

IV. Environmental Impact Analysis

H. Noise

1. Introduction

This section of the Draft EIR analyzes potential noise and vibration impacts of the Project. Included in this section are a description of the existing noise environment within the Project Site area, an estimation of future noise and vibration levels at surrounding sensitive land uses associated with construction and operation of the Project, a description of the potential significant impacts, and the inclusion of mitigation measures to address any identified potential significant impacts. Additionally, this section of the Draft EIR evaluates the Project's incremental contribution to potential cumulative noise and vibration impacts resulting from past, present, and probable future projects. This section summarizes the noise and vibration information analyses provided in the Noise and Vibration Calculation Worksheets included in Appendix H of the 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 undesirable (i.e., loud, unexpected, or annoying) sound. Acoustics is defined as the physics of sound and addresses its propagation and control.¹ 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.

¹ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 2.2.1.

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 and reflects the way people perceive changes in sound amplitude.² The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of feeling pain. Pressure waves traveling through air exert a force registered by the human ear as sound.³

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but, rather, a broad band of frequencies varying in levels of magnitude. When all of the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequencies spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.⁴

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

² All sound levels measured in decibel (dB), as identified in the noise calculation worksheets included in Appendix H of this Draft EIR and in this section of the Draft EIR, are relative to 2×10^{-5} N/m².

³ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 2.1.3.

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

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

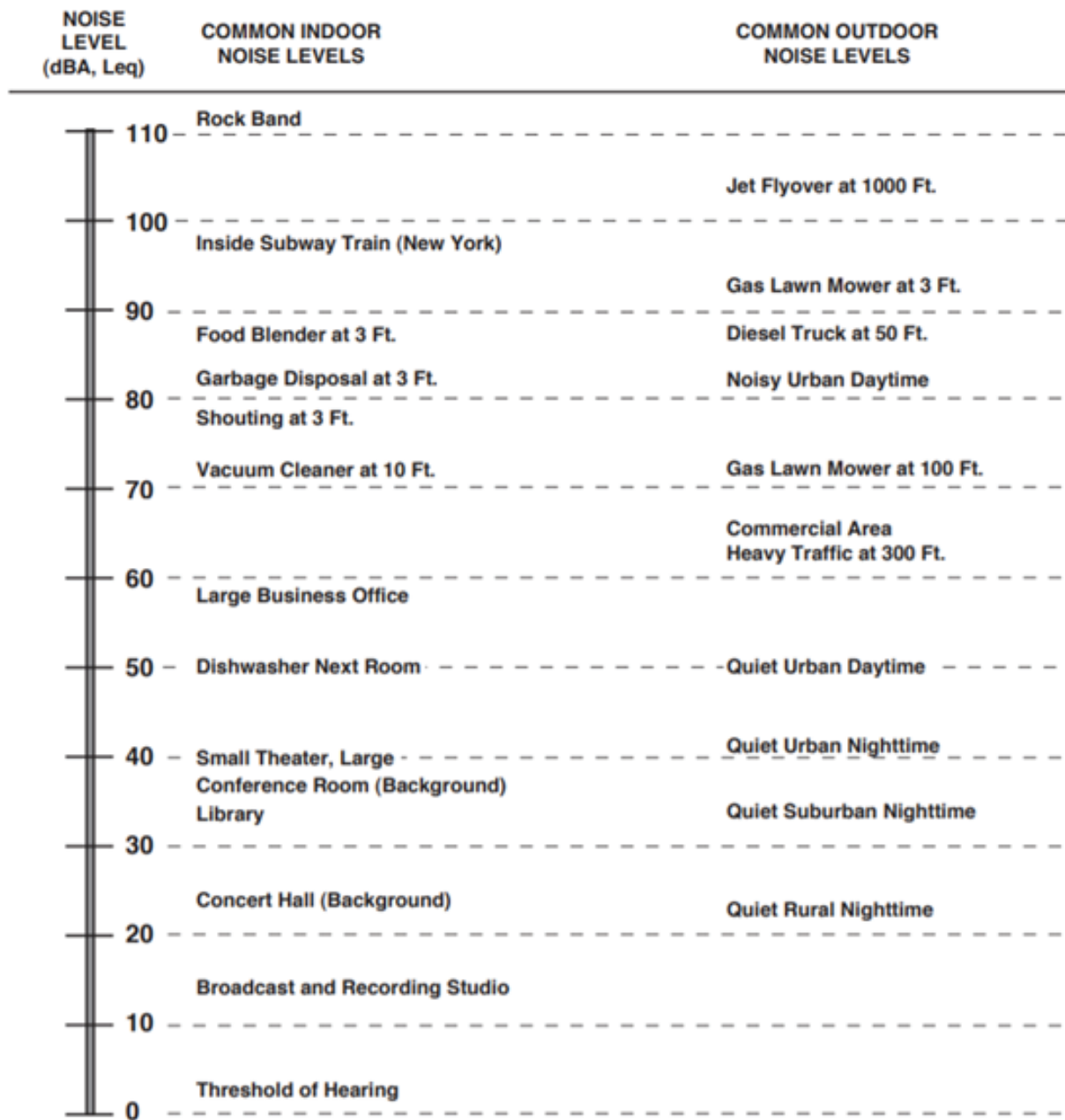


Figure IV.H-1

Decibel Scale and Common Noise Sources

(2) Noise Exposure and Community Noise

Community noise exposure is typically measured over a period of time; a noise level is a measure of noise at a given instant in time. Community noise varies continuously over a period of time with respect to the sound sources contributing to the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with many unidentifiable individual contributors. Single-event noise sources, such as aircraft flyovers, sirens, etc., may cause sudden changes in background noise level.⁶ However, generally, background noise levels change gradually throughout the day, corresponding with the addition and subtraction of distant noise sources, such as changes in traffic volume.

These successive additions of sound to the community noise environment change the community noise level from moment to moment, requiring the noise exposure to be measured over periods of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. The following noise descriptors are used to characterize environmental noise levels over time.⁷

- 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 energy-average sound level.
 - L_{max}:** The maximum, instantaneous noise level experienced during a given period of time.
 - L_{min}:** The minimum, instantaneous noise level experienced during a given period of time.
 - L_x:** The noise level exceeded a percentage of a specified time period. For instance, L₅₀ and L₉₀ represent the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.
 - L_{dn}:** The average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dBA to measured noise levels between the hours of 10:00 P.M. and 7:00 A.M. the next day 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 time average A-weighted noise level during a 24-hour day that includes an addition of

⁶ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 2.2.1.

⁷ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 2.2.2.

5 dBA to measured noise levels between the hours of 7:00 P.M. and 10:00 P.M. and an addition of 10 dBA to noise levels between the hours of 10:00 P.M. and 7:00 A.M. the next day 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, and interference with sleep.

The World Health Organization's Guidelines for Community Noise details the adverse health effects of high noise levels, which include hearing impairment, speech intelligibility, sleep disturbance, physiological functions (e.g., hypertension and cardiovascular effects), mental illness, performance of cognitive tasks, social and behavioral effects (e.g., feelings of helplessness, aggressive behavior), and annoyance.⁸

With regard to the subjective effects, the responses of individuals to similar noise events are diverse and influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity. Overall, there is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an

⁸ World Health Organization Team, edited by Birgitta Berglund, Thomas Lindvall, and Dietrich H. Schwela, *Guidelines for Community Noise*, 1999.

important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise levels, the following relationships generally occur:⁹

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

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

(4) Noise Attenuation

When noise propagates over a distance, the noise level reduces, or attenuates, with distance depending on the type of noise source and the propagation path. Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern, referred to as “spherical spreading.” The rate of sound attenuation for a point source, such as a piece of mechanical or electrical equipment (e.g., air conditioner) or idling vehicle (e.g.,

⁹ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 2.2.1.

¹⁰ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 2.2.1.1.

bulldozer), is 6 dBA per doubling of distance from the noise source to the receptor over acoustically “hard” sites and 7.5 dBA per doubling of distance from the noise source to the receptor over acoustically “soft” sites.¹¹ Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the reduction in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, which in addition to geometric spreading, provide an excess ground attenuation value of 1.5 dBA (per doubling distance).¹² For example, an outdoor condenser fan that generates a sound level of 60 dBA at a distance of 50 feet from a point source at an acoustically hard site would attenuate to 54 dBA at a distance of 100 feet from the point source and attenuate to 48 dBA at 200 feet from the point source.

Roadways and highways consist of several localized noise sources on a defined path and, hence, are treated as “line” sources, which approximate the effect of several point sources.¹³ Noise from a line source propagates over a cylindrical surface, often referred to as “cylindrical spreading.”¹⁴ Line sources (e.g., traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement.¹⁵ Therefore, noise due to a line source attenuates less with distance than that of a point source with increased distance.

Structures (e.g., buildings and solid walls) and natural topography (e.g., hills and berms) that obstruct the line-of-sight between a noise source and a receptor further reduce the noise level if the receptor is located within the “shadow” of the obstruction, such as behind a sound wall. This type of sound attenuation is known as “barrier insertion loss.” If a receptor is located behind the wall but still has a view of the source (i.e., the line-of-sight is not fully blocked), barrier insertion loss would still occur but to a lesser extent. Additionally, a receptor located on the same side of the wall as a noise source may actually experience an increase in the perceived noise level as the wall can reflect noise back to the receptor, thereby compounding the noise. Noise barriers can provide noise level reductions ranging from approximately 5 dBA (where the barrier just breaks the line-of-sight between the source and

¹¹ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Sections 2.1.4.1 and 2.1.4.2.

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

¹³ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 2.1.4.1.

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

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

receiver) to an upper range of 20 dBA with a larger barrier.¹⁶ Additionally, structures with closed windows can further attenuate exterior noise by a minimum of 20 dBA to 30 dBA.¹⁷

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.¹⁸ Atmospheric temperature inversion (i.e., increasing temperature with elevation) can increase sound levels at long distances. Other factors, such as air temperature, humidity, and turbulence can, under the right conditions, also have substantial effects on noise levels.¹⁹

(5) Vibration Fundamentals

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

As described in the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual*, groundborne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard.²⁰ In contrast to airborne noise, groundborne vibration is not a common environmental problem, as it is unusual for vibration from sources, such as rubber-tired buses and trucks, to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains, heavy trucks traveling on rough roads, and certain construction activities, such as blasting, pile-driving, and operation of heavy earth-moving equipment.²¹ Groundborne vibration generated by man-made activities (e.g., road traffic, construction operations) typically weakens with greater horizontal distance from the source of the vibration.

¹⁶ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Sections 2.1.4.24 and 5.1.1.

¹⁷ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 7.4.2, Table 7-1.

¹⁸ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Section 2.1.4.3.

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

²⁰ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Section 7.

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

Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal in inches per second (in/sec) and is most frequently used to describe vibration impacts to buildings.²² 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.²³ Decibel notation (VdB) is commonly used to express RMS vibration velocity amplitude. The relationship of PPV to RMS velocity is expressed in terms of the “crest factor,” defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically a factor of 1.7 to 6 times greater than RMS vibration velocity; FTA uses a crest factor of 4.²⁴ 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 older masonry structures), locations where people sleep, and locations with vibration sensitive equipment.²⁵

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.²⁶ The relationship between groundborne vibration and groundborne noise depends on the frequency 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 to 37 decibels lower than the velocity level.²⁷ Therefore, for typical buildings, the groundborne noise decibel level is lower than the groundborne vibration velocity level at low frequencies.

b. Regulatory Framework

There are several plans, regulations, and programs that include policies, requirements, and guidelines applicable to the Project regarding noise at the federal, State,

²² Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Section 5.1.

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

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

²⁵ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Section 6.1, 6.2, and 6.3.

²⁶ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Section 5.4.

²⁷ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Table 6-3 and Table 6-14.

regional, and local levels. As described below, these plans, guidelines, and laws include the following:

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

(1) Federal

(a) Noise Control Act of 1972

Under the authority of the Noise Control Act of 1972, the United States Environmental Protection Agency (USEPA) established noise emission criteria and testing methods published in Parts 201 through 205 of Title 40 of the Code of Federal Regulations (CFR) that apply to some transportation equipment (e.g., interstate rail carriers, medium trucks, and heavy trucks) and construction equipment. In 1974, USEPA issued guidance levels for the protection of public health and welfare in residential areas of an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA.²⁸ 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 and evaluate intrusive noise sources and increases, this section utilizes the City of Los Angeles (City) Noise Regulations, discussed below.

(b) Federal Transit Administration Vibration Standards

There are no federal vibration standards or regulations adopted by any agency that are applicable to evaluating vibration impacts from land use development projects, such as the Project. However, the FTA has adopted vibration criteria for use in evaluating vibration

²⁸ U.S. Environmental Protection Agency, *EPA Identifies Noise Levels Affecting Health and Welfare*, April 1974.

impacts from construction activities, as presented in its Transit Noise and Vibration Impact Assessment Manual.²⁹ The vibration damage criteria adopted by the FTA are shown in Table IV.H-1 on page IV.H-12.

The FTA has also adopted standards associated with human annoyance for determining the groundborne vibration and noise impacts from groundborne noise on the following three off-site land-use categories: Vibration Category 1—High Sensitivity; Vibration Category 2—Residential; and Vibration Category 3—Institutional.³⁰ The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses, such as schools, churches, other institutions, and quiet offices (e.g., doctors' offices), that do not have vibration-sensitive equipment but that still potentially involve activities that could be disturbed by vibration. The vibration thresholds associated with human annoyance for these three land-use categories are shown in Table IV.H-2 on page IV.H-12. No thresholds have been adopted or recommended for commercial or office uses.

(c) Occupational Safety and Health Act of 1970

Under the Occupational Safety and Health Act of 1970 (29 United States Code [USC] Sections 1919 et seq.), the Occupational Safety and Health Administration (OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring 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.³¹

²⁹ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Table 7-5, p. 86.

³⁰ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Table 6-1, p. 124.

³¹ U.S. Department of Labor, *Occupational Safety and Health Act*, 1970.

**Table IV.H-1
Construction Vibration Damage Criteria**

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.50
II. Engineered concrete and masonry (no plaster)	0.30
III. Non-engineered timber and masonry buildings	0.20
IV. Buildings extremely susceptible to vibration damage	0.12
<i>Source: FTA, Transit Noise and Vibration Impact Assessment Manual, 2018.</i>	

**Table IV.H-2
Groundborne Vibration and Groundborne Noise Impact Criteria for General Assessment**

Land Use Category	Frequent Events^a	Occasional Events^b	Infrequent Events^c
Category 1: Building where vibration would interfere with interior operations	65 VdB ^d	65 VdB ^d	65 VdB ^d
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime uses	75 VdB	78 VdB	83 VdB
^a "Frequent Events" are defined as more than 70 vibration events of the same source per day. ^b "Occasional Events" are defined as between 30 and 70 vibration events of the same source per day. ^c "Infrequent Events" are defined as fewer than 30 vibration events of the same source per day. ^d This criterion limit is based on the levels that are acceptable for most moderately sensitive equipment such as optical microscopes. <i>Source: FTA, Transit Noise and Vibration Impact Assessment Manual, September 2018.</i>			

(2) State

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

The State of California has not adopted Statewide standards for environmental noise, but the Governor's Office of Planning and Research (OPR), now known as the Office of Land Use and Climate Innovation (LCI), has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as presented in Figure IV.H-2 on page IV.H-13.³² The purpose of these guidelines is to maintain

³² State of California, Governor's Office of Planning and Research, General Plan 2017 Guidelines, p. 377.

Land Use Category	Noise Exposure (L_{dn} or CNEL, dBA)					
	55	60	65	70	75	80
Residential – Low Density Single-Family, Duplex, Mobile Home						
Residential – Multiple Family						
Transient Lodging – Motel, Hotel						
School, Library, Church, Hospital, Nursing Home						
Auditorium, Concert Hall, Amphitheater						
Sports Arena, Outdoor Spectator Sports						
Playground, Neighborhood Park						
Golf Course, Riding Stable, Water Recreation, Cemetery						
Office Building, Business Commercial and Professional						
Industrial, Manufacturing, Utilities, Agriculture						

-  **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.

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

acceptable noise levels in a community setting for different land use types. Noise levels are divided into four general categories, which vary in range according to land use type: “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.” The City has developed its own compatibility guidelines in the Noise Element of the General Plan based in part on these state 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 identify and appraise noise problems in the community and analyze and quantify current and projected noise levels.

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

The State of California’s noise insulation standards for nonresidential uses are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 11, California Green Building Standards (CALGreen) Code. The CALGreen Code noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Proposed Projects may use either the prescriptive method (CALGreen Code Section 5.507.4.1) or the performance method (CALGreen Code Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows when located within a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA $L_{eq}(1hr)$.

(3) Regional

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

In Los Angeles County (County) the Regional Planning Commission has the responsibility for acting as the Airport Land Use Commission (ALUC) and for coordinating the airport planning of public agencies within the County. The ALUC coordinates planning for the areas surrounding public use airports. The Comprehensive Land Use Plan provides for the orderly expansion of Los Angeles County’s public use airports and the area

surrounding them. It is intended to provide for the adoption of land use measures that will minimize the public's exposure to excessive noise and safety hazards. In formulating the Comprehensive Land Use Plan, the Los Angeles County ALUC has established provisions for safety, noise insulation, and the regulation of building height within areas adjacent to each of the public airports in the County.

(4) Local

(a) Los Angeles Municipal Code

The City's Noise Regulations are provided in Chapter XI of the Los Angeles Municipal Code (LAMC). LAMC Section 111.02 provides procedures and criteria for the measurement of the sound level of "offending" noise sources. In accordance with the LAMC, a noise source that causes a noise level increase of 5 dBA over the existing average ambient noise level as measured at an adjacent property line creates a noise violation. This standard applies to radios, television sets, air conditioning, refrigeration, heating, pumping and filtering equipment, powered equipment intended for repetitive use in residential areas, and motor vehicles driven on-site. To account for people's increased tolerance for short-duration noise events, the Noise Regulations provide a 5-dBA allowance for a noise source that causes noise lasting more than 5 but less than 15 minutes in any one-hour period, and an additional 5-dBA allowance (for a total of 10 dBA) for a noise source that causes noise lasting 5 minutes or less in any one-hour period.³³

The LAMC provides that in cases where the actual ambient conditions are not known, the City's presumed daytime (7:00 A.M. to 10:00 P.M.) and nighttime (10:00 P.M. to 7:00 A.M.) minimum ambient noise levels as defined in LAMC Section 111.03 should be used. The presumed ambient noise levels for these areas where the actual ambient conditions are not known as set forth in the LAMC Section 111.03 are provided in Table IV.H-3 on page IV.H-16. For example, for residential-zoned areas, the presumed ambient noise level is 50 dBA during the daytime and 40 dBA during the nighttime.

LAMC Section 112.01 limits noise from amplified voice and music and prohibits the operation of such devices (e.g., radio, musical instrument, phonograph, television receiver, or other machine) or other sounds in such a manner as to disturb the peace, quiet, and comfort of neighbors. Specifically, noise from such uses or operation that is audible at a distance in excess of 150 feet from the property line of the noise source within a residential zone of the City or within 500 feet thereof is prohibited.

LAMC Section 112.02 limits increases in noise levels from air conditioning, refrigeration, heating, pumping, and filtering equipment. Such equipment may not be

³³ *Los Angeles Municipal Code, Chapter XI, Article I, Section 111.02-(b).*

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

Zone	Daytime (7:00 A.M. to 10:00 P.M.) dBA (L_{eq})	Nighttime (10:00 P.M. to 7:00 A.M.) dBA (L_{eq})
Residential (A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5)	50	40
Commercial (P, PB, CR, C1, C1.5, C2, C4, C5, and CM)	60	55
Manufacturing (M1, MR1, and MR2)	60	55
Heavy Manufacturing (M2 and M3)	65	65
<i>Source: LAMC Section 111.03.</i>		

operated in such a manner as to create any noise which would cause the noise level on the premises of any other occupied property, or, if a condominium, apartment house, duplex, or attached business, within any adjoining unit, to exceed the ambient noise level by more than 5 dB.

LAMC Section 112.05 sets 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 shall not apply where compliance therewith is technically infeasible.³⁴ 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 or any national holiday, and at any time on Sunday (i.e., construction is allowed Monday through Friday between 7:00 A.M. to 9:00 P.M. and Saturdays and national holidays between 8:00 A.M. to 6:00 P.M.). In general, the City's Department of Building and Safety enforces provisions of the City's noise regulations relative to equipment, and the Los Angeles Police Department (LAPD) enforces provisions relative to noise generated by people.

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

³⁴ *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.*

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

(b) City of Los Angeles General Plan Noise Element

The Noise Element of the City's General Plan (Noise Element) policies include the CNEL guidelines for land use compatibility as shown in Table IV.H-4 on page IV.H-18 and includes a number of goals, objectives, and policies for land use planning purposes. The overall purpose of the Noise Element is to guide policymakers in making land use determinations and in preparing noise ordinances that would limit exposure of citizens to excessive noise levels.³⁵ The following policies and objectives from the Noise Element apply to the Project.

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

Policy 2.2: Enforce and/or implement applicable city, state, and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise and alleviate noise that is deemed a public nuisance.

Objective 3 (Land Use Development): Reduce or eliminate noise impact associated with proposed development of land and changes in land use.

Policy 3.1: Develop land use policies and programs that will reduce or eliminate potential and existing noise impacts.

Exhibit I of the Noise Element also contains guidelines for noise compatible land uses.³⁶ Table IV.H-4 summarizes these guidelines, which are based on OPR guidelines from 1990.

³⁵ *City of Los Angeles, General Plan Noise Element, Adopted February 3, 1999, pp. 1.1–2.4.*

³⁶ *City of Los Angeles, General Plan Noise Element, Adopted February 3, 1999, p. I-1.*

Table IV.H-4
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, Professional Commercial	50 to 70	67 to 77	Above 75	—
Industrial, Manufacturing, Utilities, Agriculture	50 to 75	70 to 80	Above 75	—
Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise-reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Clearly Unacceptable: New construction or development should generally not be undertaken. Source: City of Los Angeles, 2006; L.A. CEQA Thresholds Guide, 2006.				

c. Existing Conditions

As discussed in Section II, Project Description, of this Draft EIR, the Project Site is in a highly urbanized area. The predominant source of noise in the vicinity of the Project Site is vehicular traffic on adjacent roadways, particularly along North Alameda Street and North Main Street, which have high volumes of traffic. Other ambient noise sources in the vicinity of the Project Site include trains on the Metro A Line tracks running overhead both west and south of the Project Site; commercial activities; surface parking lot activities; construction noise from developing properties in the area; and other miscellaneous noise sources associated with typical urban activities, such as human voices, overhead aircraft, and emergency vehicle sirens.

(1) Noise-Sensitive Receptors

Some land uses are considered more sensitive to intrusive noise than others based on the types of activities typically involved at the receptor location. The *2006 L.A. CEQA Thresholds Guide* states that noise-sensitive uses include residences, transient lodgings (hotels), schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks.³⁷ Similarly, the Noise Element defines noise-sensitive land uses as single-family and multi-unit dwellings, long-term care facilities (including convalescent and retirement facilities), dormitories, motels, hotels, transient lodging, and other residential uses; houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves; and parks.³⁸ These uses are generally considered more sensitive to noise than commercial and industrial land uses.

Based on a review of the land uses in the vicinity of the Project Site, six noise receptor locations were selected to represent existing noise-sensitive uses within 500 feet of the Project Site (receptor locations R1 through R6). These locations represent areas with land uses that could qualify as noise-sensitive uses according to the definition of such uses in the *2006 L.A. CEQA Thresholds Guide* and the Noise Element. As discussed below, noise measurements were conducted at the six off-site locations to establish baseline noise conditions in the vicinity of the Project Site. In addition, the measurement locations provide an adequate basis to evaluate potential noise impacts at other sensitive receptors located beyond the measurement location in the same direction from the Project Site. The noise measurement locations are shown in Figure IV.H-3 on page IV.H-20 and described in Table IV.H-5 on page IV.H-21.

(2) Ambient Noise Levels

The baseline noise monitoring program was conducted on March 13, 2024, using a Larson-Davis Model 870 and a Quest Technologies Model 2900 Integrating/Logging Sound Level Meters.³⁹ A 24-hour measurement was conducted at receptor location R2.⁴⁰ Two 15-minute measurements were conducted at each of the remaining receptor locations during

³⁷ City of Los Angeles, *L.A. CEQA Thresholds Guide*, 2006, p. I.1-3.

³⁸ Noise Element, *City of Los Angeles General Plan*, Chapter IV, p. 4-1.

³⁹ These sound meters meet the minimum industry standard performance requirements for “Type 1” (Larson-Davis Model 870) and “Type 2” (Quest Technologies Model 2900) standard instruments as defined in the American National Standard Institute (ANSI) S1.4. It also meets the requirement specified in Section 111.01(I) of the LAMC that instruments be “Type S2A” standard instruments or better. The sound meter was calibrated prior to the measurements and operated according to the manufacturer’s written specifications.

⁴⁰ A 24-hour measurement is typically conducted at one receptor location to obtain the pattern and validate the noise measurements at other receptor locations.

**Table IV.H-5
Description of Noise Measurement Locations**

Receptor Location^a	Description	Approximate Linear Distance from Measurement Location to Nearest Project Site Boundary (feet)^b	Nearest Noise-Sensitive Land Use(s)
R1	Residential use located at the southeastern corner of North Vignes Street and North Alhambra Avenue, southeast of the Project Site	340	Residential
R2	Residential use located at the northwestern corner of North Main Street and Rondout Street, northeast of the Project Site	290	Residential
R3	Proposed mixed-use development on the north side of West College Street, north of the Project Site (Related Project No. 5)	60	Residential
R4	Residential use at the northwestern corner of North Spring Street and West College Street, northwest of the Project Site	320	Residential
R5	Residential use at the northwestern corner of North Alameda Street and Alpine Street, southwest of the Project Site.	290	Residential
R6	Los Angeles State Historic Park (LASHP) on the north/west side of North Spring Street, north of the Project Site	660	Park
^a These noise receptor locations also represent vibration sensitive receptors, with the exception of the outdoor park use. ^b Distances are horizontal distances estimated using Google Earth. Source: Acoustical Engineering Services (AES), 2024. See Appendix H of this Draft EIR.			

daytime and nighttime hours. The daytime ambient noise levels were measured between 10:00 A.M. and 12:00 P.M., and the nighttime ambient noise levels were measured between 10:00 P.M. and 12:00 A.M. The ambient noise measurements followed the City's standards, which require ambient noise to be measured over a period of at least 15 minutes.⁴¹

Table IV.H-6 on page IV.H-22 provides a summary of the ambient noise measurements conducted at the six noise receptor locations. Based on field observations, the current ambient noise at the measurement locations is dominated by local traffic and, to a lesser extent, helicopter flyovers and other typical urban noises. As indicated in Table IV.H-6, the existing daytime ambient noise levels at the off-site noise receptor locations

⁴¹ LAMC Section 111.01.

**Table IV.H-6
Existing Ambient Noise Levels**

Receptor Location	Noise-Sensitive Land Use	Measured Noise Levels, L_{eq} (dBA)		CNEL (24-hour)
		Daytime Hours (7:00 A.M.–10:00 P.M.)	Nighttime Hours (10:00 P.M.–7:00 A.M.)	
R1	Residential	68.1	60.4	68.0 ^a
R2	Residential	67.0 ^b	64.5 ^b	71.6
R3	Residential	58.5	56.5	61.6 ^a
R4	Residential	66.3	60.4	67.0 ^a
R5	Residential	67.2	61.8	68.2 ^a
R6	Park	60.5	57.3	62.8 ^a
^a Estimated based on short-term (15-minute) noise measurement based on FTA procedures. ^b Levels shown for R2 represent the average for the entire daytime and nighttime periods. Source: AES, 2024. See Appendix H of this Draft EIR.				

ranged from 58.5 dBA (L_{eq}) at receptor location R3 to 68.1 dBA (L_{eq}) at receptor location R1. The measured nighttime ambient noise levels ranged from 56.5 dBA (L_{eq}) at receptor location R3 to 64.5 dBA (L_{eq}) at receptor location R2. Thus, the existing ambient noise levels at all off-site locations are above the City's presumed daytime and nighttime ambient noise levels of 50 dBA (L_{eq}) and 40 dBA (L_{eq}), respectively, for residential uses, as presented above in Table IV.H-3 on page IV.H-16.

In addition to the ambient noise measurements in the vicinity of the Project Site, the existing traffic noise on local roadways in the surrounding area was calculated to quantify the 24-hour CNEL noise levels using information provided in the Transportation Assessment prepared for the Project and included as Appendix I of this Draft EIR. Thirteen roadway segments were selected for the existing off-site traffic noise analysis included in this section based on proximity to noise-sensitive uses along the roadway segments and potential increases in traffic volumes from the Project operation. Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) and traffic volume data from the Transportation Assessment prepared for the Project. The TNM calculates the hourly L_{eq} noise levels based on specific information including the hourly traffic volume, vehicle type mix, vehicle speed, and lateral distance between the noise receptor and the roadway. To calculate the 24-hour CNEL levels, the hourly L_{eq} levels were calculated during daytime hours (7:00 A.M. to 7:00 P.M.), evening hours (7:00 P.M. to 10:00 P.M.), and nighttime hours (10:00 P.M. to 7:00 A.M.). The TNM calculates the 24-hour CNEL noise levels based on specific information, including Average Daily Traffic (ADT); percentages of day, evening, and nighttime traffic volumes relative to ADT; vehicle speed; and distance between the noise receptor and the roadway. Vehicle mix/distribution information used in the noise calculations is shown in Table IV.H-7 on page IV.H-23.

**Table IV.H-7
Vehicle Mix for Traffic Noise Model**

Vehicle Type	Percent of Average Daily Traffic (ADT)			Total Percent of ADT per Vehicle Type
	Daytime Hours (7 A.M.–7 P.M.)	Evening Hours (7 P.M.–10 P.M.)	Nighttime Hours (10 P.M.–7 A.M.)	
Automobile	77.6	9.7	9.7	97.0
Medium Truck ^a	1.6	0.2	0.2	2.0
Heavy Truck ^b	0.8	0.1	0.1	1.0
Total	80.0	10.0	10.0	100.0

^a Medium Truck—Trucks with 2 axles.
^b Heavy Truck—Trucks with 3 or more axles.
Source: AES, 2024. See Appendix H of this Draft EIR.

Table IV.H-8 on page IV.H-24 provides the calculated CNEL for the analyzed local roadway segments based on existing traffic volumes. As shown therein, the existing CNEL due to surface street traffic volumes ranges from 64.2 dBA CNEL along West College Street (between North Spring Street and North Main Street) to 73.0 dBA CNEL along North Hill Street (between Bamboo Lane and West College Street). Currently, the existing traffic-related noise levels along the roadway segments of West College Street fall within the conditionally acceptable noise levels for residential uses (i.e., between 60 and 70 dBA CNEL). The existing traffic noise levels along North Hill Street, North Broadway, North Spring Street, North Alameda Street, and North Main Street are between 70 dBA CNEL and 75 dBA CNEL, which, pursuant to the Noise Element and as shown in Table IV.H-4 on page IV.H-18, are considered normally unacceptable for residential uses.

(3) Existing Groundborne Vibration Levels

Based on field observations, the primary source of existing groundborne vibration in the vicinity of the Project Site is vehicular travel (e.g., standard cars, refuse trucks, delivery trucks, construction trucks, school buses, and buses) on local roadways. According to the FTA technical study “Federal Transit Administration: Transit Noise and Vibration Impacts Assessments,” typical road traffic-induced vibration levels are unlikely to be perceptible by people. Specifically, the FTA study reports that “[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads.”⁴² Trucks and buses typically generate groundborne vibration velocity levels of around 63 VdB (at a 50-foot distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road. Vibration from trucks and buses at a distance of 30 to 35 feet would be

⁴² FTA, “Transit Noise and Vibration Impact Assessment,” Page 112, September 2018.

**Table IV.H-8
Existing Roadway Traffic Noise Levels**

Roadway Segment	Adjacent Land Use	Approximate Distance to Roadway Center Line (feet)	Calculated Traffic Noise Levels, CNEL (dBA)^a	Noise-Sensitive Land Uses	Existing Noise Exposure Compatibility Category^b
North Hill Street					
Between Bamboo Ln. and West College St.	Commercial	35	73.0	No	Conditionally Acceptable
Between West College St. and Alpine St.	School, Motel	35	72.9	Yes	Normally Unacceptable
North Broadway					
Between Bamboo Ln. and West College St.	Residential	35	72.7	Yes	Normally Unacceptable
Between West College St. and Alpine St.	Commercial	35	72.2	No	Conditionally Acceptable
North Spring Street					
Between East Elmyra St. and West College St.	Park	35	71.4	Yes	Normally Unacceptable
Between West College St. and Alpine St.	Residential	35	71.7	Yes	Normally Unacceptable
North Alameda Street					
Between West College St. and Alpine St.	Residential	35	70.8	Yes	Normally Unacceptable
North Main Street					
Between East Elmyra St. and West College St.	Residential	35	71.2	Yes	Normally Unacceptable
Between West College St. and Alpine St.	Industrial	35	70.8	No	Conditionally Acceptable
West College Street					
Between Yale St. and North Hill St.	School	35	68.4	Yes	Conditionally Acceptable
Between North Hill St. and North Broadway	Commercial	35	68.9	No	Conditionally Acceptable
Between North Broadway and North Spring St.	Residential	35	68.7	Yes	Conditionally Acceptable
Between North Spring St. and North Main St.	Commercial	35	64.2	No	Normally Acceptable
^a Detailed calculation worksheets are included in Appendix H of this Draft EIR. ^b Noise compatibility is based on the most stringent land use, per City's land use compatibility as provided in Table IV.H-4 on page IV.H-18. Source: AES, 2024.					

approximately 68 to 70 VdB. Per the FTA, 75 VdB is the dividing line between barely perceptible (with regard to groundborne vibration) and distinctly perceptible.⁴³ Therefore, existing groundborne vibration in the vicinity of the Project Site is generally below the perceptible level. However, groundborne vibration associated with heavy trucks traveling on road surfaces with irregularities, such as speed bumps and potholes, could reach the perceptible threshold.

3. Project Impacts

a. Thresholds of Significance

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

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

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

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

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

(1) Construction Noise

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

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 10 dBA (hourly L_{eq}) or more at a noise-sensitive use;

⁴³ FTA, "Transit Noise and Vibration Impact Assessment," Table 5-5, September 2018.

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

(2) Operational Noise

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

- The Project causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 3 dBA in CNEL to or within the “normally unacceptable” or “clearly unacceptable” category (see Table IV.H-4 on page IV.H-18 for a description of these categories); or
- The Project causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 5 dBA in CNEL or greater; or
- Project-related operational on-site (i.e., non-roadway) noise sources, such as outdoor building mechanical/electrical equipment, outdoor activities, loading docks, or parking facilities, increase the ambient noise level (hourly L_{eq}) at noise-sensitive uses by 5 dBA.

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

(3) FTA Groundborne Vibration Standards and Guidelines

The City currently does not have significance criteria to assess vibration impacts during construction. Thus, the FTA guidelines set forth in FTA’s *Transit Noise and Vibration Impact Assessment Manual*, are used to evaluate potential impacts related to construction vibration for both potential building damage and human annoyance. The FTA guidelines

regarding construction vibration are the most current guidelines and are commonly used in evaluating vibration impacts. Based on this FTA guidance, impacts relative to groundborne vibration associated with potential building damage would be considered significant if any of the following events were to occur:

- Project construction activities cause groundborne vibration levels to exceed 0.5 PPV at the nearest off-site reinforced concrete, steel, or timber building.
- Project construction activities cause groundborne vibration levels to exceed 0.3 PPV at the nearest off-site engineered concrete and masonry building.
- Project construction activities cause groundborne vibration levels to exceed 0.2 PPV at the nearest off-site non-engineered timber and masonry building.
- Project construction activities cause groundborne vibration levels to exceed 0.12 PPV at buildings extremely susceptible to vibration damage, such as historic buildings. This threshold is also used for the Granite Block Paving, a designated Historic-Cultural Monument (HCM).

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

- Project construction activities cause groundborne vibration levels to exceed 72 VdB at off-site sensitive uses, including residential uses.

b. Methodology

(1) On-Site Construction Activities

Noise impacts due to on-site construction activities associated with the Project were evaluated by calculating the construction-related noise levels at representative sensitive receptor locations and comparing these estimated construction-related noise levels to the existing ambient noise levels (i.e., noise levels without construction noise from the Project). Construction noise associated with the Project was analyzed based on the Project's anticipated construction equipment inventory, construction durations, and construction schedule. The construction noise model for the Project is based on construction equipment noise levels as published by the FHWA's "Roadway Construction Noise Model (FHWA 2006)."⁴⁴ These maximum noise levels would occur when equipment is operating under full

⁴⁴ *The reference noise levels for construction equipment from the FHWA are based on measurements of newer construction equipment (published in 2006), rather than the noise levels from the USEPA report referenced in the L.A. CEQA Thresholds Guide (published in 1971).*

power conditions (i.e., the equipment engine at maximum speed). However, equipment used on a typical construction site often operates under less than full power conditions, or partial power. To more accurately characterize construction noise levels, the average (hourly L_{eq}) noise level associated with each construction stage is calculated based on the quantity, type, and usage factors for each type of equipment that would be used.⁴⁵ These noise levels are typically associated with multiple pieces of equipment operating simultaneously. The on-site construction-related noise levels were calculated by distributing all construction equipment over the entire construction site. The on-site construction noise levels were calculated using the SoundPLAN (version 8.2) computer noise prediction model.⁴⁶ SoundPLAN is widely used by acoustical engineers as a noise modeling tool for environmental noise analysis. The ambient noise levels at surrounding sensitive receptor locations were based on field measurement data (see Table IV.H-6 on page IV.H-22).

(2) Off-Site Construction Haul Trucks

Off-site construction noise impacts from haul trucks associated with the Project were analyzed using the FHWA's TNM. The TNM is the current Caltrans standard computer noise model for traffic noise studies. The model allows for the input of roadways, noise receivers, and sound barriers, if applicable. The construction-related off-site truck volumes were obtained from the Transportation Assessment prepared for the Project, which is included in Appendix I of this Draft EIR. The TNM calculates the hourly L_{eq} noise levels generated by construction-related haul trucks. Noise impacts were determined by comparing the predicted noise level of construction-related haul trucks plus the ambient noise levels with that of the existing ambient noise levels along the Project's anticipated haul route(s).

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

On-site stationary point-source noise impacts were evaluated by: (1) identifying the noise levels that would be generated by the Project's stationary noise sources, such as rooftop mechanical equipment, outdoor activities (e.g., use of the outdoor spaces), parking facilities, and trash compactor; (2) calculating the noise level from each noise source at surrounding sensitive receptor property line locations; and (3) comparing such noise levels to ambient noise levels to determine significance. The on-site stationary noise sources were calculated using the SoundPLAN computer noise prediction model.

⁴⁵ Pursuant to the FHWA Roadway Construction Noise Model User's Guide, 2006, page 7, the usage factor is the percentage of time during a construction noise operation that a piece of construction is operating at full power.

⁴⁶ SoundPLAN GmbH, SoundPLAN version 8.2, 2020.

(4) Off-Site Roadway Noise (Operation)

Off-site roadway noise was analyzed using the FHWA TNM and traffic data from the Project's Transportation Assessment, included as Appendix I of this Draft EIR. Roadway noise levels were calculated for various roadway segments based on the intersection traffic volumes. Roadway noise conditions without the Project were calculated and compared to noise levels that would occur with implementation of the Project to determine Project-related noise impacts for operational off-site roadway noise.

(5) Construction Vibration

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

(6) Operational Vibration

Groundborne vibration impacts associated with the Project's operational were evaluated based on the review of the anticipated on-site and off-site vibration sources. The Project would generally include on-site stationary mechanical equipment, such as air-handling units (mounted at grade or roof level), and on-site and off-site vehicle circulation. The Project, which includes office, restaurant, and retail uses, does not include land uses that would typically generate high levels of vibration, such as industrial, manufacturing, and transportation infrastructure uses.

c. Project Design Features

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

Project Design Feature NOI-PDF-1: Outdoor mounted mechanical equipment will be enclosed or screened by the building design (e.g., a roof parapet) from view of off-site noise-sensitive receptors at the street level.

Project Design Feature NOI-PDF-2: All loading docks will be screened from off-site noise-sensitive receptors.

Project Design Feature NOI-PDF-3: Outdoor amplified sound systems, if any, will be designed so as not to exceed the maximum noise level of 70 dBA (L_{eq-1hr}) at a distance of 15 feet from the amplified speaker sound systems at Level 1 and Level 2 common outdoor spaces and 85 dBA (L_{eq-1hr}) at Level 4 common outdoor spaces. A qualified noise consultant will provide written documentation at plan check that the design of the system complies with these maximum noise levels.

d. Analysis of Project Impacts

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

(1) Impact Analysis

(a) Construction Noise

Project construction is expected to occur over the course of 20 months and be completed in 2028. Project construction would commence with the site preparation and demolition of existing surface parking, followed by grading and excavation, building foundations, building construction, paving/concrete installation, and landscape installation. In accordance with LAMC requirements, construction activities generally would be permitted to occur Monday through Friday from 7:00 A.M. to 9:00 P.M. and between 8:00 A.M. and 6:00 P.M. on Saturday and national holidays, or outside of these hours if written permission is granted by the Los Angeles Board of Police Commissioners. Construction delivery/haul trucks would travel on approved truck routes between the Project Site and US-101 Highway, as follows:

- **Loaded Trucks:** Exit the Project Site onto West College Street heading west, turn left (south) onto North Alameda Street, turn left (east) onto Commercial Street, merge onto US-101 Highway heading south.
- **Empty Trucks:** From the US-101 Highway northbound, exit on North Alameda Street, turn right (north) onto North Alameda Street, turn right (east) onto College Street, and continue to the Project Site.

(i) On-Site Construction Noise

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

(e.g. pump and generator) and episodic (e.g., excavator and loader) noise that could be heard within and adjacent to the Project Site. In addition, Project construction stages would have the potential to overlap. Therefore, overlapping construction noise activities were evaluated to determine the potential impacts.

Individual pieces of construction equipment anticipated to be used during Project construction could produce maximum noise levels (L_{max}) of 74 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in Table IV.H-9 on page IV.H-32. These maximum noise levels would occur when equipment is operating under full power conditions (i.e., the equipment engine at maximum speed). However, equipment used on construction sites often operates under less than full power conditions, or partial power. To more accurately characterize construction noise levels, the average (hourly L_{eq}) noise level associated with each construction stage is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction stage. These noise levels are typically associated with multiple pieces of equipment operating on partial power simultaneously.

Table IV.H-10 on page IV.H-33 provides the estimated construction noise levels for various Project construction stages at the six off-site noise-sensitive receptor locations (R1–R6). As indicated in Table IV.H-10, the estimated noise levels during all stages of Project construction would be below the ambient plus 5-dBA significance threshold at all off-site receptor locations, except for receptor location R3. The estimated construction noise levels at receptor location R3 would exceed the 5-dBA significance threshold by up to 11.5 dBA. The Project's construction stages would have the potential to overlap during the building construction and the paving/landscape stages. Therefore, overlapping construction noise activities were evaluated to determine the potential impacts. Construction noise impacts associated with the overlapping construction are provided in Table IV.H-11 on page IV.H-34. As indicated in Table IV.H-11, the estimated noise levels due to overlapping construction activities would also be below the ambient plus 5-dBA significance threshold at all off-site receptor locations, except for receptor location R3. The estimated construction noise levels at receptor location R3 would exceed the 5-dBA significance threshold by up to 11.6 dBA over the significance threshold. **Therefore, temporary noise impacts associated with the Project's on-site construction would be significant. However, significant noise impacts at receptor location R3 would only occur if the proposed residential development (i.e., Related Project No. 5) is occupied during the Project construction.**

**Table IV.H-9
Construction Equipment Noise Levels**

Equipment	Estimated Usage Factor^a (%)	Typical Noise Level at 50 feet from Equipment, dBA (L_{max})
Air Compressor	40	78
Cement and Mortar Mixer	50	80
Concrete Mixer Truck	40	79
Concrete Saw	20	90
Crane	16	81
Delivery Truck	40	74
Dozer	40	82
Drill Rig	20	84
Dump/Haul Truck	40	76
Excavator	40	81
Forklift	10	75
Generator	50	81
Grader	40	85
Paver	50	77
Pump	50	81
Roller	20	80
Rubber Tired Loader	40	79
Tractor/Loader/Backhoe	40	84
Welders	40	74
^a Usage factor represents the percentage of time the equipment would be operating at full speed. Source: FHWA Roadway Construction Noise Model User's Guide, 2006.		

**Table IV.H-10
On-Site Construction Noise Impacts**

Off-Site Receptor Location	Estimated Construction Noise Levels by Construction Stages (L_{eq} (dBA))								Existing Daytime Ambient Noise Levels (L_{eq} (dBA))	Signifi- cance Threshold (L_{eq} (dBA)) ^a	Maximum Noise Exceed- ance Above the Threshold (L_{eq} (dBA))	Significant Impact?
	Site Prepara- tion/ Demoli- tion	Grading	Founda- tion	Basement	Building Construc- tion	Architec- tural Façade	Interior	Paving/ Land- scaping				
R1	63.9	61.0	61.4	61.6	62.8	55.8	59.6	62.2	68.1	73.1	0.0	No
R2	65.6	62.6	63.0	63.3	64.4	57.4	61.2	63.8	67.0	72.0	0.0	No
R3	75.0	72.2	72.4	72.5	73.6	66.7	70.6	73.2	58.5	63.5	11.5	Yes
R4	64.2	61.2	61.6	61.9	63.1	56.0	59.8	62.5	66.3	71.3	0.0	No
R5	65.5	62.6	62.9	63.2	64.4	57.3	61.1	63.8	67.2	72.2	0.0	No
R6	59.8	56.8	57.3	57.5	58.7	51.7	55.4	58.1	60.5	65.5	0.0	No
^a Significance thresholds are equivalent to the measured daytime ambient noise levels (see Table IV.H-6 on page IV.H-22) plus 5 dBA, per the L.A. CEQA Thresholds Guide, for construction activities lasting longer than 10 days in a three-month period. If the estimated construction noise levels exceed those significance thresholds, a construction-related noise impact is identified. Source: AES, 2024. See Appendix H of this Draft EIR.												

Table IV.H-11
On-Site Construction Noise Impacts—Overlapping Construction

Off-Site Receptor Location	Estimated Construction Noise Levels by Construction Stages (L_{eq} (dBA))			Existing Daytime Ambient Noise Levels (L_{eq} (dBA))	Significance Thresholds (L_{eq} (dBA)) ^a	Maximum Noise Exceedance Above the Thresholds (L_{eq} (dBA))	Significant Impact?
	Building Construction + Architectural Façade	Architectural Façade + Interior	Interior + Paving/ Landscaping				
R1	63.6	61.1	64.1	68.1	73.1	0.0	No
R2	65.2	62.7	65.7	67.0	72.0	0.0	No
R3	74.4	72.1	75.1	58.5	63.5	11.6	Yes
R4	63.9	61.3	64.4	66.3	71.3	0.0	No
R5	65.2	62.6	65.7	67.2	72.2	0.0	No
R6	59.5	56.9	60.0	60.5	65.5	0.0	No
^a Significance threshold are equivalent to the measured daytime ambient noise levels (see Table IV.H-6 on page IV.H-22) plus 5 dBA, per the L.A. CEQA Thresholds Guide, for construction activities lasting longer than 10 days in a three-month period. If the estimated construction noise levels exceed those significance thresholds, a construction-related noise impact is identified. Source: AES, 2024. See Appendix H of this Draft EIR.							

(ii) Off-Site Construction Noise

In addition to on-site construction noise sources, other noise sources may include materials delivery, concrete mixing, and haul trucks (construction trucks), as well as construction worker vehicles accessing the Project Site during construction. Typically, construction trucks generate higher noise levels than construction worker vehicles. The major noise sources associated with off-site construction trucks would be from the material delivery/concrete/haul trucks. With regard to haul routes, as described above, construction haul trucks would travel between the Project Site and US-101 Highway via North Alameda Street, West College Street, and East Commercial Street. However, there are no noise sensitive use along East Commercial Street. Therefore, the noise impacts analysis is limited to North Alameda Street and West College Street. The peak period (i.e., hourly truck trips) of construction with the highest number of construction trucks would occur during the site grading/excavation. Based on data provided by the Applicant, during this construction stage, there would be an estimated maximum of 130 haul/delivery trucks coming to and leaving the Project Site (equal to 260 total trips) per day. In addition, there would be up to 70 concrete trucks during the foundation stage (equal to 140 total trips) per day. There would also be between 10 to 320 construction worker trips traveling to and from the Project Site on a daily basis during the various construction stages. Construction workers are expected to arrive at the Project Site before construction starts and leave when construction ends. Therefore, construction worker vehicle noise would not overlap with Project construction equipment or trucks. In addition, the noise levels generated by construction worker vehicle trips would be lower than the construction truck trips.⁴⁷

Table IV.H-12 on page IV.H-36 provides the estimated number of construction-related truck trips, including haul/concrete/material delivery trucks, and the estimated noise levels along the anticipated truck route(s) for Project construction. As discussed above, the construction stages of the Project would have the potential to overlap. Therefore, noise levels due to off-site construction trucks associated with overlapping construction stages were evaluated to determine potential impacts. As indicated in Table IV.H-12, the hourly noise levels generated by Project construction trucks would be below the ambient plus 5-dBA significance threshold along the anticipated truck routes, except for the roadway segment of West College Street (between North Alameda Street and North Main Street) adjacent to the Project, as represented by receptor location R3. The estimated off-site construction truck noise levels at receptor location R3 would exceed the 5-dBA significance threshold during the grading and foundation phases, by up to 3.6 dBA over the significance

⁴⁷ Based on TNM noise model, a truck generates approximately 14 dBA louder than an automobile.

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

Construction Stage	Estimated Number of Construction Truck Trips per Day	Estimated Number of Construction Truck Trips per Hour ^b	Estimated Truck Noise Levels Plus Ambient Along the Project Truck Routes ^a (L_{eq} (dBA)) (Project/Project + Ambient)	
			North Alameda St.	West College St.
Site Prep/Demo	50	9	49.7/67.3	59.5/62.0
Grading	260	44	56.6/67.6	66.4/67.1
Foundation	140	18	52.8/67.4	62.6/64.0
Basement	80	10	50.2/67.3	60.0/62.3
Building Construction	40	5	47.2/67.2	57.0/60.8
Architectural Façade	20	3	45.0/67.2	54.8/60.0
Interior	80	10	50.2/67.3	60.0/62.3
Paving/Landscaping	40	5	47.2/67.2	57.0/60.8
Overlapping Construction				
Building Construction + Architectural Façade	60	8	49.2/67.3	59.0/61.8
Architectural Façade + Interior	100	13	51.3/67.3	61.1/63.0
Interior + Paving/Landscaping	120	15	52.0/67.3	61.8/63.5
Existing Ambient Noise Levels Along the Project Haul Routes, L_{eq} (dBA) ^c	N/A	N/A	67.2	58.5
Significance Threshold (L_{eq} (dBA)) ^d	N/A	N/A	72.2	63.5
Maximum Exceedance Over Significance Threshold (L_{eq} (dBA))	N/A	N/A	0.0	3.6
Significant Impact?			No	Yes
^a Noise levels include Project-related truck trips plus ambient noise levels. ^b For construction trucks, the number of hourly trips is based on an hourly average, assuming a uniform distribution of trips over an 8-hour work day. Haul truck hourly trips during demolition are based on 6 hours of hauling per day. ^c Ambient noise levels are based on measurements at nearby receptor locations; R3 (along West College Street) and R5 (along North Alameda Street). ^d Significance thresholds are equivalent to the measured daytime ambient noise levels plus 5 dBA. Source: AES, 2025. See Construction Noise & Vibration Calculations provided in Appendix H of this Draft EIR.				

threshold. Therefore, temporary noise impacts from off-site construction trucks along this segment of the haul routes would be significant. However, significant noise impacts at receptor location R3 would only occur if the proposed residential development (i.e., Related Project No. 5) is completed and occupied during the Project construction.

The Project also includes off-site construction, including installation of a fire hydrant at the northwestern corner of Main Street and Bruno Street, near the southeastern corner of the Project Site. Table IV.H-13 on page IV.H-38 provides the estimated construction noise levels for the installation of the fire hydrant at the six off-site receptor locations. As indicated in Table IV.H-13, the estimated off-site improvements construction noise levels would be below the ambient plus 5-dBA significance thresholds at all off-site receptor locations. **Therefore, temporary noise impacts from off-site improvements construction would be less than significant.**

(b) Operational Noise

This section provides a discussion of potential operational noise impacts at nearby noise-sensitive receptors. Specific operational noise sources addressed herein are (a) on-site stationary noise sources, including outdoor-mounted mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment), activities associated with the proposed outdoor spaces (located at Level 1 [ground floor], Level 2, and Level 4), parking facilities, and loading dock and trash compactors; and (b) off-site mobile (roadway traffic) noise sources.

(i) On-Site Stationary Noise Sources

Mechanical Equipment

As part of the Project, new mechanical equipment (e.g., air ventilation equipment) would be located at the roof level and/or within the building structure (e.g., garage exhaust fans). Although operation of this equipment would generate noise, Project-related outdoor mechanical equipment would be designed so as not to increase the existing ambient noise levels by 5 dBA in accordance with the City's Noise Regulations. Specifically, the Project would comply with LAMC Section 112.02, which prohibits noise from air conditioning, refrigeration, heating, pumping, and filtering equipment from exceeding the ambient noise levels on the premises of other occupied properties by more than 5 dBA. In addition, as provided above in Project Design Feature NOI-PDF-1, all outdoor mounted mechanical equipment will be enclosed or screened from off-site noise-sensitive receptors.

Table IV.H-14 on page IV.H-38 presents the estimated noise levels at the off-site receptor locations from operation of the Project's mechanical equipment. As indicated in Table IV.H-14, the estimated noise levels from the mechanical equipment would range from 37.9 dBA (L_{eq}) at the uses represented by receptor location R6 to 51.0 dBA (L_{eq}) at the uses represented by receptor location R3, which would be well below the existing ambient noise levels. Further, the estimated ambient noise levels at all off-site receptor locations with the addition of the Project's mechanical equipment would be below the significance threshold of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient noise

Table IV.H-13
Off-Site Improvements Construction Noise Impacts

Off-Site Receptor Location	Estimated Off-Site Construction Noise Levels (L _{eq} (dBA))	Existing Daytime Ambient Noise Levels (L _{eq} (dBA))	Significance Thresholds (L _{eq} (dBA)) ^a	Maximum Noise Exceedance Above the Thresholds (L _{eq} (dBA))	Significant Impact?
R1	62.7	68.1	73.1	0.0	No
R2	58.1	67.0	72.0	0.0	No
R3	61.2	58.5	63.5	0.0	No
R4	54.5	66.3	71.3	0.0	No
R5	58.5	67.2	72.2	0.0	No
R6	51.7	60.5	65.5	0.0	No
^a Significance thresholds are equivalent to the measured daytime ambient noise levels (see Table IV.H-6 on page IV.H-22) plus 5 dBA, per the L.A. CEQA Thresholds Guide, for construction activities lasting longer than 10 days in a three-month period. If the estimated construction noise levels exceed those significance thresholds, a construction-related noise impact is identified. Source: AES, 2024. See Appendix H of this Draft EIR.					

Table IV.H-14
Estimated Noise Levels from Mechanical Equipment

Receptor Location	Existing Ambient Noise Levels dBA (L _{eq})	Estimated Noise Levels from Mechanical Equipment dBA (L _{eq})	Ambient + Project Noise Levels dBA (L _{eq})	Significance Thresholds dBA (L _{eq}) ^a	Exceedance over Significance Thresholds	Significant Impact?
R1	60.4	39.3	60.4	65.4	0.0	No
R2	64.5	43.6	64.5	69.5	0.0	No
R3	56.5	51.0	57.6	61.5	0.0	No
R4	60.4	41.5	60.5	65.4	0.0	No
R5	61.8	45.6	61.9	66.8	0.0	No
R6	57.3	37.9	57.3	62.3	0.0	No
^a Significance thresholds are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-6 on page IV.H-22) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance thresholds, a noise impact is identified. Source: AES, 2024. See Appendix H of this Draft EIR.						

levels). **Therefore, noise impacts from mechanical equipment would be less than significant.**

Outdoor Spaces

As discussed in Section II, Project Description, of this Draft EIR, the Project would include various open spaces within the Project Site. The outdoor open space areas would be located on Level 1, Level 2, and Level 4, which would be comprised of plazas and decks. Noise sources associated with outdoor uses typically include noise from people gathering and conversing. For this operational noise analysis, reference noise levels of 65 dBA for a male and 62 dBA for a female speaking in a raised voice were used for analyzing potential noise impacts from people gathering at the outdoor spaces.⁴⁸ In order to analyze a typical noise scenario, it was assumed that up to 50 percent of the people (half of which would be male and the other half female) would be talking at the same time. In addition, the hours of operation for use of the outdoor areas were assumed to be from 7:00 A.M. to 12:00 A.M. Table IV.H-15 on page IV.H-40 presents the anticipated number of people at the outdoor spaces.

An additional potential noise source associated with outdoor spaces would be the use of an outdoor sound system (e.g., music or other sounds broadcast through an outdoor mounted speaker system). As set forth in Project Design Feature NOI-PDF-3, the amplified sound system used in outdoor areas would be designed so as not to exceed the maximum noise levels of 70 dBA L_{eq} at a distance of 15 feet from the amplified speaker sound system at Level 1 and Level 2, and 85 dBA L_{eq} at Level 4, thereby ensuring that the amplified sound system would not exceed the significance threshold (i.e., an increase of 5 dBA L_{eq}) at any off-site noise-sensitive receptor location.

Table IV.H-16 on page IV.H-40 presents the estimated noise levels at the off-site sensitive receptors resulting from the use of the outdoor areas. The estimated noise levels were calculated with the assumption that all of the outdoor spaces would be fully occupied and operating concurrently to represent a worst-case noise analysis, representing worst-case noise scenario. As presented in Table IV.H-16, the estimated noise levels from the outdoor spaces would range from 38.7 dBA (L_{eq}) at the uses represented by receptor location R6 to 62.0 dBA (L_{eq}) at the uses represented by receptor location R5. The estimated ambient noise levels with the addition of the noise levels generated by the Project's outdoor spaces would be below the significance threshold of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient noise level) at all off-site receptor locations. **As such, noise impacts from the use of the outdoor spaces would be less than significant.**

⁴⁸ Harris, Cyril M., *Handbook of Acoustical Measurements and Noise Control*, Third Edition, 1991, Table 16.1.

**Table IV.H-15
Outdoor Use Analysis Assumptions**

Location	Exterior Area (square feet)	Maximum Number of People ^a
Level 1 plazas	17,071	1,140
Level 2 decks	27,364	1,827
Level 4 decks	8,281	553
^a Based on worst case maximum capacity of 15 square feet per person per the Los Angeles Building Code. The actual maximum occupancy is anticipated to be less. Source: Grimshaw, 2024; AES, 2024		

**Table IV.H-16
Estimated Noise Levels from Outdoor Spaces**

Receptor Location	Existing Ambient Noise Levels (dBA (L _{eq}))	Estimated Noise Levels from Outdoor Spaces (dBA (L _{eq}))	Ambient + Project Noise Levels (dBA (L _{eq}))	Significance Thresholds ^a	Exceedance Over Significance Thresholds	Significant Impact?
R1	60.4	56.1	61.8	65.4	0.0	No
R2	64.5	50.5	64.7	69.5	0.0	No
R3	56.5	59.4	61.2	61.5	0.0	No
R4	60.4	49.6	60.7	65.4	0.0	No
R5	61.8	62.0	64.9	66.8	0.0	No
R6	57.3	38.7	57.4	62.3	0.0	No
^a Significance thresholds are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-6 on page IV.H-22) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance thresholds, a noise impact is identified. Source: AES, 2024. See Appendix H of this Draft EIR.						

Parking Facilities

As discussed in Section II, Project Description, of this Draft EIR, the Project would provide 440 vehicular parking spaces within one subterranean level, one ground level, and one above ground (mezzanine) level. Sources of noise within the parking facilities would primarily include vehicular movements and engine noise, doors opening and closing, and intermittent car alarms. Noise levels within the parking facilities would fluctuate with the amount of automobile and human activity. The at-grade and above-grade parking levels would be wrapped with ground floor commercial uses along the North Alameda Street, Bruno Street, and North Main Street frontages and screened with perforated metal panels with

60-percent opacity along West College Street. Noise generated within the subterranean (i.e., below-grade) parking level would be effectively shielded from off-site sensitive receptor locations in the immediate vicinity of the Project Site. Table IV.H-17 on page IV.H-42 presents the estimated noise levels from the parking garages at the off-site receptor locations. As presented in Table IV.H-17, the estimated noise levels from the parking facilities would range from 29.1 dBA (L_{eq}) at the uses represented by receptor location R4 to 49.1 dBA (L_{eq}) at the uses represented by receptor location R3. As indicated in Table IV.H-17, the estimated ambient noise levels with the addition of the noise levels generated by the Project parking facilities would be below the significance threshold of 5 dBA (L_{eq}) above the ambient noise levels (based on the lowest measured ambient). **Therefore, noise impacts from the parking facilities would be less than significant.**

Loading Dock and Trash Collection Areas

The Project's loading docks and trash compactors would be located on Level 1 in the northwestern portion of the building. Noise sources associated with the loading dock and trash collection area would include delivery/trash collection trucks and operation of the trash compactor. Based on measured noise levels from typical loading dock facilities and trash compactors, delivery/trash collection trucks and trash compactors could generate noise levels of approximately 71 dBA (L_{eq}) and 66 dBA (L_{eq}), respectively, at a distance of 50 feet.⁴⁹ The loading dock and the trash compactors would be located inside the building, which would be effectively shielded to the off-site sensitive receptors, as provided above in Project Design Feature NOI-PDF-2. Table IV.H-18 on page IV.H-42 presents the estimated noise levels at the off-site sensitive receptors resulting from the loading activities and operation of the trash compactor. As presented in Table IV.H-18, the estimated noise levels from the loading and trash compactors would range from 19.8 dBA (L_{eq}) at the uses represented by receptor location R1 to 46.5 dBA (L_{eq}) at the uses represented by receptor location R3. The estimated ambient noise levels with the addition of the noise levels generated by the Project's loading activities and trash compactors would be below the significance threshold of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient) at all off-site receptor locations. **Therefore, noise impacts from loading dock and trash compactor operations would be less than significant.**

⁴⁹ RK Engineering Group, Inc., *Wal-Mart/Sam's Club Reference Noise Level Study*, 2003.

Table IV.H-17
Estimated Noise Levels from Parking Facilities

Receptor Location	Existing Ambient Noise Levels, dBA (L _{eq})	Estimated Noise Levels from Parking Facilities, dBA (L _{eq})	Ambient + Project Noise Levels, dBA (L _{eq})	Significance Thresholds ^a	Exceedance Over Significance Thresholds	Significant Impact?
R1	60.4	31.7	60.4	65.4	0.0	No
R2	64.5	39.2	64.5	69.5	0.0	No
R3	56.5	49.1	57.2	61.5	0.0	No
R4	60.4	29.1	60.4	65.4	0.0	No
R5	61.8	33.8	61.8	66.8	0.0	No
R6	57.3	32.2	57.3	62.3	0.0	No

^a Significance thresholds are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-6 on page IV.H-22) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance thresholds, a noise impact is identified.

Source: AES, 2024. See Appendix H of this Draft EIR.

Table IV.H-18
Estimated Noise Levels from Loading Dock and Trash Compactors

Receptor Location	Existing Ambient Noise Levels, dBA (L _{eq})	Estimated Noise Levels from Loading Dock and Trash Compactors Operation, dBA (L _{eq})	Ambient + Project Noise Levels, dBA (L _{eq})	Significance Thresholds ^a	Exceedance Over Significance Thresholds	Significant Impact?
R1	60.4	19.8	60.4	65.4	0.0	No
R2	64.5	33.2	64.5	69.5	0.0	No
R3	56.5	46.5	56.9	61.5	0.0	No
R4	60.4	41.7	60.5	65.4	0.0	No
R5	61.8	23.3	61.8	66.8	0.0	No
R6	57.3	31.7	57.3	62.3	0.0	No

^a Significance thresholds are equivalent to the measured daytime ambient noise levels, whichever is lower (see Table IV.H-6 on page IV.H-22) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance thresholds, a noise impact is identified.

Source: AES, 2024. See Appendix H of this Draft EIR.

(ii) *Off-Site Mobile Noise Sources*

Future Plus Project

Future roadway noise levels were calculated along 13 roadway segments in the vicinity of the Project Site. The roadway noise levels were calculated using the traffic data provided in the Transportation Assessment prepared for the Project, which is included in Appendix I of this Draft EIR. As discussed in Appendix A of the Transportation Assessment, the Project is expected to generate 2,528 daily vehicle trips. As such, Project-related traffic would increase the existing traffic volumes along the roadway segments in the vicinity of the Project Site when compared with Future Without Project conditions. This increase in roadway traffic was analyzed to determine if any traffic-related noise impacts would result from the operation of the Project.

Table IV.H-19 on page IV.H-44 provides a summary of the roadway noise impact analysis. The calculated CNEL levels are conservative as the noise levels experienced along the roadways do not account for the presence of any existing physical sound barriers or intervening structures. As shown in Table IV.H-19, the Project would result in a maximum increase of up to 1.2 dBA (CNEL) in traffic noise along the roadway segment of North Broadway (between North Spring Street and North Main Street). At other analyzed roadway segments, the increase in traffic-related noise levels would be 0.4 dBA or lower. The increase in traffic noise levels along analyzed roadway segments would be considered negligible and below the 3-dBA CNEL significance threshold, which is applicable to noise levels that fall within the normally unacceptable land use category (i.e., between 70 and 75 dBA CNEL); and below the 5-dBA CNEL significance threshold, which is applicable to noise levels that fall within the conditionally acceptable land use category (i.e., between 60 and 70 dBA CNEL). **Therefore, traffic noise impacts under Future Plus Project conditions would be less than significant.**

Existing Plus Project

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

As shown in Table IV.H-20 on page IV.H-45, when compared with existing conditions, the Project would result in a maximum increase of up to 1.7 dBA (CNEL) in traffic noise along the roadway segment of West College Street (between North Spring Street and North Main Street). At other analyzed roadway segments, the increase in traffic-related noise levels would be 0.5 dBA or lower. The increase in traffic noise levels along analyzed roadway segments would be considered negligible and below the 3-dBA CNEL significance

Table IV.H-19
Roadway Traffic Noise Impacts—Future Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels ^a (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Future Without Project	Future Plus Project		
North Hill Street					
Between Bamboo Ln. and West College St.	Commercial	73.7	73.8	0.1	No
Between West College St. and Alpine St.	School, Motel	73.4	73.4	0.0	No
North Broadway					
Between Bamboo Ln. and West College St.	Residential	73.5	73.6	0.1	No
Between West College St. and Alpine St.	Commercial	73.1	73.2	0.1	No
North Spring Street					
Between West Elmyra St. and West College St.	Park	73.1	73.2	0.1	No
Between West College St. and Alpine St.	Residential	73.0	73.1	0.1	No
North Alameda Street					
Between West College St. and Alpine St.	Residential	72.3	72.5	0.2	No
North Main Street					
Between West Elmyra St. and West College St.	Residential	72.2	72.3	0.1	No
Between West College St. and Alpine St.	Industrial	71.5	71.6	0.1	No
West College Street					
Between Yale St. and North Hill St.	School	68.9	68.9	0.0	No
Between North Hill St. and North Broadway	Commercial	70.4	70.6	0.2	No
Between North Broadway and North Spring St.	Residential	70.5	70.9	0.4	No
Between North Spring St. and North Main St.	Future Residential	65.9	67.1	1.2	No
^a See Off-Site Traffic Noise Calculations for Future No Project Conditions and Future Plus Project Conditions provided in Appendix H of this Draft EIR. Source: AES, 2024.					

**Table IV.H-20
Roadway Traffic Noise Impacts—Existing Plus Project**

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels ^a (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing	Existing Plus Project		
North Hill Street					
Between Bamboo Ln. and West College St.	Commercial	73.0	73.1	0.1	No
Between West College St. and Alpine St.	School, Motel	72.9	72.9	0.0	No
North Broadway					
Between Bamboo Ln. and West College St.	Residential	72.7	72.7	0.0	No
Between West College St. and Alpine St.	Commercial	72.2	72.3	0.1	No
North Spring Street					
Between West Elmyra St. and West College St.	Park	71.4	71.4	0.0	No
Between West College St. and Alpine St.	Residential	71.7	71.9	0.2	No
North Alameda Street					
Between West College St. and Alpine St.	Residential	70.8	71.0	0.2	No
North Main Street					
Between West Elmyra St. and West College St.	Residential	71.2	71.3	0.1	No
Between West College St. and Alpine St.	Industrial	70.8	70.9	0.1	No
West College Street					
Between Yale St. and North Hill St.	School	68.4	68.4	0.0	No
Between North Hill St. and North Broadway	Commercial	68.9	69.2	0.3	No
Between North Broadway and North Spring St.	Residential	68.7	69.2	0.5	No
Between North Spring St. and North Main St.	Future Residential	64.2	65.9	1.7	No
^a See Off-Site Traffic Noise Calculations for Existing Conditions and Existing Plus Project Conditions provided in Appendix H of this Draft EIR. Source: AES, 2024.					

threshold, which is applicable to noise levels that fall within the normally unacceptable land use category (i.e., between 70 and 75 dBA CNEL); and below the 5-dBA CNEL significance threshold, which is applicable to noise levels that fall within the conditionally acceptable land use category (i.e., between 60 and 70 dBA CNEL). **Therefore, traffic noise impacts under Existing Plus Project conditions would be less than significant.**

(iii) Composite Noise Level Impacts from Project Operations

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

Table IV.H-21 on page IV.H-47 presents the estimated composite noise levels in terms of CNEL at the six off-site sensitive receptor locations from the Project-related noise sources. As indicated in Table IV.H-21, the Project would result in an increase in composite noise levels ranging from 0.1 dBA at the uses represented by receptor location R2 to 4.4 dBA at the uses represented by receptor location R3. The composite noise level from Project operation at off-site receptor location R2 would be below the 3-dBA significance threshold as the ambient plus Project composite noise level falls within the normally unacceptable (70 to 75 CNEL) range for residential land use categories. In addition, the composite noise levels from Project operation at off-site receptor locations R1, R2, R4, R5, and R6 would be below the 5-dBA significance threshold as the ambient plus Project composite noise levels fall within the normally and conditionally acceptable (less than 70 CNEL) range for the residential land use categories. As such, composite noise level impacts due to Project operations would be less than significant.

Based on the above, Project operations would not result in the generation of a substantial permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the City's general plan or noise ordinance, or applicable standards of other agencies. Therefore, the Project's operational noise impacts from on- and off-site sources would be less than significant.

**Table IV.H-21
Composite Noise Impacts**

Receptor Location	Existing Ambient Noise Levels (CNEL (dBA))	Calculated Project-Related Noise Sources (CNEL (dBA))					Project Composite Noise Levels (CNEL (dBA))	Ambient Plus Project Composite Noise Levels (CNEL (dBA))	Increase in Noise Levels due to Project (CNEL (dBA))	Significance Threshold ^a (CNEL (dBA))	Significant Impact?
		Traffic	Mechanical	Outdoor Spaces	Parking	Loading & Trash Compactor					
R1	68.0	46.9	46.0	58.5	38.4	16.3	59.0	68.5	0.5	73.0	No
R2	71.6	53.8	48.1	50.7	45.9	30.4	56.6	71.7	0.1	74.6	No
R3	61.6	56.6	57.7	61.8	43.6	15.1	64.1	66.0	4.4	66.6	No
R4	67.0	59.0	42.0	51.0	35.0	36.3	59.7	67.7	0.7	72.0	No
R5	68.2	52.0	52.3	64.4	36.0	19.1	64.9	69.9	1.7	73.2	No
R6	62.8	53.3	44.6	44.8	38.9	28.9	54.5	63.4	0.6	67.8	No

^a Significance thresholds are equivalent to the existing ambient noise levels plus 3 dBA if the estimated noise levels (ambient plus Project) fall within the “normally unacceptable” or “clearly unacceptable” land use categories or ambient noise levels plus 5 dBA if the estimated noise levels fall within the “normally acceptable” or “conditionally acceptable” land use categories, per the City of Los Angeles Noise Element and the L.A. CEQA Thresholds Guide. If the estimated noise levels exceed those significance thresholds, a potentially significant noise impact is identified.

Source: AES, 2025. See Operations Noise Calculations provided in Appendix H of this Draft EIR.

(2) Mitigation Measures

(a) Construction Noise

As analyzed above, on-site and off-site construction of the Project would result in significant noise impacts at off-site sensitive receptor location R3. Therefore, the following mitigation measure is provided to reduce on-site construction-related noise impacts.

Mitigation Measure NOI-MM-1: A temporary and impermeable sound barrier shall be erected along the Project's northern property line between the construction areas and the potential future residential uses along the north side of College Street (receptor location R3). The temporary sound barrier shall be designed to provide a minimum 12-dBA noise reduction at the ground level of receptor location R3. At plan check, building plans shall include documentation prepared by a noise consultant verifying compliance with this measure.

In the event the proposed residential development at receptor location R3 is not completed and occupied prior to or during Project construction, this mitigation measure shall not be required because impacts on the existing (i.e., non-residential non-sensitive use) would be less than significant without mitigation.

As analyzed above, noise impacts associated with off-site construction traffic were determined to be significant along West College Street (adjacent to the Project Site and represented by receptor location R3). Conventional mitigation measures, such as providing temporary noise barrier walls to reduce the off-site construction truck traffic noise impacts during the nighttime hours, would not be feasible as the barriers would obstruct the access and visibility to the properties along the anticipated haul route(s). Other measures, such as limiting the number of trucks per hour would not be feasible as it would extend the construction period (resulting in longer on-site construction noise impacts), and the concrete foundation pour stage requires a continuous number of concrete trucks. As such, there are no other feasible mitigation measures to reduce the temporary significant noise impacts associated with the Project's off-site construction trucks.

(b) Operational Noise

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

(3) Level of Significance After Mitigation

(a) Construction Noise

Implementation of Mitigation Measure NOI-MM-1 provided above would reduce the Project's on-site construction noise levels to the extent feasible. Specifically, implementation of Mitigation Measure NOI-MM-1 (installation of temporary sound barriers) would reduce the noise generated by on-site construction activities at receptor location R3 by a minimum of 12 dBA, which would reduce the impacts to a less than significant level at the ground level.

As presented in Table IV.H-22 on page IV.H-50, the estimated construction-related noise levels at off-site sensitive receptor location R3 would be reduced below the significance threshold with implementation of Mitigation Measure NOI-MM-1 at the ground level. However, the temporary noise barrier specified for receptor location R3 would not be effective in reducing the on-site construction noise at the upper levels of the apartment building (seven-story buildings) due to their higher elevation relative to the Project Site. In order to be effective, the temporary noise barrier would need to be as high as the building (i.e., up to seven stories), which would not be feasible as it would require a deep foundation with extensive structural engineering components and construction activities to erect, which would result in additional noise and vibration generation and other secondary impacts. There are no other feasible mitigation measures that could be implemented to reduce the temporary noise impacts from on-site construction at the upper levels of receptor location R3 (Levels 2 through 7). **Based on the above, construction noise impacts associated with on-site noise sources would be significant and unavoidable.** However, it is important to note that this impact would only occur if the proposed residential development is completed and occupied prior to or during Project construction. If the proposed residential development at receptor location R3 is not completed and occupied prior to or during Project construction, the Project's construction-related significant noise impact at receptor location R3, would not occur, and mitigation would not be necessary.

Noise impacts from off-site construction trucks were determined to be significant. However, there are no feasible mitigation measures that could be implemented to reduce this short-term impact because conventional mitigation measures, such as providing temporary noise barrier walls to reduce the off-site construction truck traffic noise impacts, would not be practical as the barriers would obstruct the access and visibility to the properties along the anticipated haul routes. **Therefore, the Project's construction noise impact at receptor location R3 associated with off-site construction traffic would be significant and unavoidable.**

Table IV.H-22
On-Site Construction Noise Impacts With Mitigation Measures

Off-Site Receptor Location	Minimum Noise Reduction Provided by Mitigation Measure ^b dB	Estimated Construction Noise Levels by Construction Stage (L _{eq} (dBA))								Existing Daytime Ambient Noise Levels (L _{eq} (dBA))	Significance Threshold (L _{eq} (dBA)) ^a	Maximum Noise Exceedance Above the Threshold (L _{eq} (dBA))	Significant Impact With Mitigation?
		Site Prep/ Demo.	Grading	Foundation	Basement	Building Construction	Architectural Façade	Interior	Paving/ Land-scaping				
R1	0	63.9	61.0	61.4	61.6	62.8	55.8	59.6	62.2	68.1	73.1	0.0	No
R2	0	65.6	62.6	63.0	63.3	64.4	57.4	61.2	63.8	67.0	72.0	0.0	No
R3	12	63.0	60.2	60.4	60.5	61.6	54.7	58.6	61.2	58.5	63.5	— ^c	Yes ^c
R4	0	64.2	61.2	61.6	61.9	63.1	56.0	59.8	62.5	66.3	71.3	0.0	No
R5	0	65.5	62.6	62.9	63.2	64.4	57.3	61.1	63.8	67.2	72.2	0.0	No
R6	0	59.8	56.8	57.3	57.5	58.7	51.7	55.4	58.1	60.5	65.5	0.0	No
^a Significance thresholds are equivalent to the measured daytime ambient noise levels (see Table IV.H-6 on page IV.H-22) plus 5 dBA, per the L.A. CEQA Thresholds Guide, for construction activities lasting longer than 10 days in a three-month period. If the estimated construction noise levels exceed those significance thresholds, a construction-related noise impact is identified. ^b Noise reduction provided by temporary noise barrier along the Project boundaries. ^c On-site construction noise levels shown for receptor location R3 are for the ground level of the building only. Although construction noise impacts at ground level would be reduced below the significance threshold, noise barriers would not be effective in reducing the on-site construction noise at the upper levels of receptor location R3. Therefore, on-site construction noise impacts would remain significant and unavoidable. Source: AES, 2024. See Appendix H of this Draft EIR.													

(b) Operational Noise

Noise impacts associated with on-site noise sources and off-site traffic were determined to be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.

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

(1) Impact Analysis

(a) Construction

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

(i) Building Damage Impacts from On-Site Construction

With regard to potential building damage, the Project would generate groundborne construction vibration during building demolition and site excavation/grading activities when heavy construction equipment, such as large bulldozers, drill rigs, and loaded trucks, would be used. The FTA has published standard vibration velocities for various construction equipment operations. Installation of piles for shoring and foundation would utilize drilling methods to minimize vibration generation. Table IV.H-23 on page IV.H-52 provides the estimated ground vibration velocity levels (in terms of inch per second PPV) at the nearest off-site structures to the Project Site. The assessment of construction vibration provided above for potential building damage due to on-site construction compares the estimated vibration levels generated during construction of the Project to the 0.12-PPV significance criterion for buildings extremely susceptible to vibration damage, the 0.3-PPV significance criterion for engineered concrete and masonry buildings (applicable to the older commercial buildings to the north and south), and the 0.5-PPV significance criterion for reinforced-concrete, steel, or timber buildings (applicable the commercial buildings to the east and west). Although not a structure, the 0.12-PPV significance criterion is also used for the

**Table IV.H-23
Construction Vibration Impacts—Building Damage**

Nearest On- and Off-Site Building Structure ^a	Estimated Vibration Velocity Levels at the Outside of and Adjacent to the Nearest Off-Site Structures from the Project Construction Equipment (inch/second (PPV)) ^b					Significance Criteria (PPV)	Significant Impact?
	Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	0.089	0.089	0.076	0.035	0.003	—	—
Commercial Building to the North	0.034	0.034	0.029	0.013	0.001	0.3 ^c	No
Commercial Building to the South	0.042	0.042	0.036	0.016	0.001	0.3 ^c	No
Commercial Building to the East	0.025	0.025	0.021	0.010	0.001	0.5 ^d	No
Commercial Building to the West	0.008	0.008	0.007	0.003	<0.001	0.5 ^d	No
Granite Block Paving (historic)	0.523	0.523	0.446	0.206	0.018	0.12 ^e	Yes
^a Represents nearby off-site building structures located nearest to the Project Site to the north, south, east, and west. ^b Vibration level calculated based on FTA reference vibration level at 25 foot distance. ^c FTA criterion for engineered concrete and masonry buildings (applicable to the existing commercial buildings to the north and south). ^d FTA criterion for reinforced-concrete, steel, or timber buildings (applicable to the office and commercial buildings to the east and west). ^e FTA criterion for buildings extremely susceptible to vibration damage (applicable to the Granite Block Paving). Source: FTA, 2018; AES, 2024. See Appendix H of this Draft EIR.							

Granite Block Paving because it is a historic resource.⁵⁰ As indicated in Table IV.H-23, the estimated vibration levels at the non-historic off-site buildings would be below both the 0.3-PPV and 0.5-PPV building damage significance criteria. However, the estimated vibration levels from the construction equipment would exceed the 0.12-PPV building damage significance criterion for the off-site historic Granite Block Paving. **Therefore, impacts would be potentially significant.**

⁵⁰ This is a conservative threshold for the historic Granite Block Paving as there is no other threshold for historic resources that are not structures/buildings.

(ii) Human Annoyance Impacts from On-Site Construction

Table IV.H-24 on page IV.H-54 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 criterion for human annoyance. Per FTA guidance, the significance criterion for human annoyance is 72 VdB for residential uses, assuming there is a minimum of 70 vibration events occurring during a typical construction day. In addition, there is no significant criterion for outdoor uses. As indicated in Table IV.H-24, the estimated groundborne vibration levels from construction equipment would be below the significance criterion for human annoyance at all off-site sensitive receptor locations, except for receptor location R3. **Therefore, on-site vibration impacts during construction of the Project pursuant to the significance criterion for human annoyance, would be significant.**

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

As described above, construction delivery/haul trucks would travel between the Project Site and US-101 Highway via North Alameda Street, West College Street, and East Commercial Street. Heavy-duty construction trucks would generate groundborne vibration as they travel along the Project's anticipated haul route(s). Thus, an analysis of potential vibration impacts using the building damage and human annoyance criteria for groundborne vibration along the anticipated local haul routes was conducted.

Regarding building damage, based on FTA data, the vibration generated by a typical heavy-duty truck would be approximately 63 VdB (0.00566 PPV) at a distance of 50 feet from the truck.⁵¹ According to the FTA "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads." Nonetheless, there are existing buildings along the Project's anticipated haul route that are situated approximately 20 feet from the right-of-way and would be exposed to groundborne vibration levels of approximately 0.022 PPV, as provided in the noise calculation worksheets included in Appendix H of this Draft EIR. This estimated vibration generated by construction trucks traveling along the anticipated haul route(s) would be well below the building damage criterion of 0.25 PPV for historic buildings. **Therefore, vibration impacts with respect to building damage from off-site construction activities (i.e., construction trucks traveling on public roadways) would be less than significant.**

As discussed above, per FTA guidance, the significance criterion for human annoyance is 72 VdB for residential uses. It should be noted that buses and trucks rarely create vibration that exceeds 70 VdB at 50 feet from the receptor unless there are bumps in

⁵¹ FTA, "Transit Noise and Vibration Impact Assessment," Figure 5-4, September 2018.

**Table IV.H-24
Construction Vibration Impacts—Human Annoyance**

Off-Site Receptor Location	Estimated Vibration Velocity Levels at the Outside of and Adjacent to the Nearest Off-Site Structures from the Project Construction Equipment (inch/second (PPV)) ^a					Significance Criteria (PPV)	Significant Impact?
	Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack- hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	87	87	86	79	58	—	—
R1	53	53	52	45	24	72	No
R2	55	55	54	47	26	72	No
R3	76	766	75	68	47	72	Yes
R4	548	54	43	46	25	72	No
R5	55	55	54	47	26	72	No
R6	44	44	43	36	15	— ^b	No
^a Vibration levels calculated based on FTA reference vibration level at a 25-foot distance. ^b No applicable significance criterion for outdoor uses. Source: FTA, 2018; AES, 2024. See Appendix H of this Draft EIR.							

the road.⁵² There are existing residential uses located approximately 26 feet from the truck lane along North Alameda Street, which would be exposed to vibration levels up to 71.6 VdB due to the Project construction trucks but would be below 72-VdB significance criterion. However, the proposed residential uses on the north side of West College Street (represented by receptor location R3) are approximately 20 feet from the truck lane along West College Street, which would be exposed to vibration levels of 74.9 VdB and would exceed the 72-VdB significance criterion from the construction trucks. **As such, potential vibration impacts with respect to human annoyance at receptor location R3 that would result from temporary and intermittent off-site vibration from construction trucks traveling along the anticipated haul route(s) would be significant.**

The Project also includes off-site construction, including installation of the new fire hydrant, which would not utilize heavy construction equipment. Vibration levels generated by the off-site improvements would be approximately 0.036 PPV (at a distance of 50 feet), which would be below the building damage significance criteria at all off-site building structures (including the historic Granite Block Paving). In addition, the vibration levels generated by the off-site improvements would be approximately 53 VdB at the nearest

⁵² FTA, "Transit Noise and Vibration Impact Assessment," Page 113, September 2018.

off-site sensitive receptor location R1, which would also be below the human annoyance significance criterion of 72 VdB. **Therefore, temporary vibration impacts from off-site improvements construction would be less than significant for both building damage and human annoyance.**

(iv) Summary of Construction Vibration Impacts

As discussed above, the estimated vibration levels from on-site construction equipment would be below the building damage significance criteria of 0.3 PPV for the off-site commercial buildings to the north and south and the 0.5 PPV for the off-site commercial buildings east and west. The estimated vibration levels at the off-site historic Granite Block Paving would exceed the 0.12 PPV significance threshold with respect to building damage. **Therefore, vibration impacts from on-site construction activities with respect to building damage would be significant.**

With regard to the human annoyance, the estimated vibration levels from on-site construction equipment would exceed the human annoyance significance criterion at off-site receptor location R3. **Therefore, vibration impacts from on-site construction activities with respect to human annoyance would be significant.** However, this significant vibration impact at receptor location R3 would only occur if the proposed residential development is completed and occupied during the Project construction.

Vibration impacts associated with temporary and intermittent vibration from off-site construction activities (i.e., construction trucks traveling along the anticipated truck routes) and the installation of new fire hydrant would be less than significant with respect to building damage.

Vibration impacts from off-site construction activities would be significant with respect to human annoyance along West College Street (adjacent to the Project Site). However, this significant vibration impact at receptor location R3 would only occur if the proposed residential development is completed and occupied during the Project construction.

(b) Operational Vibration Impacts

As described above, sources of vibration related to operation of the Project would include vehicle circulation, delivery trucks, and building mechanical equipment. As discussed above in Subsection 2.a.(5), it is unusual for vibration from sources, such as rubber-tired buses and trucks to be perceptible, even in locations close to major roads. As such, vehicular-induced vibration, including vehicle circulation within the subterranean, surface, and above-grade parking facilities, would not generate perceptible vibration levels at off-site sensitive uses. Building mechanical equipment installed as part of the Project

would include typical commercial-grade stationary mechanical equipment, such as air-condenser units (mounted at the roof level), that would include vibration-attenuation mounts to reduce vibration transmission to ensure that vibration would not be perceptible at the off-site sensitive receptors. **As such, operation of the Project would not result in the generation of excessive groundborne vibration levels that would be perceptible in the vicinity of the Project Site. Therefore, vibration impacts associated with operation of the Project with respect to both building damage and human annoyance would be less than significant.**

(2) Mitigation Measures

(a) Construction Vibration

As discussed above, the estimated vibration levels from on-site construction equipment would exceed the building damage significance criterion that has been applied to the Granite Block Paving adjacent to the Project Site. Mitigation Measure CUL-MM-1 set forth in Section IV.B, Cultural Resources, of this Draft EIR, provides protections for the Granite Block Paving. Specifically, Mitigation Measure CUL-MM-1 requires the Project to retain a California Registered Professional Engineer or California Professional Land Surveyor to prepare and implement a Construction Monitoring Plan for the protection of the Granite Block Paving. This mitigation measure would reduce impacts to the historical resource to the extent feasible while maintaining its historic integrity. However, while construction logistics have been designed to work around the resource to the extent feasible, in order for vibration levels to be reduced to a less than significant level, a 20-foot setback from the historic resource would be required. This is infeasible because construction would involve work up to the property line. Other mitigation measures considered to reduce vibration impacts included the installation of a wave barrier, which is typically a trench, or a thin wall made of sheet piles installed in the ground (essentially a subterranean sound barrier to reduce noise). However, wave barriers must be very deep and long to be effective and are not considered cost effective for temporary applications, such as construction. 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. The temporary removal, storage, and reconstruction of the entire resource, not just the pavers immediately adjacent to the Project Site to allow for the installation of a shoring system, was also considered. This was determined to be infeasible because: (1) it is unknown how many of the pavers would remain intact and removal of the entire resource could result in a substantial adverse change to the extent that its integrity as a historic resource may be impaired; (2) the subsurface conditions under the pavers are not known and as a result, secondary impacts may result as a result of additional construction that may be needed in order to bring the street up to modern standards; (3) this process would require the long-term closure of Bruno Street, which would disrupt adjacent businesses, pedestrian and bicycle access, and vehicle traffic, including emergency vehicle access; and (4) the additional time required to complete this process would extend construction considerably,

thus extending the amount of time the surrounding community is exposed to the Project's construction impacts. Therefore, impacts with respect to on-site vibration pursuant to the threshold for building damage would remain significant and unavoidable.

Mitigation measures considered to reduce vibration impacts from on-site and off-site construction trucks with respect to human annoyance included the installation of a wave barrier. However, as discussed above, wave barriers are not considered cost effective for temporary applications and the construction associated with wave barriers would, in and of itself, generate groundborne vibration from the excavation equipment. Furthermore, it would not be technologically feasible to install a wave barrier along the public roadways for the off-site construction vibration impacts as it is within the public right-of-way, over which the Applicant does not have control. Thus, it is concluded that there are no technologically feasible mitigation measures that could be implemented to reduce the temporary vibration impacts from off-site construction trucks associated with human annoyance to a less-than-significant level.

(b) Operation Vibration Impacts

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

(3) Level of Significance After Mitigation

(a) Construction Vibration

Mitigation Measure CUL-MM-1 in Section IV.B, Cultural Resources, of this Draft EIR, would reduce vibration impacts with respect to building damage to Granite Block Paving to the extent feasible. Therefore, vibration impacts associated with Project on-site construction would be significant and unavoidable even with mitigation. On-site construction vibration impacts at all other locations would be less than significant without mitigation, and, as such, no mitigation measures were required or included for those locations, and the impact level remains less than significant.

Vibration impacts associated with off-site haul trucks pursuant to building damage would be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.

As described above, there are no feasible mitigation measures that could be implemented to reduce the temporary vibration impacts from on-site and off-site construction with regard to human annoyance to a less-than-significant level. Therefore, the Project's vibration impacts from on-site and off-site construction activities with respect to human annoyance would be significant and unavoidable.

(b) Operation Vibration

Vibration impacts associated with Project operation with respect to both building damage and human annoyance were determined to be less than significant without mitigation. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.

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

As discussed in the Initial Study, included as Appendix A of this Draft EIR, the Project Site would not expose people residing or working in the Project area to excessive airport-related noise levels since the nearest airport to the Project Site is the Hollywood Burbank Airport located approximately 11.3 miles northwest of the Project Site. **Since the Project would not be located within the vicinity of a private airstrip, an airport land use plan, or within 2 miles of a public airport or public use airport, impacts with respect to Thresholds (c) would not occur. No further analysis is required.**

e. Cumulative Impacts

(1) Impact Analysis

The Project, together with the related projects and future growth, could contribute to cumulative noise impacts. The potential for cumulative noise impacts to occur is specific to the distance between each related project and their stationary noise sources, as well as the cumulative traffic that these projects would add to the surrounding roadway network.

(a) Construction Noise

(i) On-Site Construction Noise

As indicated in Section III, Environmental Setting, of this Draft EIR, 21 related projects have been identified in the vicinity of the Project Site. Noise from construction of development projects is typically localized and has the potential to affect noise-sensitive uses within 500 feet from the construction site, based on the *2006 L.A. CEQA Thresholds Guide* screening criteria. Thus, noise from construction activities for two projects within 1,000 feet of each other can contribute to a cumulative noise impact for receptors located midway between the two construction sites. Of the 21 related projects located in the vicinity of the Project Site, 14 related projects are located more than 1,000 feet from the Project Site and with intervening building structures, which would not contribute to the cumulative on-site

construction noise impacts. However, the following seven related projects are within 1,000 feet of the Project Site:

- Related Project No. 1 is a residential development located at 1101 North Main Street, approximately 290 feet northeast of the Project Site. However, Related Project No. 1 is completed (represented by receptor location R2). Therefore, Related Project No. 1 would not contribute to cumulative construction-related noise impacts.
- Related Project No. 4 is a proposed mixed-use development located at 211 Alpine Street, approximately 440 feet southwest of the Project Site. There are noise sensitive receptors located between Related Project No. 4 and the Project Site, as represented by receptor location R5. As analyzed above in Subsection 3.d.(1) (see Table IV.H-11 on page IV.H-34), the estimated Project-related construction noise levels at receptor location R5 (eastern side of the building at receptor location R5) would be minimum 6.5 dBA below the significance threshold. In addition, the receptor location R5 (eastern side of the building) would be shielded to the Related Project No. 4 by the building at receptor R5, which would reduce the construction noise from Related Project No. 4 to the receptor R5 to well (minimum 10 dBA) below the significance threshold. Therefore, based on distance attenuation and shielding provided by existing buildings, construction-related noise from Related Project No. 4 would not contribute to cumulative construction-related noise impacts.
- Related Project No. 5 is a proposed mixed-use development located at 129 West College Street, approximately 60 feet north of the Project Site (represented by receptor location R3). There are noise sensitive receptors located within 500 feet of Related Project No. 5 and the Project Site, as represented by receptor location R2. As analyzed above in Subsection 3.d.(1) (see Table IV.H-11 on page IV.H-34), the estimated Project-related construction noise levels at receptor location R2 would be minimum 6.3 dBA below the significance threshold. Since the Related Project No. No. 5 has a direct line-of-sight to receptor location R2, there is a potential for cumulative construction noise impacts to occur at the uses represented by receptor location R2 in the event Project construction occurs concurrently with construction of Related Project No. 5.
- Related Project No. 10 is a proposed mixed-use development located at 942 North Broadway, approximately 560 feet northwest of the Project Site. There are noise sensitive receptors located between Related Project No. 10 and the Project Site, as represented by receptor location R4. As analyzed above in Subsection 3.d.(1) (see Table IV.H-11 on page IV.H-34), the estimated Project-related construction noise levels at receptor location R4 would be minimum 6.9 dBA below the significance threshold. In addition, there are buildings located between Related Project No. 10 and the Project, which would reduce the construction noise from Related Project No. 10 to the receptor R4 to well (minimum 10 dBA) below the significance threshold. Therefore, based on distance attenuation and shielding

provided by existing buildings, construction-related noise from Related Project No. 10 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 11 is an office and restaurant development located at 843 North Spring Street, approximately 220 feet west of the Project Site. However, Related Project No. 11 is completed. Therefore, Related Project No. 11 would not contribute to cumulative construction-related noise impacts.
- Related Project No. 18 is a proposed mixed-use development located at 1030 North Broadway, approximately 600 feet north of the Project Site. There are noise sensitive receptors located between Related Project No. 18 and the Project Site, represented by receptor location R4. As analyzed above in Subsection 3.d.(1) (see Table IV.H-11 on page IV.H-34), the estimated Project-related construction noise levels at receptor location R4 would be minimum 6.9 dBA below the significance threshold. In addition, the buildings located between Related Project No. 18 and the Project, would reduce the construction noise from Related Project No. 18 to the receptor R4 to well (minimum 10 dBA) below the significance threshold. Therefore, based on distance attenuation and shielding provided by existing buildings, construction-related noise from Related Project No. 18 would not contribute to cumulative construction-related noise impacts.
- Related Project No. 21 (Los Angeles Aerial Rapid Transit, LA ART) is located along Alameda Street, adjacent to the Project Site to the west. The nearest noise sensitive receptor to Related Project No. 21 and the Project is the proposed mixed-use as represented by receptor location R3 and the multi-family residential use at receptor location R4. As analyzed above in Subsection 3.d.(1) (see Table IV.H-11 on page IV.H-34), the estimated Project-related construction noise levels at receptor location R3 would exceed the significance threshold by up to 11.6 dBA. The estimated construction noise level due to Related Project No. 21 at receptor locations R3 and R4 would be 80.5 dBA and 72.4 dBA, respectively, which would also exceed the significance threshold at both receptor locations R3 and R4.⁵³ Since Related Project No. 21 (including the LA ART stations) is located adjacent to receptor locations R3 and R4, there is a potential for cumulative construction noise impacts to occur at receptor locations R3 and R4 in the event Project construction occurs concurrently with the construction of Related Project No. 21. However, the cumulative noise impacts would only occur if the mixed-use development at receptor location R3 is constructed and occupied during the construction of the Project and Related Project No. 21.

Construction-related noise levels from the related projects would be intermittent and temporary, and it is anticipated that, as with the Project, the related projects would comply with the construction hours and other relevant provisions set forth in the LAMC. Noise associated with cumulative construction activities would be reduced to the degree reasonably

⁵³ Los Angeles County Metropolitan Transportation Authority, *Draft Environmental Impact Report for the Los Angeles Aerial Rapid Transit Project, Los Angeles, California, Table 6-3, October 2022.*

and technically feasible through proposed mitigation measures for each individual related project and compliance with locally adopted and enforced noise ordinances. Based on the above, there would be potential cumulative noise impacts at the nearby sensitive uses located in proximity to the Project Site and Related Project No. 5 (receptor location R2) and Related Project No. 21 (receptor locations R3 and R4), in the event of concurrent construction activities. **As such, cumulative noise impacts from on-site construction would be significant at receptor locations R2, R3, and R4. However, the cumulative construction noise impacts would only occur if the mixed-use development at receptor location R3 is constructed and occupied during the construction of the Project and the Related Project Nos. 5 and 21.**

(ii) Off-Site Construction Noise

In addition to the cumulative impacts of on-site construction activities, off-site construction haul trucks would have a potential to result in cumulative impacts if the trucks for the related projects and the Project were to utilize the same haul route. As analyzed above in Subsection 3.d.(1) (see Table IV.H-12 on page IV.H-36), the estimated off-site construction noise levels would be exceed the significance threshold along West College Street (between North Alameda Street and North Main Street). Therefore, any additional number of trucks from the Project and related projects would incrementally increase the noise levels, which would contribute to cumulative impacts. In addition, as provided in the noise calculation worksheets included in Appendix H of this Draft EIR, it is estimated that if the cumulative truck trips would add up to 160 truck trips per hour along North Alameda Street, the off-site construction truck noise levels would increase the ambient noise by 5 dBA and would exceed the significance criteria. As indicated above, the Project would generate up to 44 haul truck trips per hour during the site grading/excavation phase. There are two related projects in the vicinity of the Project Site, which could utilize the same truck routes, West College Street and North Alameda Street, including Related Project No. 5 and Related Project No 21. Related Project No. 5 would generate up to 240 truck trips per day (approximately 40 truck trips per hour based on 6 hours operation).⁵⁴ Related Project No. 21 would generate 16 truck trips per hour.⁵⁵ Therefore, there is a potential for an increase in truck trips along West College Street, which would result in cumulative off-site construction noise impact. However, the potential cumulative increase in total truck trips along North Alameda Street would not reach 160 truck trips per hour to result in significant cumulative impact. **As such, cumulative off-site construction noise impacts would be significant at receptor location R3 located along West College Street.**

⁵⁴ City of Los Angeles, *College Station Project Draft Environmental Impact Report, Chapter 4.7 Noise, March 2018.*

⁵⁵ Los Angeles County Metropolitan Transportation Authority, *Draft Environmental Impact Report for the Los Angeles Aerial Rapid Transit Project, Los Angeles, California, Table 6-3, October 2022.*

(iii) Summary of Cumulative Construction Noise Impacts

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

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

(b) Operational Noise

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

(i) On-Site Stationary Noise Sources

Due to the provisions set forth in the LAMC that limit stationary source noise from items, such as rooftop mechanical equipment, noise levels would be less than significant at the property line for each related project. In addition, as discussed above, noise impacts associated with operations within the Project Site would be less than significant. **Therefore, based on the distance of the related projects from the Project Site and the operational noise levels associated with the Project, the Project's contribution to a cumulative noise impact would not be considerable and the cumulative stationary source noise impacts associated with operation of the Project and related projects would be less than significant.**

(ii) Off-Site Mobile Noise Sources

The Project and related projects in the area would produce traffic volumes (off-site mobile sources) that would generate roadway noise. Cumulative noise impacts due to off-site traffic were analyzed by comparing the projected increase in traffic noise levels from "Existing" conditions to "Cumulative Future Plus Project" conditions to the applicable

significance thresholds. Cumulative Future Plus Project conditions include traffic volumes from future ambient growth, related projects, and the Project. The calculated traffic noise levels under “Existing” and “Cumulative Future Plus Project” conditions are presented in Table IV.H-25 on page IV.H-64. As shown therein, cumulative traffic volumes would result in an increase ranging from 0.5 dBA (CNEL) along the roadway segments of Hill Street (between College Street and Alpine Street) and College Street (between Yale Street and Hill Street) to 2.9 dBA (CNEL) along the roadway segment of College Street between (Spring Street and Main Street). The increase in traffic noise levels along analyzed roadway segments would be below the 3-dBA CNEL significance threshold, which is applicable to noise levels that fall within the normally unacceptable land use category (i.e., between 70 and 75 dBA CNEL); and below the 5-dBA CNEL significance threshold, which is applicable to noise levels that fall within the conditionally acceptable land use category (i.e., between 60 and 70 dBA CNEL). **Therefore, the Project’s contribution to a cumulative noise impact would not be considerable, and the cumulative noise impacts due to off-site mobile noise sources associated with the Project, future growth, and related projects would be less than significant.**

(iii) Summary of Cumulative Operational Noise Impacts

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

**Table IV.H-25
Cumulative Roadway Traffic Operation Noise Impacts**

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels ^a (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing Conditions	Future Cumulative Plus Project		
North Hill Street					
Between Bamboo Ln. and West College St.	Commercial	73.0	73.8	0.8	No
Between West College St. and Alpine St.	School, Motel	72.9	73.4	0.5	No
North Broadway					
Between Bamboo Ln. and West College St.	Residential	72.7	73.6	0.9	No
Between West College St. and Alpine St.	Commercial	72.2	73.2	1.0	No
North Spring Street					
Between West Elmyra St. and West College St.	Park	71.4	73.2	1.8	No
Between West College St. and Alpine St.	Residential	71.7	73.1	1.4	No
North Alameda Street					
Between West College St. and Alpine St.	Residential	70.8	72.5	1.7	No
North Main Street					
Between West Elmyra St. and West College St.	Residential	71.2	72.3	1.1	No
Between West College St. and Alpine St.	Industrial	70.8	71.6	0.8	No
West College Street					
Between Yale St. and North Hill St.	School	68.4	68.9	0.5	No
Between North Hill St. and North Broadway	Commercial	68.9	70.6	1.7	No
Between North Broadway and North Spring St.	Residential	68.7	70.9	2.2	No
Between North Spring St. and North Main St.	Future Residential	64.2	67.1	2.9	No

Table IV.H-25 (Continued)
Cumulative Roadway Traffic Operation Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels ^a (CNEL (dBA))		Increase in Noise Levels due to Project (CNEL (dBA))	Significant Impact?
		Existing Conditions	Future Cumulative Plus Project		
_____ ^a See Off-Site Traffic Noise Calculations for Existing Conditions and Future Plus Project Conditions provided in Appendix H of this Draft EIR. Source: AES, 2024.					

(c) *Construction Vibration*

(i) *On-Site Construction Vibration*

Groundborne vibration decreases rapidly with distance. While Project-level impacts associated with on-site construction would be significant and unavoidable, vibration impacts due to construction activities are generally limited to buildings/structures that are located in proximity to the construction site (i.e., within 25 feet as related to building damage).⁵⁶ The nearest related project is Related Project No. 5, which is located approximately 60 feet from the Project Site. Due to the rapid attenuation characteristics of groundborne vibration, Related Project No. 5 would not contribute to the cumulative construction vibration impacts with the Project. **Therefore, the Project's contribution to a cumulative on-site construction vibration impact would not be considerable, and the cumulative construction vibration impact with respect to building damage associated with on-site construction and the cumulative impact would be less than significant.**

As analyzed above, potential vibration impacts associated with on-site construction would be significant with respect to human annoyance at receptor location R3. The nearest related project to receptor location R3 is Related Project No. 21, which is located adjacent to receptor location R3, which would likely generate vibration levels exceeding the significance threshold as related to human annoyance. **Therefore, the overlapping construction of the Related Project No. 21 and the Project would contribute to the cumulative vibration impacts with respect to human annoyance associated with on-site construction and the cumulative construction vibration impact at receptor location R3 would be significant.**

(ii) *Off-Site Construction Vibration*

As previously discussed, based on FTA data, the vibration generated by a typical heavy truck would be approximately 63 VdB (0.00566 PPV) at a distance of 50 feet from the truck.⁵⁷ In addition, according to the FTA “[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads.” As discussed above, there are existing buildings that are approximately 20 feet from the right-of-way of the anticipated truck route(s) for the Project (i.e., North Main Street, North Alameda Street, West College Street, Daly Street, and North Vignes Street). These buildings are anticipated to be exposed to groundborne vibration levels of approximately 0.022 PPV. Trucks from the related projects are expected to generate similar groundborne vibration levels. Therefore, the vibration levels generated from off-site construction trucks associated with the Project and other related projects along the anticipated truck route(s) would be below the building

⁵⁶ Distances calculated based on estimated vibration levels for typical construction equipment at a distance which would be below the 0.25 PPV significance threshold applicable to historic buildings.

⁵⁷ FTA, “Transit Noise and Vibration Impact Assessment,” Figure 5-4, September 2018.

damage significance criterion of 0.25 PPV (for historic buildings). **Therefore, the Project's contribution to a cumulative off-site construction vibration impact would not be considerable, and the potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant.**

As discussed above, potential vibration impacts associated with temporary and intermittent vibration from Project-related construction trucks traveling along the anticipated truck route(s) would be significant with respect to human annoyance. As related projects would be anticipated to use similar trucks as the Project, it is anticipated that construction trucks would generate similar vibration levels along the anticipated truck route(s) (i.e., West College Street). As analyzed above, the proposed residential development along West College Street (receptor location R3) would be exposed to vibration level of 74.9 as the trucks pass by and would exceed the 72-VdB significance criterion. There are related projects located in the vicinity of West College Street (including Related Project No. 21), which could utilize the same truck routes. **Therefore, to the extent that Related Project No. 21 uses the same haul route as the Project, potential cumulative vibration impacts with respect to human annoyance associated with temporary and intermittent vibration from haul trucks traveling along the designated haul route(s) would be significant.** However, this cumulative impact would only occur if the proposed mixed-use development (represented by receptor location R3) is constructed and occupied during the concurrent construction of the Project and the Related Project No. 21.

(iii) Summary of Cumulative Construction Vibration Impacts

As discussed above, due to the rapid attenuation characteristics of groundborne vibration and given the distance of the nearest related project to the Project Site, there is no potential for a cumulative construction vibration impact with respect to building damage associated with groundborne vibration from on-site sources. In addition, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant. **Therefore, on-site and off-site construction activities associated with the Project and related projects would not generate excessive groundborne vibration levels with respect to building damage.**

As discussed above, cumulative construction vibration impacts from on-site construction activities and off-site construction trucks pursuant to the significance criterion for human annoyance would be significant in the event concurrent construction of the Project and the related projects were to occur. **Therefore, on-site construction activities and off-site construction trucks would generate excessive groundborne vibration levels with respect to human annoyance that would result in cumulative vibration impacts.** However, these cumulative impacts would only occur if the proposed mixed-use development (represented by receptor location R3) is constructed and occupied during the concurrent construction of the Project and the Related Project No. 21.

(d) Operational Vibration

Vibration levels from project operation are generally limited to building mechanical equipment and vehicle circulation and would be limited to the immediate vicinity of the project sites. The related projects (mixed-use and commercial developments) would generate similar vibration levels as the Project. Since groundborne vibration decreases rapidly with distance, operation of the related projects would not contribute to cumulative vibration impacts due to the distance between the Project and the related projects. As analyzed above, the Project operation would not result in the generation of excessive groundborne vibration levels that would be perceptible in the vicinity of the Project Site. **Therefore, based on the distance of the related projects from the Project Site and the operational vibration levels associated with the Project, cumulative vibration impacts associated with operation of the Project and related projects would be less than significant.**

(2) Mitigation Measures

(a) Construction Noise

As analyzed above, there would be potential cumulative noise impacts at the nearby sensitive uses (e.g., residential uses) located in proximity to the Project Site and Related Project No. 21, in the event of concurrent construction activities. As included in the Draft EIR prepared for Related Project No. 21, mitigation would be provided, which would include temporary noise barrier to reduce the construction noise to the receptor locations R3 and R4.⁵⁸ However, construction noise impacts due to the Related Project No. 21 to receptor locations R3 and R4 would remain significant and unavoidable. In addition, as discussed above, the Project temporary noise barrier would not reduce the on-site construction noise impacts at the upper levels of receptor location R3 due to the building height (seven story building). There are no other physical mitigation measures that would be feasible.

As analyzed above, cumulative noise impacts associated with off-site construction trucks from the Project and other related projects would be significant along West College Street (between North Alameda Street and North Main Street). However, there are no feasible mitigation measures that could be implemented to reduce this short-term impact because conventional mitigation measures, such as providing temporary noise barrier walls to reduce the off-site construction truck traffic noise impacts, would not be practical as the barriers would obstruct the access and visibility to the properties along the anticipated haul routes.

⁵⁸ AECOM, *Draft Environmental Impact Report for the Los Angeles Aerial Rapid Transit Project, Los Angeles, California, October 2022.*

(b) Operational Noise

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

(c) Construction Vibration

As discussed above, cumulative vibration impacts with respect to building damage associated with on-site and off-site construction activities would be less than significant, with implementation of Project Mitigation Measure CUL-MM-1. Therefore, no additional mitigation measures are required.

Cumulative vibration impacts with respect to human annoyance associated with on-site construction activities and off-site construction trucks would be significant. However, there are no feasible mitigation measures to reduce the potential vibration human annoyance impacts.

(d) Operational Vibration

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

(3) Level of Significance After Mitigation

(a) Construction Noise

Cumulative construction noise impacts associated with on-site noise sources would remain significant and unavoidable at receptor locations R2, R3, and R4. However, cumulative construction noise impacts at receptor location R3 would only occur if the proposed mixed-use development is constructed and occupied during the concurrent construction of the Project and Related Project No. 21.

Cumulative construction noise impacts associated with off-site noise sources would remain significant and unavoidable at receptor location R3. However, it is important to note that this impact would only occur if the proposed mixed-use development (Related Project No. 5) is completed and occupied to or during Project construction. If the proposed mixed-use development is not completed and occupied prior to or during Project construction, the cumulative off-site construction noise impact at receptor location R2 would not occur.

(b) Operational Noise

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

(c) Construction Vibration

Cumulative vibration impacts with respect to building damage from on-site and off-site construction activities were determined to be less than significant. Therefore, no additional mitigation measures were required or included, and the impact level remains less than significant.

However, with respect to human annoyance, cumulative vibration impacts from on-site and off-site construction would be significant and unavoidable.

(d) Operational Vibration

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