBA, 67.9 dBA and 67.2 dBA, respectively. The estimated noise level from the interim Project traffic, including operation of Building A, Parking Structure, Subterranean Parking Structure (2024), and existing on-site operation along Gordon Street, Fountain Avenue, and Gower Street would be 67.7 dBA, 71.1 dBA, and 70.5 dBA, respectively. Thus, the estimated composite off-site traffic (including Project construction, interim Project traffic, and existing ambient) noise level along Gordon Street, Fountain Avenue, and Gower Street, during concurrent Project construction and operation would be approximately 73.8 dBA, 73.7 dBA, and 73.1 dBA, which would exceed the 66.1 dBA significance threshold along Gordon Street and the 71.2 dBA significance threshold along Fountain Avenue and Gower Street. **Therefore, temporary noise impacts from concurrent off-site construction and operation traffic would be significant, and mitigation measures are required.**

(iv) Summary of Construction Noise Impacts

As evaluated above, temporary noise impacts associated with the Project's on- and off-site construction would be significant before implementation of mitigation. Therefore, without mitigation measures, the Project's on- and off-site construction activities would result in the generation of noise levels in excess of standards established by the City.

Table IV.H-15
On-Site Concurrent Construction and Operation Noise Levels

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Project Construction, dBA (L_{eq})	Estimated Noise Levels from Project Operation, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria, dBA (L_{eq})[a]	Exceedance Over Significance Criteria	Significant Impact?
R1	61.1	52.1	51.7	62.0	66.1	0.0	No
R2	66.2	63.5	46.8	68.1	71.2	0.0	No
R3	66.2	54.9	51.3	66.6	71.2	0.0	No
R4	73.3	48.5	62.7	73.7	78.3	0.0	No
R5	67.6	49.5	60.7	68.5	72.6	0.0	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-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 G to this Draft EIR.

(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., plaza, paseo, outdoor courtyards, terraces, and roof level deck), parking facilities, loading dock, and trash compactor; and (b) off-site mobile (roadway traffic) noise.

(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 buildings. Although operation of the mechanical 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 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.H-16 on page IV.H-37 presents the estimated noise levels at the off-site receptor locations from operation of the Project mechanical equipment. As indicated in Table IV.H-16, the estimated noise levels from the mechanical equipment would range from 30.4 dBA (L_{eq}) at receptor location R3 to 39.1 dBA (L_{eq}) at receptor location R5, which would be well below the existing ambient noise levels of 61.8 dBA (L_{eq}) and 63.5 dBA (L_{eq}) at receptor locations R3 and R5, respectively. As such, the estimated noise levels at all off-site receptor locations would be below the significance threshold 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

The Project would include various outdoor open space areas, including a paseo, courtyards and plazas at the ground level; courtyards, roof gardens and terraces at the upper levels. 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

Table IV.H-16
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	56.9	32.3	56.9	61.9	0.0	No
R2	59.8	36.2	59.8	64.8	0.0	No
R3	61.8	30.4	61.8	66.8	0.0	No
R4	72.0	35.1	72.0	77.0	0.0	No
R5	63.5	39.1	63.5	68.5	0.0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-7 on page IV.H-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, 2018. See Appendix G to this Draft EIR.

for analyzing potential noise impacts from people gathering at the outdoor spaces.[30] 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 8:00 A.M. to 12:00 A.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 90 dBA L_{eq} as indicated in Table IV.H-17 on page IV.H-38, 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.H-17 presents the anticipated number of people at each of the outdoor spaces and the Project's maximum amplified sound levels.

Table IV.H-18 on page IV.H-39 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

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

Table IV.H-17
Outdoor Use Analysis Assumptions

Building	Outdoor Space	Estimated Total Number of People[a]	Amplified Sound System Levels, dBA (L_{eq})
Building A	Level 1 Plaza	180	85 dBA at 25 feet
	Level 1 Central Plaza	1,433	90 dBA at 25 feet
	Level 1 Paseo	500	85 dBA at 25 feet
	Levels 2, 4 and 6 Terraces (64 people at each terrace)	192	—
	Levels 3, 5, 9, 11, 13, 15 and 17 Terraces (49 people at each terrace)	535	—
	Level 7 Terrace	120	—
	Level 8 Terrace	86	—
	Level 10 Terraces	528	85 dBA at 25 feet
	Levels 12, 14 and 16 Terraces (29 people at each terrace)	87	—
	Level 16 Roof Garden	545	90 dBA at 25 feet
	Level 18 Roof Garden	369	90 dBA at 25 feet
Buildings B & C	Level 1—Courtyard	171	85 dBA at 25 feet
	Level 2—Terrace	80	—
	Level 3—Terraces	212	—
	Level 4—Terraces	325	—
	Level 5—Terrace	346	—
	Level 6—Terrace	158	—
	Level 6—Roof Garden	872	90 dBA at 25 feet

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

Source: Gensler, 2018.

Table IV.H-18 on page IV.H-39, the estimated noise levels from the outdoor spaces would range from 42.8 dBA (L_{eq}) at receptor R2 to 62.8 dBA (L_{eq}) at receptor R4 and would be below the 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 provide 1,335 new parking spaces, with up to 525 spaces within a new parking structure with six above-grade levels and three subterranean parking levels (located at the southeast corner of the Project Site), up to 531 spaces within three subterranean parking levels below

Table IV.H-18
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	56.9	47.7	57.4	61.9	0.0	No
R2	59.8	42.8	59.9	64.8	0.0	No
R3	61.8	58.8	63.6	66.8	0.0	No
R4	72.0	62.8	72.5	77.0	0.0	No
R5	63.5	60.8	65.4	68.5	0.0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-7 on page IV.H-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, 2018. See Appendix G to this Draft EIR.

the existing basecamp and up to 279 spaces within three subterranean parking levels below Building A. 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 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 above-grade parking levels would be located at the southeast corner of the Project Site, would be shielded to sensitive receptors to the north and west (by the existing buildings). Table IV.H-19 on page IV.H-40 presents the estimated noise levels from the above-grade parking levels at the off-site receptor locations. As indicated in Table IV.H-19 on page IV.H-40, the estimated noise levels from the Project parking garage range from 20.4 dBA (L_{eq}) at receptor location R4 to 49.9 dBA (L_{eq}) at receptor location R1, which would be well 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 Area

The Project would include a loading/recycling area at the south end of Building A. Noise sources associated with the loading/recycling 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

Table IV.H-19
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	56.9	49.9	57.7	61.9	0.0	No
R2	59.8	45.8	60.0	64.8	0.0	No
R3	61.8	24.2	61.8	66.8	0.0	No
R4	72.0	20.4	72.0	77.0	0.0	No
R5	63.5	33.3	63.5	68.5	0.0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-7 on page IV.H-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, 2018. See Appendix G to this Draft EIR.

66 dBA (L_{eq}), respectively, at a distance of 50 feet.[31] As provided above in Project Design Feature NOI-PDF-4, all loading docks would be screened from off-site noise-sensitive receptors. The loading/recycling area would be located within the center of the studio campus and would also be shielded to the off-site sensitive receptors by the existing and proposed buildings. Table IV.H-20 on page IV.H-41 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.H-20, the estimated noise from the loading dock and trash compactor ranges from 28.8 dBA (L_{eq}) at receptor location R4 to 36.1 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.**

(ii) Off-Site Mobile Noise Sources

Future Plus Project

Future roadway noise levels were calculated along 26 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 J to this Draft EIR. As discussed in the Traffic Study, the Project is expected to generate a net increase of 4,110 daily trips. As such, Project-related traffic would increase the existing

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

Table IV.H-20
Estimated Noise Levels from Loading Dock

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	61.1	33.4	61.1	66.1	0.0	No
R2	66.2	31.3	66.2	71.2	0.0	No
R3	66.2	36.1	66.2	71.2	0.0	No
R4	73.3	28.8	73.3	78.3	0.0	No
R5	67.6	30.3	67.6	72.6	0.0	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-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, 2018. See Appendix G to this Draft EIR.

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.H-21 on page IV.H-42 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.H-21, the Project would result in a maximum of a 1.9 dBA (CNEL) increase in traffic noise along the roadway segment Gordon Street (between Sunset Boulevard and Fountain Avenue). At other analyzed roadway segments, the increase in traffic-related noise levels would be less than 0.5 dBA. 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 impacts based on the increase in noise levels due to Project-related traffic compared with the existing baseline traffic noise conditions. As shown in Table IV.H-22 on page IV.H-44, when compared with existing conditions, the Project would result in a maximum of a

Table IV.H-21
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		
Vine Street					
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	72.7	72.7	0.0	No
Between Sunset Blvd. and Fountain Ave.	Residential, Theater	73.2	73.2	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential, Hotel	72.9	73.0	0.1	No
Gower Street					
Between Hollywood Blvd. and Sunset Blvd.	Residential	71.6	71.7	0.1	No
Between Sunset Blvd. and Fountain Ave.	Residential	71.0	71.0	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	71.0	71.1	0.1	No
Bronson Avenue					
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	69.6	69.8	0.2	No
Between Sunset Blvd. and Fountain Ave.	Residential, School	68.8	68.8	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential, Religious	68.4	68.7	0.3	No
Beachwood Drive					
Between Fountain Ave. and Santa Monica Blvd.	Residential	59.6	59.6	0.0	No
Gordon Street					
Between Sunset Boulevard and Fountain Ave.	Residential	64.6	66.5	1.9	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	61.0	61.4	0.4	No
Tamarind Avenue					
Between Sunset Blvd. and Fountain Ave.	Residential	63.4	63.4	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	61.4	61.4	0.0	No
Hollywood Boulevard					
Between Vine Street and Gower Street	Residential, Theater	73.1	73.1	0.0	No
Between Gower Street and Bronson Avenue	Hotel, Religious	73.1	73.1	0.0	No
Sunset Boulevard					

Table IV.H-21 (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		
Between Vine Street and Gower Street	Residential	75.2	75.3	0.1	No
Between Gower Street and Gordon Street	Hotel	75.4	75.5	0.1	No
Between Gordon Street and Bronson Avenue	Residential, School	75.4	75.6	0.2	No
De Longpre Avenue					
Between Vine Street and Gower Street	Residential, Hospital	63.8	63.8	0.0	No
Afton Place					
Between Vine Street and Gower Street	Residential	59.2	59.2	0.0	No
Fountain Avenue					
Between Vine Street and Gower Street	Residential	70.5	70.9	0.4	No
Between Gower Street and Gordon Street	Residential	70.6	71.0	0.4	No
Between Gordon Street and Bronson Avenue	Residential	69.9	70.2	0.3	No
Santa Monica Boulevard					
Between Vine Street and Gower Street	Religious, Theater	74.0	74.0	0.0	No
Between Gower Street and Bronson Avenue	School	74.0	74.0	0.0	No

[a] *Detailed calculation worksheets are included in Appendix G to this Draft EIR.*

Source: AES, 2018.

Table IV.H-22
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		
Vine Street					
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	72.0	72.1	0.1	No
Between Sunset Blvd. and Fountain Ave.	Residential, Theater	72.5	72.5	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential, Hotel	72.2	72.3	0.1	No
Gower Street					
Between Hollywood Blvd. and Sunset Blvd.	Residential	70.7	70.7	0.0	No
Between Sunset Blvd. and Fountain Ave.	Residential	70.3	70.3	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	70.3	70.4	0.1	No
Bronson Avenue					
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	68.7	68.9	0.2	No
Between Sunset Blvd. and Fountain Ave.	Residential, School	68.4	68.4	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential, Religious	68.1	68.4	0.3	No
Beachwood Drive					
Between Fountain Ave. and Santa Monica Blvd.	Residential	59.5	59.5	0.0	No
Gordon Street					
Between Sunset Boulevard and Fountain Ave.	Residential	64.6	66.4	1.8	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	60.9	61.3	0.4	No
Tamarind Avenue					
Between Sunset Blvd. and Fountain Ave.	Residential	63.4	63.4	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	61.3	61.3	0.0	No
Hollywood Boulevard					
Between Vine Street and Gower Street	Residential, Theater	71.5	71.5	0.0	No
Between Gower Street and Bronson Avenue	Hotel, Religious	71.4	71.4	0.0	No

Table IV.H-22 (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		
Sunset Boulevard					
Between Vine Street and Gower Street	Residential	73.7	73.9	0.2	No
Between Gower Street and Gordon Street	Hotel	74.0	74.2	0.2	No
Between Gordon Street and Bronson Avenue	Residential, School	74.0	74.2	0.2	No
De Longpre Avenue					
Between Vine Street and Gower Street	Residential, Hospital	63.7	63.7	0.0	No
Afton Place					
Between Vine Street and Gower Street	Residential	59.2	59.2	0.0	No
Fountain Avenue					
Between Vine Street and Gower Street	Residential	70.4	70.7	0.3	No
Between Gower Street and Gordon Street	Residential	70.4	70.8	0.4	No
Between Gordon Street and Bronson Avenue	Residential	69.7	70.0	0.3	No
Santa Monica Boulevard					
Between Vine Street and Gower Street	Religious, Theater	72.8	72.8	0.0	No
Between Gower Street and Bronson Avenue	School	73.0	73.0	0.0	No

[a] *Detailed calculation worksheets are included in Appendix G to this Draft EIR.*

Source: AES, 2018.

1.8-dBA (CNEL) increase in traffic noise along the roadway segment Gordon Street (between Sunset Boulevard and Fountain Avenue). At other analyzed roadway segments, the increase in traffic-related noise levels would be 0.4 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.**

(iii) 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-related 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.H-23 on page IV.H-47 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.H-23, the Project would result in an increase in composite noise levels ranging from 0.4 dBA at receptor location R4 to 1.5 dBA at receptor location R5. The composite noise levels from Project operation at the off-site receptor locations would be below the 3-dBA significance criteria (applicable to receptor locations R4 and R5) as the composite (Project plus ambient) noise level falls within the normally unacceptable (70 to 75 CNEL) and clearly unacceptable (greater than 75 CNEL) land use categories and the 5-dBA significance criteria (applicable to receptor locations R1, R2 and R3) as the composite noise levels fall within the conditionally acceptable (60 to 70 CNEL) land use category. In addition, the Project is not anticipated to include any new production beyond what is currently occurring within the Project Site. Noise levels generated by filming within the sound stages would be contained with the sound insulated sound stages. Noise levels associated with outdoor filming (on rare occasions) would be shielded to the off-site noise sensitive uses by the buildings at the perimeter of the Project Site. Nevertheless, noise levels associated with the existing studio production would be similar to the existing conditions and would not result in an increase as related to the Project. **As such, composite noise level impacts due to Project operations would be less than significant and the Project would not result in a substantial permanent increase in ambient noise levels in the vicinity of the Project Site above existing levels without the Project.**

Table IV.H-23
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 Criteria[a] (CNEL (dBA))	Sig. Impact?
		Traffic	Mechanical	Parking	Loading/ Trash Compactor	Outdoor Spaces					
R1	62.8	50.7	39.0	56.6	30.6	50.0	58.3	64.1	1.3	67.8	No
R2	66.6	60.2	42.9	52.5	28.5	45.1	61.1	67.7	1.1	71.6	No
R3	67.7	54.0	37.1	30.9	33.3	61.1	61.9	68.7	1.0	72.7	No
R4	77.0	60.7	41.8	27.1	26.0	65.1	66.4	77.4	0.4	80.0	No
R5	69.3	61.7	45.8	40.0	27.5	63.1	65.5	70.8	1.5	72.3	No

[a] *Significance criteria are equivalent to the existing ambient plus 3 dBA if the estimated noise levels (ambient plus Project) fall within the "normally unacceptable" or "clearly unacceptable" land use categories or ambient plus 5 dBA if the estimated noise levels fall within the "normally acceptable" or "conditionally acceptable" land use categories, per the City of Los Angeles Noise Element. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

Source: AES, 2018. See Appendix G to this Draft EIR.

(iv) Summary of Operational Noise Impacts

Overall, Project operations would not result in the 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

(a) Construction

Mitigation Measure NOI-MM-1: A temporary and impermeable sound barrier shall be erected, during Phase 1 and Phase 2 construction, 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 eastern property line of the Project Site between the construction areas and the residential uses on the east side of Gordon Street east of the Project Site (receptor R1). The temporary sound barrier shall be designed to provide a minimum 15-dBA noise reduction at the ground level of receptor R1.
- Along the southern property line of the Project Site between the construction areas and residential use on Fountain Avenue south of the Project Site (receptor R2). The temporary sound barrier shall be designed to provide a minimum 12-dBA noise reduction at the ground level of receptor R2.

As analyzed above, noise impacts associated with off-site construction trucks from the Project and with 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 access and visibility to the properties, as well as obtaining permission on private properties to install noise barriers along the anticipated haul routes. There are no other feasible mitigation measures to reduce the temporary significant noise impacts associated with the cumulative off-site construction trucks.

(b) Operation

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

(3) Level of Significance After Mitigation

(a) On-Site Construction Noise

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 a minimum 15 dBA at the residential use on Gordon Street east of the Project Site (receptor location R1) and by a minimum 12 dBA at the residential use on Fountain Avenue south of the Project Site (receptor location R2). The estimated construction-related noise levels at off-site sensitive receptor location R2 would be reduced to below a level of significance with implementation of Mitigation Measure NOI-MM-1. With the implementation of Mitigation Measured NOI MM-1, the construction-related noise at receptor location R1 would still exceed the significance threshold by 2.5 dBA. Therefore, construction noise impacts associated with on-site noise sources would be significant and unavoidable.

(b) Off-Site Construction Noise

As discussed above, there are no feasible mitigation measures to reduce the temporary significant noise impacts associated with the off-site construction trucks. As such, Project-level noise impacts from off-site construction would be significant and unavoidable.

(c) Operation

Project-level impacts with regard to operational noise would be less than significant without mitigation.

Threshold (b): Would the Project result in the generation of excessive groundborne vibration or groundborne 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.H-24 on page IV.H-51 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-5 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.C, Cultural Resources, of this Draft EIR, there are historic resources located on the Project Site. As such, 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 the on-site historic structures, 0.2-PPV significance criteria for non-engineered timber and masonry building (applicable to the single-story residential 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 single-story commercial and retail buildings to the north and south of the Project Site). In addition, the construction vibration analysis for potential building damage due to off-site construction activities (haul trips) conservatively 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.H-24, the estimated vibration velocity levels from construction equipment would be below the building damage significant criteria for the existing off-site building structures north, south, east, and west of the Project Site. However, the estimated vibration levels from the construction equipment would exceed the 0.12 PPV building damage significance criteria at the on-site historic structures located within 20 feet of the construction areas. **Therefore, on-site vibration impacts during construction of the Project, pursuant to the significance threshold for building damage, would be significant before implementation of mitigation measures.**

Table IV.H-24
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	—	—
Single-Story Commercial Building to the North	0.011	0.011	0.010	0.004	<0.001	0.3[d]	No
Single-Story Retail Building the South	0.021	0.021	0.018	0.008	<0.001	0.3[d]	No
Single-Story Residential buildings to the West	0.002	0.002	0.002	0.001	<0.001	0.2[e]	No
Single-Story Residential buildings to the East	0.024	0.024	0.020	0.010	<0.001	0.2[e]	No
On-Site Historic Structures[b]	0.523	0.523	0.446	0.206	0.018	0.12[f]	Yes

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

[b] *On-site historic structures: Buildings 01, 02, 03, 22 and 35, Sound Stages 01, 02, 03, 04, 07, 08, 09, 14, 15 and 16.*

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

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

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

[f] *FTA criteria for building susceptible to vibration damage, such as historic structures.*

Source: FTA, 2006; AES, 2018. See Appendix G to this Draft EIR.

(ii) Human Annoyance Impacts from On-Site Construction

Table IV.H-25 on page IV.H-52 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 and 75 VdB for institutional uses (i.e., School), assuming there are a minimum of 70 vibration events occurring during a typical construction day.

As indicated in Table IV.H-25, 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 locations R1 and R2.

Table IV.H-25
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	76	76	75	68	47	72	Yes
R2	75	75	74	67	46	72	Yes
R3	56	56	55	48	27	72	No
R4	61	61	60	53	32	72	No
R5	51	51	50	43	22	75	No

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

Source: FTA, 2006; AES, 2018. See Appendix G to this Draft EIR.

The estimated ground-borne vibration levels at receptor locations R1 and R2 would be up to 76 VdB and 75 VdB, respectively, and would exceed the 72 VdB significance criteria, during the demo and grading/excavation phases with large construction equipment (i.e., large bulldozer, caisson drilling and on-site loaded trucks) operating within 80 feet on the affected receptors. **Therefore, on-site vibration impacts during construction of the Project, pursuant to the significance threshold for human annoyance, would be significant before implementation of mitigation measures.**

(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 via Sunset Boulevard, Gordon Street, Fountain Avenue, and Gower Street. Heavy-duty construction trucks would generate ground-borne vibration as they travel along the Project's anticipated haul route(s). 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 (0.006 PPV) at a distance of 50 feet from the truck.[32] According to the FTA "[i]t is unusual for vibration from sources such as buses

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

and trucks to be perceptible, even in locations close to major roads." Nonetheless, there are existing buildings along the Project's anticipated haul route(s) 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 G to this Draft EIR. This estimated vibration generated by construction trucks traveling along the anticipated haul route(s) would be well below the most stringent building damage criteria of 0.12 PPV for buildings extremely susceptible to 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. It should be noted that buses and trucks rarely create vibration that exceeds 70 VdB at 50 feet from the receptor unless there are bumps in the road.[33] To provide a conservative analysis, the estimated vibration levels generated by construction trucks traveling along the anticipated haul route(s) were assumed to be within 30 feet of the sensitive use (residential and hotel uses) along Sunset Boulevard, Gordon Street, Fountain Avenue, and Gower Street. As indicated in the noise calculation worksheets included in Appendix G to this Draft EIR, the temporary vibration levels could reach approximately 70 VdB periodically as trucks pass sensitive receptors along the anticipated haul route(s), including; Sunset Boulevard, Gordon Street, Fountain Avenue, and Gower Street. Therefore, the residential and hotel uses along Sunset Boulevard, Gordon Street, Fountain Avenue, and Gower Street (between the Project Site and US-101) would be exposed to ground-borne vibration up to 70 VdB, which would be below the 72-VdB significance criteria from the construction trucks. In addition, the estimated vibration level of 70 VdB would be below the 75-VdB significance criteria applicable to school use. **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(s) would be less than significant.**

(iv) Summary of Construction Vibration Impacts

As discussed above, the estimated vibration levels from on-site construction equipment would be below the building damage significance threshold at the off-site buildings adjacent to the Project Site to the north, south, east and west. However, the estimated vibration levels at the on-site historic building structures would exceed the building damage significance threshold (0.12 PPV), and vibration impacts from on-site construction activities would be significant without implementation of mitigation measures.

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[33] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, Section 7.2.1.*

In addition, vibration impacts from on-site construction activities would be significant pursuant to the significance threshold for human annoyance.

Vibration impacts associated with temporary and intermittent vibration from off-site construction activities (i.e., construction trucks traveling along the anticipated haul route(s)) would be less than significant with respect to both building damage and human annoyance.

(b) Operation

As discussed above, 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. Vibration levels generate by Project vehicle circulation would be similar to existing operations, including deliveries. However, as discussed above, vehicular-induced vibration is unlikely to be perceptible by people. The Project would also include typical commercial-grade stationary mechanical (HVAC) equipment, mounted at the roof level or within the building, 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 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.**

(2) Mitigation Measures

(a) Construction

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. As it relates to potential damage to adjacent buildings from Project construction, the Project would be subject to Section 91.3307 of the LAMC (Protection of Adjoining Property). Specifically, Section 91.3307.1 (Protection Required) states adjoining public and private property shall be protected from damage during construction, remodeling and demolition work. Thus, the following mitigation measure is provided to reduce construction-related vibration impacts to the on-site historic structures:

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 on-site historic buildings adjacent to the Project construction areas to inspect and document the apparent physical condition of the buildings' readily-visible features.

- 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 on-site historic buildings located within 20 feet of the Project construction activities, during demolition and grading/excavation phases. 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 and a regulatory level of 0.12 PPV. The system shall also provide real-time alert when the vibration levels exceed the two preset levels.

- The vibration monitoring program shall be submitted to the Department of Building and Safety (DBS) for review and approval, prior to start of construction activities.
- In the event the warning level (0.10 PPV) is triggered, the contractor shall identify the source of vibration generation 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) 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. The contractor shall identify the source of vibration generation and provide feasible steps to reduce the vibration level. Construction activities may then restart.
- The recorded vibration levels and inspection logs shall be submitted to DBS for verification.

(b) Operation

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

(3) Level of Significance After Mitigation

(a) On-Site Construction Vibration

With implementation of Mitigation Measure NOI-MM-2 and compliance with LAMC Section 91.3307, vibration levels at the exterior of the on-site historic buildings would not exceed the significance criteria of 0.12 PPV for building damage. Therefore, vibration impacts, pursuant to the threshold for building damage, associated with the on-site construction activities would be reduced to a less-than-significant level. However, Project-level vibration impacts from on-site construction activities would still exceed the 72 VdB significance criteria for human annoyance at the residential use east and south of the

Project Site (receptor locations R1 and R2). 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.[34] 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.

(b) 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., Sunset Boulevard, Gordon Street, Fountain Avenue, and Gower Street) would be below the significance criteria for building damage. Therefore, vibration impacts with respect to building damage would be less than significant.

Project-related vibration levels from construction trucks would not exceed the significance criteria for human annoyance at sensitive receptors (e.g., residential and hotel uses) along Sunset Boulevard, Gordon Street, Fountain Avenue, and Gower Street. Therefore, Project-level vibration impacts from off-site construction with respect to human annoyance would also be less than significant.

(c) Operation

Project-level impacts with regard to operational vibration 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?

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

As discussed in Section VI, Other CEQA Considerations, of this Draft EIR, and evaluated in the Initial Study prepared for the Project, included in 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 6.9 miles north of the Project Site. **Since the Project would not be located within the vicinity of a private airstrip, an airport land use plan, or within 2 miles of a public airport or public use airport, impacts with respect to Threshold (c) would not occur. No further analysis is required.**

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, 105 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 six related projects are within 1,000 feet of the Project Site:

- Related Project No. 37 (6250 Sunset, Nickelodeon) is a mixed-use development located at 6250 Sunset Boulevard, approximately 815 feet west of the Project Site. There are noise sensitive receptors located within 500 feet of Related Project No. 37 and the Project Site, including the residential use at the southwest corner of Leland Way and El Centro Avenue. However, this related project is under construction and is anticipated to be completed prior to the start of the Project construction. Therefore, the Related Project No. 37 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 41 (Modera Arygle) is a mixed-use development located at 1546 Argyle Avenue, approximately 865 feet northwest of the Project Site. The nearest noise sensitive uses located between the Project Site and the Related

Project No. 41 Site is the residential use at the southeast corner of Selma Avenue and El Centro Avenue. This residential use has a direct line-of-sight to the Related Project No. 41; however, would be shielded to the Project Site by intervening buildings. The Project-related construction noise would be effectively shielded to this noise sensitive uses. Therefore, the Project would not contribute to cumulative construction-related noise impacts in the event of concurrent construction with Related Project No. 41.

- Related Project No. 42 is a mixed-use development located at 5901 Sunset Boulevard, approximately 585 feet northeast of the Project Site. There are noise sensitive receptors located within 500 feet of Related Project No. 42 and the Project Site, including the residential use on Sunset Boulevard and the Emerson College (school use) as represented by receptor location R5. However, this related project is under construction and is anticipated to be completed prior to the start of the Project construction. Therefore, the Related Project No. 42 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 48 (Palladium Residences) is a mixed-use development located at 6201 Sunset Boulevard, approximately 560 feet northwest of the Project Site. The nearest noise sensitive uses located between the Project Site and the Related Project No. 48 Site is the residential use at the southeast corner of Selma Avenue and El Centro Avenue. This residential use has a direct line-of-sight to the Related Project No. 48; however, would be shielded to the Project Site by intervening buildings. Therefore, the Project-related construction noise would be effectively shielded to this noise sensitive use. Therefore, the Project would not contribute to cumulative construction-related noise impacts in the event of concurrent construction with Related Project No. 48.

- Related Project No. 68 is a mixed-use development located at 5939 Sunset Boulevard, approximately 360 feet northeast of the Project Site. However, construction for this related project is completed. Therefore, the Related Project No. 68 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 83 is a mixed-use development located at 6200 Sunset Boulevard, approximately 500 feet west of the Project Site. There are noise sensitive receptors located within 500 feet of Related Project No. 37 and the Project Site, including the residential use at the southwest corner of Leland Way and El Centro Avenue. This residential use has a direct line-of-sight to the Related Project No. 83; however, would be shielded to the Project Site by multiple intervening buildings. The Project-related construction noise would be effectively shielded to this noise sensitive uses. Therefore, the Project would not contribute to cumulative construction-related noise impacts in the event of concurrent construction with Related Project No. 83.

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, cumulative construction noise impacts at the nearby sensitive uses located in proximity to the Project Site and Related Project Nos. 41, 48, and 83, in the event of concurrent construction activities, would not occur. **As such, cumulative noise impacts from on-site construction would be less than significant.**

(ii) Off-Site Construction Noise

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. The haul truck routes for the related projects would be approved by LADOT and/or the Department of Building and Safety according to the location of the individual construction site and the ultimate destination. The City's established review process would take into consideration overlapping construction projects and would balance haul routes to minimize the impacts of cumulative hauling on any particular roadway. Based on the existing daytime ambient noise level of 66.5 dBA (L_{eq}) along Gower Street and 73.3 dBA (L_{eq}) along Sunset Boulevard (refer to Table IV.H-13 on page IV.H-32), it is estimated that up to 66 truck trips along Gower Street and 293 truck trips per hour along Sunset Boulevard would increase the ambient noise levels by 5 dBA and exceed the significance criteria.[35] Since the Project would generate up to 104 truck trips per hour along Sunset Boulevard and 52 truck trips along Gower Street 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 293 or more hourly truck trips along Sunset Boulevard and up to 66 or more hourly truck trips along Gower Street. In addition, as analyzed above, the Project off-site construction trucks during the grading and mat foundation phase would exceed the significance threshold along Gordon Street and Fountain Avenue. Therefore, any additional trucks from the related projects that would travel along Gordon Street and Fountain Avenue, would increase the noise and would contribute to the cumulative impact. 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.**

[35] *It is estimated that with 66 truck trips, the noise level along Gower Street would be 69.5 dBA, when added to the existing ambient of 66.2 dBA the cumulative noise levels would be 71.2 dBA, which would increase the ambient by 5.0 dBA. Similarly, it is estimated that with 293 truck trips, the noise level along Sunset Boulevard would be 76.6 dBA, and when added to the existing ambient of 73.3 dBA the cumulative noise level would be 78.3 dBA, which would increase the ambient by 5.0 dBA.*

(iii) Summary of Cumulative Construction Noise Impacts

On-site construction activities from the Project and related projects would be less than significant. However, off-site construction activities from the Project and related projects have the potential to result in the generation of noise levels in excess of standards established by the City. **Therefore, cumulative noise impacts from off-site construction activities would be significant.**

(b) 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 rooftop mechanical equipment, noise levels would be less than significant at the property line for each related project. In addition, as discussed above, noise impacts associated with operations within the Project Site would be less than significant. **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. The calculated traffic noise levels under "Existing" and "Future Plus Project" conditions are presented in Table IV.H-26 on page IV.H-61. As shown therein, cumulative traffic volumes would not result in an increase of noise along the

Table IV.H-26
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		
Vine Street					
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	72.0	72.7	0.7	No
Between Sunset Blvd. and Fountain Ave.	Residential, Theater	72.5	73.2	0.7	No
Between Fountain Ave. and Santa Monica Blvd.	Residential, Hotel	72.2	73.0	0.8	No
Gower Street					
Between Hollywood Blvd. and Sunset Blvd.	Residential	70.7	71.7	1.0	No
Between Sunset Blvd. and Fountain Ave.	Residential	70.3	71.0	0.7	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	70.3	71.1	0.8	No
Bronson Avenue					
Between Hollywood Blvd. and Sunset Blvd.	Residential, Hotel	68.7	69.8	1.1	No
Between Sunset Blvd. and Fountain Ave.	Residential, School	68.4	68.8	0.4	No
Between Fountain Ave. and Santa Monica Blvd.	Residential, Religious	68.1	68.7	0.6	No
Beachwood Drive					
Between Fountain Ave. and Santa Monica Blvd.	Residential	59.5	59.6	0.1	No
Gordon Street					
Between Sunset Boulevard and Fountain Ave.	Residential	64.6	66.5	1.9	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	60.9	61.4	0.5	No
Tamarind Avenue					
Between Sunset Blvd. and Fountain Ave.	Residential	63.4	63.4	0.0	No
Between Fountain Ave. and Santa Monica Blvd.	Residential	61.3	61.4	0.1	No
Hollywood Boulevard					
Between Vine Street and Gower Street	Residential, Theater	71.5	73.1	1.6	No
Between Gower Street and Bronson Avenue	Hotel, Religious	71.4	73.1	1.7	No

Table IV.H-26 (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		
Sunset Boulevard					
Between Vine Street and Gower Street	Residential	73.7	75.3	1.6	No
Between Gower Street and Gordon Street	Hotel	74.0	75.5	1.5	No
Between Gordon Street and Bronson Avenue	Residential, School	74.0	75.6	1.6	No
De Longpre Avenue					
Between Vine Street and Gower Street	Residential, Hospital	63.7	63.8	0.1	No
Afton Place					
Between Vine Street and Gower Street	Residential	59.2	59.2	0.0	No
Fountain Avenue					
Between Vine Street and Gower Street	Residential	70.4	70.9	0.5	No
Between Gower Street and Gordon Street	Residential	70.4	71.0	0.6	No
Between Gordon Street and Bronson Avenue	Residential	69.7	70.2	0.5	No
Santa Monica Boulevard					
Between Vine Street and Gower Street	Religious, Theater	72.8	74.0	1.2	No
Between Gower Street and Bronson Avenue	School	73.0	74.0	1.0	No

[a] *Detailed calculation worksheets are included in Appendix G to this Draft EIR.*

Source: AES, 2018.

roadway segments of Tamarind Avenue (between Sunset Boulevard and Fountain Avenue) and Afton Place (between Vine Street and Gower Street). The cumulative traffic would result in an increase ranging from 0.1 dBA (CNEL) along the roadway segments of Beachwood Drive, Tamarind Avenue (between Fountain Avenue and Santa Monica Boulevard), and De Longpre Avenue (between Vine Street and Gower Street), to 1.9 dBA (CNEL) along the roadway segment of Gordon Street (between Sunset Boulevard and Fountain Avenue), which would be below the more stringent 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 generation of noise levels in excess of standards established by the City. **Therefore, cumulative operational noise impacts from on-site and off-site sources would be less than significant.**

(c) Construction Vibration

(i) On-Site Construction Vibration

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 20 feet as related to building damage and 80 feet as related to human annoyance at residential uses). As indicated above, the nearest related project to the Project Site is Related Project No. 83, which is approximately 500 feet west of the Project Site. Therefore, due to distance attenuation, cumulative construction vibration impacts would not be expected from the concurrent construction of the Project and the related projects. **As such, potential cumulative construction vibration impact with respect to building damage and human annoyance associated with on-site construction would be less than significant.**

(ii) Off-Site Construction Vibration

Based on FTA data, the vibration generated by a typical heavy truck would be approximately 63 VdB (0.006 PPV) at a distance of 50 feet from the truck.[36] 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

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

existing buildings that are approximately 20 feet from the right-of-way of the anticipated haul route(s) for the Project (i.e., Sunset Boulevard, Gordon Street, Fountain Avenue, and Gower Street). 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(s) would be below the most stringent 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(s) would less than 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(s). However, vibration impacts are evaluated based on the peak vibration levels generated by individual trucks. **Therefore, to the extent that other related projects use the same haul route (i.e., Sunset Boulevard, Gordon Street, Fountain Avenue and Gower Street) as the Project, potential cumulative human annoyance impacts associated with temporary and intermittent vibration from haul trucks traveling along the designated haul routes would be less than 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. Therefore, on-site and off-site construction activities associated with the Project and related projects would not generate excessive ground-borne vibration levels with respect to building damage.

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 routes would be less than significant.

Based on the above, cumulative vibration impacts associated with on-site and off-site construction activities would be less than significant.

(2) Mitigation Measures

(a) Construction Noise

As analyzed above, noise impacts associated with off-site construction trucks from the Project (project level) and with other related projects (cumulative level) 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 routes. There are no other feasible mitigation measures to reduce the temporary significant noise impacts associated with the cumulative off-site construction trucks.

(b) Operational Noise

As discussed above, cumulative operational noise impacts from on-site and off-site sources would be less than significant. Therefore, no mitigation measures are required.

(c) Construction Vibration

Cumulative vibration impacts associated with on-site and off-site construction activities would be less than significant. Therefore, no mitigation measures are required.

(3) Level of Significance After Mitigation

(a) Construction Noise

(i) On-Site Construction Noise

Cumulative construction noise impacts associated with on-site noise sources would be less than significant without 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 off-site construction trucks. As such, cumulative noise impacts from off-site construction would be significant and unavoidable.

(b) Operational Noise

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

(c) Construction Vibration

Cumulative vibration impacts associated with on-site and off-site construction activities would be less than significant without mitigation.