IV. Environmental Impact Analysis

I. Noise

1. Introduction

This section analyzes potential noise and vibration impacts that could result from the Project. The analysis describes the existing noise environment within the Project area, estimates future noise and vibration levels at surrounding sensitive land uses associated with construction and operation of the Project, assesses the potential for significant impacts, and identifies mitigation measures to address any potential significant impacts. An evaluation of the potential cumulative noise and vibration impacts of the Project and related projects is also provided. Noise and vibration calculation worksheets are included in Appendix J of this Draft EIR. The mobile source noise analysis is based on traffic data included in the Transportation Assessment (TA) prepared by Fehr & Peers, dated April 2021, which is included in Appendix M-1 of this Draft EIR.

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 unwanted sound (i.e., loud, unexpected, or annoying sound). Acoustics is defined as the physics of sound. 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 atmospheric factors affecting the propagation path to the receiver determine the sound level and characteristics of the noise perceived by the receiver. Acoustics addresses primarily the propagation and control of sound.[1]

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. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB

[1] M. David Egan, *Architectural Acoustics*, March 1988, Chapter 1, pp. 2, 3, 10, and 11.

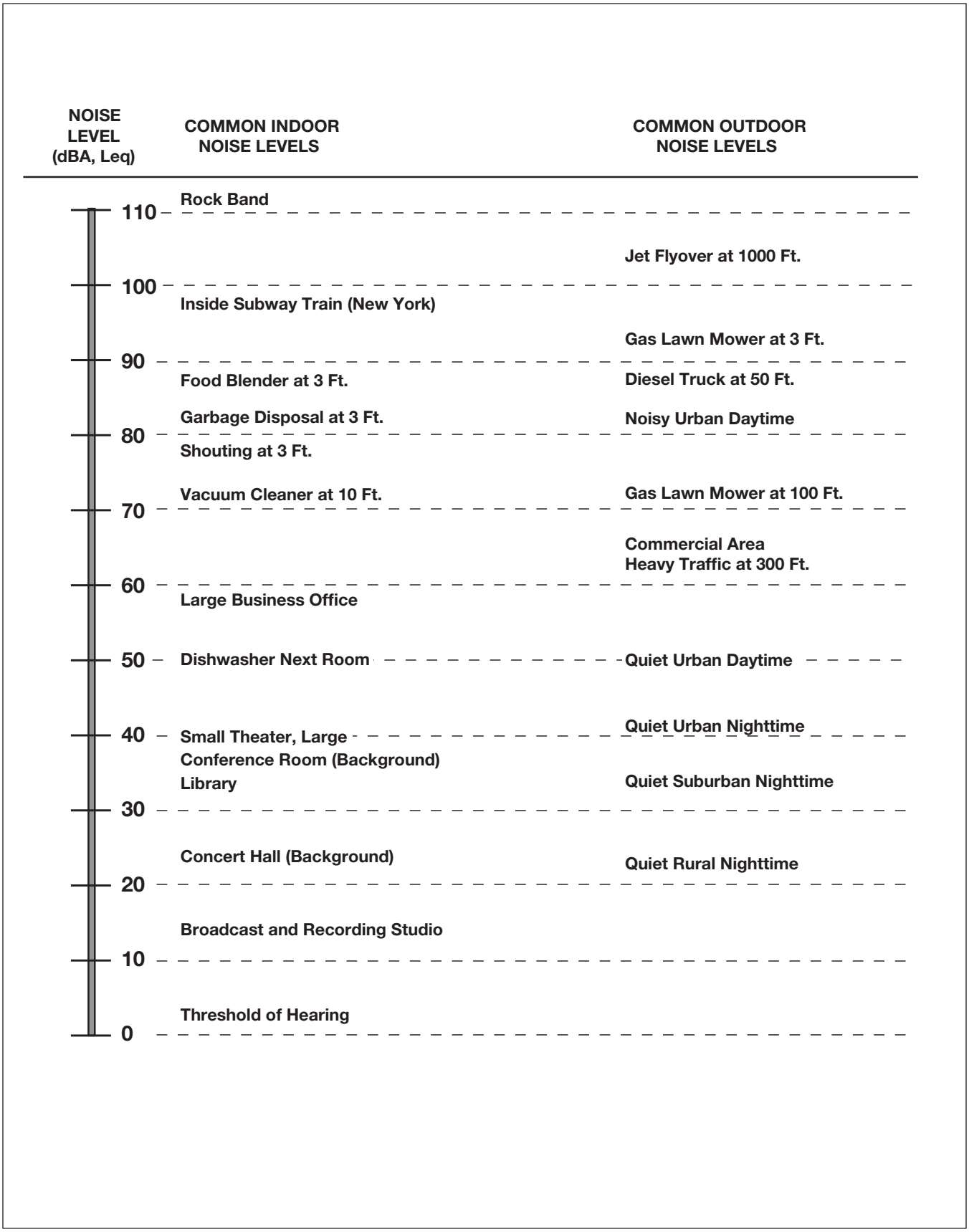
corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.[2]

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, with audible frequencies of the sound spectrum ranging from 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.[3] The typical human ear is not equally sensitive to this frequency range. 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.[4] Some representative common outdoor and indoor noise sources and their corresponding A-weighted noise levels are shown in **Figure IV.I-1**, *Decibel Scale and Common Noise Sources*.

(2) Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time; a noise level is a measure of noise at a given instant in time. However, noise levels rarely persist at that level over a long period of time. Rather, 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 of the individual contributors unidentifiable. The background noise level changes throughout a typical day but does so gradually, corresponding with the addition and subtraction of distant noise sources, such as changes in traffic volume. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.[5]

2 M. David Egan, *Architectural Acoustics*, March 1988, Chapter 1, pp. 2, 3, 10, and 11.
3 M. David Egan, *Architectural Acoustics*, March 1988, Chapter 1, pp. 2, 3, 10, and 11.
4 M. David Egan, *Architectural Acoustics*, March 1988, Chapter 1, pp. 2, 3, 10, and 11.
5 California Department of Transportation (Caltrans), *Technical Noise Supplement* (*TeNS*), September 2013, Section 2.2.2.1.



SOURCE: State of California, Department of Transportation (Caltrans), Technical Noise Supplement (TeNS). October 1998. Available: http://www.dot.ca.gov/hq/env/noise/pub/Technical Noise Supplement.pdf

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

These successive additions of sound to the community noise environment change the community noise level from instant to instant, 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, which are applicable to the Project:[6]

L_{eq}: The equivalent sound level over a specified period of time, typically, 1 hour (L_{eq}). The L_{eq} may also be referred to as the 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 dB to measured noise levels between the hours of 10:00 P.M. to 7:00 A.M. to account for nighttime noise sensitivity. The L_{dn} is also termed the day-night average noise level (DNL).

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

(3) Effects of Noise on People

Noise is generally 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., startled 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,

6 Caltrans, *TeNS*, September 2013, Section 2.2.2.2.

and sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep.[7]

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. 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 level, the following relationships generally occur:[8]

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

These relationships occur in part because of the logarithmic nature of sound and the decibel scale. The human ear perceives sound in a non-linear fashion; therefore, the dBA scale was developed. 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 ten sources of equal loudness together produce a sound level of approximately 10 dBA louder than the single source.[9]

7 Caltrans, *TeNS*, September 2013, Section 2.2.1.
8 Caltrans, *TeNS*, September 2013, Section 2.2.1.
9 Caltrans, *TeNS*, September 2013, Section 2.2.1.1.

(4) Noise Attenuation

When noise propagates over a distance, the noise level reduces 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." Noise levels generated by stationary point sources, including stationary mobile sources, such as idling vehicles, are attenuated at a rate between 6 dBA for acoustically "hard" sites and 7.5 dBA for "soft" sites for each doubling of distance from the reference measurement, as their energy is continuously spread out over a spherical surface (e.g., for hard surfaces, 80 dBA at 50 feet attenuates to 74 dBA at 100 feet, 68 dBA at 200 feet, etc.). 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, provides an excess ground attenuation value of 1.5 dBA (per doubling distance).[10]

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. Noise from a line source propagates over a cylindrical surface, often referred to as "cylindrical spreading." Noise from line sources (e.g., traffic noise from vehicles) are attenuated 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.[11] Therefore, noise due to a line source is attenuated less with distance than that of a point source with increased distance.

Additionally, 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. Atmospheric temperature inversion (i.e., increasing temperature with elevation) can increase sound levels at long distances (e.g., more than 500 feet). Other factors, such as air temperature, humidity, and turbulence, can also have an effect on noise levels.[12]

(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. Because energy is lost during the transfer of energy 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, common sources of groundborne vibration are trains, heavy trucks traveling on rough roads, and construction activities, such as blasting, pile-driving, and

[10] Caltrans, *TeNS*, September 2013, Section 2.1.4.2.
[11] Caltrans, *TeNS*, September 2013, Section 2.1.4.1.
[12] Caltrans, *TeNS*, September 2013, Section 2.1.4.3.

operation of heavy earth-moving equipment.[13] The effects of groundborne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Potential for building damage due to construction vibration is not a factor for most land use projects, although potential for damage is substantially increased when construction involves blasting and pile-driving and/or when construction is immediately adjacent to a fragile historic resource. Annoyance from vibration often occurs when the vibration levels exceed the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings.

There are several different methods that 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. 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. Decibel notation (VdB) is commonly used to measure RMS. 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.[14] The decibel notation VdB acts to compress the range of numbers required to describe vibration. Typically, groundborne 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 historic buildings and older non-engineered timber and masonry structures), locations where people sleep, and locations with vibration sensitive equipment.[15]

Groundborne 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.[16] The relationship between groundborne vibration and groundborne noise depends on the frequency content of the vibration and the acoustical absorption characteristics of the receiving room. For typical buildings, groundborne vibration that causes low frequency noise (i.e., the vibration spectrum peak is less than 30 Hz) results in a groundborne noise level that is approximately 50 decibels lower than the velocity level. For groundborne vibration that causes mid-frequency noise (i.e., the vibration spectrum peak is between 30 and 60 Hz), the groundborne noise level will be approximately 35 decibels lower than the velocity level. For groundborne vibration that causes high-frequency noise (i.e., the vibration spectrum peak is greater than 60 Hz), the groundborne noise level will be approximately 20 decibels lower than the velocity level.

[13] Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013, p. 1.
[14] FTA, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Section 5.1.
[15] FTA, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Sections 6.1, 6.2, and 6.3.
[16] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*. September 2018, p. 112.

[17] Therefore, for typical buildings, the groundborne noise decibel level is lower than the groundborne vibration velocity level at low frequencies. Groundborne noise is usually only perceptible inside buildings and is typically only an issue with subway or tunnel operations where there is no airborne noise path or for buildings with substantial sound insulation such as a recording studio.[18]

b) Regulatory Framework

(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.[19] 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 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 document 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 specifically for evaluating vibration impacts from land use development projects such as the Project. However, FTA has adopted vibration criteria that are commonly used to evaluate potential structural damage to buildings by building category from construction activities. The vibration damage criteria adopted by FTA are shown in **Table IV.I-1**, *Construction Vibration Damage Criteria*.

[17] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*. September 2018, p. 146.

[18] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*. September 2018, p. 118.

[19] United States Environmental Protection Agency (USEPA), *EPA Identifies Noise Levels Affecting Health and Welfare*, April 1974, https://archive.epa.gov/epa/aboutepa/epa-identifies-noise-levels-affecting-health-and-welfare.html. Accessed July 16, 2021.

TABLE IV.I-1
CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

SOURCE(S): FTA, *Transit Noise and Vibration Impact Assessment*, 2018.

FTA has also adopted vibration criteria associated with the potential for human annoyance from groundborne vibration for the following three land-use categories: Category 1 – High Sensitivity, Category 2 – Residential, and Category 3 – Institutional as shown in **Table IV.I-2**, *Groundborne Vibration Impact Criteria for General Assessment*. FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, historic buildings, 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 still have the potential for activity interference. The FTA uses a screening distance of 100 feet for highly vibration-sensitive buildings (e.g., historic buildings, hospitals with vibration sensitive equipment, Category 1) and 50 feet for residential uses (Category 2).[20] No vibration criteria have been adopted or recommended by FTA for commercial and office uses.

(a) Occupational Safety and Health Act of 1970

There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the Project. Under the Occupational Safety and Health Act of 1970 (29 U.S.C. §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 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.

[20] FTA, *Transit Noise and Vibration Impact Assessment*, Table 6-8.

TABLE IV.I-2
GROUNDBORNE VIBRATION IMPACT CRITERIA FOR GENERAL ASSESSMENT

Land Use Category	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings 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 use.	75 VdB	78 VdB	83 VdB

NOTE(S):

[a] "Frequent Events" is defined as more than 70 vibration events of the same source per day.
[b] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
[c] "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.
[d] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.

SOURCE(S): FTA, Transit Noise and Vibration Impact Assessment, 2018.

(b) Title 14 Code of Federal Regulations Part 150

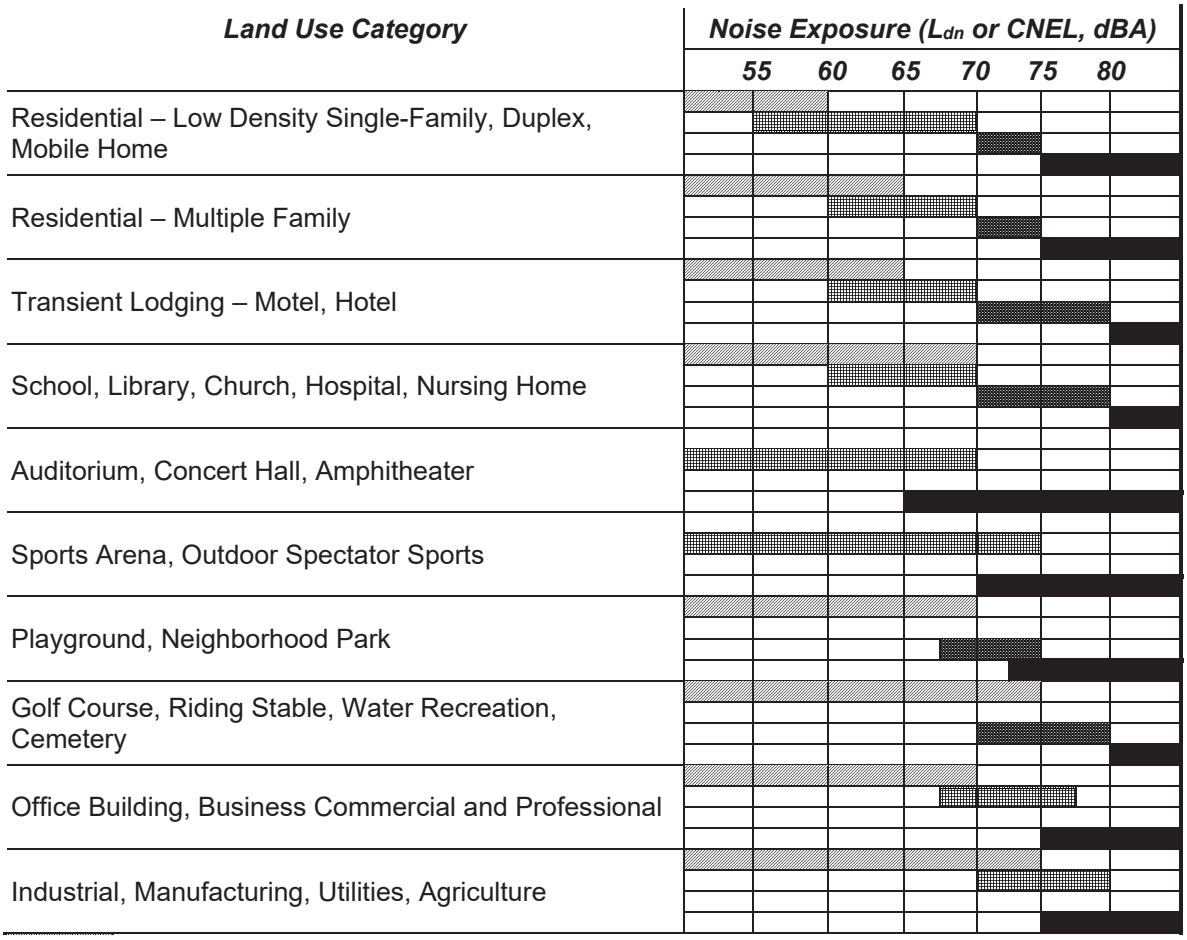
Title 14 Code of Federal Regulations Part 150 describes the land use compatibility associated with aircraft related noise. Title 14 CFR Part 150 (Appendix A) defines a noise level equal to or greater than CNEL 65 dBA as noncompatible with residential land uses and only considers the noise generated by aircraft activity and does not consider the contribution of ambient noise levels.

(2) State

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

The State of California does not have standards for environmental noise, but the Governor's Office of Planning and Research (OPR) has established general plan guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as presented in **Figure IV.I-2**, *Guideline for Noise Compatible Land Use*.[21] The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land uses types is categorized into four general levels: "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable." For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be "normally acceptable" for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be "clearly unacceptable."

[21] State of California Governor's Office of Planning and Research, *General Plan Guidelines*, 2003.



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.

NORMALLY UNACCEPTABLE: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken. Construction costs to make the indoor environmental acceptable would be prohibitive and the outdoor environment would not be usable.

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

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

The City has developed its own compatibility guidelines in the Noise Element of the General Plan based in part on OPR 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.

The State of California has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (Title 24, California Code of Regulations). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. They 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 noise levels greater than 60 dBA CNEL. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

(b) California Vibration Standards

The State of California has not adopted statewide standards or regulations for evaluating vibration or groundborne noise impacts from land use development projects such as the Project.

(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 and for coordinating the airport planning of public agencies within the county. The Airport Land Use Commission 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 Airport Land Use Commission 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.

(4) Local

(a) Los Angeles Municipal Code

The City has regulations to control unnecessary, excessive, and annoying noise, as set forth in Chapter XI, Noise Regulation, of the Los Angeles Municipal Code (LAMC). The City's Noise Regulation establishes acceptable ambient sound levels to regulate intrusive noises

(e.g., stationary mechanical equipment and vehicles other than those traveling on public streets) within specific land use zones and provides procedures and criteria for the measurement of the sound level of noise sources. These procedures recognize and account for differences in the perceived level of different types of noise and/or noise sources.

LAMC Section 41.40 prohibits construction between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, 6:00 P.M. and 8:00 A.M. on Saturday, 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.) unless a permit therefore has been duly obtained beforehand from the Board of Police Commissioners. In general, the City's Department of Building and Safety enforces noise ordinance provisions relative to equipment and the Los Angeles Police Department enforces provisions relative to noise generated by people.

LAMC Section 91.106.4.8 requires the posting of a construction site notice that includes following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported.

LAMC Sections 111.01 and 111.03 define the ambient noise as the actual measured ambient noise level or the City's presumed ambient noise level, whichever is greater. The actual ambient noise level is the measured noise level averaged over a period of at least 15 minutes L_{eq}.

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 level increase of 5 dBA over the existing average ambient noise level at an adjacent property line is considered a noise violation. To account for people's increased tolerance for short-duration noise events, the Noise Regulation provides a 5 dBA allowance for noise occurring more than five but less than fifteen minutes in any one-hour period and an additional 5 dBA allowance (total of 10 dBA) for noise occurring five minutes or less in any one-hour period.[22]

LAMC Section 112.01 prohibits noise from any radio, musical instrument, phonograph, television receiver, or other machine or device for the producing, reproducing or amplification of the human voice, music, or any other sound, in such a manner, as to disturb the peace, quiet, and comfort of neighbor occupants or any reasonable person residing or working in the area or that exceeds the ambient noise level on the premises of any other occupied property, or if a condominium, apartment house, duplex, or attached business, within any adjoining unit, by more than 5 dBA.

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

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

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 dBA.

LAMC Section 112.05 sets 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 is required only where "technically feasible."[23]

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.

(b) City of Los Angeles General Plan Noise Element

The Noise Element of the City's General Plan establishes CNEL guidelines for land use compatibility, which are also provided in the City's 2006 L.A. CEQA Thresholds Guide and as shown in **Table IV.I-3**, *City of Los Angeles Land Use Compatibility for Community Noise*. The Noise Element includes a number of goals, objectives, and policies for land use planning purposes. The overall purpose of the Noise Element of the City's General Plan is to guide policymakers in making land use determinations and in preparing noise ordinances that would limit exposure of citizens to excessive noise levels. The following goals, policies, and objectives from the Noise Element of the General Plan are applicable to the Project.[24]

Goal: A city where noise does not reduce the quality of urban life.

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

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.

[23] In accordance with the City's Noise Ordinances, "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.

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

TABLE IV.I-3
CITY OF LOS ANGELES LAND USE COMPATIBILITY FOR COMMUNITY NOISE

Land Use	Community Noise Exposure CNEL (dBA)			
	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 and Professional Commercial	50 to 70	67 to 77	Above 75	—
Industrial, Manufacturing, Utilities, Agriculture	50 to 75	70 to 80	Above 75	—

NOTE(S):

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(S): City of Los Angeles, *2006 L.A. CEQA Thresholds Guide*, 2006.

(c) Guidelines for Noise-Compatible Land Uses

The 2006 L.A. CEQA Thresholds Guide provides thresholds for determining significant noise impacts of a project. These standards are described further below. The City has adopted local guidelines based, in part, on the community noise compatibility guidelines established by OPR for use in assessing the compatibility of various land use types with a range of noise levels. These guidelines are set forth in the 2006 City of L.A. Thresholds Guide in terms of the CNEL. CNEL guidelines for specific land uses are classified into four categories: (1) "normally acceptable," (2) "conditionally acceptable," (3) "normally unacceptable," and (4) "clearly unacceptable." As shown in Table IV.I-3, a CNEL value of 70 dBA is the limit of what is considered a "conditionally acceptable" noise environment for multi-family residential uses, and the limit of what is considered "normally acceptable" for multi-family residential uses is set at 65 dBA CNEL.[25] The limit of what is considered "normally acceptable" for playgrounds and neighborhood parks is 70 dBA.[26] New development should generally be discouraged within the "normally unacceptable" or "clearly unacceptable" categories. However, if new development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

(d) Vibration

The City of Los Angeles has not adopted standards or regulations addressing groundborne vibration or groundborne noise impacts from land use development projects, such as the Project.

c) Existing Conditions

(1) Noise-Sensitive Receptor Locations

Some land uses are considered more sensitive to noise than others due to the types of activities typically involved at the receptor location and the effect that noise can have on those activities and the persons engaged in them. The City's 2006 L.A. CEQA Thresholds Guide states that residences, schools, motels and hotels, libraries, religious institutions, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks are generally more sensitive to noise than commercial and industrial land uses.[27] Only pre-school, elementary, middle, and high schools are considered to be noise-sensitive receptors. The City's definition of sensitive uses is generally consistent with those of the FHWA.[28] Existing noise-sensitive uses, or receptors, within 500 feet of the Project Site include the following as shown in **Figure IV.I-3**, *Noise-Sensitive Receptors*:

[25] City of Los Angeles, *2006 L.A. CEQA Thresholds Guide*, 2006, Section I.2.
[26] City of Los Angeles, *2006 L.A. CEQA Thresholds Guide*, 2006, Section I.2.
[27] City of Los Angeles, *2006 L.A. CEQA Thresholds Guide*, 2006, p. I.1-3.
[28] The FHWA identifies "land uses that are not considered sensitive to noise such as agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing." Federal Highway Administration. Noise Policy FAQs – Frequently Asked Questions, http://www.fhwa.dot.gov/Environment/noise/regulations_and_guidance/faq_nois.cfm. Accessed July 16, 2021.

- R1: Multi-family residential uses to the west of the Project Site at 2101 E. 7th Street
- R2: Multi-family residential uses to the south of the Project Site at 2135 E 7th Place
- R3: AMP Lofts, one block west of the Project Site, bound by Santa Fe Avenue on the east, Imperial Street on the West, Jesse Street to the north, and 7th Street to the south

Future Sensitive Receptor Locations (Sensitive Receptors Currently Under Construction):

- R4: 6th Street Park, Arts, River and Connectivity (PARC), is located under and adjacent to the new 6th Street Viaduct and adjacent to the Project Site to the north.[29]

The Project Site is bounded by the Los Angeles River to the east followed by commercial and industrial uses. There are no noise-sensitive uses to the east that are located within 500 feet of the Project Site. All other noise-sensitive uses regulated by the City are located at greater distances from the Project Site and would experience lower noise levels from potential sources of noise on the Project Site due to distance loss. There are no schools within 500 feet of the Project Site (see Figure IV.I-3).

(2) Ambient Noise Levels

The predominant existing noise source near the Project Site is roadway noise from 6th Street to the north, 7th Street to the south, and noise from the freight and passenger rail lines and rail yards to the east ("Railway Property"). Other noise sources include general residential and commercial-related activities associated with refuse service activities and the loading and unloading activities as well as noise related to surrounding industrial operations such as loading and unloading activities, stationary mechanical equipment (e.g., generators, fans, condenser units, etc.), and operation of on-site equipment (e.g., forklifts).

To establish a conservative baseline for ambient noise levels, ambient noise measurements were conducted at six locations corresponding to noise-sensitive receptors in the Project vicinity. The measurement locations are shown in **Figure IV.I-4**, *Noise Measurement Locations*.

- M1: Represents the existing noise environment at multi-family residential uses immediately to the west of the Project Site at 2101 E. 7th Street (Receptor R1) and the Project Site.
- M2: Represents the existing noise environment at the western Project Site boundary along Jesse Street. This measurement represents the baseline noise environment on the Project Site itself and does not represent the ambient noise levels at any noise-sensitive receptors.

[29] The Draft EIR (dated May 2021) for the PARC assumes a two-year construction period that would complete in 2024. Therefore, it is assumed that the PARC would be complete and would be a sensitive noise receptor under Project construction and operations. (https://eng.lacity.org/about-us/divisions/environmental-management/projects/sixth-street-park-arts-river-connectivity-improvements-parc)

SOURCE: Google Map, 2015 (Aerial)

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Figure IV.I-3
Noise-Sensitive Receptors

SOURCE: Google Map, 2015 (Aerial)

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Figure IV.I-4
Noise Measurement Locations

- M3: Represents the existing noise environment at the western Project Site boundary along Mesquit Street and is also used to approximate the existing noise environment at the future PARC site (Receptor R4). Noise measurements at the future PARC site would not be representative as the Sixth Street Viaduct is currently under construction and measurements would reflect construction noise as opposed to the future condition, which will include traffic noise and noise from nearby uses.[30]
- M4: Represents the existing noise environment at the eastern Project Site boundary along the Railway Property. This measurement represents the baseline noise environment on the Project Site itself and does not represent the ambient noise levels at any noise-sensitive receptors.
- M5: Represents the existing noise environment at multi-family residential uses approximately 100 feet to the south of the Project Site at 2135 E. 7th Place (Receptor R2).
- M6: Represents the existing noise environment at a multi-family residential use (AMP Lofts) (Receptor R3), approximately 200 feet to the west of the Project Site, bound by Santa Fe Avenue on the east, Imperial Street on the West, Jesse Street to the north, and 7th Street to the south.

Weekday daytime (between 7:00 A.M. and 10:00 P.M.) and nighttime (between 10:00 P.M. and 7:00 A.M.) noise measurements were conducted to characterize the existing noise environment at the Project Site and at representative off-site sensitive receptor locations. The City's standard for noise analysis is to compare Project-related noise levels to ambient noise measurements at representative sensitive receptor locations. Long-term noise measurements provide a larger data set from which to establish ambient conditions and would not be more or less accurate or conservative than short-term noise measurements. Where long-term noise measurements are taken, noise levels during the City's designated daytime and nighttime hours have been averaged to establish ambient daytime and nighttime noise level at that particular location. Because the Project's impacts are determined based on Project-related increases to baseline noise levels, noise measurements are generally taken outside of the peak traffic window to ensure that baseline levels do not represent elevated traffic noise and, accordingly, provide a more

[30] Noise measured at location M3 is considered generally representative of noise levels at the location of the future PARC site (Receptor R4). It is assumed that baseline noise levels at the future PARC site, if they could be taken, would be higher due to closer proximity to traffic noise along 6th Street as well as greater traffic volumes along Sixth Street when compared to Mesquit Street. Because the Sixth Street Viaduct is currently undergoing construction, an ambient measure at that location would capture elevated noise levels from the use of heavy-duty construction equipment. in addition, measurement M3 supports a conservative analysis as existing traffic noise at M3 is expected to be somewhat lower than baseline noise levels would be at the future PARC site along 6th Street (if they could be accurately taken at that location). With a lower baseline ambient noise level from traffic on Mesquit compared to the normal flow of traffic on 6th Street, the threshold of significance is set at a lower level. The lower the baseline ambient noise levels, the greater the estimated increase in Project noise would be relative to thresholds of significance.

conservative impact analysis.[31] The measured noise levels are provided in **Table IV.I-4**, *Summary of Ambient Noise Measurements*.

TABLE IV.I-4
SUMMARY OF AMBIENT NOISE MEASUREMENTS

Measurement Location	Receptor	Measured Ambient Noise Levels[a,b] (dBA L_{eq})					
		Weekday		Saturday		Sunday	
		Daytime Hours (7:00 A.M.–10:00 P.M.)	Nighttime Hours (10:00 P.M.–7:00 A.M.)	Daytime Hours (7:00 A.M.–10:00 P.M.)	Nighttime Hours (10:00 P.M.–7:00 A.M.)	Daytime Hours (7:00 A.M.–10:00 P.M.)	Nighttime Hours (10:00 P.M.–7:00 A.M.)
M1	R1	70.7	67.5	71.3	72.6	75.6	69.1
M2	N/A	70.1	64.5	68.1	49.9	58.6	67.9
M3	R4	66.6	63.8	64.8	47.1	65.9	63.9
M4	N/A	69.1	60.7	60.4	60.4	61.2	60.6
M5	R2	76.3	71.5	74.7	74.3	73.7	70.2
M6	R3	76.6	63.5	68.6	71.3	65.1	63.3

NOTE(S):

N/A = Measurement location does not represent any noise-sensitive receptors. Measurements at these locations represent the noise conditions at the Project Site.

[a] Detailed measured noise data, including hourly L_{eq} levels, are provided in Appendix J of this Draft EIR.

[b] Noise levels for locations M1 through M4 were taken over 24 hours (long-term) from secured locations on the Project Site and are based on daytime average noise levels from 7:00 A.M. to 10:00 P.M. and nighttime average noise levels from 10:00 P.M. to 7:00 A.M. Noise levels for locations M5 and M6 are based on short-term (15-minute) measurements. Both long-term and short-term ambient noise measurements appropriately establish baseline noise levels for the impact analysis.

SOURCE(S): ESA, 2021.

(3) Vibration Receptor Locations

Typically, groundborne vibration generated by man-made activities (i.e., rail and roadway traffic, operation of mechanical equipment and typical construction equipment) diminishes rapidly with distance from the vibration source. Construction activities, such as impact pile driving, would have the greatest effect on vibration sensitive land uses. Energy is lost during the transfer of energy from one particle to another and as a result, vibration becomes less perceptible with increasing distance from the source. Therefore, with respect to potential structural damage, structures in close proximity (adjacent) to the Project Site are considered vibration sensitive. As shown above in Table IV.I-1, the structural category/construction type (i.e., reinforced-concrete, engineered concrete, non-

[31] Project impacts are determined based on increases to the measured ambient noise level. If the documented ambient noise level is elevated by peak traffic noise, the impact threshold for the Project would also be elevated.

engineered timber, and building susceptible to damage) determines the vibration damage criteria for a specific building/structure.[32]

With respect to human annoyance, sensitive land uses include buildings where use of vibration-sensitive equipment is used (e.g., hospitals, research, and manufacturing), residential land uses and buildings where people normally sleep, schools, churches, and doctor's offices. Industrial or commercial (including office) uses are not considered vibration-sensitive.[33] Therefore, while all adjacent buildings have been considered vibration-sensitive for structural damage, industrial and commercial uses have not been considered for human annoyance. All of the off-site sensitive receptors listed above in Subsection 2(c)(1), *Noise-Sensitive Receptor Locations*, were also analyzed for impacts related to vibration-related human annoyance.[34]

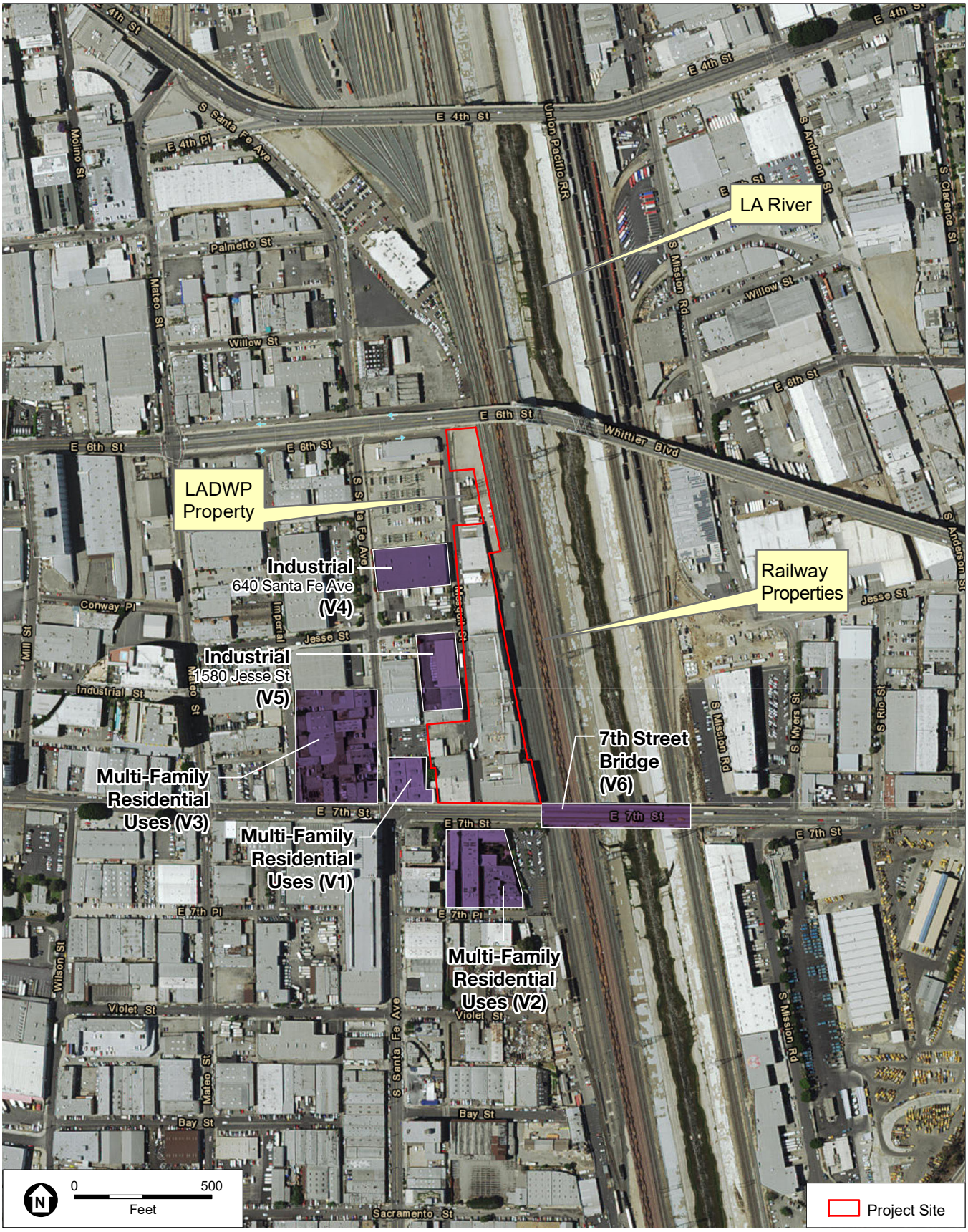
Existing and future vibration-sensitive buildings or structures include the following as shown in **Figure IV.I-5**, *Vibration-Sensitive Receptors*:

- V1: Multi-family residential uses to the west of the Project site at 2101 E. 7th Street, which is an older structure and considered a Category IV (buildings extremely susceptible to vibration damage) structure (see Table IV.I-1) with respect to structural damage and a vibration-sensitive receptor with respect to human annoyance.
- V2: Multi-family residential uses to the south of the Project Site at 2135 E 7th Place, assumed to be a Category I (reinforced-concrete, steel, or timber) structure, but is considered a Category III (non-engineered timber and masonry) structure for the purposes of providing a conservative analysis with respect to structural damage and a vibration-sensitive receptor with respect to human annoyance.
- V3: AMP Lofts is a vibration receptor located one block west of the Project Site, bound by Santa Fe Avenue on the east, Imperial Street on the West, Jesse Street to the north, and 7th Street to the south. Because this use consists of newly constructed structures and foundations, this receptor would be a Category I (reinforced-concrete, steel, or timber) structure with respect to structural damage and a vibration-sensitive receptor with respect to human annoyance.

[32] Where the structural category/type of a vibration-sensitive receptor is unclear, the analysis herein utilizes a conservative assumption. For example, although structures where industrial processes take place would generally be constructed of concrete, the threshold for non-engineered timber and masonry has been applied due to the uncertainty of building construction.

[33] FTA, *Transit Noise and Vibration Impact Assessment*, Table 6-1.

[34] The PARC is not a vibration-sensitive use. Vibration impacts are analyzed for potential structural damage (the PARC is open space and would not include structures at distances that could be affected by Project construction) and human annoyance (with receptors consisting of residential and hotels, which are places intended for people to normally sleep). See the Proposed Site Plan located at: https://eng.lacity.org/about-us/divisions/environmental-management/projects/sixth-street-park-arts-river-connectivity-improvements-parc



SOURCE: Google Map, 2015 (Aerial)

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Figure IV.I-5
Vibration-Sensitive Receptors

- V4: Industrial building located at 640 Santa Fe Avenue, assumed to be a Category I (reinforced-concrete, steel, or timber) structure, but is considered a Category III (non-engineered timber and masonry) structure for the purposes of providing a conservative analysis with respect to structural damage and not considered vibration-sensitive with respect to human annoyance.
- V5: Industrial building located at 1580 Jesse Street, assumed to be a Category I (reinforced-concrete, steel, or timber) structure, but is considered a Category III (non-engineered timber and masonry) structure for the purposes of providing a conservative analysis with respect to structural damage and not considered vibration-sensitive with respect to human annoyance.
- V6: The 7th Street Bridge, which is a Category I (reinforced-concrete, steel, or timber) structure with respect to structural damage and not considered vibration-sensitive with respect to human annoyance.

(4) Existing Roadway Noise Levels

Since the original MOU for the Project's Traffic Study was executed with the Los Angeles Department of Transportation (LADOT), the City adopted new Transportation Assessment Guidelines (TAG) in July 2020 which changed the focus of traffic analysis pursuant to CEQA from being primarily based on assessment of intersection levels of service (LOS) to one based primarily on vehicle miles traveled (VMT). Although the TA no longer evaluates LOS pursuant to CEQA, 32 intersections identified in the original MOU with LADOT, and included in Appendix E of the TA, still serve as the basis for the mobile source noise analysis provided in this section of the EIR.[35]

Existing roadway CNEL noise levels were calculated for roadway segments located within the study area, as defined by the MOU with LADOT and were based on vehicular turning movement data at intersections identified for traffic impact analysis by the City.[36] The existing cold storage warehouse facility on the Project Site generates a greater number of truck trips compared to passenger vehicle trips. According to data provided by the current operator of the existing warehouse use, and as included as part of Appendix J,[37] existing daily traffic from on-site uses consists of 28 percent passenger vehicles, 37 percent medium-duty trucks, and 35 percent heavy-duty trucks. The traffic volumes provided by the TA for existing uses (39 peak hour trips) do not provide a breakdown of the trips by vehicle type (e.g., passenger vehicles versus heavy-duty trucks). Therefore, information on vehicle types has been incorporated into the traffic noise analysis for existing conditions to account for the relatively higher proportion of trips generated by trucks from the existing warehouse use that travel along roadway segments in the immediate vicinity of the Project Site in order to reflect the higher traffic-related noise

35 Fehr & Peers, *Transportation Assessment for the 670 Mesquit Project*, April 2021, Appendix E. Provided in Appendix M-1 of this Draft EIR.

36 Fehr & Peers, *Transportation Assessment for the 670 Mesquit Project*, April 2021, Appendix E. Provided in Appendix M-1 of this Draft EIR.

37 Refer to Appendix J, Existing Site Vehicle Trips, pages 370 through 373 (of 397).

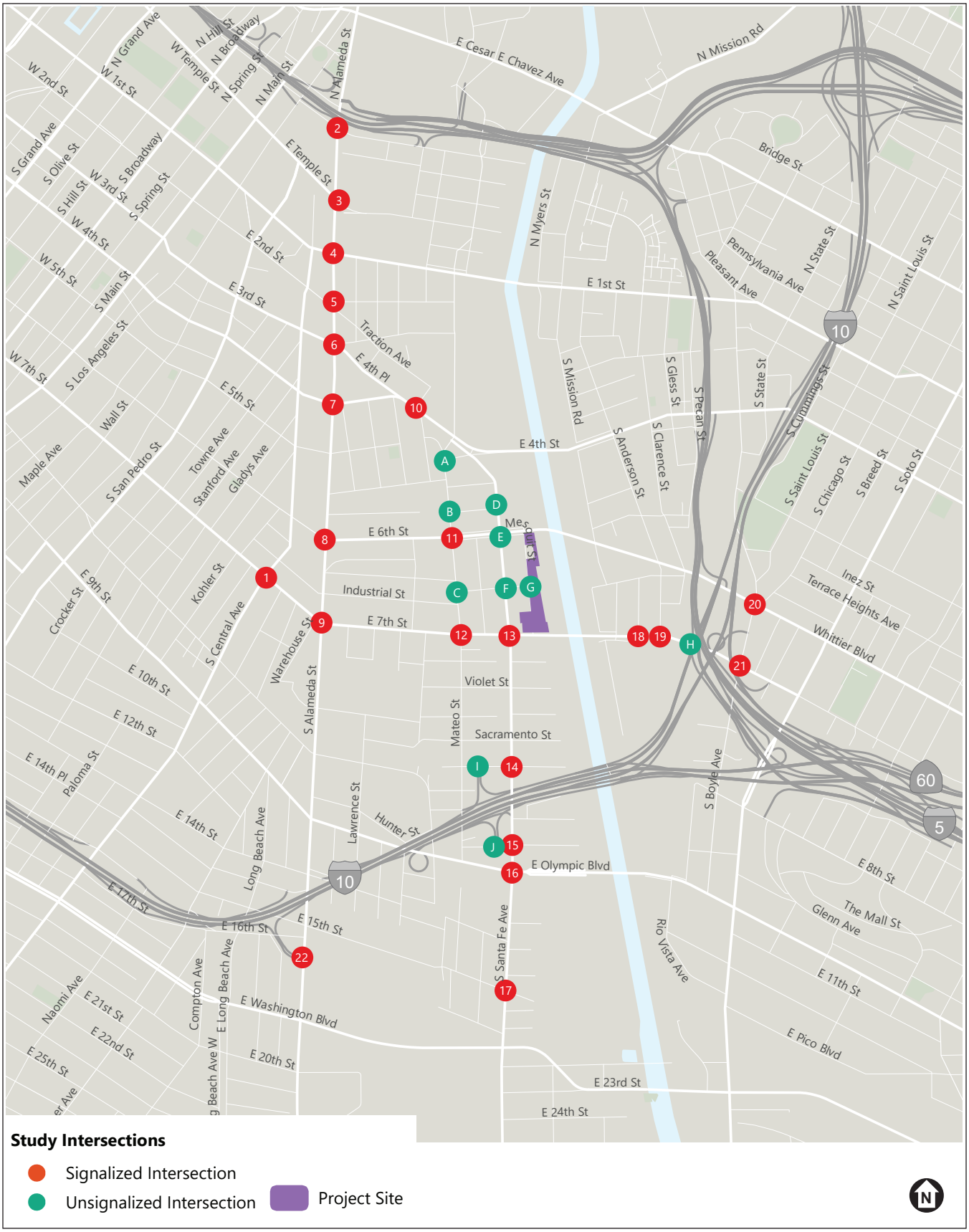
levels associated with trucks as compared to passenger vehicles.[38] The existing cold storage warehouse facility on the Project Site identified the route taken by existing trucks. The specific roadway segments that account for the relatively higher proportion of trips generated by trucks from the existing warehouse use and the specific roadway segments for which the vehicle types have been adjusted include Mesquit Street between 6th Street and 7th Street, 6th Street between Mesquit Street and Santa Fe Avenue, Jesse Street between Mesquit Street and Santa Fe Avenue, Santa Fe Avenue north of 6th Street, Santa Fe Avenue between 6th Street and Jesse Street, and Santa Fe Avenue south of Jesse Street. While trucks from the existing warehouse use would continue to travel along other roadway segments beyond those listed above, the traffic noise model for existing conditions does not adjust for the relatively higher proportion of trips generated by trucks on roadway segments further away from the Project Site since the proportion of trucks on these further segments would tend to decline and approach typical vehicle fleet mix conditions with increasing distance from the Project Site. Thus, limiting this adjustment to the roadway segments in the immediate vicinity of the Project Site is a conservative approach as it would ensure that baseline traffic noise levels are not overestimated.

Turning movements at each studied intersection were used to determine traffic volumes along 35 roadway segments within the Project vicinity. **Figure IV.I-6**, *Traffic Study Intersections*, shows the intersections analyzed and the general locations of segments (located between intersection numbers shown in the figure) studied for traffic noise impacts. The roadway segments, when compared to roadways located farther away from the Project Site, would experience the greatest percentage increase in traffic generated by the Project (i.e., as distances are increased from the Project Site, traffic is spread out over a greater geographic area, and its effects are reduced).

Existing roadway CNEL noise levels were calculated using the Federal Highway Administration's (FHWA's) Highway Traffic Noise Model (FHWA-TNM)[39] and traffic volumes at the study intersections reported in the TA. The TNM model calculates the average noise level at specific locations based on traffic volumes, average speeds, and site environmental conditions. The noise levels along these roadway segments are presented in **Table IV.I-5**, *Modeled Existing Vehicular Traffic Noise Levels*.

[38] According to Table 11A, Project Trip Generation, of the TA, the existing warehouse use generates up to 39 peak hour trips. Based on data provided by the existing operator of the warehouse, existing trips consist of 28 percent passenger vehicles, 37 percent medium-duty trucks, and 35 percent heavy-duty trucks. Therefore, the turning movement volumes for the existing 39 peak hour trips for the route taken by existing on-site uses has been adjusted to account for the current percentage of passenger vehicles versus trucks. Although other uses in the immediate Project vicinity consist of industrial uses, existing turning movement volumes were adjusted to account for trucks associated with on-site uses only to ensure that baseline traffic noise levels are not overestimated.

[39] The traffic noise model which was developed based on calculation methodologies provided in the Caltrans TeNS document and traffic data provided in the Project's TA provided in Appendix M-1 to this Draft EIR. This methodology, considered an industry standard, allows for the definition of roadway configurations, barrier information (if any), and receiver locations.



SOURCE: Fehr & Peers, November 2020

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Figure IV.I-6
Traffic Study Intersections

TABLE IV.I-5
MODELED EXISTING VEHICULAR TRAFFIC NOISE LEVELS

Roadway Segment (location between intersection numbers)[a]	Existing Land Uses Located along Roadway Segment	dBA CNEL	Land Use Compatibility (Levels Defined at the Bottom of the Table)[b]
4th Street			
Between S. Alameda Street and Molino Street (6 & 10)	Commercial	69.1	C
6th Street			
Between S. Alameda Street and Mateo Street (8 & 11)	Industrial	68.4	A
Between Santa Fe Avenue and Boyle Avenue (E & 20)	Industrial	68.1	A
Between Mateo Street and Santa Fe Avenue (11 & E)	Commercial	66.6	A
7th Street			
Between Mateo Street and Santa Fe Avenue (12 & 13)	Commercial	68.1	C
Between S. Alameda Street and Mateo Street (9 & 12)	Commercial	67.9	C
Between S. Anderson Street and US-101 Southbound (19 & H)	Commercial	69.0	C
Between S. Central Avenue and S. Alameda Street (1 & 9)	Commercial/ Residential	68.3	C
Between S Rio Street and S. Anderson Street (18 & 19)	Commercial	68.4	C
Between Santa Fe Avenue and S. Rio Street (13 & 18)	Commercial	68.6	C
Between US-101 Southbound Ramp and Boyle Avenue (H & 21)	Open Spaces	66.7	C
E. 8th Street			
Between I-10 Westbound Ramp and Santa Fe Avenue (L & 14)	Industrial	65.4	A
Jesse Street			
Between Mateo Street and Santa Fe Avenue (C & F)	Industrial/ Residential	58.6	A
Between Santa Fe Avenue and Mesquit Street (F & G)	Industrial	60.2	A

TABLE IV.I-5
MODELED EXISTING VEHICULAR TRAFFIC NOISE LEVELS

Roadway Segment (location between intersection numbers)[a]	Existing Land Uses Located along Roadway Segment	dBA CNEL	Land Use Compatibility (Levels Defined at the Bottom of the Table)[b]
Mateo Street			
Between 6th Street and Jesse Street (11 & C)	Commercial/ Residential	62.6	A
Between E. 4th Place and Willow Street (A & B)	Commercial/ Residential	62.1	A
Between Jesse Street and 7th Street (C & 12)	Commercial	63.7	A
Between Willow Street and 6th Street (B & 11)	Commercial	62.6	A
N. Alameda Street			
Between Aliso Street and Temple Street (2 & 3)	Commercial	70.8	C
Between Temple Street and East 1st Street (3 & 4)	Residential/ Commercial	70.8	C
Between E. 1st Street and E. 2nd Street (4 & 5)	Residential/ Commercial	69.6	C
Porter Street			
Between I-10 Eastbound Ramp and Santa Fe Avenue (J & 15)	Industrial	65.9	A
S. Alameda Street			
Between 3rd Street and 4th Street (6 & 7)	Commercial	69.9	C
Between 4th Street and 6th Street (7 & 8)	Industrial	70.3	C
Between 6th Street and 7th Street (8 & 9)	Industrial	70.5	C
Between E. 2nd Street and 3rd Street (5 & 6)	Residential	70.2	C
Santa Fe Avenue			
Between 7th Street and 8th Street (13 & 14)	Commercial	67.2	C
Between 8th Street and Porter Street 14 & 15)	Commercial	67.6	C
Between Jesse Street and 7th Street (F & 13)	Commercial/ Residential	66.2	A
Between Mesquit Street and Jesse Street (E & F)	Commercial	66.8	A
Between Olympic Boulevard and E. 15th Street (16 & 17)	Commercial	70.1	C
Between Porter Street and Olympic Boulevard (15 & 16)	Commercial	69.0	C
Between Willow Street and Mesquit Street (D & E)	Commercial	63.4	A

TABLE IV.I-5
MODELED EXISTING VEHICULAR TRAFFIC NOISE LEVELS

Roadway Segment (location between intersection numbers)[a]	Existing Land Uses Located along Roadway Segment	dBA CNEL	Land Use Compatibility (Levels Defined at the Bottom of the Table)[b]
Willow Street			
Between Mateo Street and Santa Fe Avenue (B & D)	Commercial	55.2	A
Mesquit Street			
Between E. 6th Street and 7th Street (G)	Industrial	60.8	A

NOTE(S):

[a] See Figure IV.I-5 for location of TA intersections.

[b] See Table IV.I-3. As discussed therein:

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

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

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

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

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

As shown in Table IV.I-5, the ambient noise environment in the Project Site vicinity can be characterized by 24-hour CNEL levels attributable to existing traffic on local roadways. The calculated CNEL (at a distance of 30 feet from the roadway centerline to receptor locations) from actual existing traffic volumes on the analyzed roadway segments ranged from 55.2 dBA to 70.8 dBA for residential, church, schools, and commercial areas.

(5) Existing Groundborne Vibration Levels

Aside from periodic construction work occurring throughout the City, field observations noted that other sources of groundborne vibration in the Project Site vicinity are primarily limited to heavy-duty vehicular travel (refuse trucks, delivery trucks, etc.) on local roadways and adjacent railroad tracks to the east of the Project Site. Trucks traveling at a distance of 50 feet typically generate groundborne vibration velocity levels of 65 VdB (approximately 0.0068 in/sec PPV).[40] Vibration from trains is dependent on factors such as wheel and rail smoothness and vehicle suspension systems with velocities increasing

[40] FTA, *Transit Noise and Vibration Impact Assessment*, Figure 5-4.

with rough tracks and stiff suspensions. Vibration velocities for rail at 50 feet from the track range from approximately 70 VdB to 80 VdB.[41]

(6) Existing Groundborne Noise Levels

As stated earlier, groundborne noise levels would generally be 20 to 50 decibels lower than the velocity level depending on the frequency level of the source.[42] With a background groundborne vibration level in residential areas of 50 VdB or lower, groundborne noise levels would be approximately 0 to 30 dBA. A bus traveling at a distance of 50 feet would generate groundborne noise levels of approximately 23 to 38 dBA. The approximate level of human perception of groundborne noise is 25 dBA for low frequency vibration (near 30 Hz) and 40 dBA for mid-frequency vibration (near 60 Hz).[43]

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:

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

For this analysis, the Appendix G Thresholds are relied upon. The analysis utilizes factors and considerations identified in the City's 2006 L.A. CEQA Thresholds Guide and the FTA's groundborne vibration and noise criteria for assessing potential impacts relating to building damage and human annoyance, as appropriate, to assist in answering the Appendix G Threshold questions. The factors to evaluate noise impacts are listed below.

41 FTA, *Transit Noise and Vibration Impact Assessment*, Figure 5-4.
42 FTA, *Transit Noise and Vibration Impact Assessment*, p. 146.
43 FTA, *Transit Noise and Vibration Impact Assessment*, p. 120.

(1) Construction

The 2006 L.A. CEQA Thresholds Guide identifies the following criteria to evaluate construction noise:

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 10 dBA 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 L_{eq} or more at a noise sensitive use; or
- Construction activities would exceed the ambient noise level by 5 dBA 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 Chapter II, *Project Description*, of this Draft EIR, construction of the Project is anticipated to commence as early as 2021 and be completed as early as 2026, in a single phase, or as late as 2040 if built in separate phases over time. Therefore, since construction activities would occur over a period longer than 10 days for all phases, the corresponding criteria used in the construction noise analysis presented in this section of the Draft EIR is an increase in the ambient exterior noise levels of 5 dBA L_{eq} or more at a noise sensitive use.

(2) Operations

The following criteria are applied to the Project, as set forth in the 2006 L.A. CEQA Thresholds Guide and the City's Noise Regulations, with the more restrictive provisions applied, to evaluate operational noise. The Project would have a significant impact from operations if:

- The Project causes the ambient noise levels measured at the property line of affected uses to increase by 3 dBA CNEL to or within the "normally unacceptable" or "clearly unacceptable" categories; or
- The Project causes the ambient noise levels measured at the property line of affected uses to increase by 5 dBA CNEL or more increase in noise level; or
- Project-related operational on-site (i.e., non-roadway) noise sources such as outdoor building mechanical/electrical equipment, outdoor activities, or parking facilities increase the ambient noise level (L_{eq}) at noise sensitive uses by 5 dBA L_{eq}.

In addition, for the purposes of evaluating noise impacts from the proposed heliport, the Project would have a significant impact from operations based on the criteria in Title 14 CFR Part 150 for noncompatible noise for residential land uses:

- Project-related heliport noise exposes noise-sensitive receptors to a noise level of 65 dBA CNEL.[44]

[44] Title 14 CFR Part 150 (Appendix A).

In summary, for operational noise, the criteria for on-site operations is an increase in ambient noise level of 5 dBA L_{eq} at an adjacent property line, in accordance with the LAMC. The LAMC does not apply to the off-site traffic (i.e., vehicle traveling on public roadways). Therefore, the criteria for off-site traffic noise associated with Project operations is based on the 2006 L.A. CEQA Thresholds Guide. In addition, the criteria for composite noise levels (on-site and off-site sources) are also based on the 2006 CEQA L.A. Thresholds Guide as, again, the LAMC does not apply to off-site traffic noise. Therefore, the criteria used for determining impacts related to off-site operational noises and composite operational noise are an increase in the ambient noise level of 5 dBA CNEL or 3 dBA CNEL to or within the "normally unacceptable" or "clearly unacceptable" categories, respectively, depending on the existing noise conditions at the affected noise-sensitive land use.

(3) Groundborne Vibration

The City has not adopted criteria to assess vibration impacts during construction. Thus, for this Project, the City has determined to use the FTA's criteria for structural damage and human annoyance, as described in Tables IV.I-1 and IV.I-2, respectively, to evaluate potential impacts related to Project construction and operation.

- Potential Building Damage – Project construction activities that cause groundborne vibration levels to exceed the potential structural damage threshold of 0.5-in/sec PPV at the nearest off-site buildings or structures of Building Category I, Reinforced-concrete, steel, or timber (no plaster).
- Potential Building Damage – Project construction activities that cause groundborne vibration levels to exceed the potential structural damage threshold of 0.3-in/sec PPV at the nearest off-site buildings of Building Category II, Engineered concrete and masonry (no plaster).
- Potential Building Damage – Project construction activities that cause groundborne vibration levels to exceed the potential structural damage threshold of 0.2-in/sec PPV at the nearest off-site buildings of Building Category III, Non-engineered timber and masonry buildings.
- Potential Building Damage – Project construction activities that cause groundborne vibration levels to exceed the potential structural damage threshold of 0.12-in/sec PPV at the nearest off-site buildings of Building Category IV, Buildings extremely susceptible to building damage.

Based on FTA guidelines, construction and operational 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 and operational activities cause groundborne vibration levels to exceed 72 VdB at off-site sensitive uses, including residential and theater uses.
- Project construction and operational activities cause groundborne vibration levels to exceed 75 VdB at off-site institutional uses.

The FTA guidance classifies the vibration impact levels based on whether the vibration-producing events are frequent, occasional, or infrequent. “Frequent Events” is defined as more than 70 vibration events of the same source per day. “Occasional Events” is defined as between 30 and 70 vibration events of the same source per day. “Infrequent Events” is defined as fewer than 30 vibration events of the same kind per day. The values listed above are applicable to “Frequent Events.” For the purposes of providing a conservative analysis, the vibration analysis provided herein for potential human annoyance compares the estimated vibration levels generated during construction and operation of the Project to the 72 VdB significance threshold for off-site residential uses for “Frequent Event.” The vibration analysis for the Project conservatively used the closest distance to construction activity and the construction phase with the equipment mix that would result in the greatest potential vibration.

Due to classification of the 7th Street Bridge as a historic resource, potential vibration impacts from heavy-duty construction vehicle travel on the Bridge has been analyzed based on the maximum carrying capacity of the Bridge as designated by Caltrans. Caltrans designates and has permitted a weight limitation of 80,000 pounds on the 7th Street Bridge (Bridge No. 53C1321, per DOT 2018 Bridge List).

b) Methodology

An acoustical study was conducted for the Project that evaluates potential noise and vibration impacts due to Project construction activities, as well as aspects of Project operations that are noise- and vibration-intensive and that have the potential to impact off-site land uses sensitive to these effects. Detailed assumptions and methodologies are included in Appendix J of this Draft EIR. Construction equipment and phasing information relied on for this analysis is based on information provided by the Project Applicant.

(1) On-Site Construction Noise

The Project and the Project with the Deck Concept would require similar construction activities. The Project and the Project with the Deck Concept would use a similar mix of construction equipment, but the Project would require a similar or slightly reduced construction intensity level on a maximum construction activity day as compared to the Project with the Deck Concept given that the Deck would not be constructed under the Project. As such the analysis below is based on the worst-case construction activity, which includes concurrent construction of the buildings and the Deck. Thus, the conclusions for construction are the same and apply to both the Project and the Project with the Deck Concept.[45]

[45] The nearest distance of construction activity to sensitive receptors under both the Project and Project with the Deck Concept would be the same. The construction of the Deck on the eastern side of the Project Site under the Project with the Deck Concept would not bring construction activity nearer to any sensitive receptors as there are no proximate noise-sensitive receptors located to the east of the Project Site. The Project would use a similar mix of construction equipment but would require a similar or slightly reduced construction intensity level on a maximum construction activity day given that the Deck would not be constructed. Therefore, the construction analysis is applicable to the maximum estimated construction noise levels for these scenarios.

On-site construction noise impacts were evaluated by determining the noise levels generated by the different types of construction activity anticipated, calculating the construction-related noise level generated by the mix of equipment assumed for all construction activities at nearby sensitive receptor locations, and comparing these construction-related noise levels to existing ambient noise levels (i.e., noise levels without construction noise) at those receptors. Construction activities include demolition of the existing uses on the Project Site and construction of the buildings and any infrastructure improvements needed to serve the Project.

Project construction includes the following six construction stages: (1) site preparation/demolition, (2) grading/excavation, (3) drainage/ utilities/ trenching, (4) foundation concrete pour, (5) building construction/ architectural coating, and (6) paving. According to the phasing schedule provided by the Project construction team, the following overlaps in stages would occur: (a) site preparation/ demolition and drainage/ utilities/ trenching, (b) site preparation/ demolition, drainage/ utilities/ trenching, and grading/ excavation, (c) drainage/ utilities/ trenching and grading/excavation, (d) grading/ excavation and foundation/ concrete pour, (e) foundation/ concrete pour and building construction, (f) building construction and architectural coating, and (g) building construction, architectural coating, and paving. Since construction of the Project as a whole would last more than 10 days, based on the criteria provided in the 2006 L.A. CEQA Thresholds Guide, the construction noise significance threshold used in this analysis is an increase in the ambient exterior noise level of 5 dBA L_{eq} or more at a noise-sensitive use.

The Project would occur within 500 feet of a noise sensitive use and would potentially include construction activity between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, before 8:00 A.M. and/or after 6:00 P.M. on Saturday, and/or potentially on Sunday. To ensure a worst case analysis, it has been assumed that nighttime construction activity would be similar to daytime activities (i.e., nighttime construction activity is not anticipated to be less intensive). Construction noise levels have been compared against weekday, Saturday, and Sunday daytime and nighttime ambient noise levels at each studied sensitive receptor.

(2) Off-Site Roadway Noise (Construction and Operation)

Roadway noise impacts were evaluated using the FHWA TNM based on the roadway traffic volume data provided in the TA prepared for the Project and included in Appendix M-1 of this Draft EIR.[46] This method allows for the definition of roadway configurations, barrier information (if any), and receiver locations. Roadway noise attributable to Project development was calculated and compared to baseline noise levels that would occur under the "Without Project" condition.

[46] Fehr & Peers, *Transportation Assessment for the 670 Mesquit Project*, April 2021, Appendix E. Provided in Appendix M-1 of this Draft EIR.

With respect to operational traffic noise, impacts are evaluated for the existing year and the earliest buildout year of 2026 under the Project and Project with the Deck Concept. Operational traffic noise is also evaluated for year 2040, which would be the worst-case scenario for the analysis due to the increased traffic volumes over time of noise impacts only. Calculations are provided in Appendix M-1 of this Draft EIR.

(3) On-Site Stationary Noise (Operation)

Although the Project and the Project with the Deck Concept include the same building programing and outdoor programming activities, under the Project with the Deck Concept, the timing and frequency of outdoor programing would increase, along with vehicular trips and effects on retail VMT. Stationary noise impacts were evaluated by identifying the noise levels generated by outdoor stationary noise sources, such as open spaces, outdoor activities, rooftop mechanical equipment, parking facilities, heliport use, and loading area activity, calculating the hourly L_{eq} noise level from each noise source at sensitive receptor property lines, and comparing such noise levels to existing ambient noise levels. The combined noise levels from each operational noise source were estimated to evaluate composite noise level impacts at the nearest sensitive receptor.

For purposes of providing a conservative noise analysis for outdoor spaces, the maximum occupant load of Project outdoor spaces was calculated based on an occupancy load factor of 15 square feet per person for an assembly area without fixed seats, according to the California Building Code Table 1004.5 Maximum Floor Area Allowances Per Occupant.[47] Although this occupancy load factor provides an overestimation of the occupancy load and associated noise within passive landscaped areas, it has been applied to the square footage of the Project's outdoor spaces to provide a conservative worst-case noise analysis.

Actual capacities for the Project outdoor spaces would be lower and, in some cases substantially lower, due to design considerations, such as building ingress/egress limitations, elevator and stairwell capacities, fire escape route capacities, and other capacity considerations. Noise from female adults, male adults, and children talking at a raised level is approximately 63 dBA, 65 dBA, and 65 dBA, respectively, at a distance of 3 feet.[48] As a conservative analysis, it is assumed that each outdoor space would be at full capacity and that half of the visitors would be adults (half male and half female) and half would be children. Of the adults and children, half would be talking simultaneously (assuming approximately half of the occupants talking and the other half listening). Several of the proposed outdoor spaces may include amplified sound, including the River Balcony (North), Rooftop Hotel Bar/Pool, Residential Pool Deck, Mesquit Paseo, Sculpture Garden, Fitness Deck, Public Plaza Flex Deck, 7th Street Terrace, and River Balcony (South). The type and level of noise from each space would vary based on the purpose and use of the space and the occupancy load. For purposes of providing a conservative assumption for amplified sound at outdoor spaces, it is assumed that

[47] California Building Standards Commission, 2019 Title 24, Part 2, Volume 1 – California Building Code.
[48] *American Journal of Audiology* Vol.7 21-25 October 1998. doi:10.1044/1059-0889(1998/012).

amplified sound systems would be used for live music or similar amplified sound resulting in noise levels of up to 91 dBA L_{eq} at 25 feet from the source.[49]

Sources of noise within the parking structures would primarily include vehicular movements and engine noise, doors opening and closing, and intermittent car alarms. Noise levels within the parking structure would fluctuate with the amount of automobile and human activity. Parking noise has been calculated for both the Project and Project with Deck Concept based on the forecasted trip generation included in the Project's TA.

The Project includes a heliport on the rooftop of Building 5, at an approximate elevation of 378 feet. The analysis is based on the assumption that the Project would involve two daily arrivals during daytime hours and two daily departures during evening hours (7:00 PM – 10:00 PM) based operations of similar project types within Los Angeles. The specific helicopter model(s) that would visit the Project heliport is unknown as there is currently no information available on tenants that would utilize the heliport. Therefore, the analysis assumes a helicopter type commonly used in corporate settings, the Bell 429 GlobalRanger, which is primarily used for passenger transport with a capacity of one pilot plus seven passengers and could represent the type of helicopter that future Project tenants could use to transport personnel.[50]

Operational noise, based on the above methodology and assumptions, would result in potentially significant impacts if noise levels exceed the significance threshold identified in Subsection 3.a, *Thresholds of Significance*, above.

(4) Groundborne Vibration (Construction and Operation)

Groundborne vibration impacts were evaluated by identifying potential vibration sources, measuring the distance between vibration sources and surrounding structure locations, and making a determination based on the significance criteria.

The City currently does not have significance criteria to assess vibration impacts during construction. Thus, as discussed above, FTA guidelines set forth in their 2018 Transit Noise and Vibration Impact Assessment are used to evaluate potential impacts related to construction vibration for both potential building/structure damage and human annoyance. The FTA guidelines regarding construction vibration are the most current guidelines and are commonly used in evaluating vibration impacts. Groundborne vibration could result in potentially significant impacts if vibration levels would exceed the significance threshold identified above.

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[49] University of Michigan, Department of Environmental Health Science, August 22, 2016. *Noise Navigator Sound Level Database with Over 1700 Measurement Values*.

[50] Bell 429, Fact Sheet, 2019. The Bell 429 is a twin-engine light-utility helicopter with a cruise speed of approximately 150 knots that is primarily used for passenger transport. The capacity is one pilot plus seven passengers and it has a maximum gross weight of 7,000 pounds. It is capable of flying up to 411 nautical miles, which could accommodate travel from the Los Angeles area to most population centers in Nevada, Arizona, and Northern California, such as San Francisco and Sacramento.

(5) Groundborne Noise

According to the FTA, airborne noise levels would be higher than groundborne noise levels.[51] Unless indoor receptors have substantial sound insulation (e.g., recording studio) and would be exposed to vibration velocities great enough to cause substantial levels of groundborne noise, groundborne noise does not need to be assessed. There are no substantially insulated indoor receptors located within the area surrounding the Project Site; therefore, the effects of airborne noise would still be higher than groundborne noise levels. Impacts related to groundborne noise have therefore not been discussed herein.

c) Project Design Features

The following Project Design Features (PDFs) are applicable to the Project:

- **NOISE-PDF-1: No Impact Pile Drivers or Blasting.** The Project will not require or allow the use of impact pile drivers and will not require or allow blasting during construction activities.
- **NOISE-PDF-2: Mechanical Equipment.** All outdoor mounted mechanical equipment will be enclosed or screened from off-site noise sensitive receptors and be designed with standard noise control devices, such as sound attenuators or acoustics louvers.

d) Analysis of Project Impacts

Threshold (a): Would the Project result in the 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 Impacts

(i) On-Site Construction Noise

Project construction activities would be required to comply with the City's Ordinance Nos. 144,331 and 161,574, which prohibit the emission or creation of noise beyond 75 dBA at 50 feet from the equipment, unless technically infeasible.[52] In addition, the Project would be subject to Section 91.106.4.8 (Construction Site Notice, City's Ordinance No. 178,048), which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the

[51] FTA, *Transit Noise and Vibration Impact Assessment*, p. 124.

[52] As provided in LAMC Section 112.05, technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during the operation of the equipment.

contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported.

Construction of the Project would require the use of heavy equipment during site preparation/demolition, grading/excavation, drainage/utilities/trenching, foundation concrete pour, building construction/architectural coating, and paving stages at the Project Site. During each stage of development, a variety of equipment would be used. As such, construction activity noise levels on and near the Project Site would fluctuate depending on the type, number, and duration of use of various pieces of construction equipment operating at a given time. Multiple pieces of construction equipment would not all operate at the same point on the Project Site. Accordingly, and to present a conservative analysis, instead of assuming the equipment is on average located in the center of the Project construction area (which is a typical assumption in construction noise analyses), it has been assumed that the two loudest equipment types would operate at the point nearest the sensitive receptor to the Project Site boundary and that the remaining equipment would operate at an additional 100 feet away from the receptor (see Appendix J for construction noise calculations).

Types of construction equipment expected to be used during Project construction could produce maximum noise levels of 75 dBA L_{max} to 90 dBA L_{max} at a reference distance of 50 feet from the noise source according to FHWA reference noise levels. **Table IV.I-6**, *Project Construction Equipment and Associated Noise Levels*, lists the construction equipment type and number assumed for each Project construction stage and FHWA reference noise levels (L_{max}) at 50 feet. These maximum noise levels would occur when equipment is operating at full power. Construction equipment does not typically operate at full power consistently throughout the duration of a given construction stage. The estimated usage factor for the equipment is also shown in Table IV.I-6 and represents the percentage of the time during a given construction stage that a piece of equipment is expected to be operational. The usage factors are based on FHWA's RCNM User's Guide.[53]

TABLE IV.I-6
PROJECT CONSTRUCTION EQUIPMENT AND ASSOCIATED NOISE LEVELS

Type of Equipment	Number of Equipment	Reference Noise Level at 50 Feet, L_{max}	Estimated Usage Factor
Site Preparation/Demolition			
Concrete Saw	4	90	20%
Jaw Crusher	1	84	10%
Vacuum Street Sweeper	1	82	10%
Excavator	4	81	40%

53 FHWA, *Roadway Construction Noise Model User's Guide*.

TABLE IV.I-6
PROJECT CONSTRUCTION EQUIPMENT AND ASSOCIATED NOISE LEVELS

Type of Equipment	Number of Equipment	Reference Noise Level at 50 Feet, L_{max}	Estimated Usage Factor
Hoe Ram Excavator	3	81	40%
Front End Loader	3	79	40%
Rubber Tired Loader	2	79	40%
Air Compressor	2	78	40%
Backhoe	2	78	40%
Forklift	2	75	10%
Grading/Excavation			
Graders	1	85	40%
Vacuum Street Sweeper	1	82	10%
Cranes	1	81	16%
Excavator	2	81	40%
Tractor/Loader/Backhoe	2	80	25%
Rubber Tired Loader	4	79	40%
Bore/Drill Rig Truck	1	79	20%
Backhoe	3	78	40%
Forklift	1	75	10%
Drainage/ Utilities/ Trenching			
Concrete Saw	1	90	20%
Excavator	1	81	40%
Air Compressor	1	78	40%
Backhoe	2	78	40%
Forklift	1	75	10%
Foundation/Concrete Pour			
Concrete Batch Plant	1	83	15%
Rubber Tired Loader	1	79	40%
Cranes	1	81	16%
Concrete Pump Trucks	5	81	20%
Generator Sets	4	81	50%
Air Compressor	2	78	40%
Forklift	2	75	10%
Man Lift	1	75	20%

TABLE IV.I-6
PROJECT CONSTRUCTION EQUIPMENT AND ASSOCIATED NOISE LEVELS

Type of Equipment	Number of Equipment	Reference Noise Level at 50 Feet, L_{max}	Estimated Usage Factor
Building Construction/Architectural Coating			
Concrete Saw	2	90	20%
Concrete Batch Plant	1	83	15%
Vacuum Street Sweeper	1	82	10%
Cranes	4	81	16%
Pumps	4	81	50%
Rubber Tired Loader	1	79	40%
Air Compressor	4	78	40%
Forklift	4	75	10%
Man Lift	6	75	20%
Paving			
Concrete Saw	1	90	20%
Surfacing Equipment	1	90	20%
Graders	1	85	40%
Roller	2	80	20%
Excavator	1	81	40%
Air Compressor	1	78	40%
Paver	1	77	50%

SOURCE(S): FHWA, 2005; MATT Construction, 2018; Gardiner & Theobald Inc., 2019.

During Project construction, the closest off-site noise sensitive receptors that would be exposed to increased noise levels are listed below (see Figure IV.I-3); the distances shown represent the closest construction area on the Project Site to the property line of the nearest off-site receptor, without taking into account differences in elevation.

- R1: Three-story multi-family residential use immediately to the west of the Project Site at 2101 E. 7th Street.
- R2: Two-story multi-family residential use approximately 130 feet to the south of the Project Site at 2135 E. 7th Place.
- R3: AMP Lofts (multi-family residential use), approximately 180 feet to the west of the Project Site, bound by Santa Fe Avenue on the east, Imperial Street on the West, Jesse Street to the north, and 7th Street to the south.

Future sensitive receptor locations that are not yet built and operational (i.e., sensitive receptors currently under construction) include the following:

- R4: 6th Street PARC immediately north of the Project Site.

Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment would operate concurrently. The estimated noise levels at the off-site sensitive receptors were calculated using the FHWA's RCNM, and were based on a maximum concurrent operation of equipment, which is considered a worst-case evaluation because the Project would typically use less overall equipment on a daily basis, and as such would generate lower noise levels.[54]

Table IV.I-7, *Estimate of Construction Noise Levels (L_{eq}) at Off-Site Sensitive Receptor Locations*, shows the estimated construction noise levels that would occur at the nearest off-site sensitive uses during a peak day of construction. The construction noise analysis takes into account the distance from the different construction activities on the Project Site to the nearest off-site noise sensitive receptor property lines, namely R1 (the three-story multi-family residential use to the west of the Project Site), R2 (the two-story multi-family residential use to the south of the Project Site), R3 (the AMP Lofts to the west of the Project Site), and R4 (the future 6th Street PARC to the north of the Project Site).

The maximum unmitigated construction noise levels would occur when the specified construction activity would be occurring within construction areas nearest the off-site noise sensitive receptor property lines. As shown in Table IV.I-7, unmitigated construction noise levels were estimated to reach a maximum of 111 dBA L_{eq} during overlap of site preparation/demolition, drainage/utilities/trenching, and grading/excavation activities and 110 dBA L_{eq} during overlap of site preparation/demolition and drainage/utilities/trenching activities at the ground floor of the nearest off-site noise sensitive receptors R1 and R4. These maximum unmitigated construction noise levels would occur when construction activities are very close and adjacent to the Project Site's western and northern boundaries, which are shared property lines with sensitive receptors R1 and R4, respectively. As construction activities are completed near the Project Site boundary, and construction activities move toward the interior of the Project Site, the construction noise levels at these noise sensitive residential property lines would decrease. Noise levels associated with each individual construction stage as well as the potential overlap of multiple construction stages were estimated. Although Section 41.40 of the LAMC prohibits construction between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, 6:00 P.M. and 8:00 A.M. on Saturday, and at any time on Sunday, Project construction could potentially take place during nighttime hours and on Sunday if required and specifically permitted by the City. Therefore, maximum construction noise has been

[54] As indicated under Subsection 3.b, *Methodology*, the construction analysis for the Project with the Deck Concept would be considered the worst-case scenario due to the construction of the Deck, and the Project would require a similar or slightly reduced construction intensity level on a maximum construction activity day given that the Deck would not be constructed under the Project.

compared against the weekday and weekend daytime and nighttime thresholds, as shown in Table IV.I-7 and described below:

- Weekday daytime construction – As shown in Table IV.I-7, unmitigated construction noise levels would not exceed the significance thresholds at receptor locations R2 or R3. However, unmitigated construction noise levels would exceed the 75.7 dBA L_{eq} and 71.6 dBA L_{eq} significance thresholds at receptor locations R1 and R4 (daytime noise levels shown in Table IV.I-4, plus 5 dBA) under single stage and overlapping stage scenarios. **Weekday daytime construction of the Project would generate unmitigated construction noise levels that would temporarily exceed the applicable significance thresholds at off-site noise sensitive receptor property lines for R1 (the three-story residential use to the west of the Project Site) and R4 (the future 6th Street PARC to the north of the Project Site). Therefore, prior to mitigation, weekday daytime construction noise impacts would be significant.**
- Weekday nighttime construction – As shown in Table IV.I-7, unmitigated weekday nighttime construction noise, if it were to occur, would exceed the thresholds of 72.5 dBA L_{eq} and 68.8 dBA L_{eq} at receptor locations R1 and R4, respectively, during each individual stage of construction as well as for all potential overlapping phase scenarios. The threshold of 76.5 dBA L_{eq} would be exceeded at receptor location R2 during the site preparation/demolition phase, the overlap of site preparation/ demolition and drainage/ utilities/ trenching, the overlap of site preparation/ demolition, drainage/ utilities/ trenching, and grading/ excavation, and the overlap of building construction, architectural coating, and paving stages. The threshold of 68.5 dBA L_{eq} at receptor location R3 would be exceeded during the site preparation/demolition stage, the grading/ excavation stage, the building construction/architectural coating stage, the paving stage, and all potential overlapping phases. **Weekday nighttime construction of the Project, if it were to occur, would generate unmitigated construction noise levels that would temporarily exceed the applicable significance thresholds at off-site noise sensitive receptor property lines for R1 (the three-story multi-family residential use to the west of the Project Site), R2 (the two-story multi-family residential use to the south of the Project Site), R3 (the AMP Lofts to the west of the Project Site), and R4 (the future 6th Street PARC). Therefore, prior to mitigation, weekday nighttime construction noise impacts would be significant.**

TABLE IV.I-7
ESTIMATE OF CONSTRUCTION NOISE LEVELS (L_{EQ}) AT OFF-SITE SENSITIVE RECEPTOR LOCATIONS

Receptor	Construction Stage	Nearest Distance to Sensitive Receptor (ft)[a]	Construction Noise Level at Receptor (L_{eq})	Weekday				Saturday				Sunday			
				Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?
Individual Construction Stages															
R1	Site Preparation/Demolition	5	109	75.7	**Yes**	72.5	**Yes**	76.3	**Yes**	77.6	**Yes**	80.6	**Yes**	74.1	**Yes**
	Grading/Excavation		102		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Drainage/Utilities/Trenching		104		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Foundation/Concrete Pour		98		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction/Architectural Coating		106		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Paving		106		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
R2[c]	Site Preparation/Demolition	130	77	81.3	No	76.5	**Yes**	79.7	No	79.3	No	78.7	No	75.2	**Yes**
	Grading/Excavation		71		No		No		No		No		No		No
	Drainage/Utilities/Trenching		71		No		No		No		No		No		No
	Foundation/Concrete Pour		70		No		No		No		No		No		No
	Building Construction/Architectural Coating		74		No		No		No		No		No		No
	Paving		74		No		No		No		No		No		No
R3[c]	Site Preparation/Demolition	180	74	81.6	No	68.5	**Yes**	73.6	**Yes**	76.3	No	70.1	**Yes**	68.3	**Yes**
	Grading/Excavation		69		No		**Yes**		No		No		No		**Yes**
	Drainage/Utilities/Trenching		68		No		No		No		No		No		No
	Foundation/Concrete Pour		68		No		No		No		No		No		No
	Building Construction/Architectural Coating		72		No		**Yes**		No		No		**Yes**		**Yes**
	Paving		71		No		**Yes**		No		No		**Yes**		**Yes**
R4	Site Preparation/Demolition	5	109	71.6	**Yes**	68.8	**Yes**	69.8	**Yes**	52.1	**Yes**	70.9	**Yes**	68.9	**Yes**
	Grading/Excavation		102		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Drainage/Utilities/Trenching		104		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Foundation/Concrete Pour		98		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction/Architectural Coating		106		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Paving		106		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
Overlapping Construction Stages															
R1	Site Preparation/Demolition + Drainage/Utilities/ Trenching	5	110	75.7	**Yes**	72.5	**Yes**	76.3	**Yes**	77.6	**Yes**	80.6	**Yes**	74.1	**Yes**
	Site Preparation/Demolition + Drainage/Utilities/Trenching + Grading/ Excavation		111		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Drainage/Utilities/Trenching + Grading/Excavation		106		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Grading/Excavation + Foundation/Concrete Pour		103		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Foundation/Concrete Pour + Building Construction		107		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction + Architectural Coating		106		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**

TABLE IV.I-7
ESTIMATE OF CONSTRUCTION NOISE LEVELS (L_{EQ}) AT OFF-SITE SENSITIVE RECEPTOR LOCATIONS

Receptor	Construction Stage	Nearest Distance to Sensitive Receptor (ft)[a]	Construction Noise Level at Receptor (L_{eq})	Weekday				Saturday				Sunday			
				Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?
	Building Construction + Architectural Coating + Paving		109		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
R2[c]	Site Preparation/Demolition + Drainage/Utilities/ Trenching	130	78	81.3	No	76.5	**Yes**	79.7	No	79.3	No	78.7	No	75.2	**Yes**
	Site Preparation/Demolition + Drainage/Utilities/Trenching + Grading/ Excavation		79		No		**Yes**		No		No		**Yes**		**Yes**
	Drainage/Utilities/Trenching + Grading/Excavation		74		No		No		No		No		No		No
	Grading/Excavation + Foundation/Concrete Pour		73		No		No		No		No		No		No
	Foundation/Concrete Pour + Building Construction		76		No		No		No		No		No		**Yes**
	Building Construction + Architectural Coating		74		No		No		No		No		No		No
	Building Construction + Architectural Coating + Paving		77		No		**Yes**		No		No		No		**Yes**
R3[c]	Site Preparation/Demolition + Drainage/Utilities/ Trenching	180	75	81.6	No	68.5	**Yes**	73.6	**Yes**	76.3	No	70.1	**Yes**	68.3	**Yes**
	Site Preparation/Demolition + Drainage/Utilities/Trenching + Grading/ Excavation		76		No		**Yes**		**Yes**		No		**Yes**		**Yes**
	Drainage/Utilities/Trenching + Grading/Excavation		72		No		**Yes**		No		No		**Yes**		**Yes**
	Grading/Excavation + Foundation/Concrete Pour		71		No		**Yes**		No		No		**Yes**		**Yes**
	Foundation/Concrete Pour + Building Construction		73		No		**Yes**		No		No		**Yes**		**Yes**
	Building Construction + Architectural Coating		72		No		**Yes**		No		No		**Yes**		**Yes**
	Building Construction + Architectural Coating + Paving		75		No		**Yes**		**Yes**		No		**Yes**		**Yes**
R4	Site Preparation/Demolition + Drainage/Utilities/ Trenching	5	110	71.6	**Yes**	68.8	**Yes**	69.8	**Yes**	52.1	**Yes**	70.9	**Yes**	68.9	**Yes**
	Site Preparation/Demolition + Drainage/Utilities/Trenching + Grading/ Excavation		111		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Drainage/Utilities/Trenching + Grading/Excavation		106		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Grading/Excavation + Foundation/Concrete Pour		103		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Foundation/Concrete Pour + Building Construction		107		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction + Architectural Coating		106		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction + Architectural Coating + Paving		109		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**

NOTE(S):

[a] The distance represents the closest construction area on the Project Site to the property line of the off-site receptor without taking into account any differences in elevation.
[b] The significance criteria, per the City's Thresholds Guide, is the ambient noise level as shown in Table IV.I-5 plus 5 dBA.
[c] Sensitive receptors are partially shielded from the Project Site by existing buildings, providing a minimum 5 dBA reduction (reflected in the construction noise calculations).

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

- Saturday daytime construction – As shown in Table IV.I-7, unmitigated daytime Saturday construction noise, if it were to occur, would exceed the daytime thresholds of 76.3 dBA L_{eq} and 69.8 dBA L_{eq} at receptor locations R1 and R4, respectively, during each individual stage of construction as well as for all potential overlapping phases. The threshold of 79.7 dBA L_{eq} would not be exceeded at receptor location R2 during any individual stage or overlap. The threshold of 73.6 dBA L_{eq} at receptor location R3 would be exceeded during the site preparation/ demolition stage, the overlap of site preparation/ demolition and drainage/ utilities/ trenching, the overlap of site preparation/ demolition, drainage/ utilities/ trenching, and grading/ excavation, and the overlap of building construction, architectural coating, and paving. **Saturday construction of the Project during daytime hours, if it were to occur, would generate unmitigated construction noise levels that would temporarily exceed the applicable significance thresholds at off-site noise sensitive receptor property lines for R1 (the three-story multi-family residential use to the west of the Project Site), R3 (the AMP Lofts to the west of the Project Site), and R4 (the Future 6th Street PARC to the north of the Project Site). Therefore, prior to mitigation, Saturday daytime construction noise impacts would be significant.**
- Saturday nighttime construction – As shown in Table IV.I-7, unmitigated Saturday construction noise, if it were to occur, would exceed the nighttime threshold of 77.6 dBA L_{eq} and 52.1 dBA L_{eq} at receptor locations R1 and R4, respectively, during each individual stage of construction as well as for all potential overlapping phases. The thresholds of 79.3 dBA L_{eq} and 76.3 dBA L_{eq} would not be exceeded at receptor locations R2 or R3, respectively, during any individual stage or overlapping phase. **Saturday construction of the Project during nighttime hours, if it were to occur, would generate unmitigated construction noise levels that would temporarily exceed the applicable significance thresholds at off-site noise sensitive receptor property lines for R1 (the three-story multi-family residential use to the west of the Project Site) and R4 (the future 6th Street PARC to the north of the Project Site). Therefore, prior to mitigation, Saturday nighttime construction noise impacts would be significant.**
- Sunday daytime construction – As shown in Table IV.I-7, unmitigated daytime weekend construction noise, if it were to occur, would exceed the Sunday daytime thresholds of 80.6 dBA L_{eq} and 70.9 dBA L_{eq} at receptor locations R1 and R4, respectively, during each individual stage of construction as well as for all potential overlapping phases. The threshold of 78.7 dBA L_{eq} would be exceeded at receptor location R2 during the overlap of site preparation/ demolition, drainage/ utilities/ trenching, and grading/ excavation. The threshold of 70.1 dBA L_{eq} at receptor location R3 would be exceeded during the site preparation/ demolition stage, the building construction/ architectural coating stage, the paving stage, and all overlapping phases. **Sunday construction of the Project during daytime hours, if it were to occur, would generate unmitigated construction noise levels that would temporarily exceed the applicable significance thresholds at off-site noise sensitive receptor property lines for R1 (the three-story multi-family residential use to the west of the Project Site), R2 (the two-story multi-family**

residential use to the south of the Project Site), R3 (the AMP Lofts to the west of the Project Site), and R4 (the Future 6th Street PARC to the north of the Project Site). Therefore, prior to mitigation, Sunday daytime construction noise impacts would be significant.

- Sunday nighttime construction – As shown in Table IV.I-7, unmitigated nighttime weekend construction noise, if it were to occur, would exceed the Sunday nighttime thresholds of 74.1 dBA L_{eq} and 68.9 dBA L_{eq} at receptor locations R1 and R4, respectively, during each individual stage of construction as well as for all potential overlapping phases. The threshold of 75.2 dBA L_{eq} would be exceeded at receptor location R2 during the site preparation/ demolition stage, the overlap of site preparation/ demolition and drainage/ utilities/ trenching, the overlap of site preparation/ demolition, drainage/ utilities/ trenching, and grading/ excavation, the overlap of foundation/ concrete pour and building construction, and the overlap of building construction, architectural coating, and paving. The threshold of 68.3 dBA L_{eq} at receptor location R3 would be exceeded during the site preparation/ demolition stage, the grading/ excavation stage, the building construction/ architectural coating stage, the paving stage, and all overlapping phases. **Sunday construction of the Project during nighttime hours, if it were to occur, would generate unmitigated construction noise levels that would temporarily exceed the applicable significance thresholds at off-site noise sensitive receptor property lines for R1 (the three-story multi-family residential use to the west of the Project Site), R2 (the two-story multi-family residential use to the south of the Project Site), R3 (the AMP Lofts to the west of the Project Site), and R4 (the future 6th Street PARC to the north of the Project Site). Therefore, prior to mitigation, Sunday nighttime construction noise impacts would be significant.**

(i) Off-Site Construction Noise

Construction truck trips would occur throughout the construction period and would be associated with hauling material and excavated soil from the Project Site and delivering building materials, supplies, and concrete to the Project Site. For purposes of this off-site construction noise analysis, the concrete pour stage was analyzed, which represents the worst-case day with the most construction traffic. An estimated maximum of approximately 132 worker vehicle round trips (132 inbound trips and 132 outbound trips) and approximately 896 concrete and vendor truck round trips (896 inbound trips and 896 outbound trips) would occur per day. As assumed in the Project TA, attached as Appendix M-1 to this Draft EIR, approximately 40 percent of worker trips would occur during the peak hour and concrete truck trips are assumed to be spread evenly over a 16-hour workday resulting in 53 peak hour inbound worker trips and 56 inbound peak hour concrete truck trips during the A.M. peak hour and 53 peak hour outbound worker trips and 56 peak hour outbound concrete truck trips during the P.M. peak hour.

The Project's TA evaluates potential traffic impacts that could occur during construction and operation of the proposed Project. As discussed in the Project TA (see Appendix M-1 of this Draft EIR), Project haul trucks (e.g., trucks hauling dirt) would be required to use City-

approved haul truck routes. If the landfill is accessed via I-10, the outbound route is from the Project Site westbound via Jesse Street to southbound Santa Fe Avenue, to westbound 8th Street. Inbound trucks would exit the westbound I-10 to Porter Street and travel eastbound to northbound Santa Fe Avenue and eastbound Jesse Street to access the Project Site. The outbound route to access the I-5 and SR-60 is from the Project Site westbound on Jesse Street to southbound Santa Fe Avenue, to westbound Porter Street to the I-10 to I-5/SR-60. Inbound trucks would exit the westbound I-10 to eastbound 8th Street and travel northbound on Santa Fe Avenue to Jesse Street to access the Project Site.

Concrete trucks and worker vehicles would not be subject to the City-approved haul route. Because concrete trucks and worker vehicles would come from a variety of locations and it would be speculative to assume which roadways would be traveled by concrete trucks and worker vehicles, noise associated with all peak hour worker and concrete truck trips have been assumed for all segments that are considered for the operational traffic analysis. This analysis represents worst-case construction traffic conditions and the studied segments encompass the possible haul routes for the haul trucks.

As shown in **Table IV.I-8**, *Estimate of Off-Site Construction Traffic Noise Levels*, the Project's construction trips would increase existing traffic noise levels by a maximum of 10.4 dBA L_{eq} along Willow Street between Mateo Street and Santa Fe Avenue, and 6.4 dBA L_{eq} along Jesse Street between Santa Fe Avenue and Mesquit Street. Uses along these segments include commercial and industrial uses such as Value Produce Cold Storage on Jesse Street and Mesquit Street, and Lock & Key Productions, The Yard Muay Thai (Thai boxing/martial arts) school, and Spilo Worldwide along Willow Street. The Yard Muay Thai school is not a traditional school that requires a quiet environment for instruction, reading, and exams, etc. Therefore, it is not considered a sensitive receptor. The Project's construction trips would increase existing traffic noise levels by a maximum of 6.0 dBA L_{eq} along Mesquit Street between 6th Street and 7th Street. Uses along this segment include industrial uses on Mesquit Street and are not considered sensitive receptors. According to the City of Los Angeles General Plan Noise element, noise-sensitive uses include residential dwellings, long-term care facilities, dormitories, motels, hotels, transient lodgings, housing of worship, hospitals, libraries, schools, auditoriums, concert halls, outdoor theaters, nature and wildlife preserves, and parks. Additionally, the 2006 L.A. CEQA Thresholds Guide and FHWA do not consider industrial uses, or the types of commercial uses located along the analyzed roadway segments to be noise-sensitive.[55,56]

[55] City of Los Angeles, *2006 L.A. Thresholds Guide*, pp. I.1-3, I.3-3, I.4-3, and I.4-4.
[56] Federal Highway Administration, Noise Policy FAQs – Frequently Asked Questions.

TABLE IV.I-8
ESTIMATE OF OFF-SITE CONSTRUCTION TRAFFIC NOISE LEVELS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	70.7	1.6	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	70.3	1.9	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	70.1	2.0	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	69.2	2.6	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	70.1	2.0	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	70.0	2.1	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	70.7	1.7	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	70.2	1.9	No
Between Rio Street and Anderson Street	Commercial	68.4	70.3	1.9	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	70.4	1.8	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	69.3	2.6	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	68.6	3.2	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	66.3	7.7	**Yes**
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	66.6	6.4	Not Applicable[a]

TABLE IV.I-8
ESTIMATE OF OFF-SITE CONSTRUCTION TRAFFIC NOISE LEVELS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	67.3	4.7	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	67.2	5.1	**Yes**
Between Jesse Street and 7th Street	Commercial	63.7	67.7	4.0	No
Between Willow Street and 6th Street	Commercial	62.6	67.3	4.7	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	72.1	1.3	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	72.1	1.3	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	71.3	1.7	No
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	68.9	2.9	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	71.5	1.6	No
Between 4th Street and 6th Street	Industrial	70.3	71.8	1.5	No
Between 6th Street and 7th Street	Industrial	70.5	71.9	1.4	No
Between E. 2nd Street and 3rd Street		70.2	71.7	1.5	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	69.6	2.3	No
Between 8th Street and Porter Street	Commercial	67.6	69.8	2.2	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	69.0	2.8	No

TABLE IV.I-8
ESTIMATE OF OFF-SITE CONSTRUCTION TRAFFIC NOISE LEVELS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
Between Mesquit Street and Jesse Street	Commercial	66.8	69.6	2.8	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	71.4	1.4	No
Between Porter and Olympic Boulevard	Commercial	69.0	70.7	1.7	No
Between Willow Street and Mesquit Street	Commercial	63.4	67.6	4.2	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	65.9	10.7	Not Applicable[a]
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	66.8	6.0	Not Applicable[a]

NOTE(S):

[a] According to the City of Los Angeles General Plan Noise element, noise-sensitive uses include residential dwellings, long-term care facilities, dormitories, motels, hotels, transient lodgings, housing of worship, hospitals, libraries, schools, auditoriums, concert halls, outdoor theaters, nature and wildlife preserves, and parks. Additionally, the 2006 L.A. CEQA Thresholds Guide and FHWA do not consider commercial and industrial uses to be noise-sensitive. Per the 2006 L.A. CEQA Thresholds Guide construction impacts occur when construction noise exceeds ambient noise by 5 dBA or greater at noise sensitive uses. Therefore, although Project-related increases in traffic noise would exceed 5 dBA, less than significant impacts would occur.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

However, the residential lofts located at 652 Mateo Street are noise-sensitive uses and would be exposed to a 7.7 dBA L_{eq} increase in traffic noise due to construction trips along Jesse Street between Mateo Street and Santa Fe Avenue and the Molino Street Lofts located at 500 and 530 Molino Street would be exposed to a 5.1 dBA L_{eq} increase in traffic noise due to construction trips along Mateo Street between 4th Place and Willow Street. Project-related traffic would result in significant increases in traffic noise along these two roadway segments, as shown in Table IV.I-8. **Therefore, prior to mitigation, off-site construction traffic noise impacts would be significant.**

(b) Operational Impacts

(i) On-Site Operational Noise

(a) Fixed Mechanical Equipment

As part of the Project, new mechanical equipment (e.g., air conditioners, fans, and related equipment) would be located on the Project Site. Project mechanical equipment would be located on the roofs of the Project buildings and parking structure and, as provided above in Project Design Feature NOISE-PDF-2, would be enclosed or screened from nearby land uses to attenuate noise and avoid conflicts with adjacent uses. According to the FHWA, noise barriers can provide noise level reductions of at least 10 dBA with dense concrete barriers providing reductions of up to 40 dBA.[57] Therefore, a minimum noise level reduction of 10 dBA has been assumed due to Project implementation of Project Design Feature NOISE-PDF-2. In addition, all mechanical equipment would be designed with standard noise control devices, such as sound attenuators or acoustics louvers to comply with the LAMC, which prohibits the noise from such equipment from exceeding the ambient noise levels on the premises of other occupied properties by more than 5 dBA. The Project would comply with the requirement to install mechanical equipment that would generate noise levels below this threshold, consistent with applicable regulatory requirements. Based on an exterior reference noise level for air condenser units, fans, and related equipment of 81.9 dBA L_{eq} measured at a distance of 5 feet from the equipment, Project impacts were estimated.[58] The height of Project buildings has been accounted for to estimate the distance of receptors to the nearest Project rooftop. **Table IV.I-9**, *Estimate of Mechanical Equipment Noise Levels (L_{eq})*, shows the estimated noise levels at the off-site sensitive receptor locations from operation of the Project mechanical equipment accounting for the height of Project buildings. Estimated noise levels do not account for any attenuation for screening or enclosures. As indicated in Table IV.I-9, the estimated noise levels from the Project's mechanical equipment would range from 23.6 dBA L_{eq} at receptor location R4 to 36.9 dBA L_{eq} at receptor location R2, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would not exceed the significance thresholds. **Therefore, noise impacts from mechanical equipment would be less than significant.**

[57] Federal Highway Administration, *Noise Barrier Design Handbook*, Section 3.4.2, https://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/design/design03.cfm. Accessed July 16, 2021.

[58] City of Moreno Valley, *Moreno Valley Walmart Noise Impact Analysis*, Table 9-1, p. 71, February 10, 2015; and City of Pomona, *Pomona Ranch Plaza Walmart Expansion Project Draft Environmental Impact Report*, Table 4.4-5, p. 4.4-33, August 2014. Included in Appendix J of this Draft EIR.

TABLE IV.I-9
ESTIMATE OF MECHANICAL EQUIPMENT NOISE LEVELS (L_{EQ})

Receptor Location	Distance (feet)[a]	Existing Ambient Noise Levels, dBA (L_{eq})[b]	Estimated Mechanical Equipment Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	361	67.5	34.7	67.5	72.5	No
R2	158	70.2	36.9	70.2	75.2	No
R3	422	63.3	33.4	63.3	68.3	No
R4	412	47.1	23.6	47.1	52.1	No

NOTE(S):

[a] Equipment would be located on building rooftops. Therefore, distances account for building height.

[b] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project mechanical equipment could operate during nighttime hours.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(b) Outdoor Spaces

As discussed in Chapter II, *Project Description*, of the Draft EIR, the Project would incorporate publicly accessible open space and amenities, available to the general public, as well as common and private open space and recreational amenities for use by Project residents, hotel guests, and employees. Special events such as farmer's markets, art fair/gallery installations, and food trucks could potentially be held at the outdoor open spaces.[59] Because of the height of Project buildings and the location of certain outdoor spaces on upper floors/rooftops, the height of Project buildings has been accounted for to calculate the distance of outdoor spaces to the nearest sensitive receptor.

Listed below are the Project's proposed outdoor uses and the assumptions applied to the analysis. The potential for each space to be used during nighttime hours (between the hours of 10:00 P.M. and 7:00 A.M.) has been noted below. In addition to the active uses for specified spaces described below, these outdoor areas would support a variety of passive activities.

(i) Northern Landscaped Area

The Northern Landscaped Area, which is a publicly accessible passive landscaped space, would be located at the northern end of the Project Site at grade, connecting the Project Site with the City's proposed PARC Improvements adjacent to and beneath the Ribbon of Light Bridge. It is anticipated that most use of this area will be during daytime hours (7:00 A.M. to 10:00 P.M.). Any nighttime use of this area would be incidental and

[59] Under the Project, special events would occur within the outdoor spaces analyzed based on occupancy herein. Therefore, noise levels from special events under the Project have been encompassed in the analysis of individual open space areas.

would serve as a part of the pedestrian circulation system. It is not anticipated that any people would congregate in the area during nighttime hours. The Northern Landscaped Area would be located adjacent to sensitive receptor location R4. The area is approximately 25,641 square feet, which can accommodate an estimated 1,709 people. It is anticipated that no amplified noise will be used in this area.

(ii) River Balcony (North)

The North River Balcony, that also serves as part of the Project Site's publicly accessible pedestrian circulation system, would be located on the eastern side of Building 1, approximately 21 feet above ground. The occupant load for the approximately 4,882-square foot area is estimated at 325 people.

In addition to people walking along the North River Balcony as part of the Project Site's pedestrian circulation system, group exercise classes and street performances (busking) would occur at the North River Balcony during daytime hours. The main source of noise from these activities would be from amplified music. As a conservative assumption for amplified sound system volumes, it is assumed that amplified sound systems would result in noise levels of up to 91 dBA L_{eq} at a distance of 25 feet. It is assumed that there would be no amplified music during the nighttime hours.

(iii) Rooftop Hotel Bar/Pool

A Rooftop Hotel Bar/Pool would be located at the south side of Building 1, approximately 336 feet above ground and at an approximate diagonal distance of 497 feet from sensitive receptor location R4. The occupant load for the approximately 10,792-square foot area is estimated at 719 people. The main source of noise from this space would be from amplified music. As a conservative assumption for amplified sound volumes, it is assumed that amplified sound systems would result in noise levels of up to 91 dBA L_{eq} at a distance of 25 feet. The anticipated hours of operation from this space are from 7:00 A.M. to 2:00 A.M., daily.

(iv) Residential Pool Deck

A residential Pool Deck would be located at the north side of Building 2, approximately 294 feet above ground and an approximate diagonal distance of 559 feet from sensitive receptor R3. The occupant load for the approximately 11,410-square foot pool deck is estimated at 761 people. The main source of noise from this space would be from amplified music. Although it is unlikely that that residential pool deck would include live music, live music resulting in noise levels of up to 91 dBA L_{eq} at a distance of 25 feet has been conservatively assumed. The anticipated hours of operation for this space are 7:00 A.M. to 10:00 P.M. However, use of the spa/Jacuzzi area would be permitted between 10:00 P.M. and 12:00 A.M. with an anticipated capacity of 10 percent of the daytime load (76). No amplified music would be allowed after 10:00 P.M.

(v) Mesquit Paseo

The Mesquit Paseo is an extension of Mesquit Street on the west side of Building 2 and 3 at a distance of approximately 240 feet from receptor location R1. The occupant load of the 17,412-square foot space is estimated at 1,161 people. The publicly accessible area would have limited vehicular access. The main source of noise from this space would be from amplified music. The anticipated hours of operation for this space are 7:00 A.M. to 10:00 P.M.

(vi) Work/Breakout Deck

A Work/Breakout Deck would be an office amenity space and be located at the south side of Building 2, approximately 252 feet above ground and an approximate diagonal distance of 486 feet from sensitive receptor R1. The occupant load for the approximately 14,277-square foot area is estimated at 952 people. The anticipated hours of operation for this space is 7:00 A.M. to 10:00 P.M. Because this space is an office space amenity, it is assumed that all occupants would be adults (half male and half female). It is anticipated that no amplified noise will be used in this area.

(vii) Sculpture Garden

The Sculpture Garden would be located at the north side of Building 3, approximately 210 feet above ground and an approximate diagonal distance of 392 feet from sensitive receptor R1. The occupant load for the approximately 14,388-square foot area is estimated at 959 people. Use of this space could be coordinated with the gallery space located within Building 3. The main source of noise from this space would be from amplified music. The anticipated hours of operation from this space are from 7:00 A.M. to 10:00 P.M.

(viii) Fitness Deck

A Fitness Deck would be located at the south side of Building 3, approximately 168 feet above ground and an approximate diagonal distance of 323 feet from sensitive receptor R1. The occupant load for the approximately 17,161-square foot area is estimated at 1,144 people. Use of this space would include exercising, yoga, and Tai Chi classes. The main source of noise from this space would be from amplified music. The anticipated hours of operation for this space are from 7:00 A.M. to 10:00 P.M.

(ix) Public Plaza Flex Deck

A Public Plaza Flex Deck would be located in Building 4, approximately 126 feet above ground and an approximate diagonal distance of 237 feet from sensitive receptor R2. The occupant load for the approximately 17,332-square foot area is estimated at 1,155 people. This space would be publicly accessible and would offer views of the Los Angeles River and 7th Street. The main source of noise from this space would be from amplified music. The anticipated hours of operation for this space are from 7:00 A.M. to 10:00 P.M.

(x) 7th Street Terrace

The 7th Street Terrace would be located on the south side of Building 4, approximately 84 feet above ground and an approximate diagonal distance of 143 feet from sensitive receptor R2. The 7th Street Terrace would consist of active use and outdoor seating for restaurants and cafes. The occupant load for the approximately 7,112-square foot area is estimated at 474 people. The main source of noise from these activities would be from amplified music during both daytime and nighttime hours. The anticipated hours of operation for this space are from 7:00 A.M. to 2:00 A.M.

(xi) River Balcony (South)

A South River Balcony would be located at the east side of Building 4, approximately 21 feet above ground and an approximate diagonal distance of 162 feet from sensitive receptor R2. The occupant load for the approximately 1,469-square foot area is estimated at 98 people.

In addition to people walking along the South River Balcony as part of the Project Site's publicly accessible pedestrian circulation system, group exercise classes and busking would occur at the South River Balcony during daytime hours. The main source of noise from these activities would be from amplified music. It is assumed that because the programmed events that include amplified music would be only during the daytime hours that there would be no amplified music during the nighttime hours.

(xii) Special Events

Special events such as farmer's markets, art fair/gallery installations, and food trucks could potentially be held at the outdoor open spaces. Under the Project, special events would occur within the outdoor spaces analyzed above based on provided maximum occupancy levels, which is one person per 15 square feet of space per building code requirements.[60] Therefore, noise levels from special events under the Project have been encompassed in the analyses of the individual open space areas.

Table IV.I-10, *Estimated Daytime Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project*, shows the estimated noise levels at the nearest off-site sensitive receptor locations from outdoor open space Event-Related activities. As indicated in Table IV.I-10, the estimated noise levels from the Project's individual outdoor open space related activities would range from 38.7 dBA L_{eq} at receptor location R1 to 76.4 dBA L_{eq} at receptor location R2. Noise levels associated with the River Balcony North would exceed the daytime threshold of a 5 dBA increase in ambient noise at sensitive receptor R4. In addition, as shown in **Table IV.I-11**, *Estimated Combined Daytime Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project*, assuming that all open space would operate simultaneously with amplified speaker volumes up to 91 dBA at a distance of 25 feet from the speaker, combined noise levels would exceed the daytime threshold of a 5 dBA increase in ambient noise at receptors R1, R2, R3, and R4.

60 California Building Standards Commission, 2019 Title 24, Part 2, Volume 1 – California Building Code.

TABLE IV.I-10
ESTIMATED DAYTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Open Space/Event (primary noise source)	Receptor Location	Nearest Distance to Receptor (feet)[a]	Estimated Open Space/Event-Related Noise Levels, (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})[b]	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
Northern Landscaped Area (1,709 people)	R1	1,130	24.5	70.7	70.7	75.7	No
	R2	1,390	23.1	73.7	73.7	78.7	No
	R3	930	26.4	65.1	65.1	70.1	No
	R4	10	67.3	64.8	69.3	69.8	No
River Balcony (North) (325 people and amplified music)	R1	851	50.4	70.7	70.7	75.7	No
	R2	1,051	48.5	73.7	73.7	78.7	No
	R3	731	51.7	65.1	65.3	70.1	No
	R4	291	69.7	64.8	70.9	69.8	**Yes**
Rooftop Hotel Bar/Pool (719 people and amplified music)	R1	741	61.6	70.7	71.2	75.7	No
	R2	914	59.7	73.7	73.9	78.7	No
	R3	649	62.7	65.1	67.1	70.1	No
	R4	624	53.1	64.8	65.1	69.8	No
Pool Deck (Residential) (761 people and amplified music)	R1	615	63.2	70.7	71.4	75.7	No
	R2	778	61.1	73.7	73.9	78.7	No
	R3	572	63.8	65.1	67.5	70.1	No
	R4	741	51.6	64.8	65.0	69.8	No
Mesquit Paseo (1,161 people and amplified music)	R1	240	71.4	70.7	74.1	75.7	No
	R2	415	56.6	73.7	73.8	78.7	No
	R3	330	58.6	65.1	66.0	70.1	No
	R4	765	61.3	64.8	66.4	69.8	No
Work/Breakout Deck (952 people)	R1	486	38.7	70.7	70.7	75.7	No
	R2	642	36.4	73.7	73.7	78.7	No
	R3	534	38.1	65.1	65.1	70.1	No
	R4	873	24.0	64.8	64.8	69.8	No

TABLE IV.I-10
ESTIMATED DAYTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Open Space/Event (primary noise source)	Receptor Location	Nearest Distance to Receptor (feet)[a]	Estimated Open Space/Event-Related Noise Levels, (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})[b]	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
Sculpture Garden (959 people and amplified music)	R1	392	67.1	70.7	72.3	75.7	No
	R2	493	65.1	73.7	74.3	78.7	No
	R3	484	65.3	65.1	68.2	70.1	No
	R4	993	49.0	64.8	64.9	69.8	No
Fitness Deck (1,144 people and amplified music)	R1	323	68.8	70.7	72.9	75.7	No
	R2	357	67.9	73.7	74.7	78.7	No
	R3	453	65.9	65.1	68.5	70.1	No
	R4	1,133	47.9	64.8	64.9	69.8	No
Public Plaza Flex Deck (1,155 people and amplified music)	R1	267	70.4	70.7	73.6	75.7	No
	R2	224	72.0	73.7	75.9	78.7	No
	R3	444	66.0	65.1	68.6	70.1	No
	R4	1,277	46.9	64.8	64.9	69.8	No
7th Street Terrace (474 people and amplified music)	R1	217	62.2	70.7	71.3	75.7	No
	R2	135	76.4	73.7	78.2	78.7	No
	R3	444	56.0	65.1	65.6	70.1	No
	R4	1,383	46.1	64.8	64.9	69.8	No
River Balcony (South) (98 people and amplified music)	R1	351	58.1	70.7	70.9	75.7	No
	R2	162	64.8	73.7	74.2	78.7	No
	R3	561	54.0	65.1	65.4	70.1	No
	R4	1,276	46.8	64.8	64.9	69.8	No

NOTE(S):

[a] It has been assumed that crowds would be dispersed across each open space area at various distances from each receptor. See calculation worksheets included in Appendix J for details on distances to receptors.

[b] The lowest measured ambient daytime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-11
ESTIMATED COMBINED DAYTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Receptor	Existing Ambient, dBA (L_{eq})[a]	Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Project plus Ambient, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	70.7	76.4	77.4	75.7	**Yes**
R2	73.7	78.7	79.9	78.7	**Yes**
R3	65.1	72.3	73.1	70.1	**Yes**
R4	64.8	72.2	72.9	69.8	**Yes**

NOTE(S):

Daytime hours defined as between 7:00 A.M. and 10:00 P.M.

[a] The lowest measured ambient daytime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

As shown in **Table IV.I-12**, *Estimated Nighttime Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project*, noise levels associated with nighttime (after 10:00 P.M.) use of the North River Balcony, hotel rooftop bar/pool, residential pool deck, and South River Balcony would not exceed the nighttime threshold of a 5 dBA increase in nighttime ambient conditions. Nighttime use of the 7th Street Terrace would exceed the threshold of 75.2 dBA L_{eq} at receptor R2. As shown in **Table IV.I-13**, *Estimated Combined Nighttime Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project*, combined operation of open spaces during nighttime hours would exceed the significance threshold of a 5 dBA increase in nighttime ambient levels at receptor R2. **Therefore, prior to mitigation, noise impacts from daytime use of individual outdoor open space, specifically the River Balcony North, would be significant at receptor R4, and the combined simultaneous use of Project open spaces would be significant at receptors R1, R2, R3, and R4. Nighttime use of individual outdoor open space, specifically the 7th Street Terrace, would be significant at receptor R2 and the combined simultaneous nighttime use of Project open spaces would be significant at receptor R2.**

TABLE IV.I-12
ESTIMATED NIGHTTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Open Space/Event (primary noise source)	Receptor Location[a]	Nearest Distance to Receptor (feet)[b]	Estimated Open Space/Event-Related Noise Levels, (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})[c]	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
River Balcony (North) (325 people and amplified music)	R1	851	19.9	67.5	67.5	72.5	No
	R2	1,051	18.1	70.2	70.2	75.2	No
	R3	731	21.2	63.3	63.3	68.3	No
Rooftop Hotel Bar/Pool (719 people and amplified music)	R1	741	61.6	67.5	68.5	72.5	No
	R2	914	59.7	70.2	70.6	75.2	No
	R3	649	62.7	63.3	66.0	68.3	No
Pool Deck (Residential) (76 people)	R1	615	42.1	67.5	67.5	72.5	No
	R2	778	42.0	70.2	70.2	75.2	No
	R3	572	42.2	63.3	63.3	68.3	No
7th Street Terrace (474 people and amplified music)	R1	217	62.2	67.5	68.6	72.5	No
	R2	135	76.4	70.2	77.3	75.2	**Yes**
	R3	444	56.0	63.3	64.0	68.3	No
River Balcony (South) (98 people and amplified music)	R1	351	22.9	67.5	67.5	72.5	No
	R2	162	27.9	70.2	70.2	75.2	No
	R3	561	18.6	63.3	63.3	68.3	No

NOTE(S):

Nighttime hours defined as between 10:00 PM and 7:00 AM.

[a] Nighttime impacts not calculated for receptors R4 as it is anticipated that the future PARC would be operational during daytime hours only.

[b] It has been assumed that crowds would be dispersed across each open space area at various distances from each receptor. See calculation worksheets included in Appendix J for details on distances to receptors.

[c] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-13
ESTIMATED COMBINED NIGHTTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Receptor	Existing Ambient, dBA (L_{eq})[a]	Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Project plus Ambient, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	67.5	64.9	69.4	72.5	No
R2	70.2	76.4	77.4	75.2	**Yes**
R3	63.3	63.6	66.5	68.3	No
R4[b]	N/A	N/A	N/A	N/A	N/A

NOTE(S):

Nighttime hours defined as between 10:00 PM and 7:00 AM.

[a] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

[b] Nighttime impacts not calculated for receptors R4 as it is anticipated that the future PARC would be operational during daytime hours only.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(c) Parking Facilities

As discussed in Chapter II, *Project Description*, of the Draft EIR, the Project proposes the construction of structured parking at, above, and below grade spanning the buildings' footprints. Parking provided would meet City parking requirements.

For the purpose of providing a conservative, quantitative estimate of the noise levels that would be generated from vehicles entering and exiting the Project's parking structure as well as the noise levels associated with automobile and human activity within the above-grade parking levels, the methodology recommended by FTA for the general assessment of stationary transit noise sources is discussed in the Methodology Section. The number of vehicles is based on trip generation for the Project from the Transportation Assessment, provided in Appendix M-1 of this Draft EIR.

Sources of noise within the parking structures would primarily include vehicular movements and engine noise, doors opening and closing, and intermittent car alarms. Noise levels within the parking structure would fluctuate with the amount of automobile and human activity. Since the subterranean parking levels would be fully enclosed on all sides, noise generated within the subterranean parking structures would be effectively shielded from off-site sensitive receptor locations in the immediate vicinity of the Project Site. However, the above grade parking levels would have openings for ventilation at the west and south façades of Building 5. **Table IV.I-14**, *Estimate of Parking Structure Noise Levels (L_{eq})*, shows the estimated noise levels at the off-site sensitive receptor locations from the above grade parking levels. As indicated in Table IV.I-12, the estimated noise

levels from the Project's parking structures would range from 31.1 dBA L_{eq} at receptor location R4 to 62.6 dBA L_{eq} at receptor location R1, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would not exceed the significance thresholds. **As such, impacts from parking structure noise would be less than significant, and no mitigation measures would be required.**

TABLE IV.I-14
ESTIMATE OF PARKING STRUCTURE NOISE LEVELS (L_{EQ})

Receptor Location	Distance (feet)	Existing Ambient Noise Levels, dBA (L_{eq})[a]	Estimated Parking Structure Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	32	67.5	62.6	68.7	72.5	No
R2	160	70.2	49.0	70.2	75.2	No
R3	200	63.3	46.6	63.4	68.3	No
R4	1,200	47.1	31.1	47.2	52.1	No

NOTE(S):

[a] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project uses would operate during nighttime hours resulting in nighttime parking structure activity.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(d) Loading Docks and Refuse Collection

The Project would include loading dock and trash collection areas on the eastern side of Building 1, Building 2, Building 3, and Building 5. All loading and trash collection areas would be located inside of their respective buildings on the ground floor. Delivery trucks and refuse service vehicles would enter and exit the Project via Mesquit Street at the northern side below Building 1. Turnaround capability would be provided within the structure for both loading areas. Loading dock activities such as truck movements/idling and loading/unloading operations generate noise levels that have the potential to adversely impact adjacent land uses during long-term Project operations. The Project will not allow any delivery truck idling for more than 5 consecutive minutes in the loading area pursuant to State regulation (Title 13 California Code of Regulations [CCR] Section 2485). Signs will be posted in delivery loading areas specifying this idling restriction.

Based on a noise survey that was conducted at a loading dock and trash collection facilities by ESA, loading dock activity (namely idling semi-trucks and backup alarm beeps) and trash compactors could generate noise levels of approximately 70 dBA L_{eq}

and 66 dBA L_{eq}, respectively, at a reference distance of 50 feet.[61] The loading dock and trash collection areas would be effectively buffered from the off-site sensitive receptors R1, R2, and R3 by the Project buildings. Loading dock/trash collection noise levels have been calculated at each sensitive receptor accounting for a 15 dBA reduction in noise level provided by screening of the noise source by Project buildings. **Table IV.I-15**, *Estimate of Loading Dock and Trash Collection Area Noise Levels (L_{eq})*, shows the estimated noise levels at the off-site sensitive receptor locations from operation of loading dock and trash collection areas. As indicated in Table IV.I-15, the estimated noise levels from loading dock and trash collection areas would range from 39.1 dBA L_{eq} at receptor location R3 to 46.0 dBA L_{eq} at receptor locations R1 and R2, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would not exceed the significance thresholds. **Therefore, noise impacts from loading dock and trash collection areas would be less than significant, and no mitigation measures are required.**

TABLE IV.I-15
ESTIMATE OF LOADING DOCK AND TRASH COLLECTION AREA NOISE LEVELS (L_{EQ})

Receptor Location	Distance (feet)[a]	Existing Ambient Noise Levels, dBA (L_{eq})[b]	Estimated Loading Dock and Trash Collection Area Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	150	67.5	46.0	67.5	72.5	No
R2	150	70.2	46.0	70.2	75.2	No
R3	330	63.3	39.1	63.3	68.3	No
R4	280	47.1	45.5	49.5	52.1	No

NOTE(S):

[a] The distance is measured from the nearest potential loading dock area.

[b] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project mechanical equipment could operate during nighttime hours.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(e) Emergency Generators

The Project would include three on-site emergency generators, which would be located on the ground levels of Building 2, Building 3, and Building 5 and would be rated at approximately 1,500 kilowatts (approximately 2,011 horsepower), approximately 750 kilowatts (approximately 1,006 horsepower), and approximately 1,500 kilowatts (approximately 2,011 horsepower), respectively. The emergency generators would be

[61] The loading dock facility noise measurements were conducted at a loading dock facility at a Wal-Mart store using the Larson-Davis 820 Precision Integrated Sound Level Meter ("SLM") in May 2003. The Larson-Davis 820 SLM is a Type 1 standard instrument as defined in the American National Standard Institute S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification. The microphone was placed at a height of approximately 5 feet above the local grade.

used in the event of a power outage to provide electricity for emergency safety lighting and other emergency electricity needs. Maintenance and testing of the emergency generators would not occur daily, but rather periodically, up to 50 hours per year per South Coast Air Quality Management District Rule 1470 (refer to Section IV.A, *Air Quality*, of the Draft EIR).

The specific location of the emergency generators within Buildings 2, 3, and 5 are not yet known. Therefore, as a worst-case analysis, it is assumed that emergency generators would be located on the ground level of Building 2, Building 3, and Building 5 at the nearest distance to each sensitive receptor. Based on specifications for representative standby generators with manufacturer-supplied weather and sound enclosures, the generator would generate noise levels of approximately 79 dBA L_{eq} at a reference distance of 23 feet.[62] Pursuant to LAMC Chapter XI, Section 112.02, emergency generators would be designed not to exceed the ambient noise level by more than 5 dBA by incorporating noise attenuation devices and enclosures, which can achieve substantial noise reductions. Based on a noise level source strength of 79 dBA at a reference distance of 23 feet, and accounting for barrier-insertion loss by the Project buildings (minimum 15 dBA insertion loss), generator-related noise has been estimated. **Table IV.I-16**, *Estimate of Emergency Generator Noise Levels (L_{eq})*, shows the estimated noise levels at the off-site sensitive receptor locations from operation of emergency generators. As shown in Table IV.I-16, operation of the emergency generators would not exceed the City's thresholds of significance at any of the sensitive receptor locations. **Impacts from the emergency generator noise would be less than significant, and no mitigation measures would be required.**

TABLE IV.I-16
ESTIMATE OF EMERGENCY GENERATOR NOISE LEVELS (L_{EQ})

Receptor Location	Distance (feet)	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Emergency Generator Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	10	70.7	71.2	74.0	75.7	No
R2	150	76.3	47.7	76.3	81.3	No
R3	200	76.6	45.2	76.6	81.6	No
R4	650	66.6	35.0	66.6	71.6	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

62 Kohler, Industrial Generator Set Accessories, Sound Enclosure and Subbase Fuel Tank Package. Noise levels applicable to representative standby generator.

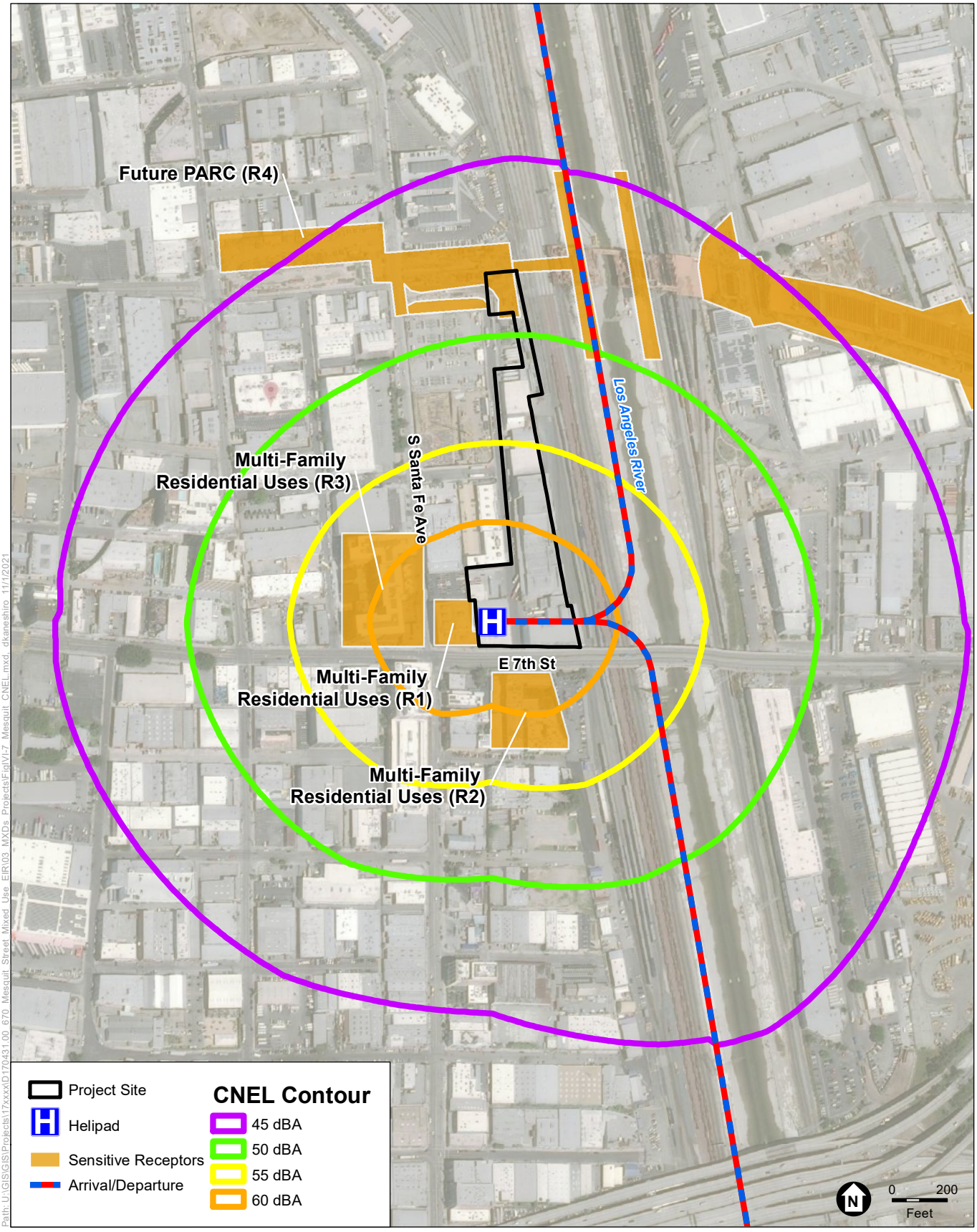
(f) Heliport Noise

The Project would include a heliport located on the rooftop of Building 5 at an elevation of 378 feet above ground level (AGL), which would be anticipated to support up to two arrivals in a day during daytime hours and two departures in a day during evening hours (7:00 PM – 10:00 PM). The helicopter approaches and departures are assumed to generally be from the east along the Los Angeles River to avoid approach and departure flight paths over residential uses. As shown in **Figure IV.I-7**, *Heliport Noise Contours (dBA CNEL)*, receptors R1, R2, and R3 would be located within the 60 dBA CNEL contour, and R4 would be located within the 50 dBA CNEL contour. None of the off-site receptors would be exposed to helicopter noise exceeding FAA's standard of 65 dBA CNEL. **Impacts related to the proposed heliport would be less than significant.**

(g) On-Site Composite Noise Levels

An evaluation of the combined noise from the Project's various noise sources (i.e., composite noise level) was conducted to conservatively ascertain the potential maximum Project-related noise level increase that may occur at the noise-sensitive receptor locations included in this analysis. Noise sources associated with the Project would include traffic on nearby roadways, open space, on-site mechanical equipment, refuse collection area, loading dock area, emergency generator, and parking structure. The noise level from stationary noise sources were converted from the maximum L_{eq} noise levels discussed above to CNEL by conservatively assuming the maximum L_{eq} noise levels would occur during the operational hours for each stationary noise source. Open space noise from the all open spaces areas operating at once was based on the hours of operation for each space; mechanical equipment noise was assumed to occur 24-hours per day; loading dock noise was assumed to occur from 7:00 A.M. to 9:00 P.M.; emergency generator noise from testing and maintenance was assumed to occur for approximately one hour during the daytime based on information provided by the Project Applicant's construction representative; and parking structure noise was assumed to occur 24-hours per day.

Table IV.I-17, *Composite Noise Levels from Project Operations*, shows the highest open space noise level at each receptor. As shown in Table IV.I-17, relative to the existing noise environment, the Project would exceed applicable thresholds at receptor R1. This analysis conservatively assumes that the Project's operational noise sources would generate maximum noise levels simultaneously. **Therefore, the Project's operational composite noise would be potentially significant at receptor R1.**



SOURCE: ESRI, 2021; ESA, 2021.

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Figure IV.I-7
Heliport Noise Contours (dBA CNEL)

TABLE IV.I-17
COMPOSITE NOISE LEVELS FROM PROJECT OPERATIONS

Operational Noise Sources	Noise Levels, dBA CNEL			
	R1	**R2**	**R3**	**R4**
Existing (Ambient) Noise Level (A)a	**74.7**	**79.6**	**76.9**	**70.9**
Project Composite Noise Sources				
Open spaces	78.3	82.7	74.4	73.0
Mechanical equipment	41.4	43.6	40.1	30.3
Parking Structure	69.7	55.7	53.3	37.8
Loading dock areas	47.6	47.6	40.7	47.1
Emergency generator	71.2	47.7	45.2	35.0
Heliport	60.0	60.0	60.0	50.0
Offsite traffic[c]				
Future without Project traffic noise level	*70.5*	*70.5*	*67.8*	*60.8*
Future plus Project traffic noise level	*70.8*	*70.8*	*68.2*	*64.3*
Estimated Project-only traffic noise level	59.0	59.0	57.6	61.7
Project Composite Noise Level (B)	**79.6**	**82.7**	**74.7**	**73.3**
Existing Plus Project Composite Noise Level (C)	**80.8**	**84.4**	**78.9**	**75.3**
Project Increment (C minus A)	6.1	4.8	2.0	4.4
Exceeds Threshold?	**Yes**	No	No	No

NOTE(S):

[a] CNEL level is from Appendix J. Ambient noise levels at R1, R2, R3, R4 correspond to measurement locations M1, M5, M6, and M3, respectively.

[b] CNEL levels for each noise source are calculated based on operational hours of each noise source.

[c] R1: 7th Street between Santa Fe Avenue and S. Rio Street. R2: 7th Street between Santa Fe Avenue and S. Rio Street. R3: Santa Fe Avenue between Jesse Street and 7th Street. R4: Mesquit Street between 6th Street and 7th Street.

SOURCE(S): ESA 2021. Appendix J of this Draft EIR.

(ii) Off-Site Traffic Noise

(a) Impacts Under Existing Traffic Baseline Conditions

Existing (2018) roadway noise levels were calculated along various arterial segments adjacent to the Project Site. Roadway noise attributable to Project operation was

calculated using the traffic noise model previously described and was compared to existing noise levels in the vicinity.[63]

Project impacts are shown in **Table IV.I-18**, *Off-Site Traffic Noise Impacts – Existing Plus Project Conditions*. As indicated, the increase in traffic noise levels along all roadway segments would not exceed the significance threshold of a 3 dBA CNEL increase within the "normally unacceptable" or "clearly unacceptable" categories or the significance threshold of 5 dBA CNEL or greater noise increase (see Table IV.I-3). **Therefore, operation under Existing Plus Project conditions would not result in off-site traffic-related noise impacts in excess of City standards and impacts would be less than significant.**

TABLE IV.I-18
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	69.2	0.1	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	68.7	0.3	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	68.7	0.6	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	67.2	0.6	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	68.6	0.5	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	68.8	0.9	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	69.4	0.4	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	68.6	0.3	No

[63] As discussed on page 74 of the Transportation Assessment, existing (2018) traffic counts were taken after demolition of the Sixth Street Viaduct. In order to analyze the roadway network with the bridge in place, Fehr & Peers compared the 2018 traffic counts post-bridge closure to the 2015 counts with the bridge in operation to assess the volume shift within the study area. Using this comparison, Fehr & Peers shifted traffic volumes accordingly. See the Transportation Assessment, provided in Appendix M-1 of this Draft EIR.

TABLE IV.I-18
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
Between Rio Street and Anderson Street	Commercial	68.4	68.9	0.5	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	69.0	0.4	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	67.2	0.5	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	65.5	0.1	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	62.9	4.3	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.6	4.4	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	63.7	1.1	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	62.8	0.7	No
Between Jesse Street and 7th Street	Commercial	63.7	64.7	1.0	No
Between Willow Street and 6th Street	Commercial	62.6	63.2	0.6	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	71.0	0.2	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	71.0	0.2	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	69.9	0.3	No
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	66.1	0.2	No

TABLE IV.I-18
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	70.3	0.4	No
Between 4th Street and 6th Street	Industrial	70.3	70.6	0.3	No
Between 6th Street and 7th Street	Industrial	70.5	70.7	0.2	No
Between E. 2nd Street and 3rd Street	Residential	70.2	70.5	0.3	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	67.7	0.5	No
Between 8th Street and Porter Street	Commercial	67.6	68.1	0.5	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	66.7	0.5	No
Between Mesquit Street and Jesse Street	Commercial	66.8	67.0	0.2	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	70.2	0.1	No
Between Porter and Olympic Boulevard	Commercial	69.0	69.3	0.3	No
Between Willow Street and Mesquit Street	Commercial	63.4	64.4	1.0	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	56.8	1.6	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.3	3.5	No

NOTE(S):

Existing and Existing with Project traffic noise levels are based on intersection turning movement volumes included in Appendix E of the Transportation Assessment for the Project (see Appendix M-1 of this Draft EIR). See Appendix J of this Draft EIR for traffic noise calculations worksheets.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(b) Impacts Under Future (2026) Traffic Conditions

Future (2026) roadway noise levels were calculated along various arterial segments adjacent to the Project as compared to 2026, the earliest Project buildout year, traffic noise levels that would occur with implementation of the Project. Project impacts are shown in **Table IV.I-19**, *Off-Site Traffic Noise Impacts – Future (2026) Plus Project Conditions*. As indicated, the increase in traffic noise levels along all roadway segments would not exceed the significance threshold of 3 dBA CNEL increase within the "normally unacceptable" or "clearly unacceptable" categories or the significance threshold of any 5 dBA CNEL or greater noise increase (see Table IV.I-3). **Therefore, operation under Future (2026) Plus Project conditions would not result in off-site traffic-related noise impacts in excess of City standards and impacts would be less than significant.**

TABLE IV.I-19
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	70.0	70.1	0.1	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	69.7	69.9	0.2	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.8	69.2	0.4	No
Between Mateo Street and Santa Fe Avenue	Commercial	67.7	68.2	0.5	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	70.2	70.5	0.3	No
Between S. Alameda Street and Mateo Street	Commercial	70.3	70.8	0.5	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	70.7	71.0	0.3	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	70.4	70.6	0.2	No
Between Rio Street and Anderson Street	Commercial	70.3	70.6	0.3	No

TABLE IV.I-19
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
Between Santa Fe Avenue and S. Rio Street	Commercial	70.4	70.7	0.3	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	68.3	68.7	0.4	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	66.5	66.6	0.1	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	59.6	63.2	3.6	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.6	4.4	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	65.3	65.9	0.6	No
Between E. 4th Place and Willow Street	Commercial/ Residential	66.2	66.5	0.3	No
Between Jesse Street and 7th Street	Commercial	65.6	66.3	0.7	No
Between Willow Street and 6th Street	Commercial	66.7	66.9	0.2	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	72.4	72.6	0.2	No
Between Temple Street and East 1st Street	Residential/ Commercial	72.8	72.9	0.1	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	72.8	72.9	0.1	No
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	67.0	67.2	0.2	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	72.3	72.5	0.2	No
Between 4th Street and 6th Street	Industrial	72.4	72.6	0.2	No

TABLE IV.I-19
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
Between 6th Street and 7th Street	Industrial	72.5	72.6	0.1	No
Between E. 2nd Street and 3rd Street	Residential	72.3	72.5	0.2	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	69.7	70.0	0.3	No
Between 8th Street and Porter Street	Commercial	69.1	69.5	0.4	No
Between Jesse Street and 7th Street	Commercial/ Residential	67.8	68.1	0.3	No
Between Mesquit Street and Jesse Street	Commercial	68.5	68.7	0.2	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.4	70.6	0.2	No
Between Porter and Olympic Boulevard	Commercial	70.2	70.4	0.2	No
Between Willow Street and Mesquit Street	Commercial	65.1	66.1	1.0	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	56.8	57.9	1.1	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.3	3.5	No

NOTE(S):
Future and Future with Project traffic noise levels are based on intersection turning movement volumes included in Appendix E of the Transportation Assessment for the Project (see Appendix M-1 of this Draft EIR). See Appendix J of this Draft EIR for traffic noise calculations worksheets.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(c) Impacts Under Future (2040) Traffic Conditions

Future (2040) roadway noise levels were also calculated along various arterial segments in the vicinity of the Project as compared to 2040, the latest Project buildout year, traffic

noise levels that would occur with implementation of the Project.[64] Project impacts are shown in **Table IV.I-20**, *Off-Site Traffic Noise Impacts – Future (2040) Plus Project Conditions*. As indicated, the increase in traffic noise levels along all roadway segments would not exceed the significance threshold of 3 dBA CNEL increase within the "normally unacceptable" or "clearly unacceptable" categories or the significance threshold of any 5 dBA CNEL or greater noise increase (see Table IV.I-3). **Therefore, operation under Future (2040) Plus Project conditions would not result in off-site traffic-related noise impacts in excess of City standards and impacts would be less than significant.**

TABLE IV.I-20
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	70.1	70.2	0.1	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	69.8	70.0	0.2	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.9	69.3	0.4	No
Between Mateo Street and Santa Fe Avenue	Commercial	67.8	68.3	0.5	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	70.2	70.5	0.3	No
Between S. Alameda Street and Mateo Street	Commercial	70.4	70.9	0.5	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	70.8	71.1	0.3	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	70.5	70.7	0.2	No
Between Rio Street and Anderson Street	Commercial	70.4	70.7	0.3	No

64 The 2040 analysis is included because 2040 is the latest possible buildout year for the Project. Ambient noise levels increase over the years due to ambient growth and Related Project development. Therefore, baseline, operational traffic noise would be considered worst case in 2040.

TABLE IV.I-20
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
Between Santa Fe Avenue and S. Rio Street	Commercial	70.5	70.8	0.3	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	68.4	68.7	0.3	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	66.6	66.7	0.1	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	59.6	63.3	3.7	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.6	4.4	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	65.3	65.9	0.6	No
Between E. 4th Place and Willow Street	Commercial/ Residential	66.2	66.6	0.4	No
Between Jesse Street and 7th Street	Commercial	65.7	66.4	0.7	No
Between Willow Street and 6th Street	Commercial	66.7	67.0	0.3	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	72.5	72.6	0.1	No
Between Temple Street and East 1st Street	Residential/ Commercial	72.9	73.0	0.1	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	72.8	73.0	0.2	No
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	67.1	67.2	0.1	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	72.4	72.6	0.2	No
Between 4th Street and 6th Street	Industrial	72.5	72.7	0.2	No

TABLE IV.I-20
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PLUS PROJECT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
Between 6th Street and 7th Street	Industrial	72.6	72.7	0.1	No
Between E. 2nd Street and 3rd Street	Residential	72.3	72.5	0.2	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	69.8	70.1	0.3	No
Between 8th Street and Porter Street	Commercial	69.2	69.6	0.4	No
Between Jesse Street and 7th Street	Commercial/ Residential	67.8	70.1	0.4	No
Between Mesquit Street and Jesse Street	Commercial	68.5	68.8	0.3	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.5	70.7	0.2	No
Between Porter and Olympic Boulevard	Commercial	70.3	70.5	0.2	No
Between Willow Street and Mesquit Street	Commercial	65.2	66.1	0.9	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	56.8	57.9	1.1	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.3	3.5	No

NOTE(S):

Future and Future with Project traffic noise levels are based on intersection turning movement volumes included in Appendix E of the Transportation Assessment for the Project (see Appendix M-1 of this Draft EIR). See Appendix J of this Draft EIR for traffic noise calculations worksheets.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(c) Conclusion

Project construction would result in on-site generation of substantial temporary increases of ambient noise levels at R1 and R4 during weekday daytime construction activities, at R1, R2, R3, and R4 during weekday nighttime construction activities, at R1, R3, and R4 during Saturday daytime construction activities, at R1 and R4 during Saturday nighttime construction activities, at R1, R2, R3, and R4 during Sunday daytime construction activities, and at R1, R2, R3, and R4 during Sunday nighttime construction activities in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Project construction would result in off-site generation of substantial temporary increases of ambient traffic noise levels along Jesse Street between Mateo Street and Santa Fe Avenue and along Mateo Street between E 4th Place and Willow Street in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, prior to mitigation, construction impacts would be significant.

Project operations would result in the generation of substantial permanent increases 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. Stationary noise associated with mechanical equipment, loading dock/refuse collection activity, emergency generator, parking structure, heliport, and off-site traffic noise (CNEL) would be less than significant. However, prior to mitigation, operational impacts related to increases in open space noise from the daytime (L_{eq} daytime) operation of North River Balcony at R4, the nighttime (L_{eq} nighttime) operation of 7th Street Terrace at R2, combined daytime open space operation at R1, R2, R3, R4, combined nighttime open space operation at R2, and combined composite operational noise (CNEL) at R1 would be significant.

(d) Project with the Deck Concept

Construction activities associated with the Project with the Deck Concept are accounted for in the Project construction analysis.[65] On a maximum construction activity day, construction of the Project with the Deck Concept would consist of the same construction techniques, use of the same types of equipment, and would not result in on-site construction activities occurring closer to sensitive receptors than analyzed for the Project. In addition, on a maximum construction activity day, construction of the Project with the Deck Concept would generate the same number of off-site maximum daily construction truck and vehicle trips as analyzed for the Project. Thus, the construction

[65] As indicated under Subsection 3.b, *Methodology*, the construction analysis for the Project with the Deck Concept would be considered the worst-case scenario due to the construction of the Deck, and the Project would require a similar or slightly reduced construction intensity level on a maximum construction activity day given that the Deck would not be constructed under the Project.

noise levels at noise-sensitive receptors on a maximum construction activity day would be the same under the Project with the Deck Concept as for the Project. Therefore, the conclusions regarding impact significance presented above are the same and apply to the Project and the Project with the Deck Concept. **As such, prior to mitigation, the Project with the Deck Concept's impact related to on-site and off-site construction noise would be significant.**

All operational components under the Project with the Deck Concept related to the land uses proposed, compliance with regulations, and implementation of Project Design Features would be similar to that of the Project. As noted above under Subsection 3.b, *Methodology*, operational noise sources would generally be similar under the Project and Project with the Deck Concept except for special outdoor events on the Deck that would occur under the Project with the Deck Concept. **As such, as with the Project, operational on-site noise impacts related to fixed mechanical equipment, loading docks, refuse collection and emergency generators, and heliport noise would be similar as under the Project and impacts would be less than significant.**

Under the Project with the Deck Concept, all outdoor spaces analyzed as a part of the Project would remain the same and all impacts as shown in Tables IV.I-10 through IV.I-13 apply to the Project with Deck Concept. The Project with Deck Concept includes a Deck on the east side of the Project Site. The Deck would serve as an expanded connection between the 7th Street Bridge and the Project Site's Northern Landscaped Area, which would provide access to the City's proposed PARC Improvements. The Deck could include amenities such as a sculpture park, benches and seating areas, landscaping, farmer's markets, group exercising, and other visitor-serving features. As stated in Chapter II, *Project Description*, of the Draft EIR, the Deck would include additional permanent and temporary programming events. Permanent events for the Project with the Deck Concept would include a weekly farmers market (as compared to a monthly weekday market under the Project), and group exercise classes (which would have more capacity as compared to under the Project). Temporary events for the Project with the Deck Concept would include the same events as under the Project but with more capacity, as well as movie nights on the Deck that would occur seasonally on Saturday evenings. While these amenities could also be provided under the Project, it is assumed that the other open space areas listed above would accommodate such events and amenities, and the events that would be located on the Deck would have expanded capacity as compared to under the Project. The Deck would be located at an approximate distance of 162 feet from sensitive receptor location R2 approximately 315 feet from sensitive receptor location R4.

Based on an area of 132,000 square feet, it has been conservatively assumed that the occupant load of the Deck for any programmed event would be 8,800 people. The main source of noise from programmed events at the Deck would be from amplified sound. As a conservative assumption for amplified sound consisting of live music, it is assumed that amplified sound systems would result in noise levels of up to 91 dBA L_{eq} at a distance of 25 feet. The anticipated hours of use for this space are from 7:00 A.M. to 10:00 P.M.

During programmed events the amplified sound would not occur past 10:00 P.M., although attendees would be allowed to remain on the Deck past 10:00 P.M. However, it has been conservatively assumed that amplified sound would continue into the nighttime hours (past 10:00 P.M.) as a worst-case analysis in the event that the sound system has not been turned off by 10:00 P.M. and/or a public address system needs to be used to make announcements (i.e., the conclusion of an event or a request to clear the Deck).

Table IV.I-21, *Estimated Daytime Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project with the Deck Concept*, shows the estimated noise levels at the nearest off-site sensitive receptor locations from the Deck. As indicated in Table IV.I-21, the estimated noise levels from the Deck would not exceed the daytime threshold of a 5 dBA increase in ambient noise at any of the receptors. As shown in **Table IV.I-22**, *Estimated Daytime Combined Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project with Deck Concept*, combined use of Project open spaces under the Project with Deck Concept (which includes all open spaces analyzed above in addition to the Deck) would exceed the daytime threshold of a 5 dBA increase in ambient noise at receptors R1, R2, R3, and R4. As shown in **Table IV.I-23**, *Estimated Nighttime Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project with the Deck Concept*, noise levels associated with nighttime (after 10:00 P.M.) use of the Deck would exceed the nighttime threshold of a 5 dBA increase in nighttime ambient conditions at receptor R2. As shown in **Table IV.I-24**, *Estimated Nighttime Combined Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project with Deck Concept*, combined use of Project open spaces under the Project with Deck Concept would exceed the nighttime threshold of a 5 dBA increase in ambient noise at receptor R2.

Therefore, as with the Project, noise impacts from daytime use of individual outdoor open spaces, specifically the River Balcony North, would be significant at receptor R4 and combined daytime use of Project open spaces would be significant at receptors R1, R2, R3, and R4. Nighttime use of individual outdoor open spaces, specifically the 7th Street Terrace and the Deck would be significant at receptor R2. Combined nighttime use of all Project open spaces would be significant at receptor R2.

Parking structure noise based on trip generation for the Project with Deck Concept from the Transportation Assessment and is summarized in **Table IV.I-25**, *Estimate of Parking Structure Noise Levels (L_{eq})*. As shown in Table IV.I-25, the estimated noise levels at the off-site sensitive receptor locations from the above grade parking levels. As indicated in Table IV.I-25, the estimated noise levels from the Project's parking structures would range from 31.4 dBA L_{eq} at receptor location R4 to 63.0 dBA L_{eq} at receptor location R1, which would be below the existing ambient noise levels. As such, the estimated noise levels at all off-site receptor locations would not exceed the significance thresholds. **As such, impacts from parking structure noise for the Project with Deck Concept would be less than significant, and no mitigation measures would be required.**

TABLE IV.I-21
ESTIMATED DAYTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ}) – PROJECT WITH THE DECK CONCEPT

Open Space/ Event (primary noise source)	Receptor Location	Nearest Distance to Receptor (feet)[a]	Estimated Open Space/ Event-Related Noise Levels, (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})[b]	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
The Deck: Special Event Programming (8,800 people and amplified music)	R1	386	57.3	70.7	70.9	75.7	No
	R2	177	74.0	73.7	76.9	78.7	No
	R3	531	54.5	65.1	65.5	70.1	No
	R4	486	55.3	64.8	65.3	69.8	No

NOTE(S):

[a] It has been assumed that crowds would be dispersed across each open space area at various distances from each receptor. See calculation worksheets included in Appendix J for details on distances to receptors.

[b] The lowest measured ambient daytime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-22
ESTIMATED COMBINED DAYTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ}) – PROJECT WITH DECK CONCEPT

Receptor	Existing Ambient, dBA (L_{eq})[a]	Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Project plus Ambient, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	70.7	76.4	77.5	75.7	**Yes**
R2	73.7	80.0	80.9	78.7	**Yes**
R3	65.1	72.4	73.1	70.1	**Yes**
R4	64.8	72.3	73.0	69.8	**Yes**

NOTE(S):

Daytime hours defined as between 7:00 AM and 10:00 PM.

[a] The lowest measured ambient daytime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-23
ESTIMATED NIGHTTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ}) – PROJECT WITH THE DECK CONCEPT

Open Space/Event (primary noise source)	Receptor Location[a]	Nearest Distance to Receptor (feet)[b]	Estimated Open Space/Event-Related Noise Levels, (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})[c]	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
The Deck: Special Event Programming (8,800 people and amplified music)	R1	386	57.3	67.5	67.9	72.5	No
	R2	177	74.0	70.2	75.5	75.2	**Yes**
	R3	531	54.5	63.3	63.8	68.3	No
	R4[a]	N/A	N/A	N/A	N/A	N/A	N/A

NOTE(S):

[a] Nighttime impacts not calculated for receptor R4 as it is anticipated that the future PARC would be operational during daytime hours only.

[b] It has been assumed that crowds would be dispersed across each open space area at various distances from each receptor. See calculation worksheets included in Appendix J for details on distances to receptors.

[c] The lowest measured ambient daytime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-24
ESTIMATED COMBINED NIGHTTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ}) – PROJECT WITH DECK CONCEPT

Receptor	Existing Ambient, dBA (L_{eq})[a]	Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Project plus Ambient, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	67.5	65.6	69.7	72.5	No
R2	70.2	78.4	79.0	75.2	**Yes**
R3	63.3	64.1	66.7	68.3	No
R4[b]	N/A	N/A	N/A	N/A	N/A

NOTE(S):

Nighttime hours defined as between 10:00 P.M. and 7:00 A.M.

[a] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

[b] Nighttime impacts not calculated for receptors R4 as it is anticipated that the future PARC would be operational during daytime hours only.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-25
ESTIMATE OF PARKING STRUCTURE NOISE LEVELS (L_{EQ}) – PROJECT WITH DECK CONCEPT

Receptor Location	Distance (feet)[a]	Existing Ambient Noise Levels, dBA (L_{eq})[b]	Estimated Parking Structure Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold
R1	32	67.5	63.0	68.8	72.5	No
R2	160	70.2	49.0	70.2	75.2	No
R3	200	63.3	47.0	63.4	68.3	No
R4	1,200	47.1	31.4	47.8	52.7	No

NOTE(S):

[a] Distance measured from each receptor to the nearest parking garage façade.

[b] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project uses would operate during nighttime hours resulting in nighttime parking structure activity.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

Table IV.I-26, *Composite Noise Levels from Project Operations – Project with Deck Concept*, shows the highest composite noise level at each receptor. As shown in Table IV.I-24, relative to the existing noise environment, the Project with Deck Concept would exceed applicable thresholds at receptors R1 and R2. This analysis conservatively

assumes that the Project with Deck Concept's operational noise sources would generate maximum noise levels simultaneously. **Therefore, the Project with Deck Concept's operational composite noise would be potentially significant.**

TABLE IV.I-26
COMPOSITE NOISE LEVELS FROM PROJECT OPERATIONS – PROJECT WITH DECK CONCEPT

	Noise Levels, dBA CNEL			
Operational Noise Sources	**R1**	**R2**	**R3**	**R4**
Existing (Ambient) Noise Level (A)[a]	**74.7**	**79.6**	**76.9**	**70.9**
Project Composite Noise Sources				
Open spaces	78.4	84.3	74.6	73.2
Mechanical equipment	41.4	43.6	40.1	30.3
Parking Structure	69.7	55.7	53.7	38.1
Loading dock areas	47.6	47.6	40.7	47.1
Emergency generator	71.2	47.7	45.2	35.0
Heliport	60.0	60.0	60.0	50.0
Offsite traffic[c]				
Future without Project traffic noise level	*70.5*	*70.5*	*67.8*	*60.8*
Future plus Project traffic noise level	*70.8*	*70.8*	*68.2*	*64.6*
Estimated Project-only traffic noise level	*59.0*	*59.0*	*57.6*	*62.3*
Project Composite Noise Level (B)	**79.7**	**84.3**	**74.8**	**73.6**
Existing Plus Project Composite Noise Level (C)	**80.9**	**85.6**	**79.0**	**75.4**
Project Increment (C minus A)	6.2	6.0	2.1	4.5
Exceeds Threshold?	**Yes**	**Yes**	No	No

NOTE(S):

[a] CNEL level is from Appendix J. Ambient noise levels at R1, R2, R3, R4 correspond to measurement locations M1, M5, M6, and M3, respectively.

[b] CNEL levels for each noise source are calculated based on operational hours of each noise source.

[c] R1: 7th Street between Santa Fe Avenue and S. Rio Street. R2: 7th Street between Santa Fe Avenue and S. Rio Street. R3: Santa Fe Avenue between Jesse Street and 7th Street. R4: Mesquit Street between 6th Street and 7th Street.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

Existing roadway noise levels were calculated along various arterial segments in the vicinity of the Project Site. Roadway noise attributable to the Project with the Deck Concept operation was calculated using the traffic noise model previously described and was compared to existing noise levels in the vicinity. Impacts are shown in **Table IV.I-27**, *Off-Site Traffic Noise Impacts – Existing with Project with the Deck Concept Conditions*. As indicated, the increase in traffic noise levels along all roadway segments would not

exceed the significance threshold of 3 dBA CNEL increase within the "normally unacceptable" or "clearly unacceptable" categories, or the significance threshold of any 5 dBA CNEL or greater noise increase (see Table IV.I-3). **Therefore, operation under Existing Plus Project with the Deck Concept conditions would not result in off-site traffic-related noise impacts in excess of City standards and impacts would be less than significant.**

TABLE IV.I-27
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	69.2	0.1	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	68.7	0.3	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	68.7	0.6	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	67.2	0.6	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	68.7	0.6	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	68.8	0.9	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	69.5	0.5	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	68.6	0.3	No
Between Rio Street and Anderson Street	Commercial	68.4	68.9	0.5	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	69.0	0.4	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	67.2	0.5	No

TABLE IV.I-27
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	65.5	0.1	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	63.1	4.5	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.8	4.6	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	63.8	1.2	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	62.8	0.7	No
Between Jesse Street and 7th Street	Commercial	63.7	64.8	1.1	No
Between Willow Street and 6th Street	Commercial	62.6	63.2	0.6	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	71.0	0.2	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	71.0	0.2	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	69.9	0.3	No
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	66.1	0.2	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	70.3	0.4	No
Between 4th Street and 6th Street	Industrial	70.3	70.7	0.4	No
Between 6th Street and 7th Street	Industrial	70.5	70.7	0.2	No
Between E. 2nd Street and 3rd Street	Residential	70.2	70.5	0.3	No

TABLE IV.I-27
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing with Project (B)	Project Increment (B–A)	Exceed Threshold?
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	67.7	0.5	No
Between 8th Street and Porter Street	Commercial	67.6	68.1	0.5	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	66.7	0.5	No
Between Mesquit Street and Jesse Street	Commercial	66.8	67.1	0.3	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	70.2	0.1	No
Between Porter and Olympic Boulevard	Commercial	69.0	69.3	0.3	No
Between Willow Street and Mesquit Street	Commercial	63.4	64.6	1.2	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	56.9	1.7	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.6	3.8	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

Future (2026) roadway noise levels were also calculated along various arterial segments adjacent to the Project with the Deck Concept as compared to 2026 traffic noise levels that would occur with implementation of the Project. Project impacts are shown in **Table IV.I-28**, *Off-Site Traffic Noise Impacts – Future (2026) Plus Project with the Deck Concept Conditions*. As indicated, the increase in traffic noise levels along all roadway segments would not exceed the significance threshold of 3 dBA CNEL increase within the "normally unacceptable" or "clearly unacceptable" categories or the significance threshold of any 5 dBA CNEL or greater noise increase (see Table IV.I-3). **Therefore, operation under Future (2026) Plus Project with the Deck Concept conditions would not result in off-site traffic-related noise impacts in excess of City standards and impacts would be less than significant.**

TABLE IV.I-28
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	70.0	70.1	0.1	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	69.7	69.9	0.2	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.8	69.3	0.5	No
Between Mateo Street and Santa Fe Avenue	Commercial	67.7	68.3	0.5	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	70.2	70.5	0.3	No
Between S. Alameda Street and Mateo Street	Commercial	70.3	70.8	0.5	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	70.7	71.0	0.3	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	70.4	70.6	0.2	No
Between Rio Street and Anderson Street	Commercial	70.3	70.6	0.3	No
Between Santa Fe Avenue and S. Rio Street	Commercial	70.4	70.7	0.3	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	68.3	68.6	0.3	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	66.5	66.6	0.1	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	59.6	63.3	3.7	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.7	4.5	No

TABLE IV.I-28
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	65.3	65.9	0.6	No
Between E. 4th Place and Willow Street	Commercial/ Residential	66.2	66.5	0.3	No
Between Jesse Street and 7th Street	Commercial	65.6	66.3	0.7	No
Between Willow Street and 6th Street	Commercial	66.7	66.9	0.2	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	72.4	72.5	0.1	No
Between Temple Street and East 1st Street	Residential/ Commercial	72.8	72.9	0.1	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	72.8	72.9	0.1	No
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	67.0	67.1	0.1	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	72.3	72.5	0.2	No
Between 4th Street and 6th Street	Industrial	72.4	72.6	0.2	No
Between 6th Street and 7th Street	Industrial	72.5	72.6	0.1	No
Between E. 2nd Street and 3rd Street	Residential	72.3	72.5	0.2	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	69.7	70.0	0.3	No
Between 8th Street and Porter Street	Commercial	69.1	69.5	0.4	No
Between Jesse Street and 7th Street	Commercial/ Residential	67.8	68.1	0.3	No
Between Mesquit Street and Jesse Street	Commercial	68.5	68.7	0.2	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.4	70.6	0.2	No
Between Porter and Olympic Boulevard	Commercial	70.2	70.4	0.2	No
Between Willow Street and Mesquit Street	Commercial	65.1	66.1	1.0	No

TABLE IV.I-28
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	56.8	57.9	1.1	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.4	3.6	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

Future (2040) roadway noise levels were also calculated along various arterial segments in the vicinity of the Project with the Deck Concept as compared to 2040 traffic noise levels that would occur with implementation of the Project. Project impacts are shown in **Table IV.I-29**, *Off-Site Traffic Noise Impacts – Future (2040) Plus Project with the Deck Concept Conditions*. As indicated, the increase in traffic noise levels along all roadway segments would not exceed the significance threshold of 3 dBA CNEL increase within the "normally unacceptable" or "clearly unacceptable" categories or the significance threshold of any 5 dBA CNEL or greater noise increase (see Table IV.I-3). **Therefore, operation under Future (2040) Plus Project with the Deck Concept conditions would not result in off-site traffic-related noise impacts in excess of City standards and impacts would be less than significant.**

TABLE IV.I-29
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	70.1	70.2	0.1	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	69.8	70.0	0.2	No

TABLE IV.I-29
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.9	69.4	0.5	No
Between Mateo Street and Santa Fe Avenue	Commercial	67.8	68.3	0.5	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	70.2	70.6	0.4	No
Between S. Alameda Street and Mateo Street	Commercial	70.4	70.9	0.5	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	70.8	71.1	0.3	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	70.5	70.7	0.2	No
Between Rio Street and Anderson Street	Commercial	70.4	70.7	0.3	No
Between Santa Fe Avenue and S. Rio Street	Commercial	70.5	70.8	0.3	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	68.4	68.8	0.4	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	66.6	66.7	0.1	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	59.6	63.5	3.9	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.8	4.6	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	65.3	66.0	0.7	No
Between E. 4th Place and Willow Street	Commercial/ Residential	66.2	66.6	0.4	No
Between Jesse Street and 7th Street	Commercial	65.7	66.4	0.7	No
Between Willow Street and 6th Street	Commercial	66.7	67.0	0.3	No

TABLE IV.I-29
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PLUS PROJECT WITH THE DECK CONCEPT CONDITIONS

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Future (A)	Future with Project (B)	Project Increment (B–A)	Exceed Threshold?
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	72.5	72.6	0.1	No
Between Temple Street and East 1st Street	Residential/ Commercial	72.9	73.0	0.1	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	72.8	73.0	0.2	No
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	67.1	67.2	0.1	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	72.4	72.6	0.2	No
Between 4th Street and 6th Street	Industrial	72.5	72.7	0.2	No
Between 6th Street and 7th Street	Industrial	72.6	72.7	0.1	No
Between E. 2nd Street and 3rd Street	Residential	72.3	72.5	0.2	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	69.8	70.1	0.3	No
Between 8th Street and Porter Street	Commercial	69.2	69.6	0.4	No
Between Jesse Street and 7th Street	Commercial/ Residential	67.8	68.2	0.4	No
Between Mesquit Street and Jesse Street	Commercial	68.5	68.8	0.3	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.5	70.7	0.2	No
Between Porter and Olympic Boulevard	Commercial	70.3	70.5	0.2	No
Between Willow Street and Mesquit Street	Commercial	65.2	66.2	1.0	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	56.8	58.0	1.2	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.6	3.8	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(i) Conclusion

Construction of the Project with the Deck Concept would result in on-site generation of substantial temporary increases of ambient noise levels at R1 and R4 during weekday daytime construction activities, at R1, R2, R3, and R4 during weekday nighttime construction activities, at R1, R3, and R4 during Saturday daytime construction activities, at R1 and R4 during Saturday nighttime construction activities, at R1, R2, R3, and R4 during Sunday daytime construction activities, and at R1, R2, R3, and R4 during Sunday nighttime construction activities in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

The Project with the Deck Concept would result in off-site generation of substantial temporary increases of ambient traffic noise levels along Jesse Street between Mateo Street and Santa Fe Avenue and along Mateo Street between E 4th Place and Willow Street in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, prior to mitigation, construction impacts under the Project with the Deck Concept would be significant.

Operation of the Project with the Deck Concept would result in the generation of substantial permanent increases 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. Stationary noise associated with mechanical equipment, loading dock/refuse collection activity, emergency generator, parking structure, heliport, and off-site traffic noise (CNEL), would be less than significant. However, prior to mitigation, operational impacts from the daytime (L_{eq} daytime) operation of North River Balcony at R4, nighttime (L_{eq} nighttime) operation of the 7th Street Terrace and the Deck at R2, combined daytime open space operation at R1, R2, R3, R4, combined nighttime open space operation at R2, combined composite operational noise (CNEL) at R1, would be significant.

(2) Mitigation Measures

(a) Construction

The following mitigation measures would reduce on-site construction-related noise levels:

NOISE-MM-1: Noise Barriers. Prior to issuance of any demolition, grading or building permit, the Project shall provide temporary ground-level 20-foot-tall construction noise barriers equipped with noise blankets or equivalent noise reduction materials rated to achieve sound level reductions of at least 15 dBA between the Project Site and the ground-level and second-levels at sensitive receptor location R1 and between the Project Site and R4 (if R4, the future 6th Street PARC is constructed and operational at the time of Project construction). These temporary noise barriers shall be used to block the line-of-sight between

the construction equipment and the noise-sensitive receptor(s) during the duration of construction activities. The Project applicant shall provide documentation prepared by a qualified noise consultant verifying compliance with this measure.

NOISE-MM-2: Construction Equipment Noise Shielding and Muffling Devices. Contractors shall ensure that all construction equipment, fixed or mobile, are equipped with properly operating and maintained noise shielding and muffling devices, consistent with manufacturers' standards. Prior to the issuance of demolition permits, certification of muffler installation shall be submitted to the City for review. The construction contractor shall keep documentation onsite demonstrating that the equipment has been maintained in accordance with the manufacturers' specifications. Most of the noise from construction equipment originates from the intake and exhaust portions of the engine cycle. According to FHWA, use of adequate mufflers systems can achieve reductions in noise levels of up to 10 dBA.[66] The contractor shall use muffler systems that provide a minimum reduction of 8 dBA compared to the same equipment without an installed muffler system, reducing maximum construction noise levels. Contractors shall include the muffler requirements in contract specifications. The contractor shall also keep documentation on-site prepared by a noise consultant verifying compliance with this measure.

NOISE-MM-3: Truck Deliveries. Contractors shall include in all vendor and concrete supplier contracts a requirement for truck deliveries to and from the Project Site to prohibit travel on Jesse Street between Mateo Street and Santa Fe Avenue or on Mateo Street between 4th Place and Willow Street when traveling to or from the Project Site during Project demolition, grading and construction. The construction contractor shall provide a flag person along Jessie Street near the segment between Mateo Street and Santa Fe Avenue and along Mateo Street between 4th Place and Willow Street to ensure that all concrete and vendor trucks do not travel along both of these identified segments.

(b) Operation

The following mitigation measures would reduce on-site open space related noise levels:

NOISE-MM-4: Amplified Speakers – All Outdoor Spaces. Outdoor amplified sound systems, if any, will be limited to a sound level equivalent to 85 dBA ($L_{eq\text{-}1hr}$) measured at a distance of 25 feet from the amplified speaker sound system. A qualified noise consultant shall provide written documentation that the design of the system complies with the maximum noise level. Compliance will be ensured through pre-performance noise tests/measurements for performances or ambient music speakers with potential to exceed the sound level, along with any necessary adjustments to the location and nature of proposed performances or ambient music speakers. Speakers will be downward or inward facing and shielded from

[66] FHWA, *Special Report – Measurement, Prediction, and Mitigation*, Chapter 4 Mitigation, https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm. Accessed July 16, 2021.

off-site sensitive uses. The Applicant or Operator shall prepare standard operating procedures for the use of amplified speakers at this location consistent with this requirement. The standard operating procedures shall be provided to the City and the Los Angeles Police Department (LAPD) prior to the issuance of a building permit for the Project and posted onsite in the event of LAPD response to noise complaints.

NOISE-MM-5: Amplified Speakers – River Balcony North. Amplified speaker volumes within the River Balcony North area shall be limited to a level that would not exceed 75 dBA at a distance of 25 feet from the speaker. A qualified noise consultant shall provide written documentation that the design of the system complies with the maximum noise level. Compliance will be ensured through pre-performance noise tests/measurements for performances or ambient music speakers with potential to exceed the sound level, along with any necessary adjustments to the location and nature of proposed performances or ambient music speakers. Speakers will be downward or inward facing and shielded from off-site sensitive uses. The Applicant or Operator shall prepare standard operating procedures for the use of amplified speakers at this location consistent with this requirement. The standard operating procedures shall be provided to the City and Los Angeles Police Department (LAPD) prior to the issuance of a building permit for the Project and posted onsite in the event of LAPD response to noise complaints.

(3) Level of Significance After Mitigation

(a) Construction

Construction noise levels with implementation of mitigation measures are shown in **Table IV.I-30**, *Estimate of Construction Noise Levels (L_{eq}) at Off-Site Sensitive Receptor Locations – Mitigated*. Mitigation Measure NOISE-MM-1 would provide at least a 15 dBA noise reduction at the ground- and second-level at sensitive receptor location R1 (the three-story multi-family residential use to the west of the Project Site) and at R4 (the future 6th Street PARC to the north of the Project Site) if R4 is constructed and operational while Project construction occurs. Implementation of Mitigation Measure NOISE-MM-2 requires that construction equipment be equipped with noise mufflers. Absorptive mufflers are generally considered commercially available, state-of-the-art noise reduction for heavy duty equipment.[67] Mitigation Measure NOISE-MM-2 requires that muffler systems provide a minimum reduction of 8 dBA compared to the same equipment without an installed muffler system.[68] Implementation of these measures would reduce impacts at all receptors and would reduce impacts at R2 and R3 to less than significant levels. However, these measures would not reduce noise levels to less-than-significant levels at

[67] United Muffler Corp, https://www.unitedmuffler.com/; Auto-jet Muffler Corp, https://www.auto-jet.com/off-road. Accessed July 16, 2021.

[68] According to FHWA, use of adequate mufflers systems can achieve reductions in noise levels of up to 10 dBA. Federal Highway Administration. *Special Report – Measurement, Prediction, and Mitigation*. Chapter 4 Mitigation. https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm. Accessed July 16, 2021.

the ground and second floors of R1 due to the proximity of R1 to the Project Site and would not be effective at reducing noise at the third floor of noise sensitive receptor R1 because the line-of-sight between construction equipment and the third floor receptors would not be blocked. Implementation of Mitigation Measures NOISE-MM-1 and NOISE-MM-2 would not reduce the construction noise impacts to a less than significant level at R1 (on any floor) or at R4 (if R4 is constructed and operational during Project construction). There are no additional feasible measures that would reduce on-site construction noise impacts to less than significant and no technically feasible measures as defined in Section 112.05 of the LAMC. **Therefore, the Project's on-site construction noise impacts, although temporary, would be significant and unavoidable at R1 and R4 during daytime and nighttime periods on weekdays and weekends.**

Mitigation Measure NOISE-MM-3 requires that contractors include in all vendor and concrete supplier contracts a requirement for truck deliveries to prohibit travel on Jesse Street between Mateo Street and Santa Fe Avenue or on Mateo Street between 4th Place and Willow Street. In addition, the contractors shall include a flag person near each affected segment to ensure that concrete and vendor trucks do not travel along the identified segments. Soil haul trucks would be required to follow the City-approved haul route, which does not include travel on either segment, as discussed in Section IV.L of this Draft EIR. With implementation of Mitigation Measure NOISE-MM-3 and adherence to the City-approved haul route, impacts related to off-site construction truck traffic would be reduced to less than significant along the impacted segments. **Therefore, the Project's off-site construction noise impacts would be less than significant with implementation of mitigation.**

(b) Operation

(i) On-Site Operational Noise

Open space related noise would exceed the daytime ambient noise levels by greater than 5 dBA at the River Balcony North. Mitigation Measure NOISE-MM-4 limits all amplified sound systems to sound levels equivalent to 85 dBA measured at a distance of 25 feet from the amplified speaker sound system. Mitigation Measure NOISE-MM-5 requires that amplified sound systems at the River Balcony North be limited to 75 dBA L_{eq} at a distance of 25 feet from the amplified speaker sound system. As shown in **Table IV.I-31**, *Mitigated Daytime Outdoor Open Space Event-Related Noise Levels (L_{eq})*, and **Table IV.I-32**, *Mitigated Daytime Combined Outdoor Open Space Event-Related Noise Levels (L_{eq})*, with implementation of Mitigation Measures NOISE-MM-4 and NOISE-MM-5, project noise from human conversation and amplified music at the River Balcony North and combined operation of Project open spaces during daytime hours would not exceed the significance threshold of a 5 dBA increase over ambient conditions. **Therefore, impacts related to daytime operation of outdoor spaces would be less than significant after implementation of mitigation.**

TABLE IV.I-30
ESTIMATE OF CONSTRUCTION NOISE LEVELS (L_{EQ}) AT OFF-SITE SENSITIVE RECEPTOR LOCATIONS - MITIGATED

Receptor	Construction Stage	Unmitigated Construction Noise Level at Receptor (L_{eq})	Mitigated Construction Noise Level at Receptor (L_{eq})	Weekday				Saturday				Sunday			
				Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?
Individual Construction Stages															
R1	Site Preparation/Demolition	109	86	75.7	**Yes**	72.5	**Yes**	76.3	**Yes**	77.6	**Yes**	80.6	**Yes**	74.1	**Yes**
	Grading/Excavation	102	79		**Yes**		**Yes**		**Yes**		**Yes**		No		**Yes**
	Drainage/Utilities/Trenching	104	81		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Foundation/Concrete Pour	98	75		No		**Yes**		No		No		No		**Yes**
	Building Construction/Architectural Coating	106	83		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Paving	106	83		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
R2[c]	Site Preparation/Demolition	77	69	81.3	No	76.5	No	79.7	No	79.3	No	78.7	No	75.2	No
	Grading/Excavation	71	63		No		No		No		No		No		No
	Drainage/Utilities/Trenching	71	63		No		No		No		No		No		No
	Foundation/Concrete Pour	70	62		No		No		No		No		No		No
	Building Construction/Architectural Coating	74	66		No		No		No		No		No		No
	Paving	74	66		No		No		No		No		No		No
R3[c]	Site Preparation/Demolition	74	66	81.6	No	68.5	No	73.6	No	76.3	No	70.1	No	68.3	No
	Grading/Excavation	69	61		No		No		No		No		No		No
	Drainage/Utilities/Trenching	68	60		No		No		No		No		No		No
	Foundation/Concrete Pour	68	60		No		No		No		No		No		No
	Building Construction/Architectural Coating	72	64		No		No		No		No		No		No
	Paving	71	63		No		No		No		No		No		No
R4	Site Preparation/Demolition	109	86	71.6	**Yes**	68.8	**Yes**	69.8	**Yes**	52.1	**Yes**	70.9	**Yes**	68.9	**Yes**
	Grading/Excavation	102	79		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Drainage/Utilities/Trenching	104	81		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Foundation/Concrete Pour	98	75		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction/Architectural Coating	106	83		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Paving	106	83		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
Overlapping Construction Stages															
R1	Site Preparation/Demolition + Drainage/ Utilities/ Trenching	110	87	75.7	**Yes**	72.5	**Yes**	76.3	**Yes**	77.6	**Yes**	80.6	**Yes**	74.1	**Yes**
	Site Preparation/Demolition + Drainage/ Utilities/Trenching + Grading/ Excavation	111	88		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**

TABLE IV.I-30
ESTIMATE OF CONSTRUCTION NOISE LEVELS (L_{EQ}) AT OFF-SITE SENSITIVE RECEPTOR LOCATIONS - MITIGATED

Receptor	Construction Stage	Unmitigated Construction Noise Level at Receptor (L_{eq})	Mitigated Construction Noise Level at Receptor (L_{eq})	Weekday				Saturday				Sunday			
				Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?
	Drainage/Utilities/Trenching + Grading/ Excavation	106	83		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Grading/Excavation + Foundation/Concrete Pour	103	80		**Yes**		**Yes**		**Yes**		**Yes**		No		**Yes**
	Foundation/Concrete Pour + Building Construction	107	84		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction + Architectural Coating	106	83		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction + Architectural Coating + Paving	109	86		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
R2[c]	Site Preparation/Demolition + Drainage/ Utilities/ Trenching	78	70	81.3	No	76.5	No	79.7	No	79.3	No	78.7	No	75.2	No
	Site Preparation/Demolition + Drainage/ Utilities/Trenching + Grading/ Excavation	79	71		No		No		No		No		No		No
	Drainage/Utilities/Trenching + Grading/ Excavation	74	66		No		No		No		No		No		No
	Grading/Excavation + Foundation/Concrete Pour	73	65		No		No		No		No		No		No
	Foundation/Concrete Pour + Building Construction	76	68		No		No		No		No		No		No
	Building Construction + Architectural Coating	74	66		No		No		No		No		No		No
	Building Construction + Architectural Coating + Paving	77	69		No		No		No		No		No		No
R3[c]	Site Preparation/Demolition + Drainage/ Utilities/ Trenching	75	67	81.6	No	68.5	No	73.6	No	76.3	No	70.1	No	68.3	No
	Site Preparation/Demolition + Drainage/ Utilities/Trenching + Grading/ Excavation	76	68		No		No		No		No		No		No
	Drainage/Utilities/Trenching + Grading/Excavation	72	64		No		No		No		No		No		No
	Grading/Excavation + Foundation/Concrete Pour	71	63		No		No		No		No		No		No
	Foundation/Concrete Pour + Building Construction	73	65		No		No		No		No		No		No
	Building Construction + Architectural Coating	72	64		No		No		No		No		No		No
	Building Construction + Architectural Coating + Paving	75	67		No		No		No		No		No		No

TABLE IV.I-30
ESTIMATE OF CONSTRUCTION NOISE LEVELS (L_{EQ}) AT OFF-SITE SENSITIVE RECEPTOR LOCATIONS - MITIGATED

Receptor	Construction Stage	Unmitigated Construction Noise Level at Receptor (L_{eq})	Mitigated Construction Noise Level at Receptor (L_{eq})	Weekday				Saturday				Sunday			
				Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?	Daytime Threshold[b]	Exceed?	Nighttime Threshold[b]	Exceed?
R4	Site Preparation/Demolition + Drainage/Utilities/ Trenching	110	87	71.6	**Yes**	68.8	**Yes**	69.8	**Yes**	52.1	**Yes**	70.9	**Yes**	68.9	**Yes**
	Site Preparation/Demolition + Drainage/ Utilities/Trenching + Grading/ Excavation	111	88		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Drainage/Utilities/Trenching + Grading/ Excavation	106	83		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Grading/Excavation + Foundation/Concrete Pour	103	80		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Foundation/Concrete Pour + Building Construction	107	84		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction + Architectural Coating	106	83		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**
	Building Construction + Architectural Coating + Paving	109	86		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**		**Yes**

NOTE(S):
Mitigation Measure NOISE-MM-1 provides 15 dBA noise reduction to receptors R1 and R4. Mitigation Measure NOISE-MM-2 provides 8 dBA noise reduction to receptors R2 and R3.

[a] The distance represents the closest construction area on the Project Site to the property line of the off-site receptor without taking into account any differences in elevation.
[b] The significance criteria, per the City's Thresholds Guide, is the ambient noise level as shown in Table IV.I-5 plus 5 dBA.
[c] Sensitive receptors are partially shielded from the Project Site by existing buildings, providing a minimum 5 dBA reduction (reflected in the construction noise calculations).

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

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TABLE IV.I-31
MITIGATED DAYTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Open Space/Event (primary noise source)	Receptor Location	Unmitigated Open Space/Event-Related Noise Levels, (L_{eq})	Mitigated Open Space/Event-Related Noise Levels, (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold?
River Balcony (North) (325 people and amplified music)	R4	69.7	53.8	64.8	65.1	69.8	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-32
MITIGATED DAYTIME COMBINED OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Receptor Location	Unmitigated Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Mitigated Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Existing Ambient, dBA (L_{eq})[a]	Project plus Ambient, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold?
R1	76.4	70.4	70.7	73.6	75.7	No
R2	78.7	72.7	73.7	76.2	78.7	No
R3	72.3	66.4	65.1	68.8	70.1	No
R4	72.2	67.9	64.8	69.6	69.8	No

NOTE(S):

Daytime hours defined as between 7:00 A.M. and 10:00 P.M.

[a] The lowest measured ambient daytime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

Open space related noise would exceed nighttime ambient noise levels by greater than 5 dBA with nighttime use of the 7th Street Terrace. Mitigation Measure NOISE-MM-4 requires that amplified speaker volumes be limited to 85 dBA at 25 feet at all open spaces. As shown in **Table IV.33**, *Mitigated Nighttime Outdoor Open Space Event-Related Noise Levels (L_{eq})*, implementation of Mitigation Measure NOISE-MM-4, Project noise levels from human conversation and amplified music at the 7th Street Terrace and combined nighttime operation of Project open spaces would not exceed the significance threshold of a 5 dBA increase over ambient conditions. **Therefore, impacts related to nighttime operation of outdoor spaces would be less than significant after implementation of mitigation measures.**

On-site composite noise levels would exceed the threshold of a 5 dBA increase over ambient conditions at receptor R1 prior to implementation of mitigation. With implementation of Mitigation Measures NOISE-MM-4 and NOISE-MM-5 limiting amplified sound system volumes to 85 dBA at a distance of 25 feet at all spaces during daytime and nighttime hours and limiting amplified sound systems at the River Balcony North to 75 dBA at a distance of 25 feet provides a reduction of 2.3 dBA L_{eq}, resulting in a mitigated increase in ambient noise levels at receptor R1 of 3.8 dBA CNEL. This increase would not exceed the threshold of a 5 dBA increase over ambient conditions. **Therefore, impacts related to on-site composite noise would be less than significant after implementation of mitigation measures.**

As concluded above, under the Project, stationary noise associated with mechanical equipment, loading dock/refuse collection activity, emergency generator, parking structure noise, heliport noise, and off-site traffic noise would be less than significant prior to mitigation. Impacts associated with daytime and nighttime use of open spaces and the combined operational noise (CNEL composite noise) would be less than significant with mitigation incorporated.

(c) Project with the Deck Concept

Construction activities associated with the Project with the Deck Concept are accounted for in the Project construction analysis.[69] The construction noise generated in the analysis above also reflects the construction noise generated during construction of the Project with the Deck Concept. In addition, as construction of the Project with the Deck Concept would implement Mitigation Measures NOISE-MM-1 through NOISE-MM-3, impacts related to construction noise would also be similar as those of the Project. Thus, the conclusions regarding impact significance presented above are the same and apply to the Project and the Project with the Deck Concept. **As such, on-site construction noise impacts under the Project with the Deck Concept, although temporary, would be significant and unavoidable at R1 and R4 during daytime and nighttime periods on weekdays and weekends. Off-site construction noise impacts under the Project with the Deck Concept would be less than significant with mitigation.**

[69] As indicated under Subsection 3.b, *Methodology*, the construction analysis for the Project with the Deck Concept would be considered the worst-case scenario due to the construction of the Deck, and the Project would require a similar or slightly reduced construction intensity level on a maximum construction activity day given that the Deck would not be constructed under the Project.

TABLE IV.I-33
MITIGATED NIGHTTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Open Space/Event (primary noise source)	Receptor Location	Unmitigated Open Space/Event-Related Noise Levels, (L_{eq})	Mitigated Open Space/Event-Related Noise Levels, (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold?
7th Street Terrace	R2	76.4	70.4	70.2	73.3	75.2	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-34
MITIGATED NIGHTTIME COMBINED OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ})

Receptor Location	Unmitigated Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Mitigated Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Existing Ambient, dBA (L_{eq})[a]	Project plus Ambient, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold?
R2	76.4	70.5	70.2	73.3	75.2	No

NOTE(S):

Nighttime hours defined as between 10:00 P.M. and 7:00 A.M.

Nighttime impacts not calculated for receptors R4 as it is anticipated that the future PARC would be operational during daytime hours only.

[a] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

All operational components under the Project with the Deck Concept related to the land uses proposed, compliance with regulations, and implementation of Project Design Features would be similar to that of the Project. With implementation of Mitigation Measures NOISE-MM-4 and NOISE-MM-5, amplified sound at all open spaces including the Deck would be limited to 85 dBA at a distance of 25 feet from the speaker location and amplified sound at the River Balcony North would be limited to 75 dBA at a distance of 25 feet from the speaker location. As shown in **Table IV.I-35**, *Mitigated Daytime Combined Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project with Deck Concept*, combined operation of Project with Deck open spaces would not exceed the threshold of a 5 dBA increase in daytime ambient noise. As shown in **Table IV.I-36**, *Mitigated Nighttime Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project with Deck Concept*, nighttime use of the Deck would not exceed the threshold of a 5 dBA increase in nighttime ambient noise. As shown in **Table IV.I-37**, *Mitigated Nighttime Combined Outdoor Open Space Event-Related Noise Levels (L_{eq}) – Project with Deck Concept*, combined nighttime use of Project with Deck open spaces would not exceed the threshold of a 5 dBA increase in nighttime ambient noise.

TABLE IV.I-35
MITIGATED DAYTIME COMBINED OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ}) – PROJECT WITH DECK CONCEPT

Receptor Location	Unmitigated Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Mitigated Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Existing Ambient, dBA (L_{eq})[a]	Project plus Ambient, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold?
R1	76.4	70.5	70.7	73.6	75.7	No
R2	80.0	74.0	73.7	76.9	78.7	No
R3	72.4	66.4	65.1	68.8	70.1	No
R4	72.3	68.0	64.8	69.7	69.8	No

NOTE(S):

Daytime hours defined as between 7:00 AM and 10:00 PM.

[a] The lowest measured ambient daytime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

On-site composite noise levels would exceed the threshold of a 5 dBA increase over ambient conditions at receptors R1 and R2 prior to mitigation. With implementation of Mitigation Measures NOISE-MM-4 and NOISE-MM-5 limiting amplified sound system volumes to 85 dBA at a distance of 25 feet at all spaces during daytime and nighttime hours including the Deck and limiting amplified sound systems at the River Balcony North to 75 dBA at a distance of 25 feet, the increase in ambient noise levels at receptor R1

TABLE IV.I-36
MITIGATED NIGHTTIME OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ}) – PROJECT WITH DECK CONCEPT

Open Space/Event (primary noise source)	Receptor Location	Unmitigated Open Space/Event-Related Noise Levels, (L_{eq})	Mitigated Open Space/Event-Related Noise Levels, (L_{eq})	Existing Ambient Noise Levels, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold?
The Deck: Special Event Programming (8,800 people and amplified music)	R2	74.0	68.0	70.2	72.3	75.2	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

TABLE IV.I-37
MITIGATED NIGHTTIME COMBINED OUTDOOR OPEN SPACE EVENT-RELATED NOISE LEVELS (L_{EQ}) – PROJECT WITH DECK CONCEPT

Receptor Location	Unmitigated Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Mitigated Combined Open Space/Event-Related Noise Level, dBA (L_{eq})	Existing Ambient, dBA (L_{eq})[a]	Project plus Ambient, dBA (L_{eq})	Significance Threshold, dBA (L_{eq})	Exceed Significance Threshold?
R2	78.4	72.5	70.2	74.5	75.2	No

NOTE(S):

Nighttime hours defined as between 10:00 PM and 7:00 AM.

[a] The lowest measured ambient nighttime noise level (see Table IV.I-4) was used to calculate the significance threshold (ambient plus 5 dBA) because project outdoor spaces are anticipated to be operational on weekdays and weekends.

[b] Nighttime impacts not calculated for receptors R4 as it is anticipated that the future PARC would be operational during daytime hours only.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

would be 3.8 dBA CNEL (reduced by 2.4 dBA L_{eq}) and the increase in ambient noise levels at receptor R2 would be 2.5 dBA CNEL (reduced by 3.5 dBA L_{eq}). These increases would not exceed the threshold of a 5 dBA increase over ambient conditions. **Therefore, impacts related to on-site composite noise would be less than significant after implementation of mitigation measures.**

As concluded above, under the Project with Deck Concept, stationary noise associated with mechanical equipment, loading dock/refuse collection activity, emergency generator, parking structure noise, heliport noise, and off-site traffic noise would be less than significant prior to mitigation. Impacts associated with daytime and nighttime use of open spaces and the combined operational noise (CNEL composite noise) would be less than significant with mitigation incorporated.

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

(1) Impact Analysis

(a) Construction

(i) Structural Damage

Construction activities at the Project Site have the potential to generate relatively low levels of groundborne vibration, as the operation of heavy equipment (e.g., vibratory pile driver, backhoe, dozer, excavators, drill rig, loader, scraper, and haul trucks) generates vibrations that propagate through the ground and diminish in intensity with distance from the source. In accordance with Project Design Feature NOISE-PDF-1, impact pile driving is not a part of the construction program and has therefore not been included in the on-site construction vibration analysis. Installation of piles for shoring and foundation would utilize drilling methods to minimize vibration generation.

Project construction would generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment used. The PPV vibration velocities for several types of construction equipment measured at increasing distances are identified in **Table IV.I-38**, *Construction Vibration Impacts – Building Damage*. Table IV.I-38 provides the estimated vibration velocity levels at the nearest off-site structures to the Project Site, which include V1 (the three-story multi-family residential use to the west of the Project Site), V2 (the two-story multi-family residential use to the south of the Project Site), V3 (the AMP Lofts to the west of the Project Site), the industrial buildings located to the west of the Project Site (640 South Santa Fe Avenue [V4] and 1580 Jesse Street [V5]), and the 7th Street Bridge (V6). All other buildings in the area would be located at greater distances to the Project Site and would experience lower vibration velocities from on-site construction activity.

TABLE IV.I-38
CONSTRUCTION VIBRATION IMPACTS – BUILDING DAMAGE

Off-Site Structure[a]	Distance to Source	Estimated Vibration Velocity Levels at the Nearest Off-Site Structures from the Source of Vibration (in/sec PPV)[b] — Off-Road Construction Equipment: Large Bulldozer	Drill Rig	Loaded Trucks	Jack-hammer	Small Bulldozer	Significance Threshold[c]	Exceed Significance Thresholds?
FTA Reference Vibration Levels	*25 feet*	*0.089*	*0.089*	*0.076*	*0.035*	*0.003*	—	—
V1	5 feet	**0.995**	**0.995**	**0.850**	**0.391**	0.034	0.12	**Yes**
V2	130 feet	0.008	0.008	0.006	0.003	0.000	0.2	No
V3	180 feet	0.005	0.005	0.004	0.002	0.000	0.5	No
V4 & V5	50 feet	0.031	0.031	0.027	0.012	0.001	0.2	No
V6	5 feet	**0.995**	**0.995**	**0.850**	0.391	0.034	0.5	**Yes**

NOTE(S):

[a] Represents off-site building structures located nearest to the Project Site to the north, south, and west.
[b] Vibration level calculated based on FTA reference vibration level at 25-foot reference distance.
[c] FTA criteria for reinforced-concrete, steel, or timber (no plaster) structures (0.5 in/sec PPV) and for buildings susceptible to vibration damage (0.12 in/sec PPV).

SOURCE(S): FTA, Transit Noise and Vibration Impact Assessment; ESA, 2021. Appendix J of this Draft EIR.

Receptor V1 is an older structure and is considered a Category IV structure (see Table IV.I-1) with a significance threshold of 0.12 in/sec PPV. Receptors V2, V4, and V5, which are not historic structures, are conservatively considered Category III structures (see Table IV.I-1) for purposes of this analysis with a significance threshold of 0.2 in/sec PPV.[70]

Receptor V3 (Related Project No. 141) would consist of newly constructed structures and foundations. Therefore, Receptor V3 would be a Category I receptor with a significance threshold of 0.5 in/sec PPV.[71]

As discussed in Section IV.C, *Cultural Resources*, of this EIR, the 7th Street Bridge (V6) was constructed as a reinforced concrete, closed-spandrel, arch bridge in 1910 and has undergone multiple improvements/retrofits. Most notable of the bridge's improvements include retrofitting to accommodate heavier automobile traffic in 1927 and seismic retrofitting in 1990. Therefore, V6 is considered a Category I structure and the significance

[70] FTA, *Transit Noise and Vibration Impact Assessment*, p. 186.
[71] FTA, *Transit Noise and Vibration Impact Assessment*, p. 186.

threshold of 0.5 in/sec PPV for potential structural damage to a reinforced-concrete structure (the bridge) has been applied for on-site construction.[72]

As indicated in Table IV.I-38, the estimated vibration velocity levels from construction equipment would not exceed the significance threshold of 0.5 in/sec PPV at V3 or the significance threshold of 0.2 in/sec PPV at V2, V4, or V5. Vibration velocities would exceed the 0.5 in/sec PPV threshold for V6 and the 0.12 in/sec PPV threshold for Receptor V1. **Therefore, vibration impacts associated with structural damage from on-site construction activities would be potentially significant prior to the implementation of mitigation measures at receptors V1 and V6.**

As described above, on-road rubber-tired construction trucks would travel to and from the Project Site along the local roadway network. According to the FTA's *Transit Noise and Vibration Impact Assessment*, haul truck trips on roadways rarely create vibration levels that exceed 70 VdB, which would be equivalent to 0.012 in/sec PPV, would not exceed the significance threshold for building damage of 0.50 in/sec PPV.[73] Additionally, unusually uneven and rough road conditions could increase vibration levels by approximately 5 VdB.[74] There is no substantial evidence that roadways in the Project vicinity are unusually uneven or rough to the point that vibrations from a typical heavy-duty truck would reach 75 VdB. Therefore, construction trucks would not exceed thresholds of 0.12 in/sec PPV, 0.20 in/sec PPV, or 0.50 in/sec PPV. **Therefore, the potential vibration impacts for building damage due to off-site haul trucks would be less than significant, and no mitigation measures would be required.**

Heavy-duty construction trucks would travel on the 7th Street Bridge. Vibration is produced by a truck's loaded wheel-suspension system over surface irregularities.[75] It is not anticipated that 7th Street Bridge would have its road surface conditions deteriorate to the point of "unusually rough." Therefore, a level of 70 VdB (0.012 in/sec PPV) is reasonable for the vibration level incurred by trucks over the bridge. The 0.5 in/sec PPV threshold for Category I structures would potentially be exceeded when a heavy-duty construction truck is at a distance of six feet or closer to the structure. However, because the trucks would travel directly over the bridge, the distance factor does not come into play for the propagation loss. It is then dependent on the bridge's design and maintenance to determine if it is safe for trucks to travel over the bridge. As discussed above in Section 3d)(1)(a)(ii), a maximum of 896 concrete truck round trips would occur on the worst-case day. As the primary function of a bridge is to carry traffic loads, including heavy trucks, bridges on the local roadway system are designed to standards that can safely resist loads and forces from a wide variety of vehicles. Pursuant to California Vehicle Code (CVC) Section 35750(a) Caltrans may "determine the maximum weight of vehicle and load, lower than the maximum weight otherwise permitted under this code which a bridge or other structure with safety to itself will sustain." When a bridge requires a weight limitation, signs specifying the

72 FTA, *Transit Noise and Vibration Impact Assessment*, p. 186.
73 FTA, *Transit Noise and Vibration Impact Assessment*, Table 7-5, 2018.
74 FTA, *Transit Noise and Vibration Impact Assessment*, p. 140.
75 Dowding, C.H., *Construction Vibrations*, 1996, page 253.

maximum suitable weight are posted at each end of the bridge.[76] Further "[n]o person shall drive a vehicle over any bridge, causeway, viaduct, trestle, or dam constituting a part of a highway when the weight of the vehicle and load thereon is greater than the maximum weight which the bridge or other structure with safety to itself will sustain."[77]

Specific to the Project, Caltrans designates and has permitted a weight limitation of 80,000 pounds per vehicle on the 7th Street Bridge.[78] Based on equipment that is commercially available, concrete mixer trucks and dump trucks used for construction of the Project could weigh up to 72,000 pounds and 50,000 pounds, respectively, fully loaded.[79] Therefore, temporarily adding additional construction traffic, such as concrete mixer trucks and haul trucks with weights that conform with and would be under the Caltrans permitted weight limitation for the 7th Street Bridge, would not produce load or vibratory effects with potential to damage the reinforced-concrete structure or foundations of the bridge. Furthermore, as discussed previously, the 7th Street Bridge was constructed as a reinforced concrete, closed-spandrel, arch bridge and has undergone multiple improvements and retrofits, including retrofitting to accommodate heavier automobile traffic in 1927 and seismic retrofitting in 1990, which resulted in improved stability and the load limitation of 80,000 pounds stated by Caltrans. **Therefore, vibration impacts associated with structural damage to the 7th Street Bridge from off-site construction activities would be less than the design load of the bridge and less than significant.**

(ii) Human Annoyance

With respect to human annoyance, the FTA's *Transit Noise and Vibration Impact Assessment* identifies residential buildings as sensitive receptors. As discussed above, per FTA guidance, the significance criteria for human annoyance is 72 VdB for sensitive uses, including residential uses, assuming a minimum of 70 vibration events occurring during a typical construction day. **Table IV.I-39**, *Construction Vibration Impacts – Human Annoyance*, 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. As indicated in Table IV.I-39, the estimated groundborne vibration levels from off-road construction equipment would exceed the significance criteria for human annoyance at the adjacent sensitive receptor location V1. **Therefore, potential vibration impacts with respect to human annoyance that would result from temporary vibration from off-road construction equipment would be significant prior to the implementation of mitigation measures at sensitive receptor location V1.**

76 *California Vehicle Code* Section 35752
77 *California Vehicle Code* Section 35753
78 Bridge No. 53C1321, per DOT 2018 Bridge List.
79 Salmon Bay Sand & Gravel, Co. Truck Specifications. http://www.sbsg.com/resources/faqs/truck-specifications/. Accessed July 16, 2021.

TABLE IV.I-39
CONSTRUCTION VIBRATION IMPACTS – HUMAN ANNOYANCE

Off-Site Structure[a]	Distance to Source	Estimated Vibration Velocity Levels at the Nearest Off-Site Structures from the Project Construction Equipment (VdB)[b]					Significance Threshold[c]	Exceed Significance Thresholds?
		Off-Road Construction Equipment						
		Large Bulldozer	Drill Rig	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels	*25*	*86.9*	*86.9*	*85.6*	*78.8*	*57.5*	—	—
V1	5	**107.9**	**107.9**	**106.5**	**99.8**	**78.5**	72	**Yes**
V2	130	65.5	65.5	64.1	57.4	36.0	72	No
V3	180	61.2	61.2	59.9	53.1	31.8	72	No

NOTE(S):

[a] Represents off-site building structures located nearest to the Project Site to the north, south, and west (V1, V2, and V3 represent multi-family residential uses).
[b] Vibration level calculated based on FTA reference vibration level at 25-foot reference distance.
[c] FTA criteria for residences or buildings where people normally sleep (72 VdB).

SOURCE(S): FTA, *Transit Noise and Vibration Impact Assessment*, 2018; ESA, 2021. Appendix J of this Draft EIR.

As described above, construction trucks would travel along the local roadway network. The vibration generated by a typical heavy-duty truck would be up to approximately 70 VdB or 75 VdB assuming unusually uneven and rough road conditions. There is no substantial evidence that roadways in the Project vicinity are unusually uneven or rough to the point that vibrations from a typical heavy-duty truck would reach 75 VdB. Therefore, heavy-duty construction trucks would not expose vibration sensitive uses to groundborne vibration above the 72 VdB human annoyance significance criteria. Additionally, it is noted that each individual haul truck would pass vibration sensitive receptors along the haul routes and generate vibrations for only a few seconds at a receptor location. **Therefore, potential vibration impacts with respect to human annoyance that would result from temporary and intermittent off-site vibration from construction trucks traveling along the local roadway network would be less than significant for residential uses.**

(b) Operation

The Project's day-to-day operations would include typical commercial-grade stationary mechanical and electrical equipment, such as air handling units, condenser units, and exhaust fans, which would produce vibration at low levels that would not cause damage or annoyance impacts to the Project buildings or on-site occupants and would not cause vibration impacts to the off-site environment. In addition, the primary sources of transient

vibration would include passenger vehicle circulation within the proposed parking area. According to America Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), pumps or compressor would generate groundborne vibration levels of 0.5 in/sec PPV at 1 foot.[80] It is anticipated that Project mechanical equipment, including air handling units, condenser units, and exhaust fans, would be located on building rooftops. Therefore, groundborne vibration from the operation of such mechanical equipment would not impact any of the off-site sensitive receptors. **Therefore, vibration impacts from the Project operation would be less than significant.**

(c) Project with the Deck Concept

Construction activities associated with the Project with the Deck Concept are accounted for in the Project construction analysis. As noted in Subsection 3.b, *Methodology*, the Project would use a similar mix of construction equipment but would require a similar or slightly reduced construction intensity level on a maximum construction activity day given that the Deck would not be constructed. Excavation depths for the Project with the Deck Concept would be the same as the Project and the excavation locations would not be any closer to vibration sensitive uses or structures than analyzed for the Project. The Deck would be located on the east side of the Project, which is adjacent to the Los Angeles River. Industrial and commercial uses to the east of the Los Angeles River are located at distances of a minimum of 500 feet, which is sufficient distance for construction vibration to dissipate to levels that would not exceed applicable thresholds. The analysis above assumes the construction activity would be located at a distance as near as five feet from the 7th Street Bridge (receptor V6) to account for shoring activities. This activity would also be required for construction of Project with Deck concept. The analysis above is based on the worst-case construction activity, which includes concurrent construction of Project buildings and the Deck as proposed under the Project with the Deck Concept. Thus, the conclusions regarding impact significance presented above are the same and apply to the Project and the Project with the Deck Concept. **As such, the Project with the Deck Concept's impact related to structural damage would be potentially significant prior to the implementation of mitigation measures at receptor locations V1 and V6. Vibration impacts from off-site construction activities under the Project with the Deck Concept would be less than significant and would also be less than the design load of the 7th Street Bridge and less than significant. Similar to the Project, potential vibration impacts with respect to human annoyance would be significant prior to the implementation of mitigation measures at sensitive receptor location V1.**

All operational components under the Project with the Deck Concept related to the land uses proposed, compliance with regulations, and implementation of Project Design Features would be similar to that of the Project. The Deck would be located on the east side of the Project adjacent to the Los Angeles River. Industrial and commercial uses to the east of the Los Angeles River are located at distances of a minimum of 500 feet and

[80] America Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., *Heating, Ventilating, and Air-Conditioning Applications*, 1999.

would not be affected by activities occurring on the Deck. Thus, the conclusions regarding impact significance presented above are the same and apply to the Project and the Project with the Deck Concept. **As such, vibration impacts from the operation of the Project with the Deck Concept would be less than significant.**

(2) Mitigation Measures

The following mitigation measures would reduce potentially significant impacts regarding structural vibration damage during construction:

NOISE-MM-6: Construction Vibration (Except Shoring). The operation of construction equipment that generates high levels of vibration, such as large bulldozers, loaded trucks, jackhammers, and small bulldozers shall be prohibited within 21 feet, 19 feet, 12, feet, and 3 feet, respectively, of receptor V1 (multi-family residential uses located at 2101 E. 7th Street). The use of large bulldozers and loaded trucks shall be prohibited within 8 feet, the use of jackhammers shall be prohibited within 5 feet, and the use of small bulldozers shall be prohibited within 1 foot of receptor V6 (the 7th Street Bridge). The contractor(s) shall require and document compliance with the minimum allowable setbacks in a construction vibration management plan, which shall be provided to the City prior to issuance of a demolition permit. The construction vibration management plan shall detail the types of equipment to be used during demolition, grading, and building construction, estimated vibration velocities, and distance to vibration receptors V1 and V6. Equipment and or alternative construction techniques to be used within the required setbacks for large bulldozers, loaded trucks, jackhammers, and small bulldozers shall be identified to ensure that vibration velocities will not exceed thresholds for potential structural damage. This measure does not apply to temporary shoring activities and shoring infrastructure that must be installed to provide adequate physical support for subterranean excavation.

NOISE-MM-7: Construction Vibration (Shoring). The following procedures are required for shoring system design and monitoring of excavation, grading, and shoring activities:

- Prior to the issuance of a shoring or grading permit, excavation and shoring plans for temporary shoring walls shall be prepared by a California Registered Civil Engineer experienced in the design and construction of shoring systems. The shoring systems shall be selected and designed in accordance with all current code requirements, industry best practices, and the recommendations of the Project Geotechnical Engineer. Maximum allowable lateral deflections for the Project Site are to be developed by the Project Geotechnical Engineer in consideration of adjacent structures, property, and public rights-of-way. These deflection limits shall be prepared in consideration of protecting the adjacent older structure at receptor location V1 (multi-family residential uses located at 2101 E. 7th Street) and the historic bridge at receptor location V6 (the 7th Street Bridge). The shoring engineer shall produce a shoring design, incorporating tie-backs,

soldier piles, walers, or other appropriate supports that is of sufficient capacity and stiffness to meet or exceed the Project strength and deflection requirements. Calculations shall be prepared by the shoring engineer showing the anticipated lateral deflection of the shoring system and its components and demonstrating that these deflections are within the allowable limits. Where tie-back anchors shall extend across property lines or encroach into the public rights-of-way, appropriate notification and approval procedures shall be followed. The final excavation and shoring plans shall include all appropriate details, material specifications, testing and special inspection requirements and shall be reviewed by the Project Geotechnical Engineer for conformance with the design intent and submitted to LADBS for review and approval during the Grading Permit application submission. The Project Geotechnical Engineer shall provide on-site observation during the excavation and shoring work.

- Appropriate parties, including but not limited to the lead Contractor, City of Los Angeles Public Works, and Los Angeles Department of Building and Safety, shall be notified immediately and corrective steps shall be identified and implemented if maximum allowable lateral deflections for the Project Site that are developed by the Project Geotechnical Engineer are exceeded, or if new cracks, distress, or other damage are observed in adjacent structures, sidewalks, buildings, utilities, façades, etc.
- Foundation systems shall be designed in accordance with all applicable loading requirements, including seismic, wind, settlement, and hydrostatic loads, as determined by the California Building Code and in accordance with the recommendations provided by the Project Geotechnical Engineer. Foundation systems are anticipated to consist of cast-in-place concrete mat foundations supported by cast-in-place concrete drilled shaft or auger cast piles. Driven (impact) piles shall not be used.

NOISE-MM-8: Inspections. Prior to the issuance of a demolition or building permit, the Applicant shall retain the services of a third party licensed building inspector or structural engineer to inspect and document (video and/or photographic) V1 (multi-family residential located at 2101 E. 7th Street) and V6 (7th Street Bridge) for the apparent physical condition of the building's readily-visible features. Inspection and documentation shall also be carried out by and in coordination with a qualified preservation consultant for the historic bridge at receptor location V6 (7th Street Bridge). Daily inspections shall occur when construction activities involving vibration-generating equipment such as bulldozers, jackhammers, loaded trucks, and drill rigs are used within 21 feet of V1 and within 8 feet of V6. In the event that damage occurs due to construction vibration the adjacent older structure at receptor location V1 (multi-family residential uses) or the historic bridge at receptor location V6 (the 7th Street Bridge) based on assessment by the third-party inspector or engineer, the Applicant/or the Applicants designated representative, shall arrange for repairs during the construction phase. Such repairs, if needed shall be undertaken by a qualified contractor. Repair of historic features on the historic bridge at receptor V6

(the 7th Street Bridge) shall be performed in consultation with a qualified preservation consultant, and, if warranted, in a manner that meets the Secretary of the interior's Standards.

Additional Requirements during Shoring. Prior to the issuance of a demolition or building permit, the general contractor shall hire a California Registered Professional Engineer or California Professional Land Surveyor to prepare an Adjacent Structures Construction Monitoring Plan, subject to review and approval by LADBS, prior to initiation of any excavation and shoring activities to ensure the protection of the adjacent older structure at receptor location V1 (multi-family residential uses) and the historic bridge at receptor location V6 (the 7th Street Bridge) from damage due to settlement during excavation and shoring. The Adjacent Structures Construction Monitoring Plan shall be carried out by a California Professional Land Surveyor and establish survey markers and document and record through any necessary means, including video, photography, survey, etc. the initial positions of and existing cracks on the adjacent structures and facades to form a baseline for determining settlement or deformation. Upon installation of soldier piles, survey monuments shall be affixed to the tops of representative piles so that deflection can be measured. The shored excavation and adjacent structures, sidewalks, buildings, utilities, facades, cracks, etc. shall be visually inspected each day. Survey monuments shall be measured at critical stages of dewatering, excavation, shoring, and construction but shall not occur less frequently than once every 30 days. Reports shall be prepared by the California Professional Land Surveyor documenting the movement monitoring results. In the event that vibration or settlement due to excavation or construction activity causes damage requiring repairs to the adjacent older structure at receptor location V1 (multi-family residential uses) or the historic bridge at receptor location V6 (the 7th Street Bridge) based on assessment by the third-party inspector or engineer, the Applicant/or the Applicants designated representative, shall arrange for repairs during the construction phase. The repair work shall be performed by a qualified contractor. Repair of historic features on the historic bridge at receptor V6 (the 7th Street Bridge) shall be performed in consultation with a qualified preservation consultant and in accordance with the California Historical Building Code and the Secretary of the Interior's Standards, as appropriate. A log of all complaints submitted and actions taken to address those complaints shall be kept on site and shall be provided to the City prior to full build permit issuance/at the conclusion of demolition and shoring, and review by Office of Historic Resources (OHR) shall be required if any damage occurs related to the bridge.

NOISE-MM-9: Construction Vibration (Human Annoyance). Prior to the issuance of a demolition or building permit, to address potential vibration impacts regarding human annoyance, the Applicant shall designate a construction relations officer to serve as a liaison with the adjacent sensitive receptor location V1. The liaison shall be responsible for responding to concerns regarding vibration within 24 hours of receiving a complaint. The liaison shall respond to concerns by ensuring that steps are taken to reduce vibration levels at V1 (multi-family residential uses located at 2101 E. 7th Street) as deemed appropriate and safe by

the on-site construction manager. Such steps could include substituting lower vibration generating equipment or activity, rescheduling of high vibration-generating construction activity, or other potential adjustments to the construction program to reduce vibration levels at the adjacent sensitive receptor location V1. A log of all complaints submitted and actions taken to address those complaints shall be kept on site and shall be provided to the City prior to full build permit issuance/at the conclusion of demolition and shoring.

Operational vibration impacts would be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.

(3) Level of Significance After Mitigation

(a) Construction

Regarding impacts due to structural damage, Mitigation Measure NOISE-MM-6 prohibits the use of vibratory construction equipment at distances that would result in significant impacts to the V1 and V6 with the exception of temporary shoring activities and shoring infrastructure. Shoring will require the use of a drill rig and is required to provide adequate physical support for subterranean excavation. As a result, although the installation of the required support infrastructure to protect surrounding structures during excavation would generate levels of vibration that would exceed applicable thresholds, the support is needed to provide adequate support during grading activities. As shown in Table IV.I-38, the operation of a drill rig at a distance of five feet would result in a vibration velocity of 0.995 in/sec PPV. Mitigated construction vibration velocities are shown in **Table IV.I-40**, *Mitigated Construction Vibration Impacts – Building Damage*. With implementation of Mitigation Measure NOISE-MM-6, potential structural vibration impacts on receptor V1 and V6 would be mitigated to less than significant for the majority of construction activities, except for temporary shoring activities and installation of shoring infrastructure. Because shoring is needed to provide adequate support for the bridge, there is no feasible mitigation that could reduce vibration velocities due to shoring, and shoring would still result in velocities of up to 0.995 in/sec PPV.

To further address potentially significant structural vibration impacts due to shoring activities, Mitigation Measure NOISE-MM-7 is proposed and requires that shoring systems be designed in accordance with all current code requirements, industry best practices, and recommendations of the Project Geotechnical Engineer. Deflection limits would be implemented in consideration of protecting adjacent older structures (receptor location V1) and the historic 7th Street bridge (receptor location V6). Although it may not be feasible to maintain vibration velocities for shoring activities below the vibration standard, if vibration levels do exceed standards, it may not result in structural damage. However, in the event structural damage does occur, it would be required to be repaired pursuant to Mitigation Measure NOISE-MM-8. Mitigation Measure NOISE-MM-8 requires that the physical condition of V1 and V6 be documented prior to the commencement of

TABLE IV.I-40
MITIGATED CONSTRUCTION VIBRATION IMPACTS – BUILDING DAMAGE

Off-Road Construction Equipment[a]	FTA Reference Level at 25 feet (in/sec PPV)	Mitigated Distance (feet)	Estimated Vibration Velocity Levels at the Mitigated Distance (in/sec PPV)[b]	Significance Threshold[c]	Exceed Significance Thresholds?
V1					
Large Bulldozer	0.089	21	0.116	0.12	No
Loaded Trucks	0.076	19	0.115		No
Jackhammer	0.035	12	0.105		No
Small Bulldozer	0.003	3	0.072		No
V6					
Large Bulldozer	0.089	8	0.492	0.5	No
Loaded Trucks	0.076	8	0.420		No
Jackhammer	0.035	5	0.391		No
Small Bulldozer	0.003	1	0.375		No

NOTE(S):

[a] Represents off-site building structures with unmitigated impacts (see Table IV.I-38).
[b] Vibration level calculated based on FTA reference vibration level at 25-foot reference distance.
[c] FTA criteria for reinforced-concrete, steel, or timber (no plaster) structures (0.5 in/sec PPV) and for buildings susceptible to vibration damage (0.12 in/sec PPV).

SOURCE(S): FTA, *Transit Noise and Vibration Impact Assessment*; ESA, 2021. Appendix J of this Draft EIR.

construction activity and that daily inspections of V1 and V6 occur when construction activities involving vibration-generating equipment such as bulldozers, jackhammers, loaded trucks, and drill rigs are used within 21 feet of V1 and within 8 feet of V6. In the event that construction-related vibration occurs, the contractor shall arrange for inspection and repair as necessary. With implementation of Mitigation Measures NOISE-MM-7 and NOISE-MM-8, impacts with regard to structural damage for the 7th Street bridge (receptor V6) would be mitigated to less than significant. Similarly, with implementation of Mitigation Measures NOISE-MM-7 and NOISE-MM-8, if Project construction due to shoring activities causes damage to receptor V1, such damage could be repaired by the Project contractor, and if so, potentially significant structural vibration impacts to receptor V1 would be reduced to a less than significant level. However, because receptor V1 is a privately-owned structure, inspections and repair pursuant to Mitigation Measure NOISE-MM-8 would require the consent of the property owner, who may not agree. Thus, impacts to receptor V1 would be significant and unavoidable should consent for inspections and repairs not be granted.

Therefore, short term construction groundborne vibration impacts associated with structural damage would be less than significant with mitigation incorporated for the majority of on-site construction activities, but would be significant and unavoidable for temporary shoring activities and installation of shoring infrastructure for receptor V1 as consent for inspections and repair on receptor V1 may not be granted.

With implementation of Mitigation Measures NOISE-MM-6 through NOISE-MM-9, construction vibration impacts related to human annoyance would remain significant and unavoidable with respect to exceedance of applicable thresholds. Mitigation Measure NOISE-MM-10 requires the designation of a construction relations officer to address potential vibration impacts related to human annoyance. Requiring a construction relations officer to serve as a liaison to the community regarding construction vibration would provide the community with an avenue for expressing concerns and an opportunity for the Project to alter its construction programming (use of equipment) to address potential vibration human annoyance concerns. Potential additional mitigation measures that were considered to reduce vibration impacts from on-site construction activities with respect to human annoyance include 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 vibration). However, wave barriers must be very deep and long to be effective and are not considered feasible for temporary applications, such as the Project construction.[81] Per Caltrans, the wave barrier would need to be at least two-thirds of the seismic wavelength and that the length of the barrier must be at least one wavelength (typical wavelength can be up to 500 feet). In addition, constructing a wave barrier to reduce the Project's construction-related vibration impacts would, in and of itself, generate groundborne vibration from the excavation equipment. Thus, it is concluded that there are no feasible mitigation measures that could be implemented to reduce the temporary vibration impacts from on-site construction associated with human annoyance. **Therefore, short term construction groundborne vibration and groundborne noise impacts associated with human annoyance would be significant and unavoidable.**

(b) Operation

Operational vibration impacts would be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.

(c) Project with the Deck Concept

Construction of the Project with the Deck Concept would require similar construction activities as the Project. The construction vibration generated in the analysis above also reflects the construction vibration generated during construction of the Project with the Deck Concept. In addition, as construction of the Project with the Deck Concept would

81 Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013.

implement Mitigation Measures NOISE-MM-6 through NOISE-MM-10, impacts related to construction noise would also be similar as those of the Project. Thus, the conclusions regarding impact significance presented above are the same and apply to the Project and the Project with the Deck Concept. **As such, short term construction groundborne vibration impacts associated with structural damage would be less than significant with mitigation incorporated for the majority of on-site construction activities, but would be significant and unavoidable for temporary shoring activities and installation of shoring infrastructure for receptor V1 if consent to implement mitigation is not granted by the property owner. Furthermore, short term on-site construction groundborne vibration impacts associated with human annoyance would be significant and unavoidable.**

All operational components under the Project with the Deck Concept related to the land uses proposed, compliance with regulations, and implementation of Project Design Features would be similar to that of the Project. **As concluded above, operational vibration impacts would be less than significant without mitigation.**

Threshold (c): Would the Project expose people residing or working in the project area to excessive noise levels (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)?

As discussed in Subsection VI.6, *Impacts Found Not to Be Significant*, of this Draft EIR and in the Initial Study (Appendix A-2) of the Draft EIR, the Project Site is not located within an airport land use plan or within two miles of a public use airport or private airstrip. The nearest airport is the Hawthorne Municipal Airport located approximately 10 miles southwest of the Project Site. **Therefore, the Project would not expose people residing or working in the project area to excessive noise levels related to the operation of a private airstrip or public airport. No impact would occur.**

(d) Project with the Deck Concept

Impacts associated with excessive private airstrip or public airport noise to people residing or working in the Project Site would be the same under the Project or the Project with the Deck Concept. Thus, the conclusions regarding impact significance presented above are the same and apply to the Project and the Project with the Deck Concept. **As such, the Project with the Deck Concept would not expose people residing or working in the project area to excessive noise levels related to the operation of a private airstrip or public airport. No impact would occur.**

e) Cumulative Impacts

(1) Impact Analysis

(a) Construction - Noise

(i) On-Site Construction Noise

The potential for cumulative construction noise impacts from on-site construction activities to occur is based on the distance between the Project and each of the related projects. Noise from construction activities would normally affect the areas immediately adjacent to each of the construction sites, specifically areas that are less than 500 feet from a construction site (500 feet is the distance identified in the Thresholds Guide as the Screening Criterion with respect to construction activities). That is, cumulative noise impacts could occur at receptor locations that are within 500 feet from two different construction sites. Therefore, based on the 500-foot Screening Criterion distance, the cumulative construction noise impacts analysis is limited to related projects within 1,000 feet of the Project Site. The 1,000-foot distance is based on an assumption that a noise-sensitive receptor would be located halfway between the Project Site and the related project.

As discussed in Chapter III, *Environmental Setting*, subsection III.2, Related Projects, of this Draft EIR, there are 141 related projects identified in the vicinity of the Project Site. Eight development projects are situated within 1,000 feet, which is the screening distance noted above, (approximately 50 feet to 800 feet) from the Project Site:

- Related Project No. 9 – Mixed-Use Development located at 2051 E. 7th Street
- Related Project No. 12 – Commercial Use Development located at 2030 E. 7th Street
- Related Project No. 20 – Commercial Use Development located at 2130 E. Violet Street
- Related Project No. 35 – Mixed-Use Development located at 676 Mateo Street
- Related Project No. 40 – Mixed-Use Development located at 2143 E. Violet Street
- Related Project No. 44 – Commercial Use Development located at 640 S. Santa Fe Avenue
- Related Project No. 67 – Mixed-Use Development located at 641 Imperial Street
- Related Project No. 141 – Sixth Street PARC[82]

[82] In order to ensure that potential impacts to known future receptors is included, the future PARC is analyzed as sensitive receptor R4 and assumed to be operational as a recreational space. For purposes of the cumulative analysis, worst-case conditions are assumed for each discussion, concurrent construction of the Project and the PARC and concurrent operations of the Project and the PARC, with the potential to impact other nearby sensitive receptors.

Related Project No. 67 would be located approximately 700 feet from the Project Site but is not included in the cumulative analysis since the related project is located outside of the screening distance of 500 feet from the Project (and is therefore not analyzed is a noise-sensitive receptor affected by the Project) and noise sensitive receptors are not located between Related Project No. 67 and the Project Site that would be affected by both Related Project No. 67 and the Proposed Project. All other related projects are located a minimum of 1,100 feet away from the Project Site and are thus not within the Thresholds Guide Screening Criterion distance.

Noise from on-site construction activities is localized and would normally affect the areas within 500 feet from the individual construction sites. The nearest existing sensitive/residential uses to the Project Site that would be subject to cumulative noise impacts are the multi-family residential uses (R1) to the west of the Project Site, the multi-family residential uses (R2) to the south of the Project Site, and the 6th Street PARC (R4) to the north of the Project Site.

The related projects closest to the R1 residences are: Related Project No. 9, Related Project No. 12, and Related Project No. 35. If construction of any of these related projects were to overlap with construction of the Project, cumulative construction noise level increases could occur at R1. At the time of preparation of this Draft EIR, the exact construction scheduling and timing of construction activities and phases for these projects are not known. Therefore, a quantitative analysis assuming a construction overlap and/or a combined construction noise level would be speculative. Nonetheless, based on the distance of R1 to Related Projects No. 9, No. 12, and No. 35 and the Project Site, and since the Project would individually result in a significant and unavoidable project-level impact on R1, Related Projects No. 9, No. 12 and No. 35 are in close enough proximity that their individual or combined short-term construction noise levels would have a significant cumulative impact on sensitive receptor R1, even with implementation of any mitigation measures by these respective related projects. **Accordingly, given the Project's significant unavoidable construction impacts on receptor R1, if construction of one or more of these related projects were to overlap with Project construction, there would be a significant cumulative impact, and the Project's contribution to cumulative construction noise would be cumulatively considerable.**

Related Projects No. 20 and No. 40 would be located approximately 400 feet and 200 feet from R2, respectively. If construction of any of these related projects were to overlap with construction of the Project, cumulative construction noise level increases could occur at R2. The exact construction scheduling and timing of construction activities and phases for these projects are not known. Therefore, a quantitative analysis assuming a construction overlap and/or a combined construction noise level would be speculative. Nonetheless, based on the distance of R2 to Related Projects No. 20 and No. 40 and the Project Site, they are in close enough proximity that their individual or combined short-term construction noise levels would have a significant cumulative impact on sensitive receptor R2, even with implementation of mitigation measures by these respective related projects. As shown in Table IV.I-7, the Project would result in significant on-site

construction noise impacts at receptor location R2. **Accordingly, if construction of the Project were to overlap with one or more of these related projects, there would be a significant cumulative impact, and the Project's contribution to cumulative construction noise would be cumulatively considerable.**

Related Project No. 44 is located approximately 50 feet from the Project Site and approximately 340 feet from the nearest sensitive receptor (R4). If construction of Related Project No. 44 were to overlap with construction of the Project, cumulative construction noise level increases could occur at R4. The exact construction scheduling and timing of construction activities and phases for this Project is not known. Therefore, a quantitative analysis assuming a construction overlap and/or a combined construction noise level would be speculative. Nonetheless, based on the distance of R4 to the related project and the Project Site, and since the Project would individually result in a significant and unavoidable project-level impact on R4, Related Project No. 44 is in close enough in proximity that its individual short-term construction noise levels would have a significant cumulative impact on sensitive receptor R4, even with implementation of mitigation measures by the related project. As shown in Table IV.I-7, the Project would result in significant on-site construction noise impacts at receptor location R4. **Accordingly, if construction of the Project were to overlap with Related Project No. 44, there would be a significant cumulative impact, and the Project's contribution to cumulative construction noise would be cumulatively considerable.**

Related Project No. 141 is also considered as Sensitive Receptor R4 in this analysis and is located greater than 1,000 feet away from R1, R2, and R3. According to the Thresholds Guide, the screening criteria for construction noise analysis is 500 feet. There are no other sensitive receptors located within 500 feet of both R4 and the Project. **Therefore, if construction of Related Project No. 141 were to overlap with construction of the Project, due to its distance from sensitive receptors R1, R2 and R3, it would not contribute to the Project's construction noise impacts and no cumulative impacts associated with Related Project No. 141 would occur.**

(ii) Off-Site Construction Noise

If construction of the related projects identified above would overlap with Project construction and construction trucks would utilize the same roadway network as the Project, cumulative off-site construction noise level increases could occur in the Project area. The exact construction scheduling and timing of construction truck trips for these projects are not known. Therefore, a quantitative analysis assuming a construction overlap and/or a combined on-road construction noise level would be speculative. As shown in Table IV.I-8, the Project would result in significant off-site construction noise impacts due to construction trips along two segments prior to the implementation of mitigation: Jesse Street between Mateo Street and Santa Fe Avenue and Mateo Street between 4th Place and Willow Street. Therefore, any additional construction truck trips from related projects would, combined with the Project, result in cumulatively significant impacts on sensitive receptors along these two segments.

Eight of the roadway segments analyzed for Project construction traffic include noise-sensitive receptors that could be impacted by cumulative construction traffic in the event that Related Project construction trucks overlap with Project trucks. **Table IV.I-41**, *Significant Related Project Construction Traffic*, lists the number of trucks in addition to Project trucks that would result in each segment reaching the threshold of a 5 dBA increase in traffic noise over existing conditions (see Table IV.I-5).

As shown in Table IV.I-41, should the construction of any related projects overlap with the Project and require construction truck trips along the identified segments, there is potential for the related projects to add enough hourly heavy-duty trucks to result in significant cumulative increases in traffic noise. **As such, should construction trips of related projects overlap with Project construction trips, there would be a significant cumulative impact, and the Projects contribution to short-term cumulative noise impacts on sensitive receptors would be cumulatively considerable.**

TABLE IV.I-41
SIGNIFICANT RELATED PROJECT CONSTRUCTION TRAFFIC

Roadway Segment	Existing Traffic Noise Level (dBA CNEL)[a]	Threshold (dBA CNEL)[b]	Project Trucks	Related Project Trucks to Reach Threshold
7th Street				
Between S. Central Avenue and S. Alameda Street	68.3	73.3	56	164
Jesse Street				
Between Mateo Street and Santa Fe Avenue	58.6	63.6	56	0[c]
Mateo Street				
Between 6th Street and Jesse Street	62.6	67.6	56	6
Between E. 4th Place and Willow Street	62.1	67.1	56	0[c]
N. Alameda Street				
Between Temple Street and East 1st Street	70.8	75.8	56	294
Between E. 1st Street and E. 2nd Street	69.6	74.6	56	214
S. Alameda Street				
Between E. 2nd Street and 3rd Street	70.2	75.2	56	254
Santa Fe Avenue				
Between Jesse Street and 7th Street	66.2	71.2	56	79

NOTE(S):

[a] See Table IV.I-5 for Existing traffic noise levels.
[b] Threshold is existing traffic noise level +5 dBA CNEL.
[c] Project increment along segment is significant prior to mitigation. There, any additional truck would result in significant cumulative impact.

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

(b) Operations - Noise

(i) On-Site Operational Noise

With respect to on-site noise sources, as is the case for the Project, compliance with the LAMC-required provisions that limit stationary source noise from items such as mechanical equipment would ensure that noise levels would be less than significant at the property line for each related project. In addition, on-site noise generated by each related project would be sufficiently low and sufficiently distant from the Project Site that it would not result in an additive increase to Project-related noise levels. Further, noise from other on-site sources, including parking lots, open space activity, emergency generator, loading docks, and heliport noise would be limited to areas in the immediate vicinity of each related project. Although each related project could potentially impact an adjacent sensitive use, that potential impact would be localized to that specific area and would not contribute to cumulative noise conditions at or adjacent to the Project Site. **Therefore, both the Project would not result in a significant cumulative impact with regard to stationary source noises.**

(ii) Cumulative Off-Site Operational Noise Under Existing Conditions

Cumulative off-site noise impacts would occur primarily as a result of increased traffic on local roadways due to operation of the Project and the related projects, as traffic is the greatest source of operational noise in the Project Site area. Cumulative off-site traffic-generated noise impacts were assessed based on a comparison of the noise levels generated by the existing plus Project traffic volumes to the noise levels generated by the existing base traffic volumes. The existing plus Project traffic volumes represent an estimate of related projects traffic and the Project traffic volumes. Therefore, the cumulative increase represents the increase in traffic volumes attributed to related project traffic and the Project traffic volumes over existing conditions. The results of that comparison are provided in **Table IV.I-42**, *Off-Site Traffic Noise Impacts – Existing Project Cumulative Increment*.

The maximum cumulative noise increase where there are sensitive receptors from the Project plus related project traffic condition would be 3.3 dBA CNEL, which would occur along North Alameda Street between 1st Street and 2nd Street where residential and commercial uses are located. Although the segment is currently within the “conditionally acceptable” category for residential uses, the increase in traffic noise would place the segment into the “normally unacceptable” category, which has a Thresholds Guide significance criteria of an increase of 3 dBA CNEL. This increase in traffic noise would exceed the Thresholds Guide significance criteria, which would be a cumulatively significant impact.

TABLE IV.I-42
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing Plus Project Plus Related Projects (B)	Project Plus Related Projects Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	70.1	1.0	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	69.9	1.5	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	69.2	1.1	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	68.1	1.5	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	70.4	2.3	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	70.8	2.8	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	70.9	1.9	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	70.6	2.3	No
Between Rio Street and Anderson Street	Commercial	68.4	70.5	2.1	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	70.6	2.0	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	68.6	1.9	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	66.5	1.1	No

TABLE IV.I-42
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing Plus Project Plus Related Projects (B)	Project Plus Related Projects Increment (B–A)	Exceed Threshold?
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	63.2	4.6	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.6	4.4	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	65.9	3.3	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	66.5	4.4	No
Between Jesse Street and 7th Street	Commercial	63.7	66.3	2.6	No
Between Willow Street and 6th Street	Commercial	62.6	66.9	4.3	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	72.5	1.7	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	72.9	2.1	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	72.9	3.3	**Yes**
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	67.1	1.2	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	72.5	2.6	No
Between 4th Street and 6th Street	Industrial	70.3	72.6	2.3	No
Between 6th Street and 7th Street	Industrial	70.5	72.6	2.1	No
Between E. 2nd Street and 3rd Street	Residential	70.2	72.4	2.2	No

TABLE IV.I-42
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing Plus Project Plus Related Projects (B)	Project Plus Related Projects Increment (B–A)	Exceed Threshold?
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	70.0	2.8	No
Between 8th Street and Porter Street	Commercial	67.6	69.5	1.9	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	68.1	1.9	No
Between Mesquit Street and Jesse Street	Commercial	66.8	68.7	1.9	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	70.5	0.4	No
Between Porter and Olympic Boulevard	Commercial	69.0	70.4	1.4	No
Between Willow Street and Mesquit Street	Commercial	63.4	66.0	2.6	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	57.8	2.6	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.3	3.5	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

As shown previously in Table IV.I-18, the Project's contribution to the existing plus Project noise levels along N. Alameda between 1st Street and 2nd Street would be 0.3 dBA. The Project's contribution to the cumulative noise levels would be substantially below the 3 dBA change in ambient noise levels that would be perceptible outside of a laboratory and are even substantially below the 1 dBA change in noise levels that cannot be perceived except in carefully controlled laboratory experiments.[83] Furthermore, the proposed Project's contribution of 0.3 dBA along this segment would not be the determining factor of a cumulative increase of 3 dBA or more – in other words, the noise levels from the related projects would cause a cumulative increase of 3 dBA or more with or without

83 Caltrans, *TeNS*, Section 2.2.1.

implementation of the proposed Project. Therefore, the perceived noise levels at sensitive land uses along North Alameda Street between 1st Street and 2nd Street with buildout of the related projects would be similar whether or not the proposed Project is implemented. For this reason, the Project's incremental contributions to cumulative noise impacts would be less than cumulatively considerable along this roadway segment.

Cumulative traffic noise increases under the Existing plus Project condition would be cumulatively significant. However, the Project contribution to cumulative increases in traffic noise would not be cumulatively considerable.

(iii) Cumulative Off-Site Operational Noise Under Future (2026) Traffic Conditions

Cumulative off-site noise impacts would occur primarily as a result of increased traffic on local roadways due to operation of the Project and the related projects, as traffic is the greatest source of operational noise in the Project Site area. Cumulative off-site traffic-generated noise impacts were assessed based on a comparison of the noise levels generated by the future cumulative plus Project traffic volumes to the noise levels generated by the existing base traffic volumes.[84] The future cumulative plus Project traffic volumes represent an estimate of the ambient background growth, related projects traffic, and the Project traffic volumes. Therefore, the cumulative increase represents the increase in traffic volumes attributed to ambient background growth, related project traffic, and the Project traffic volumes over existing conditions.[85] The results of that comparison are provided in **Table IV.I-43**, *Off-Site Traffic Noise Impacts – Future (2026) Project Cumulative Increment*.

TABLE IV.I-43
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	70.1	1.0	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	69.9	1.5	No

84 For cumulative analyses, comparing the Future Year 2026 Plus Project traffic noise levels to Existing traffic noise levels would account for the increase in noise levels from the Project as well as ambient growth and Related Projects.

85 For cumulative analyses, comparing the Future Year 2040 Plus Project traffic noise levels to Existing traffic noise levels would account for the increase in noise levels from the Project as well as ambient growth and Related Projects.

TABLE IV.I-43
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	69.2	1.1	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	68.2	1.6	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	70.5	2.4	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	70.8	2.9	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	71.0	2.0	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	70.6	2.3	No
Between Rio Street and Anderson Street	Commercial	68.4	70.6	2.2	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	70.7	2.1	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	68.7	2.0	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	66.6	1.2	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	63.2	4.6	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.6	4.4	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	65.9	3.3	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	66.5	4.4	No
Between Jesse Street and 7th Street	Commercial	63.7	66.3	2.6	No
Between Willow Street and 6th Street	Commercial	62.6	66.9	4.3	No

TABLE IV.I-43
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	72.6	1.8	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	72.9	2.1	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	72.9	3.3	**Yes**
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	67.2	1.3	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	72.5	2.6	No
Between 4th Street and 6th Street	Industrial	70.3	72.6	2.3	No
Between 6th Street and 7th Street	Industrial	70.5	72.6	2.1	No
Between E. 2nd Street and 3rd Street	Residential	70.2	72.5	2.3	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	70.0	2.8	No
Between 8th Street and Porter Street	Commercial	67.6	69.5	1.9	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	68.1	1.9	No
Between Mesquit Street and Jesse Street	Commercial	66.8	68.7	1.9	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	70.6	0.5	No
Between Porter and Olympic Boulevard	Commercial	69.0	70.4	1.4	No
Between Willow Street and Mesquit Street	Commercial	63.4	66.1	2.7	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	57.9	2.7	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.3	3.5	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

The maximum cumulative noise increase where there are sensitive receptors from the Project plus related project traffic and ambient background growth would be 3.3 dBA CNEL, which would occur along North Alameda Street between 1st Street and 2nd Street where residential and commercial uses are located. Although the segment is currently within the "conditionally acceptable" category for residential uses, the increase in traffic noise would place the segment into the "normally unacceptable" category, which has a Thresholds Guide significance criteria of an increase of 3 dBA CNEL. This increase in traffic noise would exceed the Thresholds Guide significance criteria, which would be a cumulatively significant impact.

As shown previously in Table IV.I-19, the Project's contribution to the Future (Year 2026) Plus Project noise levels along N. Alameda between 1st Street and 2nd Street would be 0.1 dBA. The Project's contribution to the cumulative noise levels would be substantially below the 3 dBA change in ambient noise levels that would be perceptible outside of a laboratory and are even substantially below the 1 dBA change in noise levels that cannot be perceived except in carefully controlled laboratory experiments.[86] Furthermore, the proposed Project's contribution of 0.1 dBA along this segment would not be the determining factor of a cumulative increase of 3 dBA or more – in other words, the noise levels from the related projects would cause a cumulative increase of 3 dBA or more with or without implementation of the proposed Project. Therefore, the perceived noise levels at sensitive land uses along North Alameda Street between 1st Street and 2nd Street with buildout of the related projects would be similar whether or not the proposed Project is implemented. For this reason, the Project's incremental contributions to cumulative noise impacts would be less than cumulatively considerable along this roadway segment.

Cumulative traffic noise increases under the future 2026 Project condition would be cumulatively significant. However, the Project contribution to cumulative increases in traffic noise would not be cumulatively considerable.

(iv) Cumulative Off-Site Operational Noise Under Future (2040) Traffic Conditions

The analysis of off-site cumulative traffic noise impacts under future (2040) Project conditions are provided in **Table IV.I-44**, *Off-Site Traffic Noise Impacts – Future (2040) Project Cumulative Increment*. The maximum cumulative noise increase from the Project plus related project traffic and ambient background growth where there are sensitive receptors would be 3.4 dBA CNEL, which would occur along North Alameda Street between 1st Street and 2nd Street where residential and commercial uses are located. Although the segment is currently within the "conditionally acceptable" category for residential uses, the increase in traffic noise would place the segment into the "normally unacceptable" category, which has a Thresholds Guide significance criteria of an increase of 3 dBA CNEL. This increase in traffic noise would exceed the Thresholds Guide significance criteria, which would be a cumulatively significant impact.

86 Caltrans, *TeNS*, Section 2.2.1.

TABLE IV.I-44
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	70.2	1.1	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	70.0	1.6	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	69.3	1.2	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	68.3	1.7	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	70.5	2.4	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	70.9	3.0	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	71.1	2.1	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	70.7	2.4	No
Between Rio Street and Anderson Street	Commercial	68.4	70.7	2.3	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	70.8	2.2	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	68.7	2.0	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	66.7	1.3	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	63.3	4.7	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.6	4.4	No

TABLE IV.I-44
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	65.9	3.3	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	66.6	4.5	No
Between Jesse Street and 7th Street	Commercial	63.7	66.4	2.7	No
Between Willow Street and 6th Street	Commercial	62.6	67.0	4.4	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	72.6	1.8	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	73.0	2.2	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	73.0	3.4	**Yes**
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	67.2	1.3	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	72.6	2.7	No
Between 4th Street and 6th Street	Industrial	70.3	72.7	2.4	No
Between 6th Street and 7th Street	Industrial	70.5	72.7	2.2	No
Between E. 2nd Street and 3rd Street	Residential	70.2	72.5	2.3	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	70.1	2.9	No
Between 8th Street and Porter Street	Commercial	67.6	69.6	2.0	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	68.2	2.0	No
Between Mesquit Street and Jesse Street	Commercial	66.8	68.8	2.0	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	70.7	0.6	No
Between Porter and Olympic Boulevard	Commercial	69.0	70.5	1.5	No

TABLE IV.I-44
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
Between Willow Street and Mesquit Street	Commercial	63.4	66.1	2.7	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	57.9	2.7	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.3	3.5	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

As shown previously in Table IV.I-20, the Project's contribution to the Future with Project noise level along North Alameda Street between 1st Street and 2nd Street would be 0.2 dBA CNEL. The Project's contribution to the cumulative noise levels would be substantially below the 3 dBA change in ambient noise levels that would be perceptible outside of a laboratory and are even substantially below the 1 dBA change in noise levels that cannot be perceived except in carefully controlled laboratory experiments.[87] Furthermore, the proposed Project's contribution of 0.2 dBA along this segment to the off-site cumulative traffic noise levels would not be the determining factor of a cumulative increase of 3 dBA or more – in other words, the noise levels from the related projects would cause a cumulative increase of 3 dBA or more with or without implementation of the proposed Project. Therefore, the perceived noise levels at sensitive land uses along North Alameda Street between 1st Street and 2nd Street with buildout of the related projects would be similar whether or not the proposed Project is implemented. For this reason, the Project's incremental contributions to cumulative noise impacts would be less than cumulatively considerable along North Alameda Street between 1st Street and 2nd Street.

Cumulative traffic noise increases under the future 2040 Project condition would be cumulatively significant. However, the Project's contribution to cumulative increases in traffic noise would not be cumulatively considerable.

(v) Heliport Noise

The Project would include a heliport located on Building 5, which is assumed to be used two times per day and 480 times per year. As there are no related projects located near

87 Caltrans, *TeNS*, Section 2.2.1.

the Project Site that are known to include heliports, it would be speculative to assume that there would be cumulative heliport noise impacts on the sensitive receptors analyzed. **Therefore, the use of the heliport would not result in a significant cumulative impact.**

(c) Construction - Groundborne Vibration

Due to rapid attenuation characteristics of groundborne vibration, only related projects located adjacent to the same sensitive receptors would result in cumulatively considerable vibration impacts. However, there are no structures adjacent to both the Project and Related Project No. 141 that could be impacted by potential cumulative vibration from overlapping construction. Vibration attenuates at high rates with distance. Therefore, construction vibration would only affect sensitive uses located directly adjacent to the Proposed Project and Related Project No. 141. **Therefore, due to the rapid attenuation of vibration, should construction of Related Project No. 141 overlap with Project construction, it would not contribute to the Project's construction vibration impacts and no cumulative impacts associated with Related Project No. 141 would occur.**

Several related projects are in locations that could potentially lead construction traffic, including truck traffic, onto the 7th Street Bridge to access the I-5, I-10, and SR-60. As discussed above in regard to Project impacts, Caltrans designates and has permitted a weight limitation of 80,000 pounds for each vehicle on the 7th Street Bridge (Bridge No. 53C1321, per DOT 2018 Bridge List). Commercially available concrete mixer and dump trucks would be well under Caltrans' weight limitation. Additionally, the 7th Street Bridge is constructed as a reinforced concrete, closed spandrel, arch bridge that has undergone multiple improvements and retrofits, including seismic retrofitting in 1990 that has improved stability of the bridge. **As related project trucks and Project construction trucks would comply with and be well under the Caltrans required weight limitation for the 7th Street Bridge, no cumulative impacts would occur.**

(d) Operation - Groundborne Vibration

Due to the rapid attenuation characteristics of groundborne vibration and distance from each of the related projects to the Project Site, there is no potential for cumulative operational impacts with respect to groundborne vibration. **Therefore, operation of the Project, considered together with related projects, would not result in a significant cumulative impact.**

(e) Project with the Deck Concept

Construction activities would be essentially the same under the Project and the Project with the Deck Concept. Accordingly, cumulative construction impacts would be essentially the same under the Project and the Project with the Deck Concept. Thus, the conclusions regarding cumulative construction impacts presented within the analyses below are the same and apply to the Project and the Project with the Deck Concept. **Therefore, under the Project with the Deck Concept, there would be a significant cumulative on-site**

construction impact, and the Project with Deck Concept's contribution to cumulative construction noise would be cumulatively considerable. In addition, should construction truck trips of the related projects identified above overlap with Project with the Deck Concept construction trips along the identified roadway segments, there would be a significant cumulative impact, and the Project with the Deck Concept's contribution to associated short-term cumulative noise impacts on sensitive receptors would be cumulatively considerable. Furthermore, due to the rapid attenuation of vibration, should construction of Related Project No. 141 overlap with construction of the Project with the Deck Concept, it would not contribute to the Project with the Deck Concept's construction vibration impacts and no cumulative impacts associated with Related Project No. 141 would occur. Additionally, as related project trucks and construction trucks under the Project with the Deck Concept would comply with and be well under the Caltrans required weight limitation for the 7th Street Bridge, no cumulative impacts would occur.

All operational components under the Project with the Deck Concept related to the land uses proposed, compliance with regulations, and implementation of Project Design Features would be similar to that of the Project. Operational noise sources would be essentially the same under the Project and the Project with the Deck Concept. Accordingly, cumulative stationary source noise impacts would be essentially the same under the Project and the Project with the Deck Concept. Thus, the conclusions regarding the cumulative stationary source impact analysis, mitigation measures, and impact significance presented above are the same and apply to the Project and the Project with the Deck Concept. **Therefore, both the Project with the Deck Concept, considered together with related projects, would not result in a significant cumulative impact with regard to stationary source noises. In addition, the use of the heliport would not result in a significant cumulative impact.**

The analysis of off-site cumulative traffic noise impacts under existing plus Related Projects plus Project with the Deck Concept conditions are provided in **Table IV.I-45**, *Off-Site Traffic Noise Impacts – Existing Project with the Deck Concept Cumulative Increment*.

The maximum cumulative noise increase where there are sensitive receptors from the Project with Deck Concept plus related project traffic condition would be 3.3 dBA CNEL, which would occur along North Alameda Street between 1st Street and 2nd Street where residential and commercial uses are located. This increase in traffic noise would exceed the Thresholds Guide significance criteria of an increase of 3 dBA CNEL since the Existing with Project Plus Deck Concept noise level would be in the "normally unacceptable" category for residential uses, which would be a cumulatively significant impact.

TABLE IV.I-45
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing Plus Project Plus Related Projects (B)	Project Plus Related Projects Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	70.1	1.0	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	69.9	1.5	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	69.2	1.1	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	68.2	1.6	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	70.5	2.4	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	70.8	2.9	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	70.9	1.9	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	70.6	2.3	No
Between Rio Street and Anderson Street	Commercial	68.4	70.5	2.1	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	70.7	2.1	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	68.6	1.9	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	66.5	1.1	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	63.4	4.8	No

TABLE IV.I-45
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing Plus Project Plus Related Projects (B)	Project Plus Related Projects Increment (B–A)	Exceed Threshold?
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.8	4.6	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	65.9	3.3	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	66.5	4.4	No
Between Jesse Street and 7th Street	Commercial	63.7	66.3	2.6	No
Between Willow Street and 6th Street	Commercial	62.6	66.9	4.3	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	72.5	1.7	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	72.9	2.1	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	72.9	3.3	**Yes**
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	67.1	1.2	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	72.5	2.6	No
Between 4th Street and 6th Street	Industrial	70.3	72.6	2.3	No
Between 6th Street and 7th Street	Industrial	70.5	72.6	2.1	No
Between E. 2nd Street and 3rd Street	Residential	70.2	72.4	2.2	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	70.0	2.8	No

TABLE IV.I-45
OFF-SITE TRAFFIC NOISE IMPACTS – EXISTING PROJECT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Existing Plus Project Plus Related Projects (B)	Project Plus Related Projects Increment (B–A)	Exceed Threshold?
Between 8th Street and Porter Street	Commercial	67.6	69.5	1.9	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	68.1	1.9	No
Between Mesquit Street and Jesse Street	Commercial	66.8	68.7	1.9	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	70.5	0.4	No
Between Porter and Olympic Boulevard	Commercial	69.0	70.4	1.4	No
Between Willow Street and Mesquit Street	Commercial	63.4	66.1	2.7	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	58.0	2.8	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.6	3.8	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

As shown previously in Table IV.I-27, the Project with Deck Concept's contribution to the existing plus Project with Deck Concept noise levels along N. Alameda between 1st Street and 2nd Street would be 0.3 dBA. The Project with Deck Concept's contribution to the cumulative noise levels would be substantially below the 3 dBA change in ambient noise levels that would be perceptible outside of a laboratory and are even substantially below the 1 dBA change in noise levels that cannot be perceived except in carefully controlled laboratory experiments.[88] Furthermore, the Project with Deck Concept's contribution of 0.3 dBA along this segment would not be the determining factor of a cumulative increase of 3 dBA or more – in other words, the noise levels from the related projects would cause a cumulative increase of 3 dBA or more with or without implementation of the Project with Deck Concept. Therefore, the perceived noise levels at sensitive land uses along North Alameda Street between 1st Street and 2nd Street with buildout of the related projects

88 Caltrans, *TeNS*, Section 2.2.1.

would be similar whether or not the Project with Deck Concept is implemented. For this reason, the Project with Deck Concept's incremental contributions to cumulative noise impacts would be less than cumulatively considerable along this roadway segment.

Cumulative traffic noise increases under the Existing plus Project with Deck Concept condition would be cumulatively significant. However, the Project with Deck Concept contribution to cumulative increases in traffic noise would not be cumulatively considerable.

The analysis of off-site cumulative traffic noise impacts under future (2026) Project with the Deck Concept conditions are provided in **Table IV.I-46**, *Off-Site Traffic Noise Impacts – Future (2026) Project with the Deck Concept Cumulative Increment*.

TABLE IV.I-46
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PROJECT WITH THE DECK CONCEPT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B-A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	70.1	1.0	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	69.9	1.5	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	69.3	1.2	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	68.2	1.6	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	70.5	2.4	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	70.8	2.9	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	71.0	2.0	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	70.6	2.3	No
Between Rio Street and Anderson Street	Commercial	68.4	70.6	2.2	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	70.7	2.1	No

TABLE IV.I-46
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PROJECT WITH THE DECK CONCEPT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B-A)	Exceed Threshold?
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	68.6	1.9	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	66.6	1.2	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	63.3	4.7	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.7	4.5	No
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	65.9	3.3	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	66.5	4.4	No
Between Jesse Street and 7th Street	Commercial	63.7	66.3	2.6	No
Between Willow Street and 6th Street	Commercial	62.6	66.9	4.3	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	72.5	1.7	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	72.9	2.1	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	72.9	3.3	**Yes**
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	67.1	1.2	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	72.5	2.6	No
Between 4th Street and 6th Street	Industrial	70.3	72.6	2.3	No
Between 6th Street and 7th Street	Industrial	70.5	72.6	2.1	No

TABLE IV.I-46
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2026) PROJECT WITH THE DECK CONCEPT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B-A)	Exceed Threshold?
Between E. 2nd Street and 3rd Street	Residential	70.2	72.5	2.3	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	70.0	2.8	No
Between 8th Street and Porter Street	Commercial	67.6	69.5	1.9	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	68.1	1.9	No
Between Mesquit Street and Jesse Street	Commercial	66.8	68.7	2.1	No
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	70.6	0.5	No
Between Porter and Olympic Boulevard	Commercial	69.0	70.4	1.4	No
Between Willow Street and Mesquit Street	Commercial	63.4	66.1	2.7	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	57.9	2.7	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.4	3.6	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

The maximum cumulative noise increase from the Project with the Deck Concept plus related project traffic and ambient background growth where there are sensitive receptors would be 3.3 dBA CNEL, which would occur along North Alameda Street between 1st Street and 2nd Street where residential and commercial uses are located. These increases in traffic noise would exceed the Thresholds Guide significance criteria of an increase of 3 dBA CNEL since the Future Plus Project with the Deck Concept noise levels would be in the “normally unacceptable” category for residential uses, which would be a cumulatively significant impact.

As shown previously in Table IV.I-28, the Project's contribution to the Future (year 2040) with Project noise levels on North Alameda Street between 1st Street and 2nd Street would be 0.1 dBA CNEL. The Project's contribution to the cumulative noise levels would be substantially below the 3 dBA change in ambient noise levels that would be perceptible outside of a laboratory and are even substantially below the 1 dBA change in noise levels that cannot be perceived except in carefully controlled laboratory experiments.[89] Furthermore, the proposed Project's contribution of 0.1 dBA along this segment would not be the determining factor of a cumulative increase of 3 dBA or more – in other words, the noise levels from the related projects would cause a cumulative increase of 3 dBA or more with or without implementation of the proposed Project with the Deck Concept. Therefore, the perceived noise levels at sensitive land uses along North Alameda Street between 1st Street and 2nd Street with buildout of the related projects would be similar whether or not the proposed Project is implemented. For this reason, the Project's incremental contributions to cumulative noise impacts would be less than cumulatively considerable along North Alameda Street between 1st Street and 2nd Street.

Cumulative traffic noise increases under the future 2026 Project with the Deck Concept condition would be cumulatively significant. However, the Project with the Deck Concept's contribution to cumulative increases in traffic noise would not be cumulatively considerable.

The analysis of off-site cumulative traffic noise impacts under future (2040) Project with the Deck Concept conditions are provided in **Table IV.I-47**, *Off-Site Traffic Noise Impacts –Future (2040) Project with the Deck Concept Cumulative Increment*. The maximum cumulative noise increase from the Project with the Deck Concept plus related project traffic and ambient background growth where there are sensitive receptors would be 3.4 dBA CNEL, which would occur along North Alameda Street between 1st Street and 2nd Street where residential and commercial uses are located. This increase in traffic noise would exceed the Thresholds Guide significance criteria of an increase of 3 dBA CNEL since the Future Plus Project with the Deck Concept noise level would be in the normally unacceptable category for residential uses, which would be a cumulatively significant impact.

89 Caltrans, *TeNS*, Section 2.2.1.

TABLE IV.I-47
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PROJECT WITH THE DECK CONCEPT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
4th Street					
Between S. Alameda Street and Molino Street	Commercial	69.1	70.2	1.1	No
6th Street					
Between S. Alameda Street and Mateo Street	Industrial	68.4	70.0	1.6	No
Between Santa Fe Avenue and Boyle Avenue	Industrial	68.1	69.4	1.3	No
Between Mateo Street and Santa Fe Avenue	Commercial	66.6	68.3	1.7	No
7th Street					
Between Mateo Street and Santa Fe Avenue	Commercial	68.1	70.6	2.5	No
Between S. Alameda Street and Mateo Street	Commercial	67.9	70.9	3.0	No
Between S. Anderson Street and US-101 Southbound Ramp	Commercial	69.0	71.1	2.1	No
Between S. Central Avenue and S. Alameda Street	Commercial/ Residential	68.3	70.7	2.4	No
Between Rio Street and Anderson Street	Commercial	68.4	70.7	2.3	No
Between Santa Fe Avenue and S. Rio Street	Commercial	68.6	70.8	2.2	No
Between US-101 Southbound Ramp and Boyle Avenue	Open Spaces	66.7	68.8	2.1	No
E. 8th Street					
Between I-10 Westbound Ramp and Santa Fe Avenue	Industrial	65.4	66.7	1.3	No
Jesse Street					
Between Mateo Street and Santa Fe Avenue	Industrial/ Residential	58.6	63.5	4.9	No
Between Santa Fe Avenue and Mesquit Street	Industrial	60.2	64.8	4.6	No

TABLE IV.I-47
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PROJECT WITH THE DECK CONCEPT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
Mateo Street					
Between 6th Street and Jesse Street	Commercial/ Residential	62.6	66.0	3.4	No
Between E. 4th Place and Willow Street	Commercial/ Residential	62.1	66.6	4.5	No
Between Jesse Street and 7th Street	Commercial	63.7	66.4	2.7	No
Between Willow Street and 6th Street	Commercial	62.6	67.0	4.4	No
N. Alameda Street					
Between Aliso Street and Temple Street	Commercial	70.8	72.6	1.8	No
Between Temple Street and East 1st Street	Residential/ Commercial	70.8	73.0	2.2	No
Between E. 1st Street and E. 2nd Street	Residential/ Commercial	69.6	73.0	3.4	**Yes**
Porter Street					
Between I-10 Eastbound Ramp and Santa Fe Avenue	Industrial	65.9	67.2	1.3	No
S. Alameda Street					
Between 3rd Street and 4th Street	Commercial	69.9	72.6	2.7	No
Between 4th Street and 6th Street	Industrial	70.3	72.7	2.4	No
Between 6th Street and 7th Street	Industrial	70.5	72.7	2.2	No
Between E. 2nd Street and 3rd Street	Residential	70.2	72.5	2.3	No
Santa Fe Avenue					
Between 7th Street and 8th Street	Commercial	67.2	70.1	2.9	No
Between 8th Street and Porter Street	Commercial	67.6	69.6	2.0	No
Between Jesse Street and 7th Street	Commercial/ Residential	66.2	68.2	2.0	No
Between Mesquit Street and Jesse Street	Commercial	66.8	68.8	2.0	No

TABLE IV.I-47
OFF-SITE TRAFFIC NOISE IMPACTS – FUTURE (2040) PROJECT WITH THE DECK CONCEPT CUMULATIVE INCREMENT

Roadway Segment	Existing Land Uses Located along Roadway Segment	CNEL (dBA)			
		Existing (A)	Future Plus Project (B)	Cumulative Increment (B–A)	Exceed Threshold?
Between Olympic Boulevard and E. 15th Street	Commercial	70.1	70.7	0.6	No
Between Porter and Olympic Boulevard	Commercial	69.0	70.5	1.5	No
Between Willow Street and Mesquit Street	Commercial	63.4	66.2	2.8	No
Willow Street					
Between Mateo Street and Santa Fe Avenue	Commercial	55.2	58.0	2.8	No
Mesquit Street					
Between E. 6th Street and E. 7th Street	Industrial	60.8	64.6	3.8	No

SOURCE(S): ESA, 2021. Appendix J of this Draft EIR.

As shown previously in Table IV.I-29, the Project's contribution to the Future with Project noise levels along North Alameda Street between 1st Street and 2nd Street would be 0.2 dBA CNEL. The Project's contribution to the cumulative noise levels would be substantially below the 3 dBA change in ambient noise levels that would be perceptible outside of a laboratory and are even substantially below the 1 dBA change in noise levels that cannot be perceived except in carefully controlled laboratory experiments.[90] Furthermore, the Project's contribution of 0.2 dBA along this segment would not be the determining factor of a cumulative increase of 3 dBA or more – in other words, the noise levels from the related projects would cause a cumulative increase of 3 dBA or more with or without implementation of the proposed Project. Therefore, the perceived noise levels at sensitive land uses along North Alameda Street between 1st Street and 2nd Street with buildout of the related projects would be similar whether or not the proposed Project is implemented. For this reason, the Project's incremental contributions to cumulative noise impacts would be less than cumulatively considerable along North Alameda Street between 1st Street and 2nd Street.

Cumulative traffic noise increases under the future 2040 Project with the Deck Concept condition would be cumulatively significant. However, the Project with the

[90] Caltrans, *TeNS*, Section 2.2.1.

Deck Concept's contribution to cumulative increases in traffic noise would not be cumulatively considerable.

(2) Mitigation Measures

Refer to Mitigation Measures NOISE-MM-1 through NOISE-MM-3 to reduce cumulative construction noise impacts. Refer to Mitigation Measures NOISE-MM-4 and NOISE-MM-5 to reduce cumulative operational noise impacts.

Refer to Mitigation Measure NOISE-MM-6 to NOISE-MM-10 to reduce cumulative construction vibration impacts. No additional mitigation measures are required.

(3) Level of Significance After Mitigation

(a) Construction - Noise

(i) On-Site Construction Noise

Given the Project's significant construction noise impacts on receptors R1 and R4 after mitigation (see Table IV.I-30) and the proximity of related projects to the Project Site and receptors R1, R2 and R4, if construction of one or more of these related projects were to overlap with Project construction, the Project's contribution to cumulative construction noise would be cumulatively considerable and would represent a significant cumulative impact. Mitigation Measures NOISE-MM-1 and NOISE-MM-2 would reduce the Project's on-site construction noise impacts at the off-site noise sensitive receptors, to the extent technically feasible.[91] Measures to reduce the types and numbers of construction equipment were considered. The noise analysis considered the expected types and numbers of construction equipment that would need to be used during the various construction activities and also considered the closest distances the construction activities would need to occur relative to the noise-sensitive uses in order to construct the proposed Project uses. Given the logarithmic nature of sound and the decibel scale, reducing the types and numbers of construction equipment by a few pieces of equipment would not result in a substantial reduction in noise levels. A 3 dBA reduction in noise requires a halving of the sound energy. Thus, there would be little benefit in terms of the construction noise levels by requiring a reduction in the types and numbers of construction equipment by only a few pieces of equipment. Given that a 3 dBA reduction in noise would require a halving of the construction sound energy, it would not be feasible to construct the proposed Project by substantially reducing the types and number of construction equipment used by half or more without severely impacting the ability to build the proposed Project within a reasonable schedule and the ability to safely and adequately construct the proposed Project buildings and facilities without access to the

[91] As provided in LAMC Section 112.05, technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during the operation of the equipment.

full range of the needed equipment. Therefore, there are no additional feasible mitigation measures and cumulative impacts would remain significant and unavoidable.

(ii) Off-Site Construction Noise

Mitigation Measure NOISE-MM-3 would reduce the Project's off-site construction noise impacts. However, cumulative impacts would remain significant along the following eight segments:

- 7th Street between S Central Avenue and S Alameda Street
- Jesse Street between Mateo Street and Santa Fe Avenue
- Mateo Street between 6th Street and Jesse Street
- Mateo Street between E 4th Place and Willow Street
- N Alameda Street between Temple Street and E 1st Street
- N Alameda Street between E 1st Street and E 2nd Street
- S Alameda Street between E 2nd Street and 3rd Street
- Santa Fe Avenue between Jesse Street and 7th Street

Prior to mitigation, the Project would have a significant Project-level impact along Jesse Street between Mateo Street and Santa Fe Avenue and along Mateo Street between E 4th Place and Willow Street. With implementation of Mitigation Measure NOISE-MM-3, Project-level impacts would be reduced to less-than-significant levels. Although the Project would have a cumulatively considerable impact on the other six segments, the Project-level impact would be less than significant without the need for mitigation. The Project has no control over the number of trucks that related projects would require and which routes they would take. There are no feasible mitigation measures and cumulative impacts remain significant and unavoidable.

(b) Operations - Noise

(i) On-Site Operation Noise

Cumulative impacts regarding operational noise would be less than significant with mitigation. When considered together with related projects, operational noise impacts would not result in a cumulatively considerable impact. Accordingly, cumulative impacts would be less than significant with mitigation.

(ii) Off-Site Traffic Noise

Cumulative traffic noise increases under future year 2026 and 2040 conditions would be cumulative significant and the Project contribution to cumulative increases in traffic noise would not be cumulatively considerable.

(iii) Heliport Noise

Heliport noise impacts are specific to individual sites and noise would be generated only during use of the heliport. It is unknown whether the related projects located nearest to the Project Site would include heliports. Therefore, to assume cumulative heliport noise impacts on the sensitive receptors analyzed would be speculative. Therefore, the use of the heliport would not result in a significant cumulative impact.

(c) Construction - Groundborne Vibration

There are no structures adjacent to both the Project and Related Project No. 141 that could be impacted by potential cumulative vibration from overlapping construction. With regard to potential cumulative impacts to the 7th Street Bridge, construction of related projects could lead construction traffic onto the 7th Street Bridge. The 7th Street Bridge is constructed as a reinforced concrete, closed spandrel, arch bridge that has undergone multiple improvements and retrofits, including seismic retrofitting in 1990 that has improved stability of the bridge. Therefore, no cumulative impacts associated with related projects would occur.

(d) Operation - Groundborne Vibration

Cumulative impacts regarding operational groundborne vibration would be less than significant without mitigation. When considered together with related projects, operational groundborne vibration impacts would not result in a cumulatively considerable impact. Accordingly, cumulative impacts would be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.