IV. Environmental Impact Analysis
H. Noise

1. Introduction

This section of the Draft EIR analyzes the potential noise and vibration impacts associated with the Project. Specifically, the analysis describes the existing noise environment in the vicinity of the Project Site, estimates future noise and vibration levels at surrounding sensitive land uses resulting from construction and operation of the Project, identifies the potential for significant impacts, and provides mitigation measures to address significant impacts. In addition, this section of the Draft EIR evaluates the potential cumulative noise and vibration impacts resulting from the Project together with related projects and other future growth. Noise calculation worksheets are included in Appendix L of this Draft EIR.

2. Environmental Setting

a. Noise and Vibration Fundamentals

(1) Noise

(a) Fundamentals of Sound and Environmental Noise

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

Equivalent Sound Level (L_{eq}). L_{eq} is a measurement of the acoustic energy content of noise averaged over a specified time period. Thus, the L_{eq} of a time-varying sound and

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

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

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

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

that of a steady sound are the same if they deliver the same amount of energy to the receptor's ear during exposure. L_{eq} for 1-hour periods, during the daytime or nighttime hours, and 24-hour periods are commonly used in environmental assessments. For evaluating community impacts, this rating scale does not vary regardless of whether the noise occurs during day or night.

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

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

(2) Ground-Borne Vibration

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

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

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

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

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

(Footnote continued on next page)

construction operations) typically weakens with greater horizontal distance away from the source of the vibration.

b. Regulatory Framework

Various government agencies have established noise regulations and policies to protect citizens from potential hearing damage and other adverse effects associated with noise and ground-borne vibration. The City of Los Angeles has adopted a number of regulations and policies, which are based in part on federal and state regulations and are intended to control, minimize, or mitigate environmental noise effects. There are no City-adopted regulations or policies that relate to ground-borne vibration; therefore, the ground-borne vibration standards and guidelines from the Federal Transit Administration (FTA) are used for this analysis. The regulations and policies that are relevant to Project construction and operation noise are discussed below.

(1) Applicable State Noise Standards

The State of California has adopted noise compatibility guidelines for general land use planning. The types of land uses addressed by the State and the acceptable noise categories for each land use are included in the *State of California General Plan Guidelines,* which is published and updated by the Governor's Office of Planning and Research.[11] 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 70 dBA CNEL are "conditionally acceptable" for residential and hotel uses with special noise insulation requirements, while noise levels between above 70 dBA CNEL and up to 75 dBA CNEL are "normally unacceptable" for residential and hotel uses, and noise levels above 75 dBA CNEL are "clearly unacceptable" for residential and hotel uses. In addition, the 2016 California Green Building Standards Code requires that where the ambient noise environment of a residential use (habitable room) exceeds 65 dBA CNEL or 65 dBA L_{eq}, measures should be implemented to achieve an interior noise environment not to exceed 45 dBA $L_{eq\ (1\text{-}hour)}$. In addition, the 2016 California Green Building Standards Code requires that where the ambient noise environment exceeds 65 dBA CNEL or 65 dBA L_{eq}, measures should be implemented to achieve an interior noise environment of a non-residential use that would not exceed 50 dBA $L_{eq\ (1\text{-}hour)}$.

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

[11] *State of California, Governor's Office of Planning and Research, General Plan Guidelines, 2017.*

(2) City of Los Angeles Regulations and Policies

The Noise Element of the City of Los Angeles General Plan (General Plan) establishes CNEL guidelines for land use compatibility and includes a number of goals, 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 is to guide policymakers in making land use determinations and in preparing noise ordinances that would limit exposure of citizens to excessive noise levels. The following policies and objectives from the Noise Element of the General Plan are applicable to the Project:[12]

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

The City's noise compatibility guidelines are provided in Table IV.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

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

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: City General Plan Noise Element, adopted February 1999.

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 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

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

greater. The actual ambient noise level is the measured noise level averaged over a period of at least 15 minutes, $L_{eq\ (15\text{-}minute)}$. 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 a 5-dBA allowance for noise sources occurring more than 5 minutes but less than 15 minutes in any 1-hour period (for a total of 10 dBA above the ambient), and an additional 5-dBA allowance (total of 15 dBA above the ambient) for noise sources occurring 5 minutes or less in any 1-hour period. These additional allowances for short-duration noise sources are applicable to noise sources occurring between the hours of 7:00 A.M. and 10:00 P.M. (daytime hours). Furthermore, the Noise Regulations provide a reduction of 5 dBA for steady high-pitched noise or repeated impulsive noises.[14,15]

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

In addition, the Noise Regulations (LAMC Section 112.05) set a maximum noise level from construction equipment (powered equipment or powered hand tools) operating between the hours of 7:00 A.M. and 10:00 P.M., in any residential zone of the City or within 500 feet thereof, of 75 dBA, measured at a distance of 50 feet from the source, unless compliance with this limitation is technically infeasible.[16] LAMC Section 41.40 prohibits construction noise that disturbs persons occupying sleeping quarters in any dwelling, hotel, or apartment or other place of residence between the hours of 9:00 P.M. and 7:00 A.M.

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

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

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

Table IV.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.

Monday through Friday, before 8:00 A.M. and after 6:00 P.M. on Saturday or national holiday, and at any time on Sunday. Construction hours may be extended with approval from the Executive Director of the Board of Police Commissioners. In general, the City of Los Angeles Department of Building and Safety enforces noise ordinance provisions relative to noise generated by operation of equipment, and the Los Angeles Police Department enforces provisions relative to noise generated by people.

(3) Ground-Borne Vibration

The City currently does not have any adopted standards, guidelines, or thresholds relative to ground-borne vibration. As such, available guidelines from the FTA are utilized to assess impacts due to ground-borne vibration. As discussed above, in most circumstances common ground-induced vibrations related to roadway traffic and construction activities pose no threat to buildings or structures.[17,18]

The FTA has published a technical manual titled, "Transit Noise and Vibration Impacts Assessment," which provides ground-borne vibration impact criteria with respect to building damage during construction activities.[19] As discussed above, building vibration damage is measured in PPV described in the unit of inches per second. Table IV.H-4 on page IV.H-10 provides the FTA vibration criteria applicable to construction activities. According to FTA guidelines, a vibration criterion of 0.20 PPV should be considered as the significant impact level for non-engineered timber and masonry buildings. Structures or buildings constructed of reinforced concrete, steel, or timber, have a vibration damage criterion of 0.50 PPV pursuant to the FTA guidelines.

[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: FTA, 2006.

In addition to the FTA Construction Vibration Impact Criteria for Building Damage, the FTA guidance manual also provides vibration criteria for human annoyance for various uses. These criteria were established primarily for rapid transit (rail) projects and, as indicated in Table IV.H-5 on page IV.H-11, are based on the frequency of vibration events. Specific criteria are provided for three land use categories: (1) Vibration Category 1—High Sensitivity; (2) Vibration Category 2—Residential; and (3) Vibration Category 3—Institutional.

c. Existing Conditions

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

(1) Noise-Sensitive Receptors

Some land uses are considered more sensitive to intrusive noise than others based on the types of activities typically involved at the receptor location. The *L.A. CEQA Thresholds Guide* states that noise-sensitive uses include residences, transient lodgings, schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks.[20]

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

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: FTA, 2006.

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 Guide*. 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-12 and described in Table IV.H-6 on page IV.H-13.

(2) Ambient Noise Levels

To establish baseline noise conditions, existing ambient noise levels were monitored at five representative receptor locations (identified as R1 through R5) in the vicinity of the Project Site. The baseline noise monitoring program was conducted on April 11, 2018,

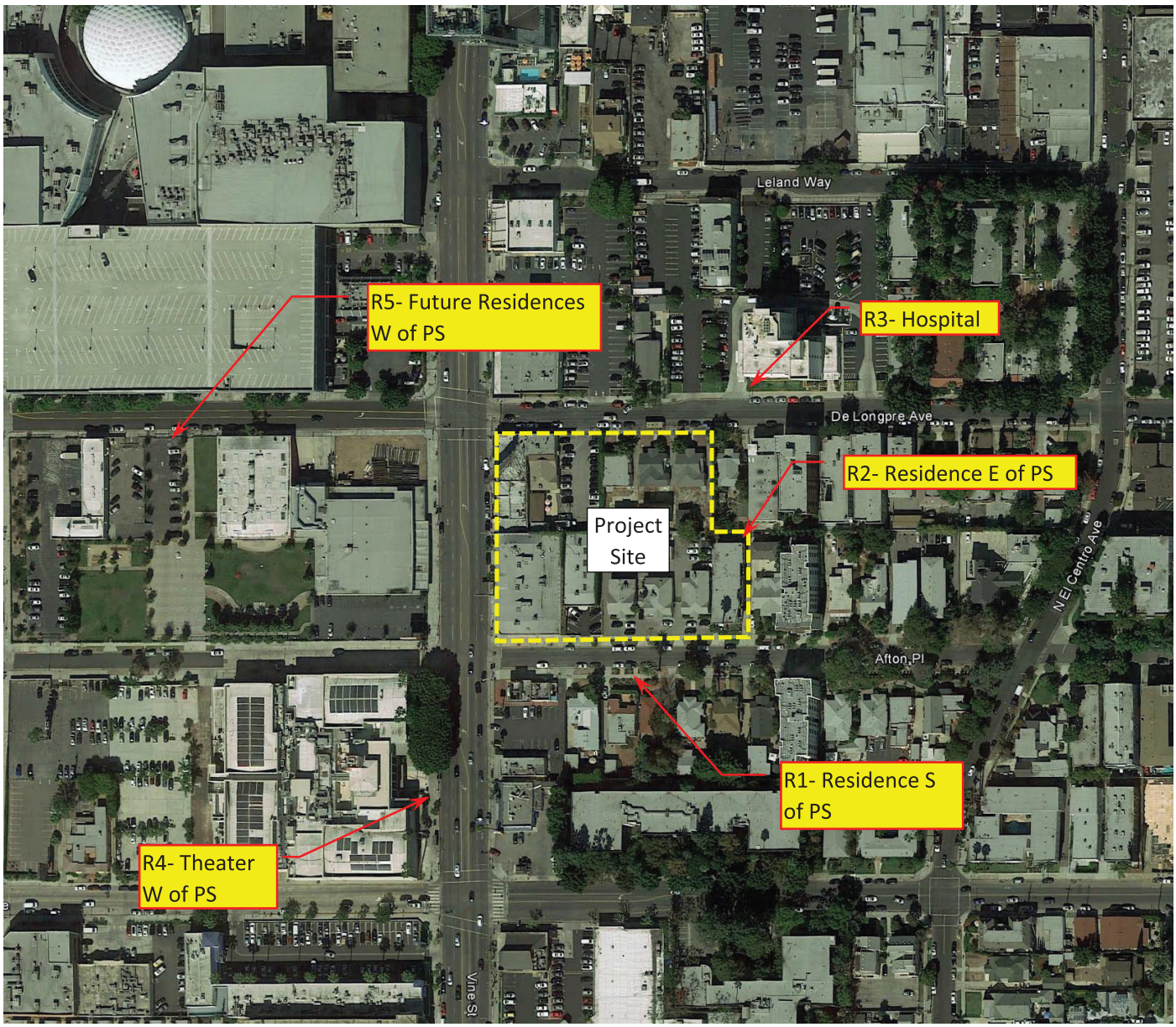

Figure IV.H-1
Noise Measurement Locations

Source: AES, 2020.

Table IV.H-6
Description of Noise Measurement Locations

Receptor Location	Land Use Description	Approximate Distance from Measurement Location to Nearest Project Site Boundary (feet)[a]	Existing Land Use
R1	Residential use on south side of Afton Place across from the Project Site	60	Residential
R2	Residential use adjacent to the Project Site to the east.	Adjacent to the Project Site	Residential
R3	Southern California Hospital on the north side of De Longpre Avenue, northeast of the Project Site. R3 also represent the residential use north of the Project Site	80	Hospital, Residential
R4	Linwood Dunn Theater on the west side of Vine Street, southwest of the Project Site	265	Theater
R5	Existing parking lot west of the Project Site, representing the proposed Kilroy Mixed-Use project	445	Commercial

[a] *Distances are estimated using Google Earth. (Map data ©2018 Google).*

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

using a Quest Technologies Model 2900 Integrating/Logging Sound Level Meter.[21] Two 15-minute measurements were conducted at each of the receptor locations during daytime and nighttime hours. The daytime ambient noise levels were measured between 10:00 A.M. and 12:00 P.M., and the nighttime ambient noise levels were measured between 10:00 P.M. and 12:00 A.M. The ambient noise measurements were recorded in accordance with the City's standards, which require ambient noise to be measured over a period of at least 15 minutes.[22]

Table IV.H-7 on page IV.H-14 provides a summary of the ambient noise measurements conducted at the five noise receptor locations. Based on field observations, the ambient noise at the noted measurement locations is dominated by local traffic and, to

[21] *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.*

[22] *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	55.0	53.4	58.4
R2	Residential	55.8	49.2	56.1
R3	Hospital, Residential	59.0	56.1	61.5
R4	Theater	71.7	65.4	72.2
R5	Commercial (future residential)	70.6	62.9	70.5

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

Source: AES, 2018. See Appendix L of this Draft EIR.

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 55.0 dBA (L_{eq}) at receptor location R1 to 71.7 dBA (L_{eq}) at receptor location R4. The measured nighttime ambient noise levels ranged from 49.2 dBA (L_{eq}) at receptor location R2 to 65.4 dBA (L_{eq}) at receptor location R4. Thus, the existing ambient noise levels at all off-site locations are above the City's presumed daytime and nighttime ambient noise levels of 50 dBA (L_{eq}) and 40 dBA (L_{eq}), respectively, for residential uses, as presented above in Table IV.H-3 on page IV.H-9.

In addition to the ambient noise measurements in the vicinity of the Project Site, the existing traffic noise on local roadways in the surrounding area was calculated to quantify the 24-hour CNEL noise levels using information provided by the Transportation Assessment prepared for the Project, and included as Appendix L of this Draft EIR. Twelve 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 Transportation Assessment 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-16.

Table IV.H-9 on page IV.H-17 provides the calculated CNEL for the analyzed local roadway segments based on existing traffic volumes. As shown therein, the existing CNEL due to surface street traffic volumes ranges from 56.9 dBA CNEL along Homewood Avenue (between Ivar Avenue and Vine Street) to 72.7 dBA CNEL along Sunset Boulevard (between Vine Street and El Centro Avenue). Currently, the existing traffic-related noise levels along the roadway segment of De Longpre Avenue (between Ivar Avenue and El Centro Avenue), and Fountain Avenue (between Ivar and El Centro Avenue) fall within the conditionally acceptable noise levels for residential uses (i.e., between 60 and less than 70 dBA CNEL). The existing traffic noise levels along Vine Street (between Hollywood Boulevard and Sunset Boulevard), Sunset Boulevard (between Ivar Street and El Centro Avenue), and Fountain Avenue (between Ivar Avenue and Vine Street) 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."[23] 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.[24] Therefore, existing ground vibration in the vicinity of the Project Site is generally below the perceptible level. However, ground vibration associated with heavy trucks traveling on road surfaces with irregularities, such as speed bumps and potholes, could reach the perceptible threshold.

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

[24] *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, 2020. See Appendix L of this Draft EIR.

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	45	71.7	Yes	Normally Unacceptable
Between Sunset Blvd. and De Longpre Ave.	Commercial	45	72.1	No	Conditionally Acceptable
Between De Longpre Ave. and Fountain Ave.	Theater	45	72.0	Yes	Clearly Unacceptable
Between Fountain Ave. and Santa Monica Blvd.	Hotel, Church	45	72.0	Yes	Normally Unacceptable
Sunset Boulevard					
Between Ivar Ave. and Vine St.	School	45	72.4	Yes	Normally Unacceptable
Between Vine St. and El Centro Ave.	Residential	45	72.7	Yes	Normally Unacceptable
De Longpre Avenue					
Between Ivar Ave. and Vine St.	Commercial	30	66.6	No	Normally Acceptable
Between Vine St. and El Centro Ave.	Residential, Hospital	30	63.8	Yes	Conditionally Acceptable
Fountain Avenue					
Between Ivar Ave. and Vine St.	Residential	30	70.0	Yes	Normally Unacceptable
Between Vine St. and El Centro Ave.	Residential	30	69.9	Yes	Conditionally Acceptable
Homewood Avenue					
Between Ivar Ave. and Vine St.	Commercial, Residential (future)	30	56.9	Yes	Normally Acceptable
Afton Place					
Between Vine St. and El Centro Ave.	Residential	30	57.4	Yes	Normally Acceptable

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

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

Source: AES, 2020.

3. Project Impacts

a. Thresholds of Significance

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

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

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

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

For this analysis, the Appendix G Thresholds provided 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 criteria to evaluate impacts related to noise:

(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 is anticipated to begin in 2023 and be completed in 2027. 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

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

- The project causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category (see Table IV.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; 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.

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

(3) 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.

(4) FTA Ground-Borne Vibration Standards and Guidelines

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

Based on this FTA guidance, impacts relative to ground-borne vibration associated with potential building damage would be considered significant if any of the following future events were to occur:

- Project construction activities cause ground-borne vibration levels to exceed 0.5 PPV at the nearest off-site reinforced-concrete, steel, or timber building.
- Project construction activities cause ground-borne vibration levels to exceed 0.3 PPV at the nearest off-site engineered concrete and masonry building.
- Project construction activities cause ground-borne vibration levels to exceed 0.2 PPV at the nearest off-site non-engineered timber and masonry building.
- Project construction activities cause ground-borne vibration levels to exceed 0.12 PPV at buildings extremely susceptible to vibration damage, such as historic buildings.

Based on FTA guidance, construction vibration impacts associated with human annoyance would be significant if 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, hospital, and theater uses.

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)."[25] The ambient noise levels at surrounding sensitive receptor locations were based on field measurement data (see Table IV.H-7 on page IV.H-14). The construction noise levels were then calculated for the Project 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 acoustical 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. 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 Transportation Assessment prepared for the Project, which is included in Appendix R of this Draft EIR. The TNM calculates the hourly L_{eq} noise levels generated by construction-related haul trucks. Noise impacts were determined by comparing the existing ambient noise levels (without Project) to the predicted ambient noise level (with Project) 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),

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

parking facilities, and trash compactor; (2) calculating the noise level from each noise source at surrounding sensitive receptor property line locations; and (3) comparing such noise levels to ambient noise levels to determine significance. The on-site stationary noise sources were calculated using the SoundPLAN (version 8.2) computer noise prediction model.[26] SoundPLAN is a 3-dimensional acoustic ray tracing program for outdoor noise propagation prediction developed by the German company, SoundPLAN GmbH. SoundPLAN is widely used by acoustical engineers as a noise modeling tool for environmental noise analysis.

(4) Off-Site Roadway Noise (Operation)

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

(5) Construction Vibration

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

(6) Operational Vibration

The primary source of ground vibration related to operation of the Project would include vehicle circulation within the proposed subterranean parking garage and off-site vehicular trips. However, as discussed above, vehicular-induced vibration is unlikely to be perceptible by people. The Project would also include typical commercial-grade stationary mechanical equipment, such as air-condenser units (mounted at the roof level), that would include vibration-attenuation mounts to reduce the vibration transmission. The Project does not include land uses that would generate high levels of ground 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

[26] *SoundPLAN GmbH, SoundPLAN version 8.2, 2020.*

vibration analysis presented in this section is limited to Project-related construction activities.

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: Project construction shall not include the use of driven (impact) pile systems.

Project Design Feature NOI-PDF-3: All outdoor mounted mechanical equipment shall be enclosed or screened from off-site noise-sensitive receptors.

Project Design Feature NOI-PDF-4: Outdoor amplified sound systems, if any, shall be designed so as not to exceed the maximum noise level of 65 dBA [$L_{eq\ (1\text{-}hour)}$] at a distance of 25 feet from the face of the amplified speaker sound systems at the Ground Level and 90 dBA [$L_{eq\ (1\text{-}hour)}$] at the Level 10 deck (Residential Option) and Level 17 deck (Office Option). A qualified noise consultant shall provide written documentation that the design of the system complies with these maximum noise levels.

Project Design Feature NOI-PDF-5: All loading docks shall be screened from off-site noise-sensitive receptors.

Project Design Feature NOI-PDF-6: An 8-foot-high, solid (non-porous) property wall shall be constructed along the Project eastern property line.

d. Analysis of Project Impacts

As set forth in Section II, Project Description, of this Draft EIR, the Project proposes two development options—the Residential Option and the Office Option.

The Project's Residential Option would develop a new high-rise building with four levels of subterranean parking consisting of up to 429 new residential units, including 36 units designated for Very Low Income households, an approximately 55,000-square-foot grocery store, approximately 5,000 square feet of neighborhood-serving commercial retail uses, and 8,988 square feet of uses in the bungalows. The bungalows would be rehabilitated and adapted for reuse as either restaurants or 12 residential units, in which

case the development would still propose a total of 429 residential units. The new building would be 360 feet 4 inches in height when accounting for rooftop mechanical equipment.

The Project's Office Option would develop a new high-rise building with eight levels of subterranean parking with approximately 463,521 square feet of office uses and 11,914 square feet of restaurant uses in the proposed building, as well as 8,988 square feet of uses in the bungalows. The bungalows would be rehabilitated and adapted for reuse as restaurants or nine residential units. The new building would be 303 feet in height when accounting for rooftop mechanical equipment.

Vehicle access for the proposed uses of the Residential Option would be provided via a right-in/right-out driveway on Vine Street and a two-way all-way access driveway on De Longpre Avenue. Both driveways would provide access to the subterranean parking garage. The commercial and/or residential truck loading docks would be located adjacent to the De Longpre Avenue driveway. No vehicular access off of Afton Place is proposed for the Residential Option.

Vehicle access for the proposed uses of the Office Option would be provided via three driveway scenarios: 1) a right-in/right-out driveway on Vine Street and a two-way all-way access driveway on De Longpre Avenue; 2) all-access driveways on Afton Place and De Longpre Avenue; or 3) all-access driveways on Afton Place and De Longpre Avenue with an added cul-de-sac (i.e., street closure to through traffic) directly east of the driveway on Afton Place. Under these scenarios, all driveways would provide access to the subterranean parking garage, and the loading dock would be located adjacent to the De Longpre driveway.

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

(1) Impact Analysis

(a) Construction Noise

Construction of the Project would commence with demolition of the existing buildings and surface parking areas, followed by grading and excavation for the subterranean parking. Building foundations would then be constructed, followed by building construction, paving/concrete installation, and landscape installation. It is estimated that approximately 142,000 cubic yards for the Residential Option and 321,000 cubic yards for the Office Option of debris (e.g., concrete and asphalt surfaces) and 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 the US-101 via either Vine Street or Sunset Boulevard. Incoming trucks from the north would travel south on Vine Street from the US-101 to the Project Site. Incoming trucks from the east would travel west on Sunset Boulevard from the US-101 to Vine Street, and head south on Vine Street to the Project Site. Outgoing trucks would travel in the reverse directions.

(i) On-Site Construction Noise

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

Individual pieces of construction equipment anticipated to be used during construction of the Project could produce maximum noise levels (L_{max}) of 74 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in Table IV.H-10 on page IV.H-26. These maximum noise levels would occur when equipment is operating under full power conditions (i.e., the equipment engine at maximum speed). However, equipment used on construction sites often operate under less than full power conditions, or part power. To more accurately characterize construction-period noise levels, the average (hourly L_{eq}) noise level associated with each construction phase is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction phase.[27] These noise levels are typically associated with multiple pieces of equipment operating on part power, simultaneously.

[27] *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-10
Construction Equipment Noise Levels

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

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

Table IV.H-11 on page IV.H-27 provides the estimated construction noise levels for various construction phases at the off-site noise-sensitive receptors for the Residential Option and Office Option and assumes implementation of Project Design Feature NOI-PDF-1. To present a conservative impact analysis, the estimated noise levels were calculated for a scenario in which all pieces of construction equipment were assumed to operate simultaneously and be located at the construction area nearest to the affected receptors. These assumptions represent the worst-case noise scenario because construction activities would typically be spread out throughout the Project Site, and, thus, some equipment would be farther away from the affected receptors. In addition, the noise modeling assumes that construction noise is constant, when, in fact, construction activities and associated noise levels are periodic and fluctuate based on the construction activities.

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))	Significant Impact?
		Demolition	Grading	Mat Foundation	Building Foundation	Building Construction	Paving				
Residential Option											
R1	60	82.7	79.2	79.5	82.0	83.2	79.2	55.0	60.0	23.2	**Yes**
R2	10	98.1	94.3	93.3	94.7	97.7	93.3	55.8	60.8	37.3	**Yes**
R3	65	82.5	79.5	79.5	82.0	83.0	79.4	59.0	64.0	19.0	**Yes**
R4	265	70.8	68.4	68.9	71.8	71.9	68.4	71.7	76.7	0.0	No
R5	445	66.4	64.1	64.7	67.7	67.7	64.1	70.6	75.6	0.0	No
Office Option											
R1	60	82.7	80.3	79.5	82.0	83.2	79.2	55.0	60.0	23.2	**Yes**
R2	10	98.1	96.0	93.3	94.7	97.7	93.3	55.8	60.8	37.3	**Yes**
R3	65	82.5	81.0	79.5	82.0	83.0	79.4	59.0	64.0	19.0	**Yes**
R4	265	70.8	69.8	68.9	71.8	71.9	68.4	71.7	76.7	0.0	No
R5	445	66.4	65.5	64.7	67.7	67.7	64.1	70.6	75.6	0.0	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-14) 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 L of this Draft EIR.

As discussed above, since construction activities would occur over a period longer than 10 days for all phases, the corresponding significance criteria used in the construction noise analysis is when the construction-related noise exceeds the ambient L_{eq} noise level of 5 dBA at a noise-sensitive use. As presented in Table IV.H-11 on page IV.H-27, construction activities would generate the highest noise during the demolition and construction phases, 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 noise levels during all stages of Project construction would exceed the significance criteria at off-site receptor locations R1, R2, and R3 for both the Residential Option and the Office Option. The estimated construction-related noise would exceed the significance criteria by 19.0 dBA at receptor location R3 (during the building construction phase, under both the Residential Option and Office Option), 23.2 dBA at receptor location R1 (during the building construction phase, under both the Residential Option and Office Option) and 37.3 dBA at receptor location R2 (during the demolition phase, under both the Residential Option and Office Option), without implementation of mitigation. **Therefore, temporary noise impacts associated with the Project's on-site construction would be significant without mitigation measures.**

(ii) Off-Site Construction Noise

In addition to on-site construction noise sources, other noise sources may include materials delivery, concrete mixing, and haul trucks (construction trucks), as well as construction worker vehicles accessing the Project Site during construction. Typically, construction trucks generate higher noise levels than construction worker vehicles. The major noise sources associated with off-site construction trucks would be associated with delivery/haul trucks. As described above, construction delivery/haul trucks would travel between the Project Site and US-101 via Vine Street and Sunset Boulevard.

The peak period of construction with the highest number of construction trucks would occur during the mat foundation phase.[28] During this phase, there would be a maximum of 175 concrete trucks coming to and leaving the Project Site (equal to 350 total trips) per day under both the Residential Option and Office Option. During the grading/excavation phase, there would be maximum of 85 trucks (170 trips) and 95 trucks (190 trips) per day under the Residential Option and Office Option, respectively. There would also be construction haul/delivery truck trips (up to 100 truck trips per day) during other construction phases of the Project, but such trips would be less than the 170 truck

[28] *Fehr & Peers, 1360 North Vine Street Project Transportation Assessment, November 2021. See Appendix R of this Draft EIR.*

trips (Residential Option) and 190 truck trips (Office Option) under the grading/excavation phase. Haul trucks for grading/excavation would operate between 9 A.M. and 3 P.M. weekday (6 hours) and between 8 A.M. and 4 P.M. on Saturday (8 hours). To represent the worst-case condition, the noise analysis was based on a 6-hour haul period, as it would generate higher truck trips per hour.[29] The highest number of worker trips per day would occur during the building construction phase, which would generate a maximum of 500 worker trips per day under both the Residential Option and Office Option. Worker trips during other construction phases for both options would be substantially less than the building construction phase.

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

(iii) Summary of Construction Noise Impacts

As discussed above, temporary noise impacts associated with the Project's on-site construction would be significant at three of the off-site receptor locations. The temporary noise impacts from off-site construction traffic would be less than significant. **Therefore, without mitigation measures, Project on-site construction activities would result in the generation of a substantial temporary increase in ambient noise levels in excess of significance criteria established by the City.**

(b) Operational Noise

This section provides a discussion of potential operational noise impacts on nearby noise-sensitive receptor locations represented by R1 through R5. Specific operational noise sources addressed herein include: (a) on-site stationary noise sources, including outdoor mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment), activities within the proposed outdoor spaces (e.g., outdoor courtyards and roof level deck), parking facilities, loading dock, and trash compactor; and (b) off-site mobile (roadway traffic) noise sources.

[29] *Per LADOT and the Bureau of Street Services, hauling for this Project would be allowed on Mondays through Fridays from 9 A.M. to 3 P.M. and Saturdays 8 A.M. to 4 P.M.*

Table IV.H-12
Off-Site Construction Noise Levels

Construction Phase	Estimated Number of Construction Truck/Worker Trips per Day	Estimated Number of Construction Truck/Worker Trips per Hour[a]	Estimated Truck Noise Levels Plus Ambient Along the Project Truck Routes (L_{eq} (dBA)) Project/Project + Ambient	
			Vine Street	Sunset Boulevard
Residential Option				
Demolition	20/25	4/10	56.9/71.8	56.9/71.8
Grading	170/75	29/30	65.2/72.6	65.2/72.6
Mat Foundation	350/25	35/10	65.9/72.7	65.9/72.7
Foundation	100/175	10/70	61.8/72.1	61.8/72.1
Building Construction	30/500	3/200	61.9/72.1	61.9/72.1
Paving	30/50	3/20	56.5/71.8	56.5/71.8
Office Option				
Demolition	20/25	4/10	56.9/71.8	56.9/71.8
Grading	190/75	32/30	65.6/72.7	65.6/72.7
Mat Foundation	350/25	35/10	65.9/72.7	65.9/72.7
Foundation	100/175	10/70	61.8/72.1	61.8/72.1
Building Construction	30/500	3/200	61.9/72.1	61.9/72.1
Paving	30/50	3/20	56.5/71.8	56.5/71.8
Existing Ambient Noise Levels Along the Project Haul Routes, L_{eq} (dBA)[b]			71.7	71.7
Significance Criteria, L_{eq} (dBA)[c]			76.7	76.7
Maximum Exceedance Over Significance Criteria, L_{eq} (dBA)			0.0	0.0
Significant Impact?			**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 10-hour work day for the foundation, building construction and paving phases, and over a 6-hour work day for the demolition and grading phases. For worker vehicles, the number of hourly trips is based on 40 percent of the worker trips that would arrive in one peak hour to represent a conservative analysis.*

[b] *Ambient noise levels along the haul routes are based on measurements at receptor location R4 along Vine Street).*

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

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

(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 building roof level and within the building structure (e.g., garage exhaust fans). Although operation of this equipment would generate noise, Project-related outdoor mechanical equipment would be designed so as not to increase the existing ambient noise levels by 5 dBA in accordance with the City's Noise Regulations. Specifically, the Project would comply with LAMC Section 112.02, which prohibits noise from air conditioning, refrigeration, heating, pumping, and filtering equipment from exceeding the ambient noise levels on the premises of other occupied properties by more than 5 dBA. In addition, as provided above in Project Design Feature NOI-PDF-3, all outdoor mounted mechanical equipment would be enclosed or screened from off-site noise-sensitive receptors. Table IV.H-13 on page IV.H-32 presents the estimated noise levels at the off-site receptor locations from operation of the Project mechanical equipment, for both the Residential Option and Office Option. As indicated in Table IV.H-13, The estimated noise levels from the mechanical equipment would range from 41.0 dBA (L_{eq}) at receptor location R4 to 42.3 dBA (L_{eq}) at receptor location R3 under the Residential Option, and from 36.8 dBA (L_{eq}) at receptor location R3 to 41.7 dBA (L_{eq}) at receptor location R1 under the Office Option, which would be well below the existing ambient noise levels. As such, the estimated ambient noise levels with the addition of the Project's mechanical equipment at all off-site receptor locations would be below the significance criteria of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient noise level). **Therefore, noise impacts from mechanical equipment would be less than significant.**

Outdoor Spaces

As discussed in Section II, Project Description, of this Draft EIR, the Project would include outdoor open space areas at Level 1 (ground level) under both the Residential Option and Office Option. In addition, an outdoor pool deck would be provided at Level 10 under the Residential Option and an outdoor deck would be provided at Level 17 under the Office Option. Noise sources associated with outdoor uses typically include noise from people gathering and conversing. For this operational noise analysis, a normal speaking voice levels of 58 dBA for a male and 55 dBA for a female were assumed for the Level 1 outdoor space and raised voice levels of 65 dBA for a male and 62 dBA for a female were assumed for people gathering at the outdoor spaces on the upper levels (Level 10 for the Residential Option and Level 17 for the Office Option).[30] It was assumed that up to

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

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

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Mechanical Equipment, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria, dBA (L_{eq})[a]	Exceedance Over Significance Criteria	Significant Impact?
Residential Option						
R1	53.4	41.1	53.6	58.4	0.0	No
R2	49.2	41.5	49.9	54.2	0.0	No
R3	56.1	42.3	56.3	61.1	0.0	No
R4	65.4	41.0	65.4	70.4	0.0	No
R5	62.9	41.9	62.9	67.9	0.0	No
Office Option						
R1	53.4	41.7	53.7	58.4	0.0	No
R2	49.2	39.8	49.7	54.2	0.0	No
R3	56.1	36.8	56.2	61.1	0.0	No
R4	65.4	39.8	65.4	70.4	0.0	No
R5	62.9	37.5	62.9	67.9	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-14) 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, 2021. See Appendix L of this Draft EIR.

50 percent of the people (half of which would be male and the other half female) would be talking at the same time. In addition, the hours of operation for use of the outdoor areas were assumed to be from 7:00 A.M. to 2:00 A.M.

An additional potential noise source associated with outdoor uses would be the use of an outdoor amplified sound system (e.g., music or other sounds broadcast through an outdoor mounted speaker system). As set forth in Project Design Feature NOI-PDF-4, the amplified sound system used in outdoor areas would be designed so as not to exceed the maximum noise levels of 65 to 90 dBA L_{eq} as indicated in Table IV.H-14 on page IV.H-33, 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. Furthermore, pursuant to Project Design Feature NOI-PDF-6, an 8-foot-high solid (non-porous) property line wall would be constructed along the Project's eastern property line to reduce noise impacts associated with the outdoor uses at the ground level. Table IV.H-14 presents the anticipated number of people at each of the outdoor spaces and the Project's maximum amplified sound levels.

Table IV.H-14
Outdoor Use Analysis Assumptions

Outdoor Space	Estimated Total Number of People	Amplified Sound System Levels dBA (L_{eq})
Residential Option		
Level 1—Outdoor Spaces	223	65 dBA at 25 feet
Level 10—Outdoor Roof Deck	460	90 dBA at 25 feet
Office Option		
Level 1—Outdoor Spaces	259	65 dBA at 25 feet
Level 17—Outdoor Roof Deck	166	90 dBA at 25 feet

Source: Stanley Saitowitz/Natoma Architects, Inc., 2018; Solomon Cordwell Buenz, 2020.

Table IV.H-15 on page IV.H-34 presents the estimated noise levels at the off-site sensitive receptor locations resulting from the use of outdoor areas. The estimated noise levels were calculated with the assumption that all of the outdoor spaces would be fully occupied and operating concurrently to represent a worst-case noise analysis. As presented in Table IV.H-15, the estimated noise levels from the outdoor spaces would range from 47.9 dBA (L_{eq}) at receptor location R4 to 54.4 dBA (L_{eq}) at receptor location R1 under the Residential Option, and from 40.0 dBA (L_{eq}) at receptor location R4 to 49.4 dBA (L_{eq}) at receptor location R1 under the Office Option. The estimated ambient noise levels with the addition of the Project's outdoor uses would be below the significance criteria of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient noise level) at all off-site receptor locations. **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, parking would be provided within four subterranean levels under the Residential Option and eight subterranean levels under the Office Option. 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. **Therefore, noise impacts from the parking garage would be less than significant.**

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

Receptor Location	Existing Ambient Noise Levels (dBA (L_{eq}))	Estimated Noise Levels from Outdoor Uses (dBA (L_{eq}))	Ambient + Project Noise Levels (dBA (L_{eq}))	Significance Criteria[a]	Exceedance over Significance Criteria	Significant Impact?
Residential Option						
R1	53.4	54.4	56.9	58.4	0.0	No
R2	49.2	51.1	53.3	54.2	0.0	No
R3	56.1	48.4	56.8	61.1	0.0	No
R4	65.4	47.9	65.5	70.4	0.0	No
R5	62.9	51.6	63.2	67.9	0.0	No
Office Option						
R1	53.4	49.4	54.9	58.4	0.0	No
R2	49.2	47.1	51.3	54.2	0.0	No
R3	56.1	47.6	56.7	61.1	0.0	No
R4	65.4	40.0	65.4	70.4	0.0	No
R5	62.9	43.4	62.9	67.9	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-14) 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 L of this Draft EIR.

Loading Dock and Trash Collection Areas

Loading docks would be integrated into the northern portion of the building with access from De Longpre Avenue, for both the Residential Option and the Office Option. The Project trash rooms would be located in the subterranean parking Level P1. Noise sources associated with the loading dock and trash collection area would include delivery/trash collection trucks and operation of the trash compactor. Based on measured noise levels from typical loading dock facilities and trash compactors, delivery/trash collection trucks and trash compactors could generate noise levels of approximately 71 dBA (L_{eq}) and 66 dBA (L_{eq}), respectively, at a distance of 50 feet.[31] The trash rooms (trash compactors) would be effectively buffered from the off-site sensitive receptors because they are located within the subterranean parking level. As provided above in Project Design Feature NOI-PDF-5, all loading docks would be screened from off-site noise-sensitive receptors. The loading docks would also be shielded to the off-site sensitive receptors by the Project buildings. Table IV.H-16 on page IV.H-35 presents the

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

Table IV.H-16
Estimated Noise Levels from Loading Dock and Trash Compactor

Receptor Location	Existing Ambient Noise Levels (dBA (L_{eq}))	Estimated Noise Levels from Loading Dock and Trash Compactor (dBA (L_{eq}))	Ambient + Project Noise Levels (dBA (L_{eq}))	Significance Criteria[a]	Exceedance over Significance Criteria	Significant Impact?
Residential Option						
R1	55.0	33.0	55.0	60.0	0.0	No
R2	55.8	19.7	55.8	60.8	0.0	No
R3	59.0	59.2	62.1	64.0	0.0	No
R4	71.7	23.3	71.7	76.7	0.0	No
R5	70.6	24.3	70.6	75.6	0.0	No
Office Option						
R1	55.0	28.1	55.0	60.0	0.0	No
R2	55.8	17.3	55.8	60.8	0.0	No
R3	59.0	59.8	62.4	64.0	0.0	No
R4	71.7	22.4	71.7	76.7	0.0	No
R5	70.6	16.2	70.6	75.6	0.0	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-14) 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 L of this Draft EIR.

estimated noise levels at the off-site receptor locations from operation of the loading dock and trash compactor. As indicated in Table IV.H-16, the estimated noise from the loading dock and trash compactor would range from 19.7 dBA (L_{eq}) at receptor location R2 to 59.2 dBA (L_{eq}) at receptor location R3 for the Residential Option. The estimated noise levels under the Office Option would range from 16.2 dBA (L_{eq}) at receptor location R5 to 59.8 dBA (L_{eq}) at receptor location R3. The estimated ambient noise level with the addition of the noise generated by the Project's loading locks would be below the significance criteria of 5 dBA (L_{eq}) above ambient noise levels at all off-site receptor locations. **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 12 roadway segments in the vicinity of the Project Site. The roadway noise levels were calculated using the traffic data provided in the Transportation Assessment prepared for the Project, which is included in Appendix R of this Draft EIR. As discussed in the Transportation Assessment, the Residential Option is expected to generate a net increase of 191 and 279 trips during the A.M. and P.M. peak hours, respectively. The Office Option is expected to generate a net increase of 327 and 433 trips during the A.M. and P.M. peak hours, respectively. As such, Project-related traffic would increase the existing traffic volumes along the roadway segments in the study area when compared with Future Without Project conditions. This increase in roadway traffic was analyzed to determine if any traffic-related noise impacts would result from operation of the Project. Table IV.H-17 on page IV.H-37 provides a summary of the roadway noise impact analysis for the Residential Option and Office Option. In addition, the Residential Option noise analysis evaluated traffic noise for the one driveway scenario herein referred to as Driveway Scenario 1 with Vine Street including right-in/right out access and De Longpre Avenue with full access. The Office Option noise analysis evaluated traffic noise for three driveway scenarios: Driveway Scenario 1 with Vine Street including right-in/right out access and De Longpre Avenue with full access; Driveway Scenario 2 with De Longpre Avenue with full access and Afton Place with full access; and Driveway Scenario 3 with De Longpre Avenue with full access and Afton Place with full access and a cul-de-sac. The calculated CNEL levels are conservatively calculated along the roadways and do not account for the presence of any physical sound barriers or intervening structures. As shown in Table IV.H-17, under the Residential Option, the Project would result in highest noise increase along the roadway segment of De Longpre Avenue (between Vine Street and El Centro Avenue) with a maximum increase of 1.3 dBA (CNEL) under Driveway Scenario 1. At other analyzed roadway segments, the increase in traffic-related noise levels would be 0.8 dBA or less. The increase in traffic noise levels would be well below the relevant 3 dBA CNEL significance criteria (applicable to Vine Street, Sunset Boulevard, and Fountain Avenue) and the 5 dBA CNEL significance criteria (applicable to De Longpre Avenue, Homewood Avenue and Afton Place). Under the Office Option, the Project would result in highest noise increase along the roadway segment of Afton Place (between Vine Street and El Centro Avenue) under Driveway Scenario 3 with a maximum increase of 5.2, which would exceed the 5 dBA significance threshold. At other analyzed roadway segments, the increase in traffic-related noise levels would be 2.7 dBA or less under all three driveway scenarios, which would also be below the applicable 3 and 5 dBA significance thresholds. **Therefore, traffic noise impacts under Future Plus Project conditions would be significant.**

Table IV.H-17
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))			Sig. Impact?
		Future Without Project	Future + Project, Driveway Scenario 1[b]	Future + Project, Driveway Scenario 2[c]	Future + Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	
Residential Option[e]									
Vine Street									
Between Hollywood Blvd. and Sunset Blvd.	Residential	72.5	72.5	—	—	0.0	—	—	No
Between Sunset Blvd. and De Longpre Ave.	Commercial	73.0	73.1	—	—	0.1	—	—	No
Between De Longpre Ave. and Fountain Ave.	Theater	73.0	73.1	—	—	0.1	—	—	No
Between Fountain Ave. and Santa Monica Blvd.	Hotel, Church	73.0	73.0	—	—	0.0	—	—	No
Sunset Boulevard									
Between Ivar Ave. and Vine St.	School	74.2	74.2	—	—	0.0	—	—	No
Between Vine St. and El Centro Ave.	Residential	74.6	74.6	—	—	0.0	—	—	No
De Longpre Avenue									
Between Ivar Ave. and Vine St.	Commercial	68.6	68.7	—	—	0.1	—	—	No
Between Vine St. and El Centro Ave.	Residential, Hospital	64.2	65.5	—	—	1.3	—	—	No
Fountain Avenue									
Between Ivar Ave. and Vine St.	Residential	70.7	70.9	—	—	0.2	—	—	No
Between Vine St. and El Centro Ave.	Residential	70.5	70.6	—	—	0.1	—	—	No
Homewood Avenue									
Between Ivar Ave. and Vine St.	Residential	61.5	61.5	—	—	0.0	—	—	No
Afton Place									
Between Vine St. and El Centro Ave.	Residential	57.6	58.4	—	—	0.8	—	—	No

Table IV.H-17 (Continued)
Table IV.H-17
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))			Sig. Impact?
		Future Without Project	Future + Project, Driveway Scenario 1[b]	Future + Project, Driveway Scenario 2[c]	Future + Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	
Office Option									
Vine Street									
Between Hollywood Blvd. and Sunset Blvd.	Residential	72.5	72.5	72.5	72.5	0.0	0.0	0.0	No
Between Sunset Blvd. and De Longpre Ave.	Commercial	73.0	73.2	73.3	73.3	0.2	0.3	0.3	No
Between De Longpre Ave. and Fountain Ave.	Theater	73.0	73.2	73.1	73.2	0.2	0.1	0.2	No
Between Fountain Ave. and Santa Monica Blvd.	Hotel, Church	73.0	73.1	73.1	73.1	0.1	0.1	0.1	No
Sunset Boulevard									
Between Ivar Ave. and Vine St.	School	74.2	74.3	74.3	74.3	0.1	0.1	0.1	No
Between Vine St. and El Centro Ave.	Residential	74.6	74.6	74.6	74.6	0.0	0.0	0.0	No
De Longpre Avenue									
Between Ivar Ave. and Vine St.	Commercial	68.6	68.7	68.7	68.7	0.1	0.1	0.1	No
Between Vine St. and El Centro Ave.	Residential, Hospital	64.2	66.7	67.0	67.0	2.5	2.8	2.8	No
Fountain Avenue									
Between Ivar Ave. and Vine St.	Residential	70.7	71.0	71.0	71.0	0.3	0.3	0.3	No
Between Vine St. and El Centro Ave.	Residential	70.5	70.6	70.5	70.6	0.1	0.0	0.1	No
Homewood Avenue									
Between Ivar Ave. and Vine St.	Residential	61.5	61.5	61.5	61.5	0.0	0.0	0.0	No
Afton Place									
Between Vine St. and El Centro Ave.	Residential	57.6	58.0	61.6	62.8	0.4	4.0	5.2	**Yes**

Table IV.H-17 (Continued)
Table IV.H-17
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))			Sig. Impact?
		Future Without Project	Future + Project, Driveway Scenario 1[b]	Future + Project, Driveway Scenario 2[c]	Future + Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	

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

[b] *Driveway Scenario 1—A right-in/right-out driveway on Vine Street and a two-way all-way access driveway on De Longpre Avenue.*

[c] *Driveway Scenario 2—All-access driveways on Afton Place and De Longpre Avenue.*

[d] *Driveway Scenario 3—All-access driveways on Afton Place and De Longpre Avenue with an added cul-de-sac.*

[e] *The Residential Option proposes only Driveway Scenario 1. The Office Option considers Driveway Scenarios 1, 2, and 3.*

Source: AES, 2021. See Appendix L of this Draft EIR.

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-18 on page IV.H-41, when compared with existing conditions, the Project would result in a maximum increase of up to 1.5 dBA (CNEL) under the Residential Option along the roadway segment of De Longpre Avenue (between Vine Street and El Centro Avenue. At other analyzed roadway segments, the increase in traffic-related noise levels under the Residential Option would be 0.8 dBA or less. The Project-related noise increase under the Residential Option would be below the applicable 3 and 5 dBA significance thresholds. Under the Office Option, the estimated maximum noise increase due to Project-related traffic would be below the applicable 3 and 5 dBA significance threshold at all roadway segments, with the exception of the roadway segment of Afton Place (between Vine Street and El Centro Avenue). The estimated noise increase along Afton Place (between Vine Street and El Centro Avenue) would be up to 5.3 dBA, which would exceed the 5 dBA significance threshold. **Therefore, traffic noise impacts under Existing Plus Project conditions would be significant.**

Composite Noise Level Impacts from Project Operations

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

Table IV.H-19 on page IV.H-44 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-19, under the Residential Option, the Project would result in an increase in composite noise levels ranging from 0.2 dBA at receptor locations R4 and R5 to 3.5 dBA at receptor location R1. Similarly, the estimated composite noise levels increase under the Office Option would range from 0.2 dBA at receptor location R5 to 4.5 dBA at receptor location R1. The composite noise levels from the 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

Table IV.H-18
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))			Sig. Impact?
		Existing Without Project	Existing Plus Project, Driveway Scenario 1[b]	Existing Plus Project, Driveway Scenario 2[c]	Existing Plus Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	
Residential Option[e]									
Vine Street									
Between Hollywood Blvd. and Sunset Blvd.	Residential	71.7	71.7	—	—	0.0	—	—	No
Between Sunset Blvd. and De Longpre Ave.	Commercial	72.1	72.2	—	—	0.1	—	—	No
Between De Longpre Ave. and Fountain Ave.	Theater	72.0	72.2	—	—	0.2	—	—	No
Between Fountain Ave. and Santa Monica Blvd.	Hotel, Church	72.0	72.1	—	—	0.1	—	—	No
Sunset Boulevard									
Between Ivar Ave. and Vine St.	School	72.4	72.5	—	—	0.1	—	—	No
Between Vine St. and El Centro Ave.	Residential	72.7	72.7	—	—	0.0	—	—	No
De Longpre Avenue									
Between Ivar Ave. and Vine St.	Commercial	66.6	66.8	—	—	0.2	—	—	No
Between Vine St. and El Centro Ave.	Residential, Hospital	63.8	65.3	—	—	1.5	—	—	No
Fountain Avenue									
Between Ivar Ave. and Vine St.	Residential	70.0	70.2	—	—	0.2	—	—	No
Between Vine St. and El Centro Ave.	Residential	69.9	70.0	—	—	0.1	—	—	No
Homewood Avenue									
Between Ivar Ave. and Vine St.	Residential	56.9	57.0	—	—	0.1	—	—	No
Afton Place									
Between Vine St. and El Centro Ave.	Residential	57.4	58.2	—	—	0.8	—	—	No

Table IV.H-18 (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))			Sig. Impact?
		Existing Without Project	Existing Plus Project, Driveway Scenario 1[b]	Existing Plus Project, Driveway Scenario 2[c]	Existing Plus Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	
Office Option									
Vine Street									
Between Hollywood Blvd. and Sunset Blvd.	Residential	71.7	71.7	71.8	71.8	0.0	0.1	0.1	No
Between Sunset Blvd. and De Longpre Ave.	Commercial	72.1	72.3	72.3	72.3	0.2	0.2	0.2	No
Between De Longpre Ave. and Fountain Ave.	Theater	72.0	72.2	72.2	72.3	0.2	0.2	0.3	No
Between Fountain Ave. and Santa Monica Blvd.	Hotel, Church	72.0	72.1	72.1	72.2	0.1	0.1	0.2	No
Sunset Boulevard									
Between Ivar Ave. and Vine St.	School	72.4	72.5	72.5	72.5	0.1	0.1	0.1	No
Between Vine St. and El Centro Ave.	Residential	72.7	72.8	72.8	72.8	0.1	0.1	0.1	No
De Longpre Avenue									
Between Ivar Ave. and Vine St.	Commercial	66.6	66.9	66.9	66.9	0.3	0.3	0.3	No
Between Vine St. and El Centro Ave.	Residential, Hospital	63.8	66.5	66.8	66.8	2.7	3.0	3.0	No
Fountain Avenue									
Between Ivar Ave. and Vine St.	Residential	70.0	70.3	70.3	70.3	0.3	0.3	0.3	No
Between Vine St. and El Centro Ave.	Residential	69.9	70.0	69.9	70.0	0.1	0.0	0.1	No
Homewood Avenue									
Between Ivar Ave. and Vine St.	Residential	56.9	56.9	56.9	56.9	0.0	0.0	0.0	No
Afton Place									
Between Vine St. and El Centro Ave.	Residential	57.4	57.9	61.6	62.7	0.5	4.1	5.3	**Yes**

Table IV.H-18 (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))			Sig. Impact?
		Existing Without Project	Existing Plus Project, Driveway Scenario 1[b]	Existing Plus Project, Driveway Scenario 2[c]	Existing Plus Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	

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

[b] *Driveway Scenario 1—A right-in/right-out driveway on Vine Street and a two-way all-way access driveway on De Longpre Avenue.*

[c] *Driveway Scenario 2—All-access driveways on Afton Place and De Longpre Avenue.*

[d] *Driveway Scenario 3—All-access driveways on Afton Place and De Longpre Avenue with an added cul-de-sac.*

[e] *The Residential Option proposes only Driveway Scenario 1. The Office Option considers Driveway Scenarios 1, 2, and 3.*

Source: AES, 2021. See Appendix L of this Draft EIR.

Table IV.H-19
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))	Significant Criteria[a] (CNEL (dBA))	Signif-icant Impact?
		Traffic	Mechanical	Loading/ Trash Compactor	Outdoor Spaces					
Residential Option										
R1	58.4	49.6	47.8	30.2	58.5	59.3	61.9	3.5	63.4	No
R2	56.1	39.4	48.2	17.2	55.2	56.1	59.1	3.0	61.1	No
R3	61.5	58.7	49.0	56.4	52.5	61.6	64.5	3.0	66.5	No
R4	72.2	58.7	47.7	20.6	52.0	59.8	72.4	0.2	75.2	No
R5	70.5	53.3	48.6	21.6	55.7	58.2	70.7	0.2	73.5	No
Office Option										
R1	58.4	59.9	48.4	25.3	53.5	61.1	62.9	4.5	63.4	No
R2	56.1	41.2	46.5	15.0	51.2	52.8	57.8	1.7	61.1	No
R3	61.5	62.5	43.5	57.0	51.7	63.9	65.9	4.4	66.5	No
R4	72.2	60.5	46.5	19.7	44.1	60.8	72.5	0.3	75.2	No
R5	70.5	55.1	44.2	14.1	47.5	56.1	70.7	0.2	73.5	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, 2021. See Appendix L of this Draft EIR.

within the normally unacceptable (70 to 75 CNEL) land use category 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. **As such, composite noise level impacts due to Project operations would be less than significant. The Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above existing levels without the Project.**

In conclusion, Project on-site operations would not result in the generation of a substantial 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. However, Project off-site traffic would result in a substantial permanent increase in ambient noise at Afton Place (between Vine Street and El Centro Avenue) under the Office Option with Driveway Scenario 3. Therefore, while the Project's operational noise impacts from on-site sources would be less than significant, the Project's operational noise impacts from off-site sources would be significant.

(2) Mitigation Measures

(a) On-Site Construction Noise

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

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

- Along the southern property line of the Project Site between the construction areas and residential use on Afton Place south of the Project Site (receptor location R1). The temporary sound barrier shall be designed to provide a minimum 15-dBA noise reduction at the ground level of receptor location R1
- Along the eastern property line of the Project Site between the construction areas and the residential uses on the east side of the Project Site (receptor location R2). The temporary sound barrier shall be designed to provide a minimum 15-dBA noise reduction at the ground level of receptor location R2.
- Along the northern property line of the Project Site between the construction areas and the residential use and the Southern

California Hospital on De Longpre Avenue northeast of the Project Site (receptor location R3). The temporary sound barrier shall be designed to provide a minimum 15-dBA noise reduction at the ground level of receptor location R3.

(b) Off-Site Construction Noise

Project-level noise impacts from off-site construction would be less than significant. Therefore, no mitigation measures are required.

(c) Operational Noise

Project-level noise impacts with regard to on-site operational noise would be less than significant. Therefore, no mitigation measures are required.

However, Project-level impacts with regard to off-site operational noise would be significant. Conventional mitigation measures, such as providing noise barrier walls to reduce the off-site traffic noise impacts, would not be feasible as the barriers would obstruct the access and visibility to the properties along the impacted roadway segments. Other mitigation measure, such as, quieter pavement surface (e.g., rubberized asphalt concrete) would not be feasible as these are public roadways. There are no other feasible mitigation measures to reduce the significant noise impacts associated with the off-site traffic.

(3) Level of Significance After Mitigation

(a) On-Site Construction Noise

Implementation of Mitigation Measure NOI-MM-1 provided above would reduce the Project and cumulative 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 Afton Place south of the Project Site (receptor location R1), the residential uses east of and immediately adjacent to the Project Site (receptor location R2), and the residential and hospital uses along De Longpre Avenue north and northeast of the Project Site (receptor location R3). However, the estimated construction-related noise levels would still exceed the significance thresholds at the sensitive uses represented by receptor locations R1, R2, and R3. In addition, the temporary sound barrier would not be effective in reducing the construction-related noise for the upper levels of the hospital uses (a six-story building), represented by receptor location R3. In order to be effective, the temporary noise barrier would need to be as high as the buildings (i.e., six stories), which would not be feasible. There are no other feasible mitigation measures that could be implemented to reduce the temporary noise impacts from on-site construction at receptor locations R1, R2, and R3. **Therefore, construction**

noise impacts associated with on-site noise sources would remain significant and unavoidable.

(b) Off-Site Construction Noise

Project-level noise impacts from off-site construction were determined to be less than significant. Therefore, no mitigation measures were required, and the impact level remains less than significant.

(c) Operational Noise

Project impacts with regard to on-site operational noise were determined to be less than significant. Therefore, no mitigation measures were required, and the impact level remains less than significant.

However, as discussed above, there are no other feasible mitigation measures to reduce the significant noise impacts associated with the off-site traffic. **Therefore, Project impacts with regard to off-site traffic operational noise would be significant and unavoidable.**

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

(1) Impact Analysis

(a) *Construction*

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

(i) Building Damage Impacts from On-Site Construction

With regard to potential building damage, the Project would generate ground-borne construction vibration during building demolition and site excavation/grading activities when heavy construction equipment, such as large bulldozers, drill rigs, and loaded trucks, would be used. The FTA has published standard vibration velocities for various construction

equipment operations. Table IV.H-20 on page IV.H-49 provides the estimated vibration levels (in terms of inch per second PPV) at the nearest off-site structures to the Project Site. The estimated vibration levels provided in Table IV.H-20 are applicable to both Residential Option and Office Option, as both options would utilize similar construction equipment. 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-2 provided above, impact pile driving vibration is not included in the on-site construction vibration analysis. Installation of piles for shoring and foundation would utilize drilling methods to minimize vibration generation.

As discussed in Section IV.B, Cultural Resources, of the Draft EIR, the Project Site is located within the Afton Square Historic District. There are six bungalows within the Project Site, which would be relocated during the Project construction and would be rehabilitated within the eastern portion of the Project Site. The nearest off-site historic resources are single-family residential structures located across the Project Site to the north and south, and adjacent to the Project Site to the east. The assessment of construction vibration provided below for potential building damage due to on-site construction compares the estimated vibration levels generated during construction of the Project to the 0.12-PPV significance criteria for buildings extremely susceptible to vibration damage (applicable to the historic single-family residential buildings to the north, south and east), the 0.2-PPV significance criteria for non-engineered timber and masonry building (applicable to the single-story commercial building to the south of the Project Site), and the 0.3-PPV significance criteria for engineered concrete masonry building (applicable for the single-story commercial buildings to the north and west of the Project Site). As indicated in Table IV.H-20, the estimated vibration velocity levels from construction equipment would be below the building damage significant criteria for the existing off-site building structures surrounding the Project Site, with the exception of the two historic single-family residential buildings adjacent to the Project to the east. The estimated vibration levels from the construction equipment would exceed the 0.12 PPV building damage significance criteria at the two historic single-story buildings adjacent to the Project Site to the east. **Therefore, the on-site vibration impacts during construction of the Project would be significant without implementation of mitigation measures.**

(ii) Human Annoyance Impacts from On-Site Construction

Table IV.H-21 on page IV.H-50 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. The estimated vibration levels provided in Table IV.H-21 are applicable to both Residential Option and Office Option, as both options would utilize similar construction equipment. Per FTA guidance, the significance criteria for human annoyance is 72 VdB for sensitive uses, including residential, hospital and theater uses, assuming there are a minimum of

Table IV.H-20
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)	Signif-icant 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	0.032	0.032	0.027	0.012	0.001	0.3[c]	No
Single-Story Commercial Building to the South	0.024	0.024	0.020	0.009	0.001	0.2[d]	No
Single-Story Commercial Building to the West	0.014	0.014	0.012	0.006	0.001	0.3[c]	No
Two Single-Story Residential Buildings to the East (Historic)	0.244	0.244	0.208	0.096	0.008	0.12[e]	**Yes**
Single-Story Residential Building to the North (Historic)	0.019	0.019	0.016	0.008	0.001	0.12[e]	No
Single-Story residential Building to the South (Historic)	0.016	0.016	0.014	0.006	0.001	0.12[e]	No

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

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

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

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

[e] *FTA criteria for buildings extremely susceptible to vibration damage, such as historic buildings.*

Source: FTA, 2006; AES, 2018. See Appendix L of this Draft EIR.

70 vibration events occurring during a typical construction day. As indicated in Table IV.H-21 on page IV.H-50, the estimated ground-borne vibration levels from construction equipment would be below the significance criteria for human annoyance at off-site sensitive receptor locations R4 and R5. The estimated ground-borne vibration levels at receptor locations R1, R2, and R3 would be up to 73 VdB, 99 VdB, and 74 VdB, respectively, each of which would exceed the 72 VdB significance criteria during the demolition and grading/excavation phases where large construction equipment (e.g., large bulldozer, caisson drilling and loaded trucks) would operate within 80 feet of the sensitive

Table IV.H-21
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	73	73	72	65	44	72	**Yes**
R2	99	99	98	91	70	72	**Yes**
R3	74	74	73	66	45	72	**Yes**
R4	56	56	55	48	27	72	No
R5	49	49	48	41	20	72	No

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

Source: FTA, 2006; AES, 2018. See Appendix L of this Draft EIR.

receptors. **Therefore, on-site vibration impacts during construction of the Project, pursuant to the significance criteria for human annoyance, would be significant without 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 Vine Street and Sunset Boulevard. 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 (0.00566 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 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

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

vibration levels of approximately 0.022 PPV, as provided in the noise calculation worksheets included in Appendix L of 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, hotel and theater 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 25 feet of the sensitive use (residential and hotel use) along Vine Street and Sunset Boulevard. As indicated in the noise calculation worksheets included in Appendix L of this Draft EIR, temporary vibration levels could reach approximately 72 VdB periodically as trucks pass sensitive receptors along the anticipated haul route(s). Therefore, the residential uses along Vine Street and Sunset Boulevard (between the Project Site and US-101), would be exposed to ground-borne vibration up to 72 VdB, which would be at the 72-VdB significance criteria from the construction trucks. **As such, 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 significant.**

(iv) Summary of Construction Vibration Impacts

As discussed above, the estimated vibration levels from on-site construction equipment would exceed the building damage significance criteria of 0.12 PPV for the off-site historic buildings adjacent to the Project Site to the east, and vibration impacts (pursuant to the significance criteria for building damage) during construction of the Project would be significant without implementation of mitigation measures. In addition, vibration impacts from on-site construction activities would be significant pursuant to the significance criteria for human annoyance without mitigation.

Based on the above, 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 building damage and significant with respect to human annoyance. Therefore, the Project's off-site

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

construction activities would generate excessive ground-borne vibration levels with respect to human annoyance.

As such, the Project would result in the generation of excessive ground-borne vibration levels from on-site construction activities with respect to building damage, and on- and off-site construction activities with respect to human annoyance. Impacts would be significant.

(b) Operation

As discussed above, Project operation would not generate high levels of vibration. The primary sources of the vibration would include vehicular operation within the parking garage and building mechanical equipment, which would not result in excessive vibration levels at the off-site vibration sensitive receptors. 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. Therefore, the following mitigation measure is provided to reduce construction-related vibration impacts:

Mitigation Measure NOI-MM-2: Prior to start of construction, the Applicant shall retain the services of a structural engineer or qualified professional to visit the two existing historic single-family residential buildings adjacent to the Project Site to the east 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 the buildings 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 0.1 PPV and a regulatory level of 0.12 PPV. The system shall also provide real-time alert when the vibration levels exceed the warning level.

In the event the warning level (0.1 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 construction activities in the vicinity of the buildings and visually inspect the buildings 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.

Other mitigation measures were considered to reduce vibration impacts from on-site construction activities with respect to human annoyance, including the installation of a wave barrier. 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. In addition, there are no feasible mitigation measures that would reduce the potential vibration human annoyance impacts associated with the off-site construction trucks. **As such, vibration impacts associated with human annoyance from on-site and off-site construction would remain significant.**

(b) Operation

Project-level noise impacts with regard to operational vibration would be less than significant. Therefore, no mitigation measures are required.

(3) Level of Significance After Mitigation

(a) On-Site Construction Vibration

Implementation of Mitigation Measure NOI-MM-2 would ensure the vibration levels at the exterior of the residential buildings adjacent to the Project Site to the east would not exceed the significance criteria of 0.12 PPV. **Therefore, vibration impacts from on-site construction activities with respect to building damage would be reduced to a less than significant level.**

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[34] *Caltrans, Transportation and Construction Vibration Guidance Manual, September 2013.*

However, Project-level vibration impacts from on-site construction activities would still exceed the 72 VdB human annoyance significance criteria at the residential uses north, south, and east of the Project Site. As previously discussed, 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., Vine Street and Sunset Boulevard) would be well below the significance criteria for building damage. **Therefore, Project vibration impacts with respect to building damage would be less than significant.**

Project vibration levels from construction trucks would exceed the significance criteria for human annoyance at sensitive receptors (e.g., residential and hotel uses) along Vine Street and Sunset Boulevard. There are no feasible mitigation measures that would reduce the potential vibration human annoyance impacts associated with the off-site construction trucks. **Therefore, Project vibration impacts from off-site construction with respect to human annoyance would remain significant and unavoidable.**

(c) Operational Vibration

Project impacts with regard to operational vibration were determined to be less than significant. Therefore, no mitigation measures were required, and the impact level remains less than significant.

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?

As discussed in Section VI, Other CEQA Considerations, of this Draft EIR and evaluated in the Initial Study (Appendix A of this Draft EIR), the Project Site would not expose people residing or working in the Project area to excessive airport-related noise levels. The nearest airport is the Hollywood Burbank Airport located approximately 7 miles north of the Project Site. Since the Project would not be located within an airport land use plan, within two miles of a public airport or public use airport, or within the vicinity of a private airstrip, impacts with regard to airport-related noise would not occur and would be clearly insignificant and unlikely to occur. Thus, the Project would have a less than

significant impact with respect to Thresholds (c). **No impacts from excessive airport-related noise levels would occur and 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, 103 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 eight related projects are within 1,000 feet of the Project Site:

- Related Project No. 25 (Columbia Square Project) is a mixed-use development 6121 Sunset Boulevard, approximately 930 feet northeast of the Project Site. However, this related project has been constructed. Therefore, Related Project No. 25 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 29 is a mixed-use development located at 6230 Sunset Boulevard, approximately 370 feet northeast of the Project Site. There are noise sensitive uses (residential and hospital) located between the Project Site and the Related Project No. 29. However, the Related Project No. 29 is currently under construction. Therefore, major construction activities for the Related Project No. 29 (i.e., demolition, grading/excavation) would be completed prior to Project construction. As such, construction-related noise from the Project and the Related Project No. 29 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 31, a mixed-use development located at 6201 Sunset Boulevard, approximately 730 feet northeast of the Project Site. There are noise sensitive uses located between the Project and the Related Project No. 31,

including the residential and hospital uses (located between Leland Way and De Longpre Avenue). However, there are existing building structures between the Project Site and the Related Project No. 31 (including the Related Project No. 29 building under construction), which would provide noise shielding between the two projects and the affected noise sensitive receptors. Therefore, construction-related noise from the Project and Related Project No. 31 would not contribute to cumulative construction-related noise impacts

- Related Project No. 43 is a mixed-use development located at 1310 Cole Avenue, approximately 735 feet west of the Project Site. Related Project No. 43 is currently under construction. Thus, the major construction activities for the Related Project No. 43 (i.e., demolition, grading/excavation) would be completed prior to the Project construction. There are no noise sensitive uses located between the Project Site and the Related Project No. 43. Therefore, construction-related noise from the Project and Related Project No. 43 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 46 is a hotel development located at 1400 Cahuenga Boulevard, approximately 730 feet southwest of the Project Site. Related Project No. 46 is currently under construction. Thus, the major construction activities for the Related Project No. 46 (i.e., demolition, grading/excavation) would be completed prior to the Project construction. There are no noise sensitive uses located between the Project Site and the Related Project No. 46. Therefore, construction-related noise from the Project and the Related Project No. 46 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 59, a mixed-use development located at 6200 Sunset Boulevard, approximately 485 feet northeast of the Project Site. There are noise sensitive uses located between the Project and the Related Project No. 59, including the residential and hospital uses (located between Leland Way and De Longpre Avenue). As analyzed above in Subsection 3.d.(1)(a)(i) under Threshold (a) (see Table IV.H-11 on page IV.H-27), the estimated Project-related construction noise levels at receptor location R3 would be 19.0 dBA above the significance criteria under both the Residential Option and Office Option. In addition, the estimated construction-related noise from the Related Project No. 59 to the hospital building (represented by receptor location R3) would exceed the significance threshold by up to 3.1 dBA.[35] Therefore, the Project could contribute to cumulative construction-related noise impacts at receptor location R3, in the event of concurrent construction with the Related Project No. 59.

- Related Project No. 75 is a mixed-use development located at 6400 Sunset Boulevard, approximately 850 feet northwest of the Project Site. There are no noise sensitive uses located between the Project Site and the Related Project

[35] *City of Los Angeles, 6200 West Sunset Boulevard Project Draft EIR, January 2018.*

No. 75. Therefore, construction-related noise from the Project and the Related Project No. 75 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 93 is a mixed-use development located at 1341 Vine Street, across the Project Site to the west. However, this related project has been constructed. Therefore, Related Project No. 93 would not contribute to cumulative construction-related noise impacts.

Construction-related noise levels from the related projects would be intermittent and temporary, and it is anticipated that, as with the Project, the related projects would comply with the construction hours and other relevant provisions set forth in the LAMC. Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed mitigation measures for each individual related project and compliance with locally adopted and enforced noise ordinances. Based on the above, there would be potential cumulative noise impacts at the nearby sensitive uses (e.g., residential and hospital uses) located in proximity to the Project Site and related projects, in the event of concurrent construction activities. **As such, cumulative noise impacts from on-site construction would be significant.**

(ii) Off-Site Construction Noise

In addition to the cumulative impacts of on-site construction activities, off-site construction haul trucks would have a potential to result in cumulative impacts if the trucks for the related projects and the Project were to utilize the same haul route. Specifically, based on the existing daytime ambient noise level of 71.7 dBA (L_{eq}) along the anticipated haul routes, including Vine Street and Sunset Boulevard (refer to Table IV.H-12 on page IV.H-30), it is estimated that up to 235 truck trips per hour could occur along Vine Street and Sunset Boulevard without exceeding the significance criteria of 5 dBA above ambient noise levels. Therefore, if the total number of trucks from the Project and related projects were to add up to 236 truck trips per hour along Vine Street and Sunset Boulevard, the estimated noise level from 236 truck trips per hour would be 75.0 dBA. The Project plus ambient would be 76.7 dBA, which would exceed the ambient noise levels by 5 dBA and exceed the significance criteria.[36] As discussed above, the Project would generate up to 35 truck trips per hour during peak construction period (mat foundation phase) under both the Residential Option and Office Option. Thus, a total of 201 trips associated with related projects in the vicinity would generate a cumulative traffic noise impact if they were to occur concurrently with the 35 peak hourly truck trips generated by the Project. Based on review

[36] *It is estimated that with 236 truck trips per hour, the noise level would be 75.0 dBA, when added to the ambient noise level of 71.7 dBA, the Project plus ambient noise level would be 76.7 dBA, which would exceed the ambient by 5.0 dBA.*

of the related projects discussed above, which are described and mapped in Section III, Environmental Setting, of this Draft EIR, several related projects may also use Sunset Boulevard and Vine Street for truck access during construction. However, many of these related projects are currently under construction or completed, and thus, would not have construction activities that would occur concurrently with those of the Project. Specifically, projects for which construction is complete or underway include Related Project Nos. 6, 20, 25, 27, 29, 43, 46, 59, 61, and 77. Based on review of the CEQA documents that have been prepared for most of the remaining related projects in the Project vicinity that have not yet been constructed, the highest number of potentially concurrent peak construction trips associated with the related projects would occur along Sunset Boulevard. Specifically, review of the City's environmental documents indicates that Related Project Nos. 31, 75, and 82 would generate a total of approximately 164 hourly construction trips during their respective peak construction periods and assuming the unlikely scenario in which all of the peak hourly construction periods from the related projects occurs simultaneously.[37] Also note that of these 164 peak hourly construction trips, approximately 105 trips are associated with Related Project No. 82 (Crossroads Hollywood), which includes two approved haul routes that would allow haul trucks to be dispersed to both Highland Boulevard and Sunset Boulevard. This emphasizes that the estimate of 164 concurrent peak construction trips is overstated and demonstrates that it is very unlikely that the peak hourly construction trips from all of the related projects would generate 235 concurrent truck trips along the Project Site's haul route that would travel along Sunset Boulevard and Vine Street. Therefore, cumulative noise due to construction truck traffic from the Project and other related projects is not expected to exceed the ambient noise levels along the haul route by 5 dBA. **As such, cumulative noise impacts from off-site construction would be less than significant.**

(iii) Summary of Cumulative Construction Noise Impacts

As discussed above, on-site construction activities from the Project and related projects would not have the potential to result in the exposure of persons to or generation of noise levels in excess of standards established by the City or result in a substantial temporary or periodic increase in ambient noise levels in the vicinity of the Project Site above levels existing without the Project and related projects. **Therefore, cumulative noise impacts from on-site construction activities would be significant. Cumulative noise impacts from off-site construction trips would be less than significant.**

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[37] *Data obtained from the City of Los Angeles Department of City Planning website, https://planning.lacity.org/, for Related Project Nos. 27, 31, 59, 75, and 82. Refer to the environmental tab followed by the Draft EIR tab.*

(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 roof-top mechanical equipment, noise levels would be less than significant at the property line for each related project. In addition, as discussed above, noise impacts associated with operations within the Project Site would be less than significant. **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-22 on page IV.H-60. As shown therein, cumulative traffic volumes under the Residential Option would result in an increase ranging from 0.7 dBA (CNEL) along the roadway segment of Fountain Avenue (between Vine Street and El Centro Avenue), to up to 4.6 dBA (CNEL) along the roadway segments of Homewood Avenue (between Ivar Avenue and Vine Street). The increase in traffic noise levels would be below the 3 dBA CNEL significance criteria (applicable to Vine Street, Sunset Boulevard, and Fountain Avenue) and the 5 dBA CNEL significance criteria (applicable to De Longpre Avenue, Homewood Avenue, and Afton Place). Under the Office Option, the estimated Project-related noise increase would be below the applicable 3 and 5 dBA significance thresholds, with the exception of the roadway segment

Table IV.H-22
Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))				Increase in Noise Levels due to Cumulative + Project (CNEL (dBA))			Sig. Impact?
		Existing Conditions	Future + Project, Driveway Scenario 1[b]	Future + Project, Driveway Scenario 2[c]	Future + Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	
Residential Option[e]									
Vine Street									
Between Hollywood Blvd. and Sunset Blvd.	Residential	71.7	72.5	—	—	0.8	--	--	No
Between Sunset Blvd. and De Longpre Ave.	Commercial	72.1	73.1	—	—	1.0	—	—	No
Between De Longpre Ave. and Fountain Ave.	Theater	72.0	73.1	—	—	1.1	—	—	No
Between Fountain Ave. and Santa Monica Blvd.	Hotel, Church	72.0	73.0	—	—	1.0	—	—	No
Sunset Boulevard									
Between Ivar Ave. and Vine St.	School	72.4	74.2	—	—	1.8	—	—	No
Between Vine St. and El Centro Ave.	Residential	72.7	74.6	—	—	1.9	—	—	No
De Longpre Avenue									
Between Ivar Ave. and Vine St.	Commercial	66.6	68.7	—	—	2.1	—	—	No
Between Vine St. and El Centro Ave.	Residential, Hospital	63.8	65.5	—	—	1.7	—	—	No
Fountain Avenue									
Between Ivar Ave. and Vine St.	Residential	70.0	70.9	—	—	0.9	—	—	No
Between Vine St. and El Centro Ave.	Residential	69.9	70.6	—	—	0.7	—	—	No
Homewood Avenue									
Between Ivar Ave. and Vine St.	Residential	56.9	61.5	—	—	4.6	—	—	No
Afton Place									
Between Vine St. and El Centro Ave.	Residential	57.4	58.4	—	—	1.0	—	—	No

Table IV.H-22 (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 + Project (CNEL (dBA))			Sig. Impact?
		Existing Condi-tions	Future + Project, Driveway Scenario 1[b]	Future + Project, Driveway Scenario 2[c]	Future + Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	
Office Option									
Vine Street									
Between Hollywood Blvd. and Sunset Blvd.	Residential	71.7	72.5	72.5	72.5	0.8	0.8	0.8	No
Between Sunset Blvd. and De Longpre Ave.	Commercial	72.1	73.2	73.3	73.3	1.1	1.2	1.2	No
Between De Longpre Ave. and Fountain Ave.	Theater	72.0	73.2	73.1	73.2	1.2	1.1	1.2	No
Between Fountain Ave. and Santa Monica Blvd.	Hotel, Church	72.0	73.1	73.1	73.1	1.1	1.1	1.1	No
Sunset Boulevard									
Between Ivar Ave. and Vine St.	School	72.4	74.3	74.3	74.3	1.9	1.9	1.9	No
Between Vine St. and El Centro Ave.	Residential	72.7	74.6	74.6	74.6	1.9	1.9	1.9	No
De Longpre Avenue									
Between Ivar Ave. and Vine St.	Commercial	66.6	68.7	68.7	68.7	2.1	2.1	2.1	No
Between Vine St. and El Centro Ave.	Residential, Hospital	63.8	66.7	670	67.0	2.9	3.2	3.2	No
Fountain Avenue									
Between Ivar Ave. and Vine St.	Residential	70.0	71.0	71.0	71.0	1.0	1.0	1.0	No
Between Vine St. and El Centro Ave.	Residential	69.9	70.6	70.5	70.6	0.7	0.6	0.7	No
Homewood Avenue									
Between Ivar Ave. and Vine St.	Residential	56.9	61.5	61.5	61.5	4.6	4.6	4.6	No
Afton Place									
Between Vine St. and El Centro Ave.	Residential	57.4	58.0	61.6	62.8	0.6	4.2	**5.4**	**Yes**

Table IV.H-22 (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 + Project (CNEL (dBA))			Sig. Impact?
		Existing Condi-tions	Future + Project, Driveway Scenario 1[b]	Future + Project, Driveway Scenario 2[c]	Future + Project, Driveway Scenario 3[d]	Driveway Scenario 1[b]	Driveway Scenario 2[c]	Driveway Scenario 3[d]	

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

[b] *Driveway Scenario 1—A right-in/right-out driveway on Vine Street and a two-way all-way access driveway on De Longpre Avenue.*

[c] *Driveway Scenario 2—All-access driveways on Afton Place and De Longpre Avenue.*

[d] *Driveway Scenario 3—All-access driveways on Afton Place and De Longpre Avenue with an added cul-de-sac.*

[e] *The Residential Option proposes only Driveway Scenario 1. The Office Option considers Driveway Scenarios 1, 2, and 3.*

Source: AES, 2021. See Appendix L of this Draft EIR.

of Afton Place. The estimated traffic noise increase along Afton Place (between Vine Street and El Centro Avenue) would be 5.4 dBA with Driveway Scenario 3, which would exceed the applicable 5 dBA significance threshold. **Therefore, cumulative noise impacts due to off-site mobile noise sources associated with the Project, future growth, and related projects would be significant.**

(iii) Summary of Cumulative Operational Noise Impacts

As discussed above, the Project and related projects would not result in the exposure of persons to or generation of noise levels in excess of standards established by the City or in a substantial permanent increase in ambient noise levels in the vicinity of the Project Site above levels existing without the Project and the related projects. **Therefore, cumulative operational noise impacts from on-site sources would be less than significant. However, the cumulative operational noise impacts from off-site source would be significant at one of the analyzed roadway segments.**

(c) Construction Vibration

(i) On-Site Construction Vibration

As previously discussed, ground-borne vibration decreases rapidly with distance. Potential vibration impacts due to construction activities are generally limited to buildings/structures that are located in proximity to the construction site (i.e., within 15 feet as related to building damage and 80 feet as related to human annoyance at residential uses). Potential vibration impacts associated with Project-related on-site construction activities would be significant with respect to human annoyance. **However, 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 both building damage and human annoyance associated with ground-borne vibration from on-site sources.**

(ii) Off-Site Construction Vibration

As previously discussed, based on FTA data, the vibration generated by a typical heavy truck would be approximately 63 VdB (0.00566 PPV) at a distance of 50 feet from the truck.[38] In addition, according to the FTA "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads." As discussed above, there are existing buildings that are approximately 20 feet from the right-of-way of the anticipated haul route(s) for the Project (i.e., Vine Street and Sunset Boulevard). These buildings are anticipated to be exposed to ground-borne vibration levels

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

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 be significant with respect to human annoyance. As related projects would be anticipated to use similar trucks as the Project, it is anticipated that construction trucks would generate similar vibration levels along the anticipated haul route(s). As analyzed above, the Project-related construction trucks would result in significant impacts at sensitive uses along the anticipated haul route(s). **Therefore, to the extent that other related projects use the same haul route as the Project, potential cumulative human annoyance impacts associated with temporary and intermittent vibration from haul trucks traveling along the designated haul routes would be significant.**

(iii) Summary of Cumulative Construction Vibration Impacts

As discussed above, due to the rapid attenuation characteristics of ground-borne vibration and given the distance of the nearest related project to the Project Site, there is no potential for a cumulative construction vibration impact with respect to building damage associated with ground-borne vibration from on-site sources. In addition, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant. 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. 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 significant. **Therefore, cumulative vibration impacts with respect to human annoyance associated with off-site construction activities would be significant.**

(2) Mitigation Measures

(a) Construction Noise

As analyzed above, cumulative noise impacts associated with off-site construction trucks from the Project and other related projects would be less than significant. However, on-site construction activities from the Project and Related Project No. 59 would be significant. Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed mitigation measures (e.g., providing temporary noise barriers) for each individual related project. However, even with these mitigation measures cumulative noise impacts would continue to occur and there are no other physical mitigation measures that would be feasible. As such, cumulative on-site noise impacts from on-site construction would be significant.

(b) Operational Noise

As discussed above, on-site operation of the Project would not result in significant noise or vibration impacts. Therefore, no mitigation measure is required for the on-site noise sources. However, as analyzed above, cumulative noise impacts associated with off-site traffic would occur along Afton Place (between Vine Street and El Centro Avenue). Conventional mitigation measures, such as providing noise barrier walls to reduce the off-site traffic noise impacts, would not be feasible as the barriers would obstruct the access and visibility to the properties along the impacted roadway segments. There are no other feasible mitigation measures to reduce the significant noise impacts associated with the cumulative off-site traffic. Project impacts associated with off-site traffic would be cumulatively considerable.

(c) Construction Vibration

As analyzed above, it is anticipated that cumulative vibration levels from off-site construction trucks would exceed the significance criteria for human annoyance at vibration sensitive receptors along the anticipated construction routes. However, there are no feasible mitigation measures to reduce the potential cumulative vibration human annoyance impacts associated with off-site construction trucks.

(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 remain significant and unavoidable.

(ii) Off-Site Construction Noise

Cumulative noise impacts from off-site construction would be less than significant.

(b) Operational Noise

Cumulative impacts with regard to on-site operational noise would be less than significant. However, cumulative impacts with regards to off-site traffic operational noise would be significant and unavoidable.

(c) Construction Vibration

(i) On-Site Construction Vibration

Cumulative vibration impacts associated with the on-site construction activities with respect to building damage and human annoyance would be less than significant.

(ii) Off-Site Construction Vibration

Cumulative vibration impacts with respect to building damage would be less than significant.

Cumulative vibration levels from construction trucks would exceed the significance criteria for human annoyance at sensitive receptors (e.g., residential and hotel uses) along Vine Street and Sunset Boulevard. There are no feasible mitigation measures that would reduce the potential vibration human annoyance impacts associated with the off-site construction trucks. **Therefore, cumulative vibration impacts from off-site construction with respect to human annoyance would remain significant and unavoidable.**