IV. Environmental Impact Analysis

I. Noise

1. Introduction

This section of the Draft EIR analyzes the potential noise and vibration impacts of the Project. Included in this section is a description of the existing noise and vibration levels within the Project Site area, an estimation of the future noise and vibration levels at surrounding sensitive land uses associated with construction and operation of the Project, an analysis of the potential noise impacts, and the inclusion of mitigation measures to address any identified potential significant impacts. Additionally, this section of the Draft EIR evaluates the Project's incremental contribution to potential cumulative noise and vibration impacts resulting from past, present, and probable future projects. This section summarizes the noise and vibration information provided in the Noise Calculation Worksheets, prepared by Acoustical Engineering Services (AES), included in Appendix J of the Draft EIR.[1]

2. Environmental Setting

Due to the technical nature of noise and vibration impacts, a brief overview of basic noise principles and descriptors is provided below.

a. Noise and Vibration Basics

(1) Noise Principles and Descriptors

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as undesirable (i.e., loud, unexpected, or annoying) sound. Acoustics is defined as the physics of sound and addresses its propagation and control.[2] In acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or

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1 AES, Noise Calculation Worksheets, December 2021.

2 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, Section 2.2.1, September 2013.

atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver.

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement and reflects the way people perceive changes in sound amplitude.[3] The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of feeling pain. Pressure waves traveling through air exert a force registered by the human ear as sound.[4]

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but, rather, a broad band of frequencies varying in levels of magnitude. When all of the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequencies spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.[5]

The typical human ear is not equally sensitive to the frequency range from 20 to 20,000 Hz. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to these extremely low and extremely high frequencies. This method of frequency filtering or weighting is referred to as A-weighting, expressed in units of A-weighted decibels (dBA), which is typically applied to community noise measurements.[6] Some representative common outdoor and indoor noise sources and their corresponding A-weighted noise levels are shown in Figure IV.I-1 on page IV.I-3.

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

[4] California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, Section 2.1.3, September 2013.

[5] California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, Section 2.1.3, September 2013.

[6] California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, Section 2.1.3, September 2013.

Common Outdoor Activities	Noise Level (dBA)	Common IndoorActivities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower 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 lawnmower, 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 in 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	

Figure IV.I-1
Decibel Scale and Common Noise Sources

Source: State of California, Department of Transportation (Caltrans), Technical Noise Supplement, 2009.

(2) Noise Exposure and Community Noise

Community noise exposure is typically measured over a period of time; a noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the sound sources contributing to the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with many unidentifiable individual contributors. Single-event noise sources, such as aircraft flyovers, sirens, etc., may cause sudden changes in background noise level.[7] However, generally, background noise levels change gradually throughout the day, corresponding with the addition and subtraction of distant noise sources, such as changes in traffic volume.

These successive additions of sound to the community noise environment change the community noise level from moment to moment, requiring the noise exposure to be measured over periods of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. The following noise descriptors are used to characterize environmental noise levels over time.[8]

L_{eq}: The equivalent sound level over a specified period of time, typically, one hour (L_{eq}). The L_{eq} may also be referred to as the energy-average sound level.

L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

L_{min}: The minimum, instantaneous noise level experienced during a given period of time.

L_x: The noise level exceeded a percentage of a specified time period. For instance, L_{50} and L_{90} represent the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.

L_{dn}: The average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dBA to measured noise levels between the hours of 10:00 P.M. and 7:00 A.M. to account for nighttime noise sensitivity. The L_{dn} is also termed the day-night average noise level (DNL).

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7 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, Section 2.2.1, September 2013.

8 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 2.2.2.

CNEL: The Community Noise Equivalent Level (CNEL) is the time average A-weighted noise level during a 24-hour day that includes an addition of 5 dBA to measured noise levels between the hours of 7:00 P.M. and 10:00 P.M. and an addition of 10 dBA to noise levels between the hours of 10:00 P.M. and 7:00 A.M. to account for noise sensitivity in the evening and nighttime, respectively.

(3) Effects of Noise on People

Noise is generally a loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance);
- Interference effects (e.g., communication, sleep, and learning interference);
- Physiological effects (e.g., startle response); and
- Physical effects (e.g., hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep.

The World Health Organization's Guidelines for Community Noise details the adverse health effects of high noise levels, which include hearing impairment, speech intelligibility, sleep disturbance, physiological functions (e.g., hypertension and cardiovascular effects), mental illness, performance of cognitive tasks, social and behavioral effects (e.g., feelings of helplessness, aggressive behavior), and annoyance.[9]

With regard to the subjective effects, the responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity. Overall, there is no completely satisfactory way to measure

[9] World Health Organization Team, edited by Birgitta Berglund, Thomas Lindvall, and Dietrich H. Schwela, Guidelines for Community Noise, 1999.

the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise levels, the following relationships generally occur:[10]

- Except in carefully controlled laboratory experiments, a change of 1 dBA in ambient noise levels cannot be perceived;
- Outside of the laboratory, a change of 3 dBA in ambient noise levels is considered to be a barely perceivable difference;
- A change of 5 dBA in ambient noise levels is considered to be a readily perceivable difference; and
- A change of 10 dBA in ambient noise levels is subjectively heard as a doubling of the perceived loudness.

These relationships between change in noise level and human hearing response occur in part because of the logarithmic nature of sound and the dB scale. Because the dBA scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but, rather, logarithmically. Under the dBA scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two sources are each producing sound of the same loudness, the resulting sound level at a given distance would be approximately 3 dBA higher than one of the sources under the same conditions. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. Under the dB scale, three sources of equal loudness together produce a sound level of approximately 5 dBA louder than one source, and 10 sources of equal loudness together produce a sound level of approximately 10 dBA louder than the single source.[11]

[10] California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 2.2.1.

[11] California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 2.2.1.1.

(4) Noise Attenuation

When noise propagates over a distance, the noise level reduces, or attenuates, with distance depending on the type of noise source and the propagation path. Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, referred to as "spherical spreading." The rate of sound attenuation for a point source, such as a piece of mechanical or electrical equipment (e.g., air conditioner) or idling vehicle (e.g., bulldozer), is 6 dBA per doubling of distance from the noise source to the receptor over acoustically "hard" sites and 7.5 dBA per doubling of distance from the noise source to the receptor over acoustically "soft" sites.[12] Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the reduction in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, which, in addition to geometric spreading, provide an excess ground attenuation value of 1.5 dBA (per doubling distance).[13] 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.

Roadways and highways consist of several localized noise sources on a defined path and, hence, are treated as "line" sources, which approximate the effect of several point sources.[14] Noise from a line source propagates over a cylindrical surface, often referred to as "cylindrical spreading."[15] Line sources (e.g., traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement.[16] Therefore, noise due to a line source attenuates less with distance than that of a point source with increased distance.

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

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12 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Sections 2.1.4.1 and 2.1.4.2.

13 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Sections 2.1.4.1 and 2.1.4.2.

14 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 2.1.4.1.

15 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 2.1.4.1.

16 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 2.1.4.1.

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), 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 can reflect 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 larger barrier.[17] Additionally, structures with closed windows can further attenuate exterior noise by a minimum of 20 dBA to 30 dBA.[18]

Receptors located downwind from a noise source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels.[19] Atmospheric temperature inversion (i.e., increasing temperature with elevation) can increase sound levels at long distances. Other factors such as air temperature, humidity, and turbulence can, under the right conditions, also have substantial effects on noise levels.[20]

(5) Vibration Fundamentals

Vibration can be interpreted as energy transmitted in waves through the ground or man-made structures, which generally dissipate with distance from the vibration source. Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Since energy is lost during its transfer from one particle to another, vibration becomes less perceptible with increasing distance from the source.

As described in the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment Manual, ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard.[21] In contrast to airborne noise, ground-borne

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17 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Sections 2.1.4.24 and 5.1.1.

18 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 7.4.2, Table 7-1.

19 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 2.1.4.3.

20 California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013, Section 2.1.4.3.

21 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Section 7.

vibration is not a common environmental problem, as it is unusual for vibration from sources such as rubber-tired buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, heavy trucks traveling on rough roads, and certain construction activities, such as blasting, pile-driving, and operation of heavy earth-moving equipment.[22] Ground-borne vibration generated by man-made activities (e.g., road traffic, construction operations) typically weakens with greater horizontal distance from the source of the vibration.

Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal in inches per second (in/sec) and is most frequently used to describe vibration impacts to buildings.[23] The root mean square (RMS) amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body.[24] Decibel notation (VdB) is commonly used to express RMS vibration velocity amplitude. The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically a factor of 1.7 to 6 times greater than RMS vibration velocity; FTA uses a crest factor of 4.[25] The decibel notation VdB acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include buildings where vibration would interfere with operations within the building or cause damage (especially older masonry structures), locations where people sleep, and locations with vibration-sensitive equipment.[26]

Ground-borne noise specifically refers to the rumbling noise emanating from the motion of building room surfaces due to the vibration of floors and walls; it is perceptible only inside buildings.[27] The relationship between ground-borne vibration and ground-borne noise depends on the frequency of the vibration and the acoustical absorption characteristics of the receiving room. For typical buildings, ground-borne vibration that causes low frequency noise (i.e., the vibration spectrum peak is less than 30 Hz) results in a ground-borne noise level that is approximately 50 decibels lower than the velocity level. For ground-borne vibration that causes mid-frequency noise (i.e., the vibration spectrum

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22 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Section 7.

23 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Section 5.1.

24 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Section 5.1.

25 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Section 5.1.

26 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Sections 6.1, 6.2, and 6.3.

27 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Section 5.4.

peak is between 30 and 60 Hz), the ground-borne noise level will be approximately 35 to 37 decibels lower than the velocity level.[28] Therefore, for typical buildings, the ground-borne noise decibel level is lower than the ground-borne vibration velocity level at low frequencies.

b. Regulatory Framework

There are several plans, regulations, and programs that include policies, requirements, and guidelines regarding noise at the federal, state, regional, and local levels. As described below, these plans, guidelines, and laws include the following:

- Noise Control Act of 1972
- Federal Transportation Administration Vibration Standards
- Occupational Safety and Health Act of 1970
- Office of Planning and Research Guidelines for Noise Compatible Land Use
- Los Angeles County Airport Land Use Commission Comprehensive Land Use Plan
- City of Los Angeles Municipal Code
- City of Los Angeles General Plan Noise Element

(1) Federal

(a) Noise Control Act of 1972

Under the authority of the Noise Control Act of 1972, the United States Environmental Protection Agency (USEPA) established noise emission criteria and testing methods published in Parts 201 through 205 of Title 40 of the Code of Federal Regulations (CFR) that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, USEPA issued guidance levels for the protection of public health and welfare in residential areas of an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA.[29] These guidance levels are not standards or regulations and were developed without consideration of technical or economic feasibility. There are no federal noise standards that directly regulate environmental noise related to

[28] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Table 6-3 and Table 6-14.

[29] U.S. Environmental Protection Agency, EPA Identifies Noise Levels Affecting Health and Welfare, April 1974.

the construction or operation of the Project. Moreover, the federal noise standards are not reflective of urban environments that range by land use, density, proximity to commercial or industrial centers, etc. As such, for purposes of determining acceptable sound levels to determine and evaluate intrusive noise sources and increases, this section utilizes the City of Los Angeles Noise Regulations, discussed below.

(b) Federal Transit Administration Vibration Standards

There are no federal vibration standards or regulations adopted by any agency that are applicable to evaluating vibration impacts from land use development projects, such as the Project. However, the FTA has adopted vibration criteria for use in evaluating vibration impacts from construction activities.[30] The vibration damage criteria adopted by the FTA are shown in Table IV.I-1 on page IV.I-12.

The FTA has also adopted standards associated with human annoyance for determining the ground-borne vibration and noise impacts from ground-borne noise on the following three off-site land-use categories: Vibration Category 1—High Sensitivity, Vibration Category 2—Residential, and Vibration Category 3—Institutional.[31] The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment but that still potentially involve activities that could be disturbed by vibration. The vibration thresholds associated with human annoyance for these three land use categories are shown in Table IV.I-2 on page IV.I-13. No thresholds have been adopted or recommended for commercial or office uses.

(c) Occupational Safety and Health Act of 1970

Under the Occupational Safety and Health Act of 1970 (29 United States Code [USC] Sections 1919 et seq.), the Occupational Safety and Health Administration (OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. The regulations further specify a

30 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Table 7-5, p. 86.

31 Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018, Table 6-1, p. 124.

Table IV.I-1
Construction Vibration Damage Criteria

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, Transit Noise and Vibration Impact Assessment Manual, 2018.

hearing conservation program that involves monitoring the noise to which workers are exposed, ensuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.[32]

(2) State

(a) Office of Planning and Research Guidelines for Noise Compatible Land Use

The State of California has not adopted statewide standards for environmental noise, but the Governor's Office of Planning and Research (OPR) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as presented in Figure IV.I-2 on page IV.I-14.[33] The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise levels are divided into four general categories, which vary in range according to land use type: "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable." The City has developed its own compatibility guidelines in the Noise Element of the General Plan based in part on OPR's guidelines. California Government Code Section 65302 requires each county and city in the State to prepare and adopt a comprehensive long-range general plan for its physical development, with Section 65302(f) requiring a noise element to be included in the general plan. The noise element must (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

[32] U.S. Department of Labor, Occupational Safety and Health Act, 1970.

[33] State of California, Governor's Office of Planning and Research, General Plan 2017 Guidelines, p. 377.

Table IV.I-2
Ground-borne Vibration and Ground-borne Impact Criteria for General Assessment

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

[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, Transit Noise and Vibration Impact Assessment Manual, 2018.

The State has also established noise insulation standards for new multi-family residential units, hotels, and motels. These requirements are collectively known as the California Noise Insulation Standards (Title 24 of the California Code of Regulations [CCR]). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. The standards require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to exterior noise levels greater than 60 dBA CNEL. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

(3) Regional

(a) Los Angeles County Airport Land Use Commission Comprehensive Land Use Plan

In Los Angeles County, the Regional Planning Commission has the responsibility for acting as the Airport Land Use Commission (ALUC) and for coordinating the airport planning of public agencies within the County. The ALUC coordinates planning for the areas surrounding public use airports. The Comprehensive Land Use Plan provides for the orderly expansion of Los Angeles County's public use airports and the area surrounding them. It is intended to provide for the adoption of land use measures that will minimize the public's exposure to excessive noise and safety hazards. In formulating the Comprehensive Land Use Plan, the Los Angeles County ALUC has established provisions for safety, noise insulation, and the regulation of building height within areas adjacent to each of the public airports in the County.

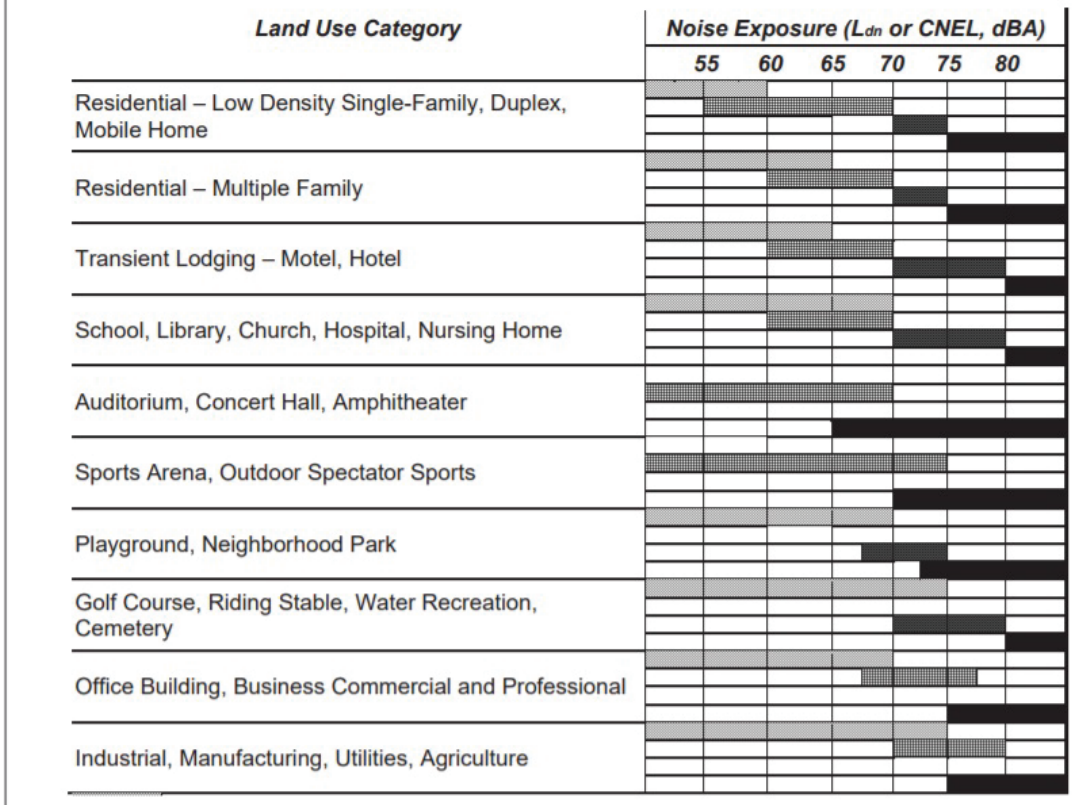

Figure IV.I-2
Guidelines for Noise Compatible Land Use

Source: State of California, General Plan Guidelines, Governor's Office of Planning and Research, 2003.

(4) Local

(a) Los Angeles Municipal Code

The City of Los Angeles Noise Regulations are provided in Chapter XI of the Los Angeles Municipal Code (LAMC). LAMC Section 111.02 provides procedures and criteria for the measurement of the sound level of "offending" noise sources. In accordance with the LAMC, a noise source that causes a noise level increase of 5 dBA over the existing average ambient noise level as measured at an adjacent property line creates a noise violation. This standard applies to radios, television sets, air conditioning, refrigeration, heating, pumping and filtering equipment, powered equipment intended for repetitive use in residential areas, and motor vehicles driven on-site. To account for people's increased tolerance for short-duration noise events, the Noise Regulations provide a 5-dBA allowance for a noise source that causes noise lasting more than five but less than 15 minutes in any one-hour period, and an additional 5 dBA allowance (for a total of 10 dBA) for a noise source that causes noise lasting five minutes or less in any one-hour period.[34]

The LAMC provides that in cases where the actual 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.) minimum ambient noise levels as defined in LAMC Section 111.03 should be used. The presumed ambient noise levels for these areas where the actual ambient conditions are not known as set forth in the LAMC Sections 111.03 are provided in Table IV.I-3 on page IV.I-16. For example, for residential-zoned areas, the presumed ambient noise level is 50 dBA during the daytime and 40 dBA during the nighttime.

LAMC Section 112.02 limits increases in noise levels from air conditioning, refrigeration, heating, pumping and filtering equipment. Such equipment may not be operated in such a manner as to create any noise which would cause the noise level on the premises of any other occupied property, or, if a condominium, apartment house, duplex, or attached business, within any adjoining unit, to exceed the ambient noise level by more than 5 dB.

LAMC Section 112.05 sets forth a maximum noise level for construction equipment of 75 dBA at a distance of 50 feet when operated within 500 feet of a residential zone. Compliance with this standard does not apply where compliance therewith is technically infeasible.[35] LAMC Section 41.40 prohibits construction between the hours of 9:00 P.M. and

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[34] Los Angeles Municipal Code, Chapter XI, Article I, Section 111.02(b).

[35] In accordance with the City's 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.I-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 (A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5)	50	40
Commercial (P, PB, CR, C1, C1.5, C2, C4, C5, and CM)	60	55
Manufacturing (M1, MR1, and MR2)	60	55
Heavy Manufacturing (M2 and M3)	65	65

Source: LAMC Section 111.03.

7:00 A.M. Monday through Friday, 6:00 P.M. and 8:00 A.M. on Saturday or any national holiday, and at any time on Sunday (i.e., construction is allowed Monday through Friday between 7:00 A.M. to 9:00 P.M. and Saturdays and national holidays between 8:00 A.M. to 6:00 P.M.). In general, the City's Department of Building and Safety enforces Noise Regulations provisions relative to construction equipment, and the Los Angeles Police Department (LAPD) enforces provisions relative to noise generated by people.

LAMC Section 113.01 prohibits collecting or disposing of rubbish or garbage, operating any refuse disposal truck, or collecting, loading, picking up, transferring, unloading, dumping, discarding, or disposing of any rubbish or garbage, as such terms are defined in LAMC Section 66.00, within 200 feet of any residential building between the hours of 9:00 P.M. and 6:00 A.M. of the following day, unless a permit therefore has been duly obtained beforehand from the Board of Police Commissioners.

Section 91.1206.14.2 prohibits interior noise levels attributable to exterior sources from exceeding 45 dBA in any habitable room. The noise metric shall be either the day-night average sound level (L_{dn}) or the CNEL, consistent with the noise element of the local general plan.

(b) City of Los Angeles General Plan Noise Element

The Noise Element of the City's General Plan policies include the CNEL guidelines for land use compatibility as shown in Table IV.I-4 on page IV.I-17 and includes a number of goals, objectives, and policies for land use planning purposes. The overall purpose of the Noise Element is to guide policymakers in making land use determinations and in

Table IV.I-4
City of Los Angeles Guidelines for Noise Compatible Land Use

Land Use	Community Noise Exposure CNEL (dB)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single-Family, Duplex, Mobile Homes	50 to 60	55 to 70	70 to 75	Above 70
Multi-Family Homes	50 to 65	60 to 70	70 to 75	Above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 to 70	60 to 70	70 to 80	Above 80
Transient Lodging—Motels, Hotels	50 to 65	60 to 70	70 to 80	Above 80
Auditoriums, Concert Halls, Amphitheaters	—	50 to 70	—	Above 65
Sports Arena, Outdoor Spectator Sports	—	50 to 75	—	Above 70
Playgrounds, Neighborhood Parks	50 to 70	—	67 to 75	Above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 to 75	—	70 to 80	Above 80
Office Buildings, Business, Professional Commercial	50 to 70	67 to 77	Above 75	—
Industrial, Manufacturing, Utilities, Agriculture	50 to 75	70 to 80	Above 75	—

Normally Acceptable: *Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.*

Conditionally Acceptable: *New construction or development should be undertaken only after a detailed analysis of the noise-reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.*

Normally Unacceptable: *New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.*

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

Source: City of Los Angeles L.A. CEQA Thresholds Guide, 2006.

preparing noise ordinances that would limit exposure of citizens to excessive noise levels.[36] The following policies and objectives from the Noise Element apply to the Project.

> **Objective 2 (Non-Airport):** Reduce or eliminate non-airport related intrusive noise, especially relative to noise sensitive uses.

[36] City of Los Angeles, General Plan Noise Element, Adopted February 3, 1999, pp. 1.1–2.4.

Policy 2.2: 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 impact 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.

Exhibit I of the Noise Element also contains guidelines for noise compatible land uses.[37] Table IV.I-4 on page IV.I-17 summarizes these guidelines, which are based on OPR guidelines from 1990.

c. Existing Conditions

As discussed in Section II, Project Description, of this Draft EIR, the Project Site is located in an urbanized area that is developed with a diverse mix of land uses. The predominant source of noise in the vicinity of the Project Site is vehicular traffic on adjacent roadways, particularly along Beverly Boulevard and Fairfax Avenue, which have high volumes of traffic. Ambient noise sources in the vicinity of the Project Site include automobile and truck traffic; commercial activities; parking activities within surface and structured parking areas and other miscellaneous noise sources associated with typical urban activities. Additional sources of noise within the Project Site include outdoor production-related activities and intermittent operation of an existing rooftop helipad.

(1) Noise-Sensitive Receptors

Some land uses are considered more sensitive to intrusive noise than others based on the types of activities typically involved at the receptor location. The *L.A. CEQA Thresholds Guide* states that noise-sensitive uses include residences, transient lodgings (hotels), schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks.[38] Similarly, the Noise Element defines noise-sensitive land uses as single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodging, and other residential uses; houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves; and parks.[39]

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[37] City of Los Angeles, General Plan Noise Element, Adopted February 3, 1999, p. I-1.

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

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

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, eight noise receptor locations were selected to represent noise-sensitive uses within 500 feet of the property line of Project Site (receptor locations R1 through R8). In addition, ambient noise measurements were conducted at two proposed off-site construction truck staging areas (receptor locations R9 and R10). These locations represent areas with land uses that could qualify as noise-sensitive uses according to the definition of such uses in the L.A. CEQA Thresholds Guide and the General Plan. As discussed below, noise measurements were conducted at 10 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 surround the Project Site and thereby provide representative baseline measurements for all noise-sensitive uses. In addition, the monitoring locations provide an adequate basis to evaluate potential impacts at the monitoring locations and at other sensitive receptors located beyond the monitoring location in the same direction from the Project Site. The noise measurement locations surrounding the Project Site are shown in Figure IV.I-3 on page IV.I-20 and described in Table IV.I-5 on page IV.I-21. The two additional noise measurement locations that were evaluated for off-site construction truck staging only are shown in Figure IV.I-4 and Figure IV.I-5 on pages IV.I-22 and IV.I-23, and are also described in Table IV.I-5.

(2) Ambient Noise Levels

To establish baseline noise conditions, existing ambient noise levels were monitored at 10 off-site receptor locations (identified as R1 through R10) that are representative of sensitive uses in the vicinity of the Project Site and near the off-site construction truck staging areas. The baseline noise monitoring program was conducted on August 9, 2021, using a Larson-Davis Model 870 and a Quest Technologies Model 2900 Integrating/Logging Sound Level Meters.[40] A 24-hour measurement was conducted at receptor location R1. Two 15-minute measurements were conducted at each of the off-site receptor locations R2 through R8 during daytime and nighttime hours, and one 15-minute measurement was conducted at both off-site receptor locations R9 and R10 during the daytime hours. The daytime ambient noise levels were measured between 10:00 A.M. and 2:00 P.M., and the nighttime ambient noise levels were measured between 10:00 P.M. and 1:00 A.M. The

[40] These sound meters meet the minimum industry standard performance requirements for "Type 1" (Larson-Davis Model 870) and "Type 2" (Quest Technologies Model 2900) standard instruments as defined in the American National Standard Institute (ANSI) S1.4. It also meets the requirement specified in Section 111.01(l) of the LAMC that instruments be "Type S2A" standard instruments or better. The sound meter was calibrated and operated according to the manufacturer's written specifications.

Figure IV.I-3

Noise Measurement Locations—Project Site Area (R1 through R8)

Source: Acoustical Engineering Services, 2021;
Google Earth Pro, 2021; Eyestone Environmental, 2021

Table IV.I-5
Description of Noise Measurement Locations

Receptor Location	Description	Approximate Distance from Measurement Location to Nearest Project Site Boundary (feet)[a]	Nearest Noise-Sensitive Land Use(s)
R1	Residential uses at the southwest corner of The Grove Drive and Beverly Boulevard, east of the Project Site	Adjacent to the Project Site	Multi-family Residential
R2	Pan Pacific Park on the east side of The Grove Drive, east of the Project Site	75	Park
R3	Motel use on the north side of Beverly Boulevard (between Genesee Avenue and Spaulding Avenue), north of the Project Site	95	Motel
R4	School use on the north side of Beverly Boulevard (between Spaulding Avenue and Stanley Avenue), north of the Project Site	195	School
R5	Residential use on Ogden Drive (north of Beverly Boulevard), north of the Project Site	220	Single-family Residential
R6	Residential use on Hayworth Avenue (north of Beverly Boulevard), northwest of the Project Site	375	Multi-family Residential
R7	Residential use on Hayworth Avenue (south of Beverly Boulevard), west of the Project Site	230	Multi-family Residential
R8	Hotel use on Fairfax Avenue (south of Beverly Boulevard), southwest of the Project Site	95	Multi-family residential, Hotel
R9[b]	Residential, motel, and medical uses on the north side of Venice Boulevard, west of Guthrie Avenue	13,075	Single-family Residential, Motel, Medical
R10[b]	School and recreation uses on the north side of Venice Boulevard, east of Normandie Avenue	20,810	School, Recreation

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

[b] *Receptor locations R9 and R10 are utilized for evaluation of off-site construction truck staging only.*

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

ambient noise measurements were measured in accordance with the City's standards, which require ambient noise to be measured over a period of at least 15 minutes.[41]

Table IV.I-6 on page IV.I-24 provides a summary of the ambient noise measurements conducted at the 10 noise receptor locations. Based on field observations, the ambient noise at the measurement locations is dominated by local traffic and, to a

41 LAMC Section 111.01.

Figure IV.I-4

Noise Measurement Location—Potential Truck Staging Area (R9)

Source: Acoustical Engineering Services, 2021; Google Maps, 2021.

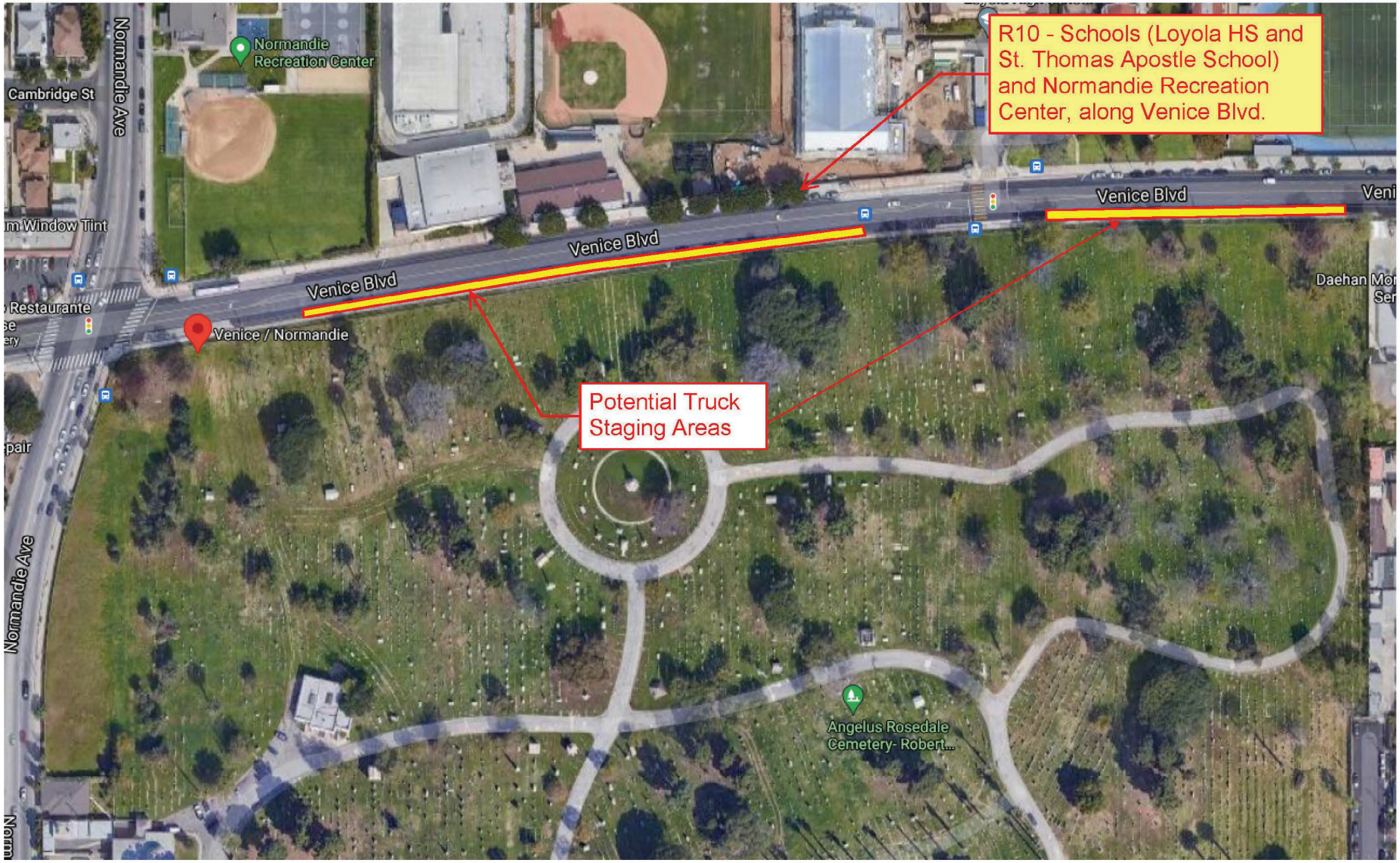

Figure IV.I-5
Noise Measurement Locations—Potential Truck Staging Area (R10)

Source: Acoustical Engineering Services, 2021; Google Maps, 2021.

Table IV.I-6
Existing Ambient Noise Levels

Receptor Location	Noise-Sensitive Land Use	Measured Noise Levels, L_{eq} (dBA)		CNEL (24-hour)
		Daytime Hours (7:00 A.M.–10:00 P.M.)	Nighttime Hours (10:00 P.M.–7:00 A.M.)	
R1	Residential	61.1[b]	53.3[b]	62.3
R2	Park	62.8	60.7	65.9[a]
R3	Hotel	68.5	67.5	72.4[a]
R4	School	67.7	65.8	70.9[a]
R5	Residential	58.9	57.8	62.7[a]
R6	Residential	60.4	54.2	60.9[a]
R7	Residential	56.6	53.1	58.7[a]
R8	Hotel	66.9	65.0	70.1[a]
R9	Residential, Motel, Medical	64.2	—	—
R10	School, Recreation	67.5	—	—

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

[b] *Levels shown for R1 represent the average for the entire daytime and nighttime periods.*

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

lesser extent, helicopter flyovers and other typical urban noises. As indicated in Table IV.I-6, the existing daytime ambient noise levels at the off-site noise receptor locations ranged from 56.6 dBA (L_{eq}) at receptor location R7 to 68.5 dBA (L_{eq}) at receptor location R3. The measured nighttime ambient noise levels ranged from 53.1 dBA (L_{eq}) at receptor location R7 to 67.5 dBA (L_{eq}) at receptor location R3. 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 and hotel uses, as presented above in Table IV.I-3 on page IV.I-16.

In addition to the ambient noise measurements in the vicinity of the Project Site, the existing traffic noise on local roadways in the surrounding area was calculated to quantify the 24-hour CNEL noise levels using information provided in the Transportation Study prepared for the Project and included as Appendix M of this Draft EIR. Eighteen (18) roadway segments were selected for the existing off-site traffic noise analysis included in this section based on proximity to the Project Site 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 Study prepared for the Project. The TNM 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 TNM 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.I-7 on page IV.I-26.

Table IV.I-8 on page IV.I-27 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 64.2 dBA CNEL along Gardner Street (between Beverly Boulevard and 3rd Street) to 71.9 dBA CNEL along Fairfax Avenue (between 3rd Street and 6th Street). Currently, the existing traffic-related noise levels along the roadway segments of The Grove Drive (between Beverly Boulevard and 3rd Street) and Gardner Street (between Beverly Boulevard and 3rd Street) fall within the conditionally acceptable noise levels for residential uses (i.e., between 60 and 70 dBA CNEL). The existing traffic noise levels along Fairfax Avenue (between Melrose Avenue and 8th Street), Beverly Boulevard (between Crescent Heights Boulevard and La Brea Avenue), 3rd Street (between Crescent Heights Boulevard and Martel Avenue), and Crescent Heights Boulevard (between Beverly Boulevard and 3rd Street) are between 70 dBA CNEL and 75 dBA CNEL, which are considered normally unacceptable for residential uses but conditionally acceptable for commercial 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."[42] Trucks and buses typically generate ground-borne vibration velocity levels of around 63 VdB (at a distance of 50 feet), 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.[43] Therefore,

[42] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018, p. 112.

[43] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018, Table 5-5.

Table IV.I-7
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 two axles.*

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

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

existing ground-borne vibration in the vicinity of the Project Site is generally below the perceptible level. However, ground-borne vibration associated with heavy trucks traveling on road surfaces with irregularities, such as speed bumps and potholes, could reach the perceptible threshold.

Table IV.I-8
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent 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]
Fairfax Avenue					
Between Melrose Ave. and Rosewood Ave.	Hotel, School	40	70.6	Yes	Normally Unacceptable
Between Rosewood Ave. and Beverly Blvd.	Commercial	40	70.6	No	Conditionally Acceptable
Between Beverly Blvd. and 3rd St.	Residential, Hotel	40	71.2	Yes	Conditionally Acceptable
Between 3rd St. and 6th St.	Residential, Hospital	35	71.9	Yes	Normally Unacceptable
Between 6th St. and Wilshire Blvd.	Commercial	40	70.7	No	Conditionally Acceptable
Between Wilshire Blvd. and 8th St.	Residential	40	70.3	Yes	Normally Unacceptable
Beverly Boulevard					
Between Crescent Heights Blvd. and Fairfax Ave.	Religious, Hotel	45	70.9	Yes	Normally Unacceptable
Between Fairfax Ave. and Genesee Ave.	Commercial	45	71.0	No	Conditionally Acceptable
Between Genesee Ave. and Stanley Ave.	Residential, Religious, Hotel, School	45	70.8	Yes	Normally Unacceptable
Between Stanley Ave. and Gardner St.	Hotel, Park	45	71.1	Yes	Normally Unacceptable
Between Gardner St. and La Brea Ave.	Religious, School	45	71.2	Yes	Normally Unacceptable
3rd Street					
Between Crescent Heights Blvd. and Fairfax Ave.	Religious	40	70.1	Yes	Normally Unacceptable
Between Fairfax Ave. and Ogden Dr.	Commercial	40	70.9	No	Conditionally Acceptable
Between Ogden Dr. and The Grove Dr.	Residential	40	71.4	Yes	Normally Unacceptable
Between The Grove Dr. and Martel Ave.	Residential, Park	40	71.4	Yes	Normally Unacceptable
Crescent Heights Boulevard					
Between Beverly Blvd. and 3rd St.	Residential	30	71.0	Yes	Normally Unacceptable
The Grove Drive					
Between Beverly Blvd. and 3rd St.	Residential, Park	35	66.1	Yes	Conditionally Acceptable

Table IV.I-8 (Continued)
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent 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]
Gardner Street Between Beverly Blvd. and 3rd St.	Residential	28	64.2	Yes	Conditionally Acceptable

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

[b] *Noise compatibility is based on the most stringent land use, per the City's land use compatibility guidelines as provided in Table IV.I-4 on page IV.I-17.*

Source: AES, 2021.

3. Project Impacts

a. Thresholds of Significance

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

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

Threshold (b): Generation of excessive groundborne vibration or groundborne noise levels; 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, expose people residing or working in the project area to excessive noise levels.

For this analysis, the Appendix G thresholds listed above are relied upon. The analysis utilizes factors and considerations identified in the City's 2006 L.A. CEQA Thresholds Guide, as appropriate, to assist in answering the Appendix G threshold questions. The *L.A. CEQA Thresholds Guide* identifies the criteria below to evaluate noise impacts.

(1) Construction Noise

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

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

As discussed in Section II, Project Description, of this Draft EIR, Project buildout may occur in one phase, with a total construction period of approximately 32 months. Construction could begin as soon as 2023 and end as soon as 2026.[44] Therefore, since construction activities would occur over a period longer than 10 days for all stages, 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.I-4 on page IV.I-17 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 criterion used in the noise analysis for on-site operations presented below is an increase in the ambient noise level of 5 dBA (hourly L_{eq}) at the noise-sensitive uses, in accordance with the LAMC. The LAMC does not apply to off-site traffic (i.e., vehicles traveling on public roadways). Therefore, based on the L.A. CEQA Thresholds Guide, the significance criterion for off-site traffic noise associated with Project operations is an increase in the ambient noise level by 3 dBA or 5 dBA in CNEL (depending on the land use category) at noise-sensitive uses. In addition, the significance criterion for composite noise levels (on-site and off-site sources) is also based on the L.A. CEQA Thresholds Guide, which is an increase in the ambient noise level of 3 dBA or 5 dBA in CNEL (depending on the land use category) for the Project's composite noise (both Project-related on-site and off-site sources) at noise-sensitive uses.

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[44] The Project Applicant is seeking a Development Agreement with a term of 20 years, which could extend the full buildout year to approximately 2043. For purposes of conservatively analyzing construction noise impacts and to ensure that potential overlap of construction stages is accounted for, it was assumed that the Project's construction schedule could be compressed within a 32-month timeframe and be completed as early as 2026 with overlapping construction stages.

(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 currently does not have significance criteria to assess vibration impacts during construction. Thus, the FTA guidelines set forth in FTA's *Transit Noise and Vibration Assessment*, dated September 2018, are used to evaluate potential impacts related to construction vibration for both potential building damage and human annoyance. The FTA guidelines regarding construction vibration are the most current guidelines and are commonly used in evaluating vibration impacts.

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

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

Based on FTA guidance, construction vibration impacts associated with human annoyance would be significant if the following were to occur (applicable to frequent events; 70 or more vibration events per day):

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

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 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)."[45] The ambient noise levels at surrounding sensitive receptor locations were based on field measurement data (see Table IV.I-6 on page IV.I-24). The construction noise levels were then calculated for the 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 the receptor locations where the line-of-sight to the Project Site was interrupted by the presence of intervening structures.

(2) Off-Site Construction Haul Trucks

Off-site construction noise impacts from haul trucks associated with the Project were analyzed using the FHWA's TNM. 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 Study prepared for the Project, which is included in Appendix M 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 predicted noise level of construction-related haul trucks plus the ambient noise levels with that of the existing ambient noise levels along the Project's anticipated haul route(s).

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

On-site stationary point-source noise impacts were evaluated by: (1) identifying the noise levels that would be generated by the Project's stationary noise sources, such as

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

rooftop mechanical equipment, outdoor activities (e.g., use of outdoor courtyards and roof decks), parking facilities, and trash compactors; (2) calculating the noise level from each noise source at the surrounding sensitive receptor property line locations; and (3) comparing such noise levels to the ambient noise levels to determine significance. The on-site stationary noise sources were calculated using the SoundPLAN (version 8.2) computer noise prediction model.[46] 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 Study, included as Appendix M of this Draft EIR. Roadway noise levels were calculated for various roadway segments, based on the intersection traffic volumes. Roadway noise conditions without the Project were calculated and compared to noise levels that would occur with implementation of the Project to determine Project-related noise impacts for operational off-site roadway noise.

(5) Construction Vibration

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

(6) Operational Vibration

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

[46] SoundPLAN GmbH, SoundPLAN version 8.2, 2020.

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, will be equipped with state-of-the-art noise shielding and muffling devices, consistent with manufacturers' standards. All equipment will be properly maintained to assure that no additional noise due to worn or improperly maintained parts will be generated.

Project Design Feature NOI-PDF-2: Project construction will not include the use of driven (impact) pile systems.

Project Design Feature NOI-PDF-3: Outdoor mounted mechanical equipment will be enclosed or screened by the building design (e.g., a roof parapet or mechanical screen) from the view of off-site noise-sensitive receptors.

Project Design Feature NOI-PDF-4: Outdoor amplified sound systems for outdoor gatherings (non-production uses) on roof decks, if any, will be designed so as not to exceed a maximum noise level of 85 A-weighted decibels (dBA) ($L_{eq\text{-}1hr}$) at a distance of 25 feet from the amplified speaker sound systems in any roof deck gathering areas located within 15 feet from the northern, southern and western property lines and within 40 feet from the eastern property line, and 95 dBA ($L_{eq\text{-}1hr}$) at a distance of 25 feet from the amplified speaker sound systems within the interior portions of the Project Site.[47] A qualified noise consultant will provide written documentation that the design of the system complies with these maximum noise levels.

Project Design Feature NOI-PDF-5: Outdoor studio production activities will be prohibited within 200 feet of the Shared Eastern Property Line adjacent to the existing multi-family residence located immediately east of the Project Site (receptor location R1) between the hours of 10 P.M. and 7 A.M.

In addition to these Project Design Features, as discussed in Section IV.M, Transportation of this Draft EIR, in accordance with Project Design Feature TR-PDF-1, the Project will include a Construction Traffic Management that will include a provision that the Project Applicant will designate a construction relations officer to serve as a liaison with the

[47] Based on the conceptual site plan shown in Section II, Project Description, of this Draft EIR, the potential roof decks along the perimeter were assumed to be at least 75 feet above adjacent grade and the roof decks within the interior portion of the Project Site were assumed to be at least 50 feet above grade.

surrounding community and respond to any construction-related inquiries, including those related to construction noise.

d. Analysis of Project Impacts

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

(1) Impact Analysis

(a) Construction Noise

As discussed above, Project construction may occur in one phase, with a total construction period of approximately 32 months. Thus, the corresponding significance criterion used in the construction noise analysis below is when the Project-related construction noise exceeds the ambient exterior noise levels by 5 dBA (hourly L_{eq}) or more at a noise-sensitive use. Construction of the Project would generally commence with the demolition of certain existing buildings and parking areas, followed by grading and excavation. Building foundations would then be constructed, followed by building construction, paving/concrete installation, and landscape installation. In accordance with Los Angeles Municipal Code (LAMC) requirements, construction activities generally would be permitted to occur Monday through Friday from 7:00 A.M. to 9:00 P.M. and between 8:00 A.M. and 6:00 P.M. on Saturday or national holidays, or outside of these hours if a temporary noise variance is approved by the Los Angeles Board of Police Commissioners. It is estimated that up to approximately 772,000 cubic yards of soil would be exported from the Project Site, and potentially 50,000 cubic yards of soil would be imported to the Project Site during the excavation stage. Exported soil materials likely would be disposed of at United Rock Products Landfill in Irwindale via the Santa Monica Freeway (I-10) east to State Route 60 (SR-60) east to the San Gabriel River Freeway (I-605) north to Irwindale. Construction delivery/haul trucks would travel on approved truck routes between the Project Site and the Santa Monica Freeway (I-10) via the following optional routes:

Option 1: Empty trucks would travel westbound on I-10, exit at Washington Boulevard/Fairfax Avenue, turn right (north) on Fairfax Avenue and enter the Project Site from Fairfax Avenue (or continue north and make a right on Beverly Boulevard and then access the Project Site from Beverly Boulevard). Loaded trucks would exit the Project Site

from Beverly Boulevard heading west and then turn left on Fairfax Avenue heading south, turn left on Washington Boulevard, and enter eastbound I-10.[48]

Option 2: Empty trucks would travel westbound on I-10, exit at La Brea Avenue, turn right (north) on La Brea Avenue, turn left (west) on San Vicente Boulevard, turn right (north) on Fairfax Avenue and enter the Project Site from Fairfax Avenue (or continue north and make a right turn on to Beverly Boulevard to access the Project Site from Beverly Boulevard). Loaded trucks would exit the Project Site from Beverly Boulevard heading west and then turn left on Fairfax Avenue heading south on Fairfax Avenue heading south, turn left on San Vicente Boulevard (east), turn right (south) on La Brea Avenue, and enter eastbound I-10.[49]

Option 3: Empty trucks would travel westbound on I-10, exit at La Brea Avenue, turn right (heading north) on La Brea Avenue, turn left (heading west) on Beverly Boulevard and enter the site from Beverly Boulevard. Loaded trucks would exit the Project Site on Fairfax Avenue heading north, turn right on Beverly Boulevard (east) (or exit the Project Site via a right turn on Beverly Boulevard heading east), turn right (heading south) on La Brea Avenue, and enter eastbound I-10.[50]

Any hazardous soil materials would be exported to Buttonwillow Landfill in Kern County using the same local roadways, as follows: loaded trucks would travel Beverly Boulevard west to Fairfax Avenue south to Washington Boulevard east to I-10 west to I-405 north to I-5 north to Route 58 west to Lokern Road under Option 1; Beverly Boulevard west to Fairfax Avenue south to San Vicente Boulevard east to La Brea Avenue south to I-10

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48 Within this optional haul route, LADOT recommended that empty trucks travel westbound on I-10, exit at Washington Boulevard/Fairfax Avenue, turn right (north) on Fairfax Avenue, and turn right (east) to enter the Project Site from Fairfax Avenue (or continue north and make a right (east) on Beverly Boulevard and then access the Project Site from Beverly Boulevard at the Genesee Avenue signal). Loaded trucks would exit from Beverly Boulevard (at the Genesee Avenue signal) heading west and then turn left (south) on Fairfax Avenue, turn left (east) on Washington Boulevard, turn right to enter eastbound I-10,

49 Within this optional haul route, LADOT recommended that empty trucks travel westbound on I-10, exit at La Brea Avenue, turn right (north) on La Brea Avenue, turn left (west) on San Vicente Boulevard, turn right (north) on Fairfax Avenue and enter the Project Site from Fairfax Avenue (or continue north and make a right turn on to Beverly Boulevard to access the Project Site from Beverly Boulevard at the Genesee Avenue signal). Loaded trucks would exit from Beverly Boulevard (at the Genesee Avenue signal) heading west and then turn left (south) on Fairfax Avenue, turn left (east) on San Vicente Boulevard, turn right (south) on La Brea Avenue, turn right to enter eastbound I-10, and continue on eastbound I-10.

50 Within this optional haul route, LADOT recommended that empty trucks would travel westbound on I-10, exit at La Brea Avenue, turn right (north) on La Brea Avenue, turn left (west) on Beverly Boulevard, and enter the site from Beverly Boulevard at the Genesee Avenue signal. Loaded trucks would exit on Fairfax Avenue heading north, turn right (east) on Beverly Boulevard (or exit the Project Site via a right turn on Beverly Boulevard at the Genesee Avenue signal heading east), turn right (south) on La Brea Avenue, turn right to enter eastbound I-10, and continue on eastbound I-10.

west to I-405 north to I-5 north to Route 58 west to Lokern Road under Option 2; or Fairfax Avenue north to Beverly Boulevard east to La Brea Avenue (or Beverly Boulevard east to La Brea Avenue) south to I-10 west to I-405 north to I-5 north to Route 58 west to Lokern Road under Option 3.

In addition, haul trucks would also access two potential staging areas on the south side of Venice Boulevard between Cadillac Avenue and Fairfax Avenue (staging area 1) and between Normandie Avenue and Walton Avenue (staging area 2), via Venice Boulevard (between Cadillac Avenue and Fairfax Avenue and between Normandie Avenue and Vermont Avenue), Normandie Avenue (between I-10 and Venice Boulevard) and Vermont Avenue (between Venice Boulevard and I-10).

(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, grading and excavation, 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 require the use of earth-moving equipment, such as excavators, front-end loaders, and heavy-duty trucks. Building construction typically involves the use of cranes, forklifts, concrete trucks, pumps, and delivery trucks. Noise from construction equipment would generate both steady-state and episodic noise that could be heard within and adjacent to the Project Site.

As provided in Project Design Feature NOI-PDF-1 above, construction equipment will have proper noise muffling devices per the manufacturer's standards. Individual pieces of construction equipment anticipated to be used during construction of the Project could produce maximum noise levels (L_{max}) of 74 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in Table IV.I-9 on page IV.I-38. 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 operates under less than full power conditions, or partial power. To more accurately characterize noise levels during construction, the average (hourly L_{eq}) noise levels associated with each construction stage was calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction

Table IV.I-9
Construction Equipment Noise Levels

Equipment	Estimated Usage Factor[a] (%)	Typical Noise Level at 50 feet from Equipment, dBA (L_{max})
Air Compressor	40	78
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.

stage.[51] These noise levels are typically associated with multiple pieces of equipment operating on partial power, simultaneously.

Table IV.I-10 on page IV.I-39 provides the estimated construction noise levels for various construction stages at eight off-site receptor locations (R1 to R8). 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 a conservative noise scenario because construction activities would typically be

[51] 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.I-10
Construction Noise Impacts

Off-Site Receptor Location	Approximate Distance from Receptor to Project Construction Area (feet)	Estimated Construction Noise Levels by Construction Stage (L_{eq} (dBA))						Existing Daytime Ambient Noise Levels (L_{eq} (dBA))	Significance Criteria (L_{eq} (dBA))[a]	Maximum Noise Exceedance Above the Criteria (L_{eq} (dBA))	Significant Impact Without Mitigation?
		Demolition	Grading/ Excavation	Mat Foundation	Structure/ Enclosure	Architectural Coating/ Finishing	Paving/ Landscape				
R1	20	88.8	87.1	84.9	86.4	83.7	82.9	61.1	66.1	22.7	Yes
R2	75	82.7	80.5	78.6	82.5	76.0	75.5	62.8	67.8	14.9	Yes
R3	95	81.0	79.1	77.0	81.1	74.6	73.7	68.5	73.5	7.6	Yes
R4	195	75.6	74.8	72.1	76.5	70.2	68.1	67.7	72.7	3.8	Yes
R5	220	69.7	69.1	66.2	70.7	64.4	62.1	58.9	63.9	6.8	Yes
R6	375	60.5	60.4	57.2	62.1	55.7	52.8	60.4	65.4	0.0	No
R7	230	74.3	73.8	70.9	75.4	69.1	66.8	56.6	61.6	13.8	Yes
R8	95	81.0	79.1	77.0	81.1	74.6	73.7	66.9	71.9	9.2	Yes

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.I-6 on page IV.I-24) 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 thresholds, a construction-related noise impact is identified.*

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

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 the construction noise would be constant, when, in fact, construction activities and associated noise levels are periodic and fluctuate based on the construction activities.

As discussed above, since construction activities would occur over a period longer than 10 days for all stages combined, the corresponding significance criterion 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 indicated in Table IV.I-10 on page IV.I-39, the estimated noise levels during all stages of Project construction combined would exceed the significance criterion at all of the representative off-site receptor locations, with the exception of receptor location R6. The estimated construction-related noise would exceed the significance threshold by a range of 3.8 dBA at the uses represented by receptor location R4 to up to 22.7 dBA at the uses represented by receptor location R1, without the implementation of mitigation. **Therefore, temporary noise impacts associated with the Project's on-site construction activities would be potentially significant.**

(ii) Off-Site Construction Noise

In addition to on-site construction noise sources, other noise sources may include staging activities, 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 from the material delivery/concrete/haul trucks.

As described above, there would be temporary construction-related truck staging (for haul trucks) along the south side of Venice Boulevard between Cadillac Avenue and Fairfax Avenue (staging area 1) and between Normandie Avenue and Catalina Street (staging area 2). It is anticipated that there would be up to 25 haul trucks lined up along the two staging areas. Noise sources at the truck staging area would include trucks queuing and idling. However, truck idling would be limited to a maximum of 5 minutes per the State's guidelines (i.e., CARB). Estimated noise levels due to trucks at the staging area would be 66.3 dBA Leq at receptor location R9 (across from staging area 1) and 69.0 dBA Leq at receptor location R10 (across from staging area 2). When added to the existing ambient noise levels (64.2 dBA Leq at R9 and 67.5 dBA Leq at R10), the Project plus ambient noise levels at receptor locations R9 and R10 would be 68.4 dBA Leq and 71.3 dBA Leq, respectively. Thus, the estimated noise increases at receptor locations R9 and R10 due to truck staging would be below the 5-dBA significance criterion. Therefore, temporary noise impacts associated with the Project's two potential haul truck staging locations would be less than significant.

With regard to haul routes, as described above, construction haul trucks would travel between the Project Site and I-10 via Washington Boulevard, Fairfax Avenue, San Vicente Boulevard, Beverly Boulevard, and/or La Brea Avenue. In addition, haul trucks would also utilize Venice Boulevard, Normandie Avenue, and Vermont Avenue to access the staging areas from I-10. As discussed in Section IV.K, Transportation, of this Draft EIR, the peak period (i.e., daily number of truck trips) of construction with the highest number of construction trucks would occur during the mat foundation stage, which would occur for a duration of up to five days. During this construction stage, there would be a maximum of approximately 500 concrete trucks coming to and leaving the Project Site (equal to 1,000 total trips) per day. In addition, there would be up to approximately 320 construction trucks (300 haul trucks and 20 delivery trucks) during the grading/excavation stage (total of 640 truck trips). There would also be approximately 50 to 740 construction workers traveling to and from the Project Site on a daily basis during the various construction stages, which would generate approximately 100 to 1,480 trips per day. Construction workers are expected to arrive at the Project Site before construction starts and leave when construction ends. Therefore, construction worker vehicle noise would not overlap with Project construction equipment or trucks. In addition, the noise levels generated by construction worker vehicle trips would be lower than the construction truck trips.

Table IV.I-11 on page IV.I-42 provides the estimated number of construction-related truck trips, including haul/concrete/material delivery trucks and the estimated noise levels along the anticipated truck routes. As indicated in Table IV.I-11, the hourly noise levels generated by Project construction trucks along Fairfax Avenue would be consistent with the existing daytime ambient noise levels for all construction stages, except for the grading/excavation stage, where the estimated construction truck noise would exceed the 5-dBA significance threshold by 0.5 dBA L_{eq}. The estimated noise levels along La Brea Avenue, San Vicente Boulevard, Beverly Boulevard, Normandie Avenue, Venice Boulevard, and Vermont Avenue (utilized by haul trucks from the two staging areas during the grading/excavation stage) would be below the significance criterion of a 5-dBA increase over the ambient noise level. In addition, the concrete mat foundation pour could occur during the nighttime hours, if permitted by the Executive Director of the Board of Police Commissioners. The estimated noise levels due to concrete trucks used for mat foundation pour traveling along Fairfax Avenue (67.6 dBA L_{eq}), La Brea Avenue (66.4 dBA L_{eq}), and San Vicente Boulevard (65.5 dBA L_{eq}) would increase the nighttime ambient noise level (62.0 dBA L_{eq}) by 6.7 dBA L_{eq} (along Fairfax Avenue), 5.7 dBA L_{eq} (along La Brea Avenue), and 5.1 dBA L_{eq} (along San Vicente Boulevard), which would exceed the measured nighttime ambient noise levels plus the 5-dBA significance threshold of 67.0 dBA L_{eq} by 1.7 dBA (along Fairfax Avenue), 0.7 dBA (along La Brea Avenue), and 0.1 dBA (along San Vicente Boulevard). The estimated noise levels due to concrete trucks used for mat foundation pour traveling along Beverly Boulevard (66.4 dBA L_{eq}) would increase the nighttime ambient noise level (65.8 dBA L_{eq}) by 3.3 dBA, which would be below the

Table IV.I-11
Off-Site Construction Truck Noise Levels

Construction Stage	Estimated Number of Construction Truck Trips per Day	Estimated Number of Construction Truck Trips per Hour[b]	Estimated Truck Noise Levels Plus Ambient Along the Project Truck Routes[a] (L_{eq} (dBA)) (Project/Project + Ambient)						
			Fairfax Avenue	La Brea Avenue	San Vicente Boulevard	Beverly Boulevard	Normandie Avenue[c]	Venice Boulevard[c]	Vermont Avenue[c]
Demolition	80	10	60.6/67.8	59.4/67.6	58.5/67.5	59.4/68.3	—/—	—/—	—/—
Grading/Excavation	640	107	70.9/72.4	69.7/71.5	68.8/71.0	69.7/71.8	69.6/71.7	65.8/69.7	69.6/71.7
Mat Foundation (concrete pour)	1,000	50	67.6/70.3[f]	66.4/69.7	65.5/69.3	66.4/70.1	—/—	—/—	—/—
Structure/Enclosure	100	13	61.8/68.1	60.6/67.8	59.6/67.6	60.6/68.5	—/—	—/—	—/—
Architectural Coating/Finishing	60	8	59.7/67.7	58.4/67.5	57.5/67.4	58.4/68.2	—/—	—/—	—/—
Paving/Landscaping	10	2	53.6/67.1	52.4/67.1	51.5/67.0	52.4/67.8	—/—	—/—	—/—
Existing Ambient Noise Levels Along the Project Haul Routes, L_{eq} (dBA)[d]			66.9	66.9	66.9	67.7	67.5	67.5	67.5
Significance Criteria, L_{eq} (dBA)[e]			71.9	71.9	71.9	72.7	72.5	72.5	72.5
Maximum Exceedance Over Significance Criteria, L_{eq} (dBA)			0.5[f]	0.0[f]	0.0[f]	0.0	0.0	0.0	0.0
Significant Impact?			**Yes[f]**	**Yes[f]**	**Yes[f]**	**No**	**No**	**No**	**No**

[a] *Noise levels include Project-related truck trips plus ambient noise levels.*

[b] *For construction trucks, the number of hourly trips is based on an hourly average, assuming a uniform distribution of trips over an 8-hour work day. Haul truck hourly trips during demolition, grading and excavation are based on 6 hours of hauling per day. Concrete truck trips for the mat foundation pour are based on a uniform distribution of trips over a 20-hour workday.*

[c] *Normandie Avenue, Venice Boulevard, and Vermont Avenue would only be used for truck trips associated with the two staging areas during grading and excavation.*

[d] *Ambient noise levels along Fairfax Avenue, Beverly Boulevard, La Brea Avenue, San Vicente Boulevard and Venice Boulevard are based on measurements at nearby receptor locations (i.e., receptor locations R8 along Fairfax Avenue, La Brea Avenue, and San Vicente Boulevard, R4 along Beverly Boulevard, and R10 along Venice Boulevard). Ambient noise levels along Normandie Avenue and Vermont Avenue are based on the measured ambient noise level at receptor location R10.*

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

[f] *The concrete mat foundation pour could occur during the nighttime hours, if permitted by the Executive Director of the Board of Police Commissioners. The estimated noise levels due to concrete trucks along Fairfax Avenue (67.6 dBA L_{eq}), La Brea Avenue (66.4 dBA L_{eq}), and San Vicente Boulevard (65.5 dBA L_{eq}) would increase the nighttime ambient noise level (62.0 dBA L_{eq}) by 6.7 dBA L_{eq},, 5.7 dBA L_{eq}, and 5.1 dBA L_{eq}, which would exceed the 5-dBA significance threshold by 1.7 dBA, 0.7 dBA and 0.1 dBA along Fairfax Avenue, La Brea Avenue, and San Vicente Boulevard, respectively, and, thus, would result in a significant impact. The estimated noise levels due to concrete trucks used for mat foundation pour traveling along Beverly Boulevard (66.4 dBA L_{eq}) would increase the nighttime ambient noise level (65.8 dBA L_{eq}) by 3.3 dBA, which would be below the 5-dBA significance threshold.*

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

5-dBA significance threshold. **Therefore, temporary noise impacts from off-site construction trucks along the haul routes would be potentially significant.**

(iii) Summary of Construction Noise Impacts

As discussed above, Project construction would result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the Project in excess of significance criterion established by the City. **Therefore, temporary noise impacts associated with the Project's on-site and off-site construction activities would be potentially significant.**

(b) Operational Noise

This section provides a discussion of potential operational noise impacts at nearby noise-sensitive receptors. Specific operational noise sources addressed herein include: (a) on-site stationary noise sources, including outdoor mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment), activities associated with the proposed outdoor spaces (e.g., outdoor roof level decks, outdoor studio production), parking facilities, loading dock, and trash compactors; and (b) off-site mobile (roadway traffic) noise sources. As discussed above, a rooftop helipad is currently located within the central portion of the Project Site. As part of the Project, the helipad would be upgraded and would continue to operate in the same general location in accordance with existing applicable regulatory requirements. **As such, potential impacts associated with the continued operation of the helipad would be less than significant, and no further analysis of the helipad is required.**

(i) On-Site Stationary Noise Sources

Mechanical Equipment

As part of the Project, new mechanical equipment (e.g., air ventilation equipment) would be located at the roof level and/or within each of the building structures (e.g., garage exhaust fans). Although operation of mechanical equipment would generate noise, Project-related outdoor mechanical equipment would be designed so as not to increase the existing ambient noise levels by 5 dBA in accordance with the City's Noise Regulations. Specifically, the Project would comply with LAMC Section 112.02, which prohibits noise from air conditioning, refrigeration, heating, pumping, and filtering equipment from exceeding the ambient noise levels on the premises of other occupied properties by more than 5 dBA. In addition, with Project Design Feature NOI-PDF-3, all outdoor mounted mechanical equipment will be enclosed or screened from off-site noise-sensitive receptors. Table IV.I-12 on page IV.I-44 presents the estimated noise levels at the off-site receptor locations from mechanical equipment during operation of the Project.

Table IV.I-12
Estimated Noise Levels from Mechanical Equipment

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Mechanical Equipment, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria, dBA (L_{eq})[a]	Exceedance over Significance Criteria	Significant Impact?
R1	53.3	48.6	54.6	58.3	0.0	No
R2	60.7	36.5	60.7	65.7	0.0	No
R3	67.5	37.0	67.5	72.5	0.0	No
R4	65.8	31.4	65.8	70.8	0.0	No
R5	57.8	39.7	57.9	62.8	0.0	No
R6	54.2	35.0	54.3	59.2	0.0	No
R7	53.1	41.3	53.4	58.1	0.0	No
R8	65.0	44.7	65.0	70.0	0.0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.I-6 on page IV.I-24) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a potentially significant noise impact is identified.*

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

As indicated in Table IV.I-12, the estimated noise levels from the mechanical equipment would range from 31.4 dBA (L_{eq}) at the uses represented by receptor location R4 to 48.6 dBA (L_{eq}) at the uses represented by receptor location R1, which would be well below the existing ambient noise levels. Further, the estimated ambient noise levels at all off-site receptor locations with the addition of the Project's mechanical equipment would be below the significance criterion of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient noise levels). **Therefore, noise impacts from mechanical equipment during Project operation would be less than significant.**

Studio-Related Production

The Project would increase the number of sound stages and related production and production support activities. The sound stage shell structures would be designed to provide sound insulation to ensure that any noise generated is contained within the sound stages. Therefore, sound generation within the interior of the sound stages would be contained within the sound-insulated stages. As such, noise impacts associated with the operation of additional sound stages would be less than significant.

Outdoor studio production activities currently occur throughout the Project Site. Noise sources associated with outdoor studio production activities include, but are not limited to, setup and take down of sets, outdoor filming activities, and the use of portable generators. Outdoor studio production activities may occur at any time and any day of the

week, including weekends. However, noise generation associated with outdoor studio production activities is currently prohibited within 200 feet of the adjacent multi-family residences to the east of the Project Site (receptor location R1). In accordance with Project Design Feature NOI-PDF-5, outdoor production activities will continue to be prohibited within 200 feet of the Shared Eastern Property Line and receptor location R1. Outdoor studio production activities would continue to occur throughout the remaining portions of the Project Site. However, the overall amount of outdoor area used for studio production activities during Project operation would be reduced as compared to existing conditions due to the development of new buildings and parking facilities throughout much of the Project Site. Therefore, noise levels associated with outdoor studio production activities would be expected to be somewhat lower than under existing conditions. **As such, noise impacts associated with outdoor studio production activities would be less than significant.**

Outdoor Roof Deck Gathering Spaces

The Project would also generate noise associated with outdoor roof deck gathering spaces (i.e., people conversing and the potential use of amplified sound systems). For this operational noise analysis, reference noise levels of 65 dBA for a male and 62 dBA for a female speaking in a raised voice were used for analyzing potential noise impacts from people gathering in outdoor spaces potentially located throughout the Project Site.[52]

It was conservatively assumed that up to 1,200 people could gather at a given roof deck location, with a total of 5,000 people throughout the Project Site at any given time during the hours of operation within the potential outdoor gathering areas.[53] In order to analyze a typical noise scenario, it was assumed that up to 50 percent of the people (half of which would be male and the other half female) would be talking at the same time. The hours of operation for use of the outdoor gathering areas were assumed to be from 7:00 A.M. to 12:00 A.M. As set forth in Project Design Feature NOI-PDF-4, any amplified sound system used in outdoor roof deck gathering areas would be designed so as not to exceed the maximum noise levels of 85 dBA ($L_{eq\text{-}1hr}$) at a distance of 25 feet from the amplified speaker sound systems within 15 feet from the property boundary to the north, south, and west and within 40 feet from the property boundary to the east, and 95 dBA ($L_{eq\text{-}1hr}$) at a distance of 25 feet from any amplified speaker sound systems within the remaining

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

[53] Based on the conceptual site plan included in Section II, Project Description, of this Draft EIR, the maximum number of persons that could occupy outdoor roof deck gathering areas would range from approximately 270 to 1,200 persons. This analysis conservatively assumes that approximately 1,200 persons could gather at a specific roof deck location and a total of approximately 5,000 persons could gather throughout the Project Site at any given time during the hours of operation.

interior portion of the Project Site. These noise levels would ensure that any amplified sound system would not exceed the significance criterion (i.e., an increase of 5 dBA L_{eq}) at any off-site noise-sensitive receptor location.

Table IV.I-13 on page IV.I-47 presents the estimated noise levels at the off-site sensitive receptors resulting from the use of outdoor roof deck gathering areas. As presented in Table IV.I-13, the estimated noise levels from the outdoor roof deck gathering spaces would range from 48.1 dBA (L_{eq}) at the uses represented by receptor location R2 to 59.2 dBA (L_{eq}) at the uses represented by receptor location R5. With the addition of noise generated by use of the Project's outdoor gathering spaces, the resulting noise levels would be below the significance criterion 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 roof deck gathering spaces during Project operation would be less than significant.**

Parking Facilities

As discussed in Section II, Project Description, of this Draft EIR, the Project would provide approximately 5,300 vehicular parking spaces. These parking spaces would be located within an underground parking level, an above-ground parking structure (located at the southeastern portion of the Project Site), and/or surface parking throughout the Project Site. Sources of noise within the parking facilities would primarily include vehicular movements and engine noise, doors opening and closing, and intermittent car alarms. Noise levels within the parking facilities would fluctuate with the amount of automobile and human activity. The underground parking levels would be fully enclosed on all sides. Therefore, noise generated within the underground parking levels would be effectively shielded from off-site sensitive receptor locations. Table IV.I-14 on page IV.I-48 presents the estimated noise levels from the at-grade and above-grade parking levels at the off-site receptor locations. As indicated in Table IV.I-14, the estimated noise levels from the parking facilities would range from 24.1 dBA (L_{eq}) at the uses represented by receptor location R6 to 54.5 dBA (L_{eq}) at the uses represented by receptor location R1. The estimated ambient noise levels with the addition of the noise levels generated by the Project parking facilities would be below the significance criterion of 5 dBA (L_{eq}) above the ambient noise levels (based on the lowest measured ambient noise levels). **Therefore, noise impacts from the parking facilities during Project operation would be less than significant.**

Loading Dock and Trash Collection Areas

Loading docks/areas would be located throughout the Project Site in support of the production activities. The trash compactors would be located inside the subterranean parking facilities (below the podium level) or within another structurally-enclosed area and,

Table IV.I-13
Estimated Noise Levels from Outdoor Uses

Receptor Location	Existing Ambient Noise Levels (dBA (L_{eq}))	Estimated Noise Levels from Outdoor Uses (dBA (L_{eq}))	Ambient + Project Noise Levels (dBA (L_{eq}))	Significance Criteria[a]	Exceedance Over Significance Criteria	Significant Impact?
R1	53.3	55.2	57.4	58.3	0.0	No
R2	60.7	48.1	60.9	65.7	0.0	No
R3	67.5	58.4	68.0	72.5	0.0	No
R4	65.8	50.3	65.9	70.8	0.0	No
R5	57.8	59.2	61.6	62.8	0.0	No
R6	54.2	53.1	56.7	59.2	0.0	No
R7	53.1	55.8	57.7	58.1	0.0	No
R8	65.0	54.0	65.3	70.0	0.0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.I-6 on page IV.I-24) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a potentially significant noise impact is identified.*

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

thus, would be shielded from the off-site sensitive receptors. Noise sources associated with the loading docks/areas and trash collection areas would include delivery/trash collection trucks and operation of the trash compactors. 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 70 dBA (L_{eq}) and 66 dBA (L_{eq}), respectively, at a distance of 50 feet.[54] The Project also includes various outdoor truck loading areas serving the sound stages. The loading areas would typically be located at the basecamp areas or adjacent to the sound stages. Table IV.I-15 on page IV.I-49 presents the estimated noise levels at the off-site sensitive receptors resulting from the loading activities and operation of the trash compactor. The estimated noise levels were calculated with the assumption that up to 60 truck loadings and two trash compactors would operate concurrently to represent a conservative noise analysis. As presented in Table IV.I-15, the estimated noise levels from the loading and trash compactors would range from 41.6 dBA (L_{eq}) at the uses represented by receptor location R6, to 64.1 dBA (L_{eq}) at the uses represented by receptor location R1. The estimated ambient noise levels with the addition of the noise levels generated by the Project's loading activities and trash compactors would be below the significance criterion of 5 dBA (L_{eq}) above ambient noise levels at all off-site receptor locations. In addition, noise levels associated with the loading activities would be consistent with the existing loading operations as the loading activities would be located at similar distances from the off-site

54 RK Engineering Group, Inc., Wal-Mart/Sam's Club Reference Noise Level Study, 2003.

Table IV.I-14
Estimated Noise Levels from Parking Facilities

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Parking Facilities, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria[a]	Exceedance Over Significance Criteria	Significant Impact?
R1	53.3	54.5	57.0	58.3	0.0	No
R2	60.7	48.0	60.9	65.7	0.0	No
R3	67.5	36.1	67.5	72.5	0.0	No
R4	65.8	32.7	65.8	70.8	0.0	No
R5	57.8	37.6	57.8	62.8	0.0	No
R6	54.2	24.1	54.2	59.2	0.0	No
R7	53.1	33.0	53.1	58.1	0.0	No
R8	65.0	37.7	65.0	70.0	0.0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.I-6 on page IV.I-24) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a potentially significant noise impact is identified.*

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

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 Mobile Noise

Future roadway noise levels were calculated along 18 roadway segments in the vicinity of the Project Site. The roadway noise levels were calculated using the traffic data provided in the Transportation Study prepared for the Project, which is included in Appendix M of this Draft EIR. As discussed in the Transportation Study, the Project is expected to generate a net increase of 787 and 855 trips during the morning and afternoon peak hour, 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.I-16 on page IV.I-50 provides a summary of the roadway noise impact analysis. The calculated CNEL levels are conservative as the noise levels experienced along the roadways are used and do not account for the presence of any physical sound barriers or intervening structures. As shown in Table IV.I-16, the Project would result in a maximum increase of up to 0.9 dBA (CNEL) in traffic noise along the roadway segment of The Grove Drive (between Beverly Boulevard and 3rd Street). At other analyzed roadway segments, the increase in traffic-related noise levels would be 0.3 dBA or lower. The increase in traffic

Table IV.I-15
Estimated Noise Levels from Loading and Trash Compactors

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Loading and Trash Compactor, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria[a]	Exceedance Over Significance Criteria	Significant Impact?
R1	61.1	64.1	65.9	66.1	0.0	No
R2	62.8	54.3	63.4	67.8	0.0	No
R3	68.5	58.5	68.9	73.5	0.0	No
R4	67.7	48.6	67.8	72.7	0.0	No
R5	58.9	59.6	62.3	63.9	0.0	No
R6	60.4	41.6	60.5	65.4	0.0	No
R7	56.6	55.7	59.2	61.6	0.0	No
R8	66.9	43.0	66.9	71.9	0.0	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels, whichever is lower (see Table IV.I-6 on page IV.I-24) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a potentially significant noise impact is identified.*

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

noise levels along The Grove Drive and Gardner Street would be well below the 5-dBA CNEL significance criterion, which is applicable to noise levels that fall within the conditionally acceptable land use category (i.e., between 60 and 70 dBA CNEL). In addition, the increase in noise levels along Fairfax Avenue, Beverly Boulevard, 3rd Street and Crescent Heights Boulevard would be below the 3-dBA CNEL significance criterion, which is applicable to noise levels that fall within the normally unacceptable land use category (between 70 dBA and 75 dBA CNEL). **Therefore, traffic noise impacts under Future Plus Project conditions would be less than significant.**

Existing Plus Project Mobile Noise

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.I-17 on page IV.I-52, when compared with existing conditions, the Project would result in a maximum increase of up to 1.0 dBA (CNEL) in traffic-related noise levels along the roadway segment of The Grove Drive (between Beverly Boulevard and 3rd Street). At other analyzed roadway segments, the increase in traffic-related noise levels would be 0.3 dBA or lower. The increase in traffic noise levels along

Table IV.I-16
Roadway Traffic Noise Impacts—Future Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Future Without Project	Future Plus Project		
Fairfax Avenue					
Between Melrose Ave. and Rosewood Ave.	Hotel, School	71.3	71.4	0.1	No
Between Rosewood Ave. and Beverly Blvd.	Commercial	71.3	71.4	0.1	No
Between Beverly Blvd. and 3rd St.	Residential, Hotel	71.8	72.0	0.2	No
Between 3rd St. and 6th St.	Residential, Hospital	72.7	72.8	0.1	No
Between 6th St. and Wilshire Blvd.	Commercial	71.6	71.7	0.1	No
Between Wilshire Blvd. and 8th St.	Residential	71.4	71.4	0.0	No
Beverly Boulevard					
Between Crescent Heights Blvd. and Fairfax Ave.	Religious, Hotel	71.5	71.6	0.1	No
Between Fairfax Ave. and Genesee Ave.	Commercial	71.4	71.6	0.2	No
Between Genesee Ave. and Stanley Ave.	Residential, Religious, Hotel, School	71.2	71.5	0.3	No
Between Stanley Ave. and Gardner St.	Hotel, Park	71.5	71.8	0.3	No
Between Gardner St. and La Brea Ave.	Religious, School	71.6	71.8	0.2	No
3rd Street					
Between Crescent Heights Blvd. and Fairfax Ave.	Religious	70.7	70.9	0.2	No
Between Fairfax Ave. and Ogden Dr.	Commercial	71.3	71.5	0.2	No
Between Ogden Dr. and The Grove Dr.	Residential	71.8	72.0	0.2	No
Between The Grove Dr. and Martel Ave.	Residential, Park	71.8	71.9	0.1	No
Crescent Heights Boulevard					
Between Beverly Blvd. and 3rd St.	Residential	71.5	71.5	0.0	No
The Grove Drive					
Between Beverly Blvd. and 3rd St.	Residential, Park	66.3	67.2	0.9	No

Table IV.I-16 (Continued)
Roadway Traffic Noise Impacts—Future Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Future Without Project	Future Plus Project		
Gardner Street Between Beverly Blvd. and 3rd St.	Residential	64.4	64.4	0.0	No

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

Source: AES, 2021.

Table IV.I-17
Roadway Traffic Noise Impacts—Existing Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing	Existing Plus Project		
Fairfax Avenue					
Between Melrose Ave. and Rosewood Ave.	Hotel, School	70.6	70.8	0.2	No
Between Rosewood Ave. and Beverly Blvd.	Commercial	70.6	70.8	0.2	No
Between Beverly Blvd. and 3rd St.	Residential, Hotel	71.2	71.4	0.2	No
Between 3rd St. and 6th St.	Residential, Hospital	71.9	72.1	0.2	No
Between 6th St. and Wilshire Blvd.	Commercial	70.7	70.9	0.2	No
Between Wilshire Blvd. and 8th St.	Residential	70.3	70.4	0.1	No
Beverly Boulevard					
Between Crescent Heights Blvd. and Fairfax Ave.	Religious, Hotel	70.9	71.1	0.2	No
Between Fairfax Ave. and Genesee Ave.	Commercial	71.0	71.3	0.3	No
Between Genesee Ave. and Stanley Ave.	Residential, Religious, Hotel, School	70.8	71.1	0.3	No
Between Stanley Ave. and Gardner St.	Hotel, Park	71.1	71.4	0.3	No
Between Gardner St. and La Brea Ave.	Religious, School	71.2	71.4	0.2	No
3rd Street					
Between Crescent Heights Blvd. and Fairfax Ave.	Religious	70.1	70.3	0.2	No
Between Fairfax Ave. and Ogden Dr.	Commercial	70.9	71.1	0.2	No
Between Ogden Dr. and The Grove Dr.	Residential	71.4	71.6	0.2	No
Between The Grove Dr. and Martel Ave.	Residential, Park	71.4	71.6	0.2	No
Crescent Heights Boulevard					
Between Beverly Blvd. and 3rd St.	Residential	71.0	71.0	0.0	No
The Grove Drive					
Between Beverly Blvd. and 3rd St.	Residential, Park	66.1	67.1	1.0	No

Table IV.I-17 (Continued)
Roadway Traffic Noise Impacts—Existing Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing	Existing Plus Project		
Gardner Street					
Between Beverly Blvd. and 3rd St.	Residential	64.2	64.2	0.0	No

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

Source: AES, 2021.

The Grove Drive and Gardner Street would be well below the 5-dBA CNEL significance criterion, which is applicable to noise levels that fall within the conditionally acceptable land use category (i.e., between 60 and 70 dBA CNEL). In addition, the increase in traffic noise levels along Fairfax Avenue, Beverly Boulevard, 3rd Street and Crescent Heights Boulevard would be below the 3-dBA CNEL significance criterion, which is applicable to noise levels that fall within the normally unacceptable land use category (between 70 dBA and 75 dBA CNEL). In addition, traffic noise on an hourly basis due to events would also be less than significant. Specifically, in order for hourly traffic noise levels to result in a significant impact, traffic volumes would need to be more than doubled. Given the existing traffic volumes along the roadways (refer to Appendix J) and the various ingress/egress points around the Project Site on which event trips would be distributed, the traffic volumes generated by events on an hourly basis would not generate traffic volumes that would result in a significant noise impact. **Therefore, traffic noise impacts under Existing Plus Project conditions would be less than significant.**

(iii) Composite Noise Level Impacts from Project Operations

In addition to considering the potential noise impacts to neighboring noise-sensitive receptors from each specific on-site and off-site noise source (e.g., mechanical equipment, outdoor areas, parking facilities, loading, trash compactors, and off-site traffic), an evaluation of potential composite noise level increases (i.e., noise levels from all on-site noise sources combined) at the analyzed sensitive receptor locations was also performed. This evaluation of composite noise levels from all on-site Project-related noise sources, which was 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.I-18 on page IV.I-55 presents the estimated composite noise levels in terms of CNEL at the off-site sensitive receptor locations (R1–R8) from the Project-related noise sources. As indicated in Table IV.I-18, the Project would result in an increase in composite noise levels ranging from 0.3 dBA at the uses represented by receptor location R4 to 4.0 dBA at the uses represented by receptor location R1. The composite noise level from Project operation at off-site receptor locations R3, R4 and R8 would be below the 3-dBA significance criterion as the Ambient Plus Project Composite noise level falls within the normally unacceptable (70 to 75 CNEL) range for the residential, motel, and hotel land use categories. In addition, the composite noise levels from Project operation at off-site receptor locations R1, R2, R5, R6 and R7 would be below the 5-dBA significance criterion as the Ambient Plus Project Composite noise levels fall within the conditionally acceptable (60 to 70 CNEL) range for the residential, motel, and hotel land use categories. As such, composite noise level impacts due to Project operations would be less than significant.

Table IV.I-18
Composite Noise Impacts

Receptor Location	Existing Ambient Noise Levels (CNEL (dBA)) (A)	Calculated Project-Related Noise Sources (CNEL (dBA))					Project Composite Noise Levels (CNEL (dBA)) (G=B+C+D+E+F)[b]	Ambient Plus Project Composite Noise Levels (CNEL (dBA)) (H=A+G)[b]	Increase in Noise Levels due to Project (CNEL (dBA)) (H-A)	Significance Criteria[a] (CNEL (dBA))	Significant Impact?
		Mechanical Equipment (B)	Outdoor Spaces (C)	Parking (D)	Loading & Trash Compactor (E)	Off-Site Traffic (F)					
R1	62.3	55.3	57.6	58.6	61.3	51.3	64.1	66.3	4.0	67.3	No
R2	65.9	43.2	50.5	52.1	51.5	59.1	61.0	67.1	1.2	70.9	No
R3	72.4	43.7	60.8	40.2	55.7	58.9	63.8	73.0	0.6	75.4	No
R4	70.9	38.1	52.7	36.8	45.8	58.9	60.0	71.2	0.3	73.9	No
R5	62.7	46.4	61.6	41.7	56.8	43.8	63.0	65.9	3.2	67.7	No
R6	60.9	41.7	55.5	28.2	38.8	40.5	55.9	62.1	1.2	65.9	No
R7	58.7	48.0	58.2	37.1	52.9	51.2	60.2	62.5	3.8	63.7	No
R8	70.1	51.4	56.4	41.8	40.1	56.5	60.2	70.5	0.4	73.1	No

[a] *Significance criteria are equivalent to the existing ambient noise levels plus 3 dBA if the estimated noise levels (ambient plus Project) fall within the "normally unacceptable" or "clearly unacceptable" land use categories or ambient noise levels 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 and the L.A. CEQA Thresholds Guide. If the estimated noise levels exceed those significance criteria, a potentially significant noise impact is identified.*

[b] *Adding sound levels in dB are calculated based on energy basis.*

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

Based on the above, Project 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 City's general plan or noise ordinance, or applicable standards of other agencies. Therefore, the Project's operational noise impacts from on- and off-site sources would be less than significant.

(2) Mitigation Measures

(a) On-Site Construction Noise

As analyzed above, construction of the Project would have the potential to result in significant noise impacts at 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 eastern property line of the Project Site between the construction areas and the adjacent residential and park uses to the east, the temporary sound barrier shall be designed to provide a minimum 16-A-weighted decibels (dBA) noise reduction at the ground level of receptor locations R1 and R2.
- Along the northern property line of the Project Site between the construction areas and the motel (receptor location R3) and school (receptor location R4) on the north side of Beverly Boulevard and the residential uses along Orange Grove Avenue, Ogden Drive, Genesee Avenue, and Spaulding Avenue (represented by receptor location R5), the temporary sound barrier shall be designed to provide a minimum 9-dBA, 5-dBA and 8-dBA noise reduction at the ground level of receptor locations R3, R4, and R5 respectively.
- Along the western and a portion of the southern property lines of the Project Site between the construction areas and residential uses on Hayworth Avenue (receptor location R7) and the residential and motel uses on the west side Fairfax Avenue (receptor location R8), the temporary sound barrier shall be designed to provide a minimum 15-dBA and 10-dBA noise reduction at the ground level of receptor locations R7 and R8, respectively.

(b) Off-Site Construction Noise

As analyzed above, noise impacts associated with off-site construction trucks would be potentially significant along Fairfax Avenue during daytime hauling activities and significant along Fairfax Avenue, La Brea Avenue and San Vicente Boulevard should concrete trucks access the Project Site during nighttime hours for mat pour foundations. Daytime hauling activities are anticipated to occur between the hours of 7:00 A.M. and 4:00 P.M. with approval from the Bureau of Engineering District Engineer as well as between 8:00 A.M. and 4:00 P.M. on Saturdays. Conventional mitigation measures, such as providing temporary noise barrier walls to reduce the off-site construction truck traffic noise impacts, would not be feasible as the barriers would obstruct the access and visibility to the properties along the anticipated haul route(s). As such, there are no other feasible mitigation measures to reduce the temporary significant noise impacts associated with the Project's off-site construction trucks.

(c) Operational Noise

Noise impacts associated with on-site noise sources and off-site traffic during Project operation were determined to be less than significant. Therefore, no mitigation measures are required.

(3) Level of Significance After Mitigation

(a) On-Site Construction Noise

Implementation of Mitigation Measure NOI-MM-1 provided above would reduce the Project's construction noise levels to the extent feasible. Specifically, implementation of Mitigation Measure NOI-MM-1 (installation of temporary sound barriers) would reduce the noise generated by on-site construction activities at the off-site sensitive uses by a minimum of 16 dBA at the residential uses adjacent to the Project Site to the east (receptor location R1), by a minimum of 16 dBA at Pan Pacific Park on the east side of The Grove Drive (receptor location R2), by a minimum 9 dBA at the motel uses on the north side of Beverly Boulevard (receptor location R3), by a minimum of 5 dBA at the school uses on the north side of Beverly Boulevard (receptor location R4), by a minimum of 8 dBA at the residential uses on Ogden Drive (receptor location R5), by a minimum of 15 dBA at the residential use on Hayworth Avenue (receptor location R7), and by a minimum of 10 dBA at the ground level of the residential and hotel uses on the west side of Fairfax Avenue (receptor location R8). As presented in Table IV.I-19 on page IV.I-58, the estimated construction-related noise levels at the uses represented by off-site sensitive receptor locations R2, R3, R4, R5, R7 and R8 would be reduced to a less-than-significant level with the implementation of Mitigation Measure NOI-MM-1. The temporary sound barrier specified for receptor location R1 would not be effective in reducing the construction-related noise levels at the upper levels of the residential building (up to five stories) due to

Table IV.I-19
Construction Noise Impacts With Mitigation Measures

Off-Site Receptor Location	Minimum Noise Reduction Provided by Mitigation Measures[b] (feet)	Estimated Construction Noise Levels by Construction Stages (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 Without Mitigation?
		Demolition	Grading/ Excavation	Mat Foundation	Structure/ Enclosure	Architectural Coating/ Finishing	Paving/ Landscape				
R1	16	**72.8[d]**	**71.1**	**68.9**	**70.4**	**67.7**	**66.9**	61.1	66.1	6.7	Yes[c]
R2	16	66.7	64.5	62.6	66.5	60.0	59.5	62.2	67.8	0.0	No
R3	9	72.0	70.1	68.0	72.1	65.6	64.7	68.5	73.5	0.0	No
R4	5	70.6	69.8	67.1	71.5	65.2	63.1	67.7	72.7	0.0	No
R5	8	61.7	61.1	58.2	62.7	56.4	54.1	58.9	63.9	0.0	No
R6	0	60.5	60.4	57.2	62.1	55.7	52.8	60.4	65.4	0.0	No
R7	15	59.3	58.8	55.9	60.4	54.1	51.8	56.6	61.6	0.0	No
R8	10	71.0	69.1	67.0	71.1	64.6	63.7	66.9	71.9	0.0	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.I-6 on page IV.I-24) 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 potentially significant construction-related noise impact is identified.*

[b] *Noise reduction provided by temporary noise barrier along the Project boundaries.*

[c] *Noise barriers would also not be effective in reducing the on-site construction noise at the upper levels of receptor location R1. On-site construction noise levels shown for R1 are for the ground level of the building only.*

[d] *Bolded number indicates exceedance of the significance criteria.*

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

the higher ground elevation relative to the Project Site. In order to be effective, the temporary noise barrier would need to be as high as the building (i.e., five stories), which would not be feasible. Consequently, even with the implementation of Mitigation Measure NOI-MM-1, the construction-related noise at receptor R1 would still exceed the significance threshold by 6.7 dBA. There are no other feasible mitigation measures to further reduce the construction noise impact at receptor R1 to below the significance threshold. Therefore, construction noise impacts associated with on-site noise sources would remain significant and unavoidable.

(b) Off-Site Construction Noise

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

(c) Operational Noise

Noise impacts associated with on-site noise sources and off-site traffic during operation of the Project were determined to be less than significant without mitigation. Therefore, no mitigation measures are required or included, and the impacts would remain less than significant.

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

(1) Impact Analysis

(a) Construction

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures and the type of construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies, depending on soil type, ground strata, and construction characteristics of the receptor buildings. The effects of 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.I-20 on page IV.I-61 provides the estimated ground vibration velocity levels (in terms of inch per second PPV) at the nearest off-site structures, including historic structures, to the Project Site. It is noted that since impact pile driving methods would not be used during construction of the Project, in accordance with Project Design Feature NOI-PDF-2 discussed 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.

Vibration impacts associated with potential building damage were evaluated for the nearest off-site buildings to the north, south, east and west. In addition, the vibration impacts were also evaluated for the five off-site historical resources (as identified in Section IV.B, Cultural Resources, of this Draft EIR) in the vicinity of the Project Site, including The Original Farmers Market (located at 6333 3rd Street), Rancho La Brea Adobe (Gilmore Adobe) (located at 6301 3rd Street), Chase Bank (located at 310 Fairfax Avenue), Fairfax Theater (located at 7901–7909 Beverly Boulevard), and Air Raid Siren No. 25 (located on the west side of Ogden Drive in front of the commercial building at 309 Ogden Drive and north of Beverly Boulevard). 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 criterion for buildings extremely susceptible to vibration damage (applicable to the off-site historical resources), the 0.3-PPV significance criterion for engineered timber and masonry buildings (applicable to the off-site single-story commercial buildings to the north, south and west of the Project Site), and the 0.5-PPV significance criterion for engineered concrete and masonry buildings (applicable to the multi-story parking structure across from the Project Site to the south and the five-story residential building to the east).

As indicated in Table IV.I-20, the estimated vibration levels from the construction equipment would be well below the 0.12-PPV building damage significance criterion at the five off-site historical resources, the 0.3-PPV building damage significance criterion for the existing buildings to the north, south and west of the Project Site, and the 0.5-PPV building damage significance criterion for the multi-story residential building to the east and the multi-story parking structure to the south. **Therefore, the on-site vibration impacts during construction of the Project, pursuant to the significance criteria for building damage, would be less than significant.**

Table IV.I-20
Construction Vibration Impacts—Building Damage

Nearest Off-Site Buildings[a]	Approximate Distance Between the Off-Site Buildings and the Construction Equipment (feet)	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)	Significant Impact?
		Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	25	0.089	0.089	0.076	0.035	0.003	—	—
Commercial Buildings to the North	95	0.012	0.012	0.010	0.005	0.000	0.3[c]	No
Multi-Story Parking Structure to the South	20	0.114	0.114	0.097	0.045	0.004	0.5[d]	No
Commercial Buildings to the South	30	0.068	0.068	0.058	0.027	0.002	0.3[c]	No
Multi-Story Residential Building to the East	20	0.114	0.114	0.097	0.045	0.004	0.5[d]	No
Single-Story Commercial Buildings to the West	95	0.012	0.012	0.010	0.005	0.000	0.3[c]	No
The Original Farmers Market to the South (historic)	670	0.001	0.001	0.001	<0.001	<0.001	0.12[e]	No
Gilmore Adobe to the South (historic)	100	0.011	0.011	0.010	0.004	<0.001	0.12[e]	No
Chase Bank to the North (historic)	100	0.011	0.011	0.010	0.004	<0.001	0.12[e]	No
Fairfax Theater to the Northwest (historic)	140	0.007	0.007	0.006	0.003	<0.001	0.12[e]	No
Air Raid Siren No. 25 to the South (historic)	100	0.011	0.011	0.010	0.004	<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 a 25-foot distance.*

Table IV.I-20 (Continued)
Construction Vibration Impacts—Building Damage

Nearest Off-Site Buildings[a]	Approximate Distance Between the Off-Site Buildings and the Construction Equipment (feet)	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)	Significant Impact?
		Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
[c] *FTA criteria for non-engineered timber and masonry buildings.*								
[d] *FTA criteria for reinforced-concrete, steel or timber buildings.*								
[e] *FTA criteria for buildings extremely susceptible to vibration damage.*								
Source: FTA, 2006; AES, 2021. See Appendix J of this Draft EIR.								

(ii) Human Annoyance Impacts from On-Site Construction

Table IV.I-21 on page IV.I-64 provides the estimated vibration levels at the off-site sensitive uses due to construction equipment operation and compares the estimated vibration levels to the specified significance criteria for human annoyance. Per FTA guidance, the significance criteria for human annoyance are 72 VdB for residential and hotel uses (receptor locations R1, R3, and R5 to R8) and 75 VdB for school uses (receptor location R4) uses, assuming there is a minimum of 70 vibration events occurring during a typical construction day. The FTA human annoyance criteria do not apply to people in an outdoor environment (receptor location R2). As indicated in Table IV.I-21, the estimated ground-borne vibration levels from construction equipment would be below the significance criteria for human annoyance at all off-site sensitive receptor locations, with the exception of receptor location R1. The estimated ground-borne vibration levels at receptor location R1 would be up to 89.2 VdB, which would exceed the 72-VdB significance criterion during the demolition and grading/excavation stages with large construction equipment (i.e., large bulldozer, caisson drilling, and loaded trucks) operating within 80 feet of receptor location R1. The estimated ground-borne vibration levels at receptor location R1 would be 71.8 VdB with heavy construction equipment operating at a distance of 80 feet or greater, which would be below the 72 VdB significance criterion. As such, the ground-borne vibration impacts would be limited to construction along the eastern property line, within 80 feet of receptor R1. **Therefore, on-site vibration impacts during construction of the Project, pursuant to the significance criteria for human annoyance, would be potentially significant.**

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

As described above, construction delivery/haul trucks would travel between the Project Site and I-10 via Washington Boulevard, Fairfax Avenue, San Vicente Boulevard, Beverly Boulevard, and/or La Brea Avenue . In addition, haul trucks would travel between the haul truck staging areas and I-10 via Normandie Avenue, Venice Boulevard, and Vermont Avenue. 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.[55] According to the FTA, "[i]t is unusual for vibration from sources such as

[55] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018, Figure 5-4.

Table IV.I-21
Construction Vibration Impacts—Human Annoyance

Off-Site Receptor Location	Approximate Distance Between the Off-Site Buildings and the Construction Equipment (feet)	Estimated Vibration Velocity Levels at the Off-Site Sensitive Uses Due to On-Site Construction Equipment Operation[a] (VdB)					Significance Criteria (VdB)	Significant Impact?
		Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	25	87	87	86	79	58	—	—
R1	20	89.2	89.2	88.2	81.2	60.2	72	Yes[c]
R2[b]	75	72.7	72.7	71.7	64.7	43.7	—	No
R3	95	69.6	69.6	68.6	61.6	40.6	72	No
R4	195	60.2	60.2	59.2	52.2	31.2	75	No
R5	220	58.7	58.7	57.7	50.7	29.7	72	No
R6	375	51.7	51.7	50.7	43.7	22.7	72	No
R7	230	58.1	58.1	57.1	50.1	29.1	72	No
R8	95	69.6	69.6	68.6	61.6	40.6	72	No

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

[b] *Receptor location R2 is provided for informational purposes only, as it is not considered a vibration-sensitive use per the FTA.*

[c] *Impacts would be reduced to less-than-significant levels with heavy construction equipment (i.e., large bulldozer, caisson drilling, loaded trucks, and jack hammer) operating at greater than 80 feet from receptor location R1.*

Source: FTA, 2018; AES, 2021. See Appendix J of this Draft EIR.

buses and trucks to be perceptible, even in locations close to major roads." Nonetheless, there are existing buildings along the Project's anticipated haul route that are situated approximately 20 feet from the right-of-way and would be exposed to ground-borne vibration levels of approximately 0.022 PPV, as provided in the noise calculation worksheets included in Appendix J 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 criterion 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 are 72 VdB for residential and hotel uses and 75 VdB for school 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.[56] The estimated vibration levels generated by construction trucks traveling along the anticipated haul route were assumed to be within 24 feet of the sensitive uses (i.e., the residential and motel uses) along Fairfax Avenue, Beverly Boulevard, La Brea Avenue, San Vicente Boulevard, Normandie Avenue, and Vermont Avenue. As indicated in the noise calculation worksheets included in Appendix J of this Draft EIR, the temporary vibration levels could reach approximately 72.6 VdB periodically as trucks pass sensitive receptors along the anticipated haul route(s) at a distance of 24 feet. The vibration sensitive uses along Venice Boulevard are located a minimum of 55 feet from the truck traveled lane, and would be exposed to vibration levels up to 61.8 VdB from the construction trucks, which would be below the 72-VdB significance criterion. However, the residential and motel uses along Fairfax Avenue Beverly Boulevard, La Brea Avenue, San Vicente Boulevard, Normandie Avenue, and Vermont Avenue would be exposed to ground-borne vibration levels of up to 72.6 VdB, which would exceed the 72-VdB significance criterion. **Thus, 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 potentially significant.**

(iv) Summary of Construction Vibration Impacts

As discussed above, the estimated vibration levels from on-site construction equipment would be below the building damage significance criteria of 0.12 PPV for the off-site historical resources, 0.3 PPV for the off-site buildings across the Project Site to the north, south and west, and 0.5 PPV for the off-site residential building adjacent to the Project to the east and the multi-level parking structure to the south. **Therefore, vibration**

[56] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018, p. 113.

impacts (pursuant to the significance criteria for building damage) during construction of the Project would be less than significant. However, vibration impacts from on-site construction activities would be potentially significant pursuant to the significance criteria for human annoyance. In addition, 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; however, vibration impacts from off-site construction activities would be potentially significant with respect to the significance criteria for human annoyance.

(b) Operational Vibration Impacts

As described above, sources of vibration related to operation of the Project would include vehicle circulation, delivery trucks, and building mechanical equipment. As discussed above, it is unusual for vibration from sources, such as rubber-tired buses and trucks to be perceptible, even in locations close to major roads. As such, vehicular-induced vibration, including vehicle circulation within the subterranean, surface, and above-grade parking facilities, would not generate perceptible vibration levels at off-site sensitive uses. Building mechanical equipment installed as part of the Project would include typical commercial-grade stationary mechanical equipment, such as air-condenser units (mounted at the roof level), that would include vibration-attenuation mounts to reduce vibration transmission to ensure that vibration would not be perceptible at the off-site sensitive receptors. **As such, operation of the Project would not result in the generation of excessive ground-borne vibration levels that would be perceptible in the vicinity of the Project Site. Therefore, vibration impacts associated with operation of the Project would be less than significant.**

(2) Mitigation Measures

(a*) Construction Vibration*

As discussed above, vibration impacts (pursuant to the significance criteria for building damage) associated with on-site and off-site construction activities would be less than significant. Therefore, no mitigation measures are required.

Vibration impacts from on-site and off-site construction activities would be potentially significant pursuant to the significance criteria for human annoyance. Mitigation measures considered to reduce vibration impacts from on-site construction activities with respect to human annoyance included the installation of a wave barrier, which is typically a trench or a thin wall made of sheet piles installed in the ground (essentially a subterranean sound barrier to reduce noise). However, wave barriers must be very deep and long to be

effective, is cost prohibitive for temporary applications, such as construction, and is considered infeasible.[57] 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. In addition, it would not be feasible to install a wave barrier along the public roadways for the off-site construction vibration impacts. As such, there are no feasible mitigation measures to reduce the potential vibration human annoyance impacts.

(b) Operational Vibration

As discussed above, vibration impacts during operation of the Project would be less than significant. Therefore, no mitigation measures are required.

(3) Level of Significance After Mitigation

(a) Construction Vibration

Vibration impacts (pursuant to the significance criteria for building damage) associated with on-site and off-site construction activities were determined to be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant. However, vibration impacts from both on-site and off-site construction with respect to human annoyance would remain significant and unavoidable.

(b) Operational Vibration

Vibration impacts associated with Project operation were determined to be less than significant without mitigation. Therefore, no mitigation measures were required or included, 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, included as Appendix A of this Draft EIR, the Project Site is not located within the vicinity of a private airstrip. The closest private airstrip or airport is the Santa Monica Airport, which is approximately 6.1 miles west of the Project Site. In

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

addition, the Project Site is not located within 2 miles of an airport or within an area subject to an airport land use plan. **Since the Project would not be located within the vicinity of a private airstrip, an airport land use plan, or within 2 miles of a public airport or public use airport, noise impacts with respect to Threshold (c) would not occur. No further analysis is required.**

e. Project Impacts with Long-Term Buildout

While Project buildout is anticipated in 2026, the Project Applicant is seeking a Development Agreement with a term of 20 years, which could extend the full buildout year to approximately 2043. The Development Agreement would confer a vested right to develop the Project in accordance with the Specific Plan and a Mitigation Monitoring and Reporting Program (MMRP) throughout the term of the Development Agreement. The Specific Plan and MMRP would continue to regulate development of the Project site and provide for the implementation of all applicable Project design features and mitigation measures associated with any development activities during and beyond the term of the Development Agreement. Additionally, with the exception of potential mobile noise impacts, a later buildout date would not affect the impacts or significance conclusions presented above as such impacts are not dependent upon buildout year. With regard to Project-related mobile noise impacts, with an extended buildout year, the Future Without Project noise levels would increase as a result of ambient traffic growth occurring between 2026 and 2043. Thus, the Project's contribution to increases in ambient noise levels would be diluted, and overall Project operational impacts related to mobile noise would be expected to be slightly reduced.

f. 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, 68 related projects have been identified in the vicinity of the Project Site. Noise from the 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 seven related projects are located within 1,000 feet of the Project Site:

- Related Project No. 1 (Beverly & Fairfax Mixed-Use) is a mixed-use development located at 7901 Beverly Boulevard, approximately 140 feet northwest of the Project Site. There are noise-sensitive receptors located within 500 feet of Related Project No. 1 and the Project Site, as represented by receptor locations R6 and R7. As analyzed above in Subsection 2.c.(2) (see Table IV.I-10 on page IV.I-39), the estimated Project-related construction noise levels at receptor location R6 would be below the significance criterion by 3.3 dBA (i.e., noise levels of 62.1 to 65.4 dBA) but would be 13.8 dBA above the significance criterion at receptor location R7. Since Related Project No. 1 is adjacent to receptor location R6, cumulative construction noise from both the Project and Related Project No. 1 would likely exceed the 5-dBA significance criterion. There are intervening buildings between Related Project No. 1 and the receptor location R7, which would provide noise shielding from Related Project No. 1 to receptor location R7. Nevertheless, there is a potential for cumulative construction noise impacts at receptor location R6 in the event that Project construction occurs concurrently with the construction of Related Project No. 1.

- Related Project No. 4 (Jewish Family Service) is an office development located at 320 Fairfax Avenue, approximately 270 feet north of the Project Site. This Project has been completed. As such, there is no potential for cumulative construction noise impacts associated with this project and the Project to occur.

- Related Project No. 5 (Edin Park) is a retail and restaurant development located at 8001 Beverly Boulevard, approximately 775 feet northwest of the Project Site. There are noise-sensitive receptors located between the Project Site and Related Project No. 5, including receptor locations R6 and R7. There are buildings located between Related Project No. 5 and the Project, which would provide shielding of construction-related noise between the two projects. Therefore, the Project would not contribute to cumulative construction-related noise impacts at the uses represented by receptor locations R6 and R7 in the event of concurrent construction with Related Project No. 5.

- Related Project No. 8 (8000 Beverly Mixed-Use) is a mixed-use development located at 8000 Beverly Boulevard, approximately 765 feet west of the Project Site. There are noise-sensitive receptors located between the Project Site and Related Project No. 8, including receptor location R7. However, there are buildings located between Related Project No. 8 and the Project, which would provide shielding of construction-related noise between Related Project No. 8 and the receptor location R7. Therefore, the Project would not contribute to cumulative construction-related noise impacts at the uses represented by

receptor location R7 in the event of concurrent construction with Related Project No. 8.

- Related Project No. 11 (7951 Beverly Mixed-Use) is a mixed-use development located at 7951 Beverly Boulevard, approximately 465 feet northwest of the Project Site. There are noise-sensitive receptors located between the Project Site and Related Project No. 11, including receptor location R6. As analyzed above in Subsection 2.c.(2) (see Table IV.I-10 on page IV.I-39), the estimated Project-related construction noise levels at receptor location R6 would be below the significance criterion by 3.3 dBA. Since Related Project No. 11 is approximately 100 feet from receptor location R6 and would have direct line-of-sight to receptor location R6, cumulative construction noise from both the Project and Related Project No. 11 would likely exceed the 5-dBA significance criterion. As such, there is a potential for cumulative construction noise impacts in the event Project construction occurs concurrently with the construction of Related Project No. 11.

- Related Project No. 13 (3rd & Fairfax Mixed-Use) is a mixed-use development located at 6300 3rd Street, approximately 950 feet south of the Project Site. There are noise-sensitive receptors located between the Project Site and Related Project No. 13, including the residential uses located on the south side of 3rd Street adjacent to Related Project No. 13. However, there are buildings located between the Project and the residential uses adjacent to Related Project No. 13. Based on the distance attenuation (approximately 950 feet) and the shielding provided by intervening buildings, Project construction would not contribute to cumulative construction noise in the event of concurrent construction with Related Project No. 13.

- Related Project No. 15 (Apartments Project) is a residential development located at 320 Hayworth Avenue, approximately 635 feet northwest of the Project Site. There are noise-sensitive receptors located between the Project Site and Related Project No. 15, including residential uses along Hayworth Avenue (represented by receptor location R6). As analyzed above in Subsection 2.c.(2) (see Table IV.I-10 on page IV.I-39), the estimated Project-related construction noise levels at receptor location R6 would be below the significance criterion by 3.3 dBA. Since Related Project No. 15 is approximately 110 feet from receptor location R6 and would have partial line-of-sight to receptor location R6, cumulative construction noise from both the Project and Related Project No. 15 would likely exceed the 5-dBA significance criterion. As such, there is a potential for cumulative construction noise impacts in the event that Project construction occurs concurrently with construction of Related Project No. 15.

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 hour regulations and other applicable 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 uses) located in proximity to the Project Site and Related Project Nos. 1, 11 and 15, in the event of concurrent construction activities. **As such, cumulative noise impacts from on-site construction would be potentially 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 routes. As analyzed above (see Table IV.I-11 on page IV.I-39), the estimated off-site construction noise levels would exceed the significance criteria along the anticipated truck routes utilizing Fairfax Avenue during daytime hours and Fairfax Avenue, La Brea Avenue, and San Vicente Boulevard during potential nighttime hours associated with the mat pour foundation. Therefore, any additional number of trucks from the Project and related projects would incrementally increase the noise levels, which would contribute to cumulative impacts. There are related projects located in the vicinity of Fairfax Avenue, La Brea Avenue, and San Vicente Boulevard between the Project Site and I-10, including Related Project Nos. 1, 3, 11, 12, 13, 15, 17, 19 and 21, which could utilize Fairfax Avenue, La Brea Avenue, and San Vicente Boulevard as a haul route. Based on the existing daytime ambient noise level of 67.7 dBA (L_{eq}) along Beverly Boulevard (see Table IV.I-11), it is estimated that up to 143 truck trips along Beverly Boulevard per hour would increase the ambient noise levels by 5 dBA and exceed the significance criterion.[58] There are related projects located in the vicinity of Beverly Boulevard, which could utilize Beverly Boulevard as a haul route, including Related Project Nos. 1, 5, 7, 8, 11, 15 and 16. There is no available information regarding the anticipated truck trips for these related projects. However, since the Project would generate up to 107 truck trips per hour, it is conservatively assumed that the total truck trips from the Project and related projects could add up to 143 truck trips per hour along Beverly Boulevard and result in a 5 dBA noise increase. Therefore, cumulative noise due to construction truck traffic from the Project and other related projects has the potential to increase the ambient noise levels along the haul truck routes by 5 dBA. **As such, cumulative noise impacts from off-site construction would be potentially significant.**

[58] It is estimated that with 143 truck trips, the noise level along Beverly Boulevard would be 71.0 dBA, when added to the existing ambient of 67.7 dBA the cumulative noise levels would be 72.7 dBA, which would increase the ambient by 5.0 dBA.

(iii) Summary of Cumulative Construction Noise Impacts

As discussed above, on-site and off-site construction activities from the Project and related projects have the potential to result in the generation of noise levels in excess of standards established by the City. **Therefore, cumulative noise impacts from on-site and off-site construction activities would be potentially significant.**

(b) Operational Noise

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

(i) On-Site Stationary Noise Sources

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

(ii) Off-Site Mobile Noise Sources

The Project and related projects in the area would produce traffic volumes (off-site mobile sources) that would generate roadway noise. Cumulative noise impacts due to off-site traffic were analyzed by comparing the projected increase in traffic noise levels from "Existing" conditions to "Cumulative Future Plus Project" conditions to the applicable significance criteria. Cumulative Future Plus Project conditions include traffic volumes from future ambient growth, related projects, and the Project. The calculated traffic noise levels under "Existing" and "Cumulative Future Plus Project" conditions are presented in Table IV.I-22 on page IV.I-73. As shown therein, cumulative traffic volumes would result in an increase ranging from 0.2 dBA (CNEL) along the roadway segment of Gardner Street

Table IV.I-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))	Significant Impact?
		Existing	Future Cumulative Plus Project		
Fairfax Avenue					
Between Melrose Ave. and Rosewood Ave.	Hotel, School	70.6	71.4	0.8	No
Between Rosewood Ave. and Beverly Blvd.	Commercial	70.6	71.4	0.8	No
Between Beverly Blvd. and 3rd St.	Residential, Hotel	71.2	72.0	0.8	No
Between 3rd St. and 6th St.	Residential, Hospital	71.9	72.8	0.9	No
Between 6th St. and Wilshire Blvd.	Commercial	70.7	71.7	1.0	No
Between Wilshire Blvd. and 8th St.	Residential	70.3	71.4	1.1	No
Beverly Boulevard					
Between Crescent Heights Blvd. and Fairfax Ave.	Religious, Hotel	70.9	71.6	0.7	No
Between Fairfax Ave. and Genesee Ave.	Commercial	71.0	71.6	0.6	No
Between Genesee Ave. and Stanley Ave.	Residential, Religious, Hotel, School	70.8	71.5	0.7	No
Between Stanley Ave. and Gardner St.	Hotel, Park	71.1	71.8	0.7	No
Between Gardner St. and La Brea Ave.	Religious, School	71.2	71.8	0.6	No
3rd Street					
Between Crescent Heights Blvd. and Fairfax Ave.	Religious	70.1	70.9	0.8	No
Between Fairfax Ave. and Ogden Dr.	Commercial	70.9	71.5	0.6	No
Between Ogden Dr. and The Grove Dr.	Residential	71.4	72.0	0.6	No
Between The Grove Dr. and Martel Ave.	Residential, Park	71.4	71.9	0.5	No
Crescent Heights Boulevard					
Between Beverly Blvd. and 3rd St.	Residential	71.0	71.5	0.5	No
The Grove Drive					
Between Beverly Blvd. and 3rd St.	Residential, Park	66.1	67.2	1.1	No

Table IV.I-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))	Significant Impact?
		Existing	Future Cumulative Plus Project		
Gardner Street					
Between Beverly Blvd. and 3rd St.	Residential	64.2	64.4	0.2	No

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

Source: AES, 2021.

(between Beverly Boulevard and 3rd Street) to 1.1 dBA (CNEL) along the roadway segments of Fairfax Avenue (between Wilshire Boulevard and 8th Street) and The Grove Drive (between Beverly Boulevard to 3rd Street). The estimated cumulative roadway traffic noise level increases along the roadway segments of Fairfax Avenue, Beverly Boulevard, 3rd Street, and Crescent Heights Boulevard would be below the 3-dBA significance criterion (applicable when noise levels fall within the normally unacceptable or clearly unacceptable land use category, i.e., 70 dBA CNEL or higher). The estimated cumulative noise level increases along the roadway segments of The Grove Drive and Gardner Street would be below the 5-dBA significance criterion (applicable when noise levels fall within the conditionally acceptable land use category, i.e., between 60 and 70 dBA CNEL). **Therefore, cumulative noise impacts due to off-site mobile noise sources associated with the Project, future growth, and related projects would be less than significant.**

(iii) Summary of Cumulative Operational Noise Impacts

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

(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). As indicated above, the closest related project, Related Project No. 1, is approximately 140 feet northwest of the Project Site. Therefore, based on distance attenuation potential cumulative vibration impacts with respect to the building damage from the Project and Related Project No. 1 would be less than significant. **Therefore, the Project would not contribute to a cumulative construction vibration impact with respect to building damage associated with on-site construction, and the cumulative impact would be less than significant.**

As discussed above, potential vibration impacts associated with Project-related on-site construction activities would be potentially significant with respect to human annoyance at receptor location R1. Related Project No. 29 is approximately 960 feet from receptor location R1. Due to the rapid attenuation characteristics of ground-borne

vibration, Related Project No. 29 would not contribute to the cumulative construction vibration impact with respect to human annoyance at the uses represented by receptor locations R1. In addition, Related Project No. 29 is approximately 200 feet from receptor location R4. However, as analyzed above, the estimated ground-borne vibration at receptor location R4 is estimated at 60 VdB, which would be well below the 72-VdB significance criterion. In addition, due to the rapid attenuation characteristics of ground-borne vibration, the Project would not contribute to the cumulative construction vibration impacts at the uses represented by receptor location R4. **Therefore, the Project's contribution to construction vibration impacts with respect to human annoyance would not be cumulatively considerable, and, as such, potential cumulative construction vibration impact with respect to human annoyance associated with on-site construction would be less than significant.**

(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.[59] 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 truck routes for the Project (i.e., Fairfax Avenue, La Brea Avenue, Beverly Boulevard, and San Vicente Boulevard). These buildings are anticipated to be exposed to ground-borne vibration levels of approximately 0.022 PPV. Trucks from the related projects are expected to generate similar ground-borne vibration levels. Therefore, the vibration levels generated from off-site construction trucks associated with the Project and other related projects along the anticipated truck route(s) would be below the most stringent building damage significance criterion 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 truck route(s) would be potentially 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 Fairfax Avenue, La Brea Avenue, Beverly Boulevard, and San Vicente Boulevard. As analyzed above, there are residential and motel uses along Fairfax Avenue, La Brea Avenue, Beverly Boulevard and

[59] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, September 2018, Figure 5-w4.

San Vicente Boulevard, which could reach 72.6 VdB as the trucks pass by within 24 feet of the sensitive receptors. As described above, there are related projects that could utilize the same truck routes as the Project, including Nos. 1, 3, 5, 7, 8, 11, 12, 13, 15, 16, 17, and 21, which could utilize Fairfax Avenue, Beverly Boulevard, La Brea Avenue, and San Vicente Boulevard as a haul route, or the staging areas along Normandie Avenue and Vermont Avenue. **Therefore, to the extent that other related projects use the same haul route or staging areas as the Project, potential cumulative vibration impacts with respect to human annoyance associated with temporary and intermittent vibration from haul trucks would be potentially 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, and impacts would be less than significant**.

Cumulative construction vibration impacts from on-site construction activities pursuant to the significance criteria for human annoyance would be less than significant in the event that concurrent construction of the Project and the related projects were to occur. However, to the extent that other related projects use the same haul route as the Project, potential cumulative human annoyance impacts associated with temporary and intermittent vibration from haul trucks traveling along the designated haul route would be potentially significant. **Therefore, on-site construction activities would not generate excessive ground-borne vibration levels with respect to human annoyance that would result in cumulative vibration impacts. However, cumulative vibration impacts with respect to human annoyance associated with off-site construction activities would be potentially significant.**

(d) Operational Vibration

Vibration levels from project operation are generally limited to building mechanical equipment and vehicle circulation and would be limited to the immediate vicinity of the project sites. The related projects (mixed-use and commercial developments) would generate similar vibration levels as the Project. As described above, the nearest related projects are located a minimum of 140 feet from the Project Site. Since ground-borne vibration decreases rapidly with distance, operation of the related projects would not contribute to cumulative vibration impacts due to the distance between the Project and the

related projects. As analyzed above, the Project operation would not result in the generation of excessive ground-borne vibration levels that would be perceptible in the vicinity of the Project Site. **Therefore, based on the distance of the related projects from the Project Site and the operational vibration levels associated with the Project, cumulative vibration impacts associated with operation of the Project and related projects would be less than significant**.

(e) Cumulative Impacts with Long-Term Buildout

With regard to cumulative impacts, mobile noise associated with ambient growth through 2043 would increase cumulative traffic noise levels as compared to the future noise levels presented in Table IV.I-22 on page IV.I-73. The cumulative mobile noise levels in 2043 would not result in significant mobile noise impacts since traffic volumes would need to increase by approximately 50 percent over existing conditions in order to generate a 3-dBA increase in noise levels. Based on the Transportation Study included in Appendix M of this Draft EIR, one percent annual ambient growth in traffic volumes would be considered conservative (i.e., inflated), particularly over a long-term period. Using this conservative growth rate, the ambient traffic growth from 2026 to 2043 would only be increased by 18 percent, and, thus, the resulting mobile noise levels would not increase by 3 dBA. As such, a later buildout date would not result in new significant cumulative noise impacts or a substantial increase in any significant cumulative noise impacts identified above.

(2) Mitigation Measures

(a) Construction Noise

As analyzed above, there would be potential cumulative noise impacts at the nearby sensitive uses (e.g., residential uses) located in proximity to the Project Site and Related Project Nos. 1, 11 and 15, in the event of concurrent construction activities. 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 potentially significant.

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

other feasible mitigation measures to reduce the temporary significant noise impacts associated with the cumulative off-site construction trucks.

(b) Operational Noise

As discussed above, operation of the Project and related projects would result in a less-than-significant noise impact during operation. Therefore, no mitigation measures are required.

(c) Construction Vibration

Cumulative vibration impacts with respect to building damage associated with on-site and off-site construction activities would be less than significant. Therefore, no mitigation measures are required. However, vibration levels from construction trucks would exceed the significance criteria for human annoyance at vibration sensitive receptors along the anticipated haul routes. There are no feasible mitigation measures to reduce the potential vibration human annoyance impacts. Even though impacts would be temporary, intermittent, and limited to daytime hours when haul trucks are traveling within 25 feet of a sensitive receptor, cumulative vibration impacts from off-site construction with respect to human annoyance would remain significant and unavoidable.

(d) Operational Vibration

Cumulative vibration impacts associated with operation of the Project and related projects would be less than significant. Therefore, no mitigation measures are required.

(3) Level of Significance After Mitigation

(a) Construction Noise

Cumulative construction noise impacts associated with on-site noise sources and off-site construction traffic would remain significant and unavoidable.

(b) Operational Noise

Cumulative impacts related to operational noise were determined to be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.

(c) Construction Vibration

Cumulative vibration impacts associated with respect to building damage from on-site and off-site construction activities were determined to be less than significant

without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant. However, cumulative vibration impacts associated with human annoyance from construction trucks would be significant and unavoidable.

(d) Operational Vibration

Cumulative impacts related to operational vibration were determined to be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.