Environmental Impact Analysis

F. Noise

1. Introduction

This section evaluates the potential for noise and groundborne vibration impacts resulting from the development and operation of the Proposed Project, including impacts associated with temporary or permanent increase in ambient noise levels; generation of excessive groundborne noise and vibration, and whether this is in excess of standards established in the City of Los Angeles General Plan, Los Angeles Municipal Code (LAMC) or Noise Ordinance. Mitigation measures intended to reduce noise and vibration impacts are proposed, where appropriate, to avoid or reduce significant impacts of the Proposed Project.

Data used to prepare this analysis were obtained from the Federal Transit Administration Transit Noise and Vibration Impact Assessment (May, 2006), the Federal Transit Administration Noise and Vibration Impact Assessment Manual (September 2018), the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM), California Department of Transportation (Caltrans) Technical Noise Supplement (2009), Caltrans Transportation and Construction Vibration Guidance Manual (September 2013), and by measuring and modeling existing and future noise levels at the Project Site and surrounding areas. The following section is also based, in part, on the information provided in the Construction Noise and Vibration Technical Report, ("Construction Noise Technical Report"), prepared by Veneklasen Associates, dated October 9, 2020. The Construction Noise and Vibration Technical Report and calculations cited in this section are presented in Appendix F to this Draft EIR.

a) Fundamentals of Sound and Environmental Noise

Sound is technically described in terms of amplitude (i.e., loudness) and frequency (i.e., pitch). The standard unit of sound amplitude measurement is the decibel (dB). The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Since the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted dB scale (dBA) provides this compensation by emphasizing frequencies in a manner approximating the sensitivity of the human ear.

Noise, on the other hand, is typically defined as unwanted sound audible at such a level that the sound becomes an undesirable by-product of society's normal day-to-day activities. Sound becomes unwanted when it interferes with normal activities, causes actual physical harm, or results in adverse health effects. The definition of noise as unwanted sound implies that it has an adverse effect, or causes a substantial annoyance, to people and their environment. However, not every unwanted audible sound interferes with normal activities, causes harm, or has adverse health effects. For unwanted audible sound (i.e., noise) to be considered adverse it must occur with sufficient frequency and at such a level that adverse impacts are reasonably likely to occur.

A typical noise environment consists of a base of steady ambient noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise, such as traffic on a major highway. Table IV.F-1, Representative Environmental Noise Levels, illustrates representative noise levels in the environment.

Several rating scales have been developed to analyze the adverse effects of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effects of noise on people is largely dependent upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

- L_{eq}: An L_{eq}, or equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- 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.
- CNEL: The Community Noise Equivalent Level (CNEL) is a 24-hour average L_{eq} with a 5-dBA "weighting" during the hours of 7:00 P.M. to 10:00 P.M. and a 10-dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a constant 60-dBA 24-hour Leq would result in a CNEL of 66.7 dBA.

Table IV.F-1
Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 ft.	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
	—0—	

Source: California Department of Transportation, Technical Noise Supplement, September 2013.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day, night, or over a 24-hour period. For residential uses, environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60–70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet suburban residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate level noise environments are urban residential or semi-commercial areas (typically 55–60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60–75 dBA) or dense urban or industrial areas (65–80 dBA).

It is widely accepted that in the community noise environment the average healthy ear can barely perceive CNEL noise level changes of 3 dBA. CNEL changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5-dBA CNEL increase is readily noticeable to most people, while the human ear perceives a 10-dBA CNEL increase as a doubling of sound. However, there is no direct correlation between increasing or even doubling noise-generating uses and what is detectable by the human ear as an increase in noise level. The human ear perceives a 10-dBA increase in sound level to be a doubling of sound volume, but doubling the sound wave energy, (i.e., the noise-generating activity), only results in a 3-dBA increase in sound. This means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level to the human ear. Thus, relatively sizeable increases in baseline noise generation are not necessarily perceived as significant noise increases by the human ear.

Noise levels from a particular source generally decline as distance to the receptor increases. Other factors, such as the weather and reflective barriers, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source (assume a starting point of 50 feet), the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources[1] is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels are also generally reduced by about 1 dBA for each 1,000 feet of distance due to air absorption. Noise barriers can provide noise level reductions ranging from approximately 5 dBA (where the barrier just breaks the line of sight between the source and receiver) to an upper range of 20 dBA with a more substantial barrier. The normal noise attenuation within residential structures with open windows is about 17 dBA, while the noise attenuation with closed windows is a minimum of 25 to 30 dBA.[2]

b) Fundamentals of Environmental Groundborne Vibration

Vibration is sound radiated through the ground. Vibration can result from a source (e.g., train operations, motor vehicles, machinery equipment, etc.) causing the adjacent ground to move and creating vibration waves that propagate through the soil to the foundations of nearby buildings. This effect is referred to as groundborne vibration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe

[1] *A stationary or point noise source is a single, localized identifiable noise location, such as noise from a train, speaker, a patio, or a construction site.*

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

vibration levels. PPV is defined as the maximum instantaneous peak of the vibration level, while RMS is defined as the square root of the average of the squared amplitude of the level. PPV is typically used for evaluating potential building damage, while RMS velocity in decibels (VdB) is typically more suitable for evaluating human response.

The background vibration velocity level in residential areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. Trucks and buses rarely crate vibration that exceeds 70 Vdb unless there are bumps and frequent irregularities in the road. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. As noted in the Federal Transit Administration Noise and Vibration Impact Assessment Manual, ground-borne vibration is not a common environmental problem and it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. For purposes of human perception, the range of interest is from approximately 50 VdB, which is the typical background vibration velocity level in residential areas, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings, such as historic buildings.

2. Environmental Setting

a) Regulatory Framework

(1) Federal

(a) Noise

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 land use areas[3] of an outdoor L_{dn} of 55 dBA and an indoor L_{dn} of 45 dBA. These guidance levels are not considered as standards or regulations and were developed without consideration of technical or

[3] *United States Environmental Protection Agency, EPA Identifies Noise Levels Affecting Health and Welfare, April 1974.*

economic feasibility. There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the proposed Project.

Under the Occupational Safety and Health Act of 1970 (29 U.S.C. §1919 et seq.), the Occupational Safety and Health Administration (OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, ensuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

(b) Vibration

The Federal Transit Administration (FTA) has adopted vibration criteria that are used to evaluate potential structural damage to buildings by building category from construction activities. The vibration damage criteria adopted by FTA for various structural categories are shown in Table IV.F-2, FTA Construction Vibration Impact Criteria for Building Damage**.** FTA guidelines suggest minimum safe distances between construction equipment and buildings based on the types of construction equipment and the category of a building.

Table IV.F-2
FTA Construction Vibration Impact Criteria for Building Damage

Building Category	PPV (in/sec)	Approximate Vibration Velocity Level (L_V)[a]
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Note:
[a] *RMS velocity in decibels, VdB re 1 micro-in/sec*
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018 (Table 7-5).

The FTA has also adopted vibration criteria associated with the potential for human annoyance from groundborne vibration for the following three land-use categories: Category 1 – High Sensitivity, Category 2 – Residential, and Category 3 – Institutional. FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-

resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment but still have the potential for activity interference. The vibration criteria associated with human annoyance for these three land-use categories are shown in Table IV.F-3, FTA Vibration Impact Criteria for Human Annoyance. No vibration criteria have been adopted or recommended by FTA for commercial and office uses.

Table IV.F-3
FTA Vibration Impact Criteria for Human Annoyance

Land Use Category	Vibration Impact Levels (VdB, micro-inch/sec)		
	Frequent Events	Occasional Events	Infrequent Events
Category 1: Buildings where vibration would interfere with interior operations.	65	65	65
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime use.	75	78	83

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018 (Table 6-3).

For evaluating potential annoyance or interference with vibration-sensitive activities due to construction vibration, the criteria for general assessment shown in Table IV.F-3 can be applied. Under conditions where there are a frequent number of events per day, the FTA has established thresholds of 65 VdB for Category 1 buildings, 72 VdB for Category 2 buildings, and 75 VdB for Category 3 buildings.[4] Under conditions where there are an occasional number of events per day, the FTA has established thresholds of 65 VdB for Category 1 buildings, 75 VdB for Category 2 buildings, and 78 VdB for Category 3 buildings.[5] Under conditions where there are an infrequent number of events per day, the FTA has established thresholds of 65 VdB for Category 1 buildings, 80 VdB for Category 2 buildings, and 83 VdB for Category 3 buildings.[6]

[4] *"Frequent events" are defined by the FTA as more than 70 vibration events of the same source per day. Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.*

[5] *"Occasional events" are defined by the FTA as between 30 and 70 vibration events of the same source per day. Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.*

[6] *"Infrequent events" are defined by the FTA as being fewer than 30 vibration events of the same kind per day. Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.*

(2) State

(a) Noise.

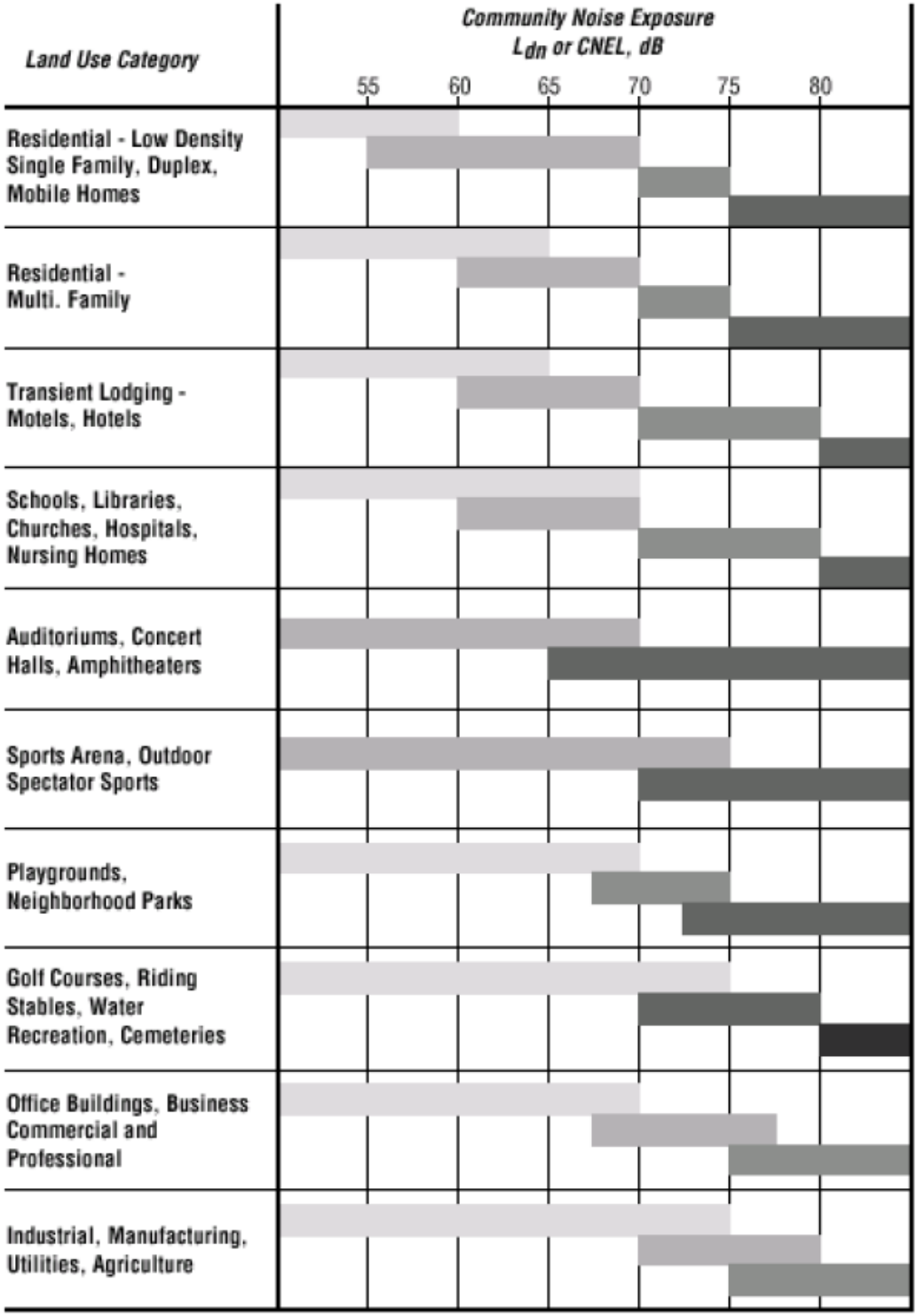
The State of California does not have statewide standards for environmental noise, but the Governor's Office of Planning and Research (OPR) has established general plan guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as presented in Figure IV.F-1, Guidelines for Noise Compatible Land Use.[7] The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land uses types is categorized into four general levels: "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable." For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be "normally acceptable" for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be "clearly unacceptable." In addition, Section 65302(f) of the California Government Code 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(g) requiring a noise element to be included in the general plan. The noise element must (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

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

(b) Vibration

There are no state vibration standards that apply to the Proposed Project. Therefore, this analysis uses the FTA criteria as shown in Tables IV.F-3 and IV.F-4 to assess construction impacts relative to structural damage and human annoyance from groundborne vibration.

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



Source: California OPR General Plan Guidelines, 2017.

Figure IV.F-1
Guidelines for Noise Compatible Land Use

(3) City of Los Angeles

(a) General Plan Noise Element

As discussed previously, California Government Code Section 65302(g) requires that a noise element be included in the general plan of each county and city in the state. The Noise Element of the City's General Plan establishes CNEL guidelines for land use compatibility as shown in Table IV.F-4 and includes a number of goals, objectives, and policies for land use planning purposes. The overall purpose of the Noise Element of the City's General Plan is to guide policymakers in making land use determinations and in preparing noise ordinances that would limit exposure of citizens to excessive noise levels. The following policies and objectives from the Noise Element of the General Plan are applicable to the Project.[8]

> 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.

In accordance with the City's Noise Element, a noise exposure of 60 dBA CNEL or less is considered to be the most desirable target for the exterior of noise-sensitive land uses, or sensitive receptors, such as homes, schools, churches, libraries, etc. It is also recognized that such a level may not always be possible in areas of substantial traffic noise intrusion. Exposures up to 70 dBA CNEL for noise-sensitive uses are generally considered conditionally acceptable if all measures to reduce such exposure have been taken. Noise levels above 70 dBA CNEL are normally unacceptable for residential uses.

[8] *Noise Element of the General Plan, adopted February 3, 1999.*

Table IV.F-4
City of Los Angeles Community Noise Exposure Guidelines

Land Use	Normally Acceptable (dBA)[a]	Conditionally Acceptable (dBA)[b]	Normally Unacceptable (dBA)[c]	Clearly Unacceptable (dBA)[d]
Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70 - 75	above 70
Multi-Family Homes	50 - 65	60 - 70	70 - 75	above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	above 80
Transient Lodging – Motels, Hotels	50 - 65	60 - 70	70 - 80	above 80
Auditoriums, Concert Halls, Amphitheaters	---	50 - 70	---	above 65
Sports Arena, Outdoor Spectator Sports	---	50 - 75	---	above 70
Playgrounds, Neighborhood Parks	50 - 70	---	67 - 75	above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 75	---	70 - 80	above 80
Office Buildings, Business and Professional Commercial	50 - 70	67 - 77	above 75	---
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	above 75	---

Notes:
[a] 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.
[b] Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
[c] 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.
[d] Clearly Unacceptable: New construction or development should generally not be undertaken.
Source: California Department of Health Services (DHS); L.A. CEQA Thresholds Guide (2006).

(b) Los Angeles Municipal Code Noise Regulations

The City has numerous ordinances and enforcement practices that apply to intrusive noise and that regulate new construction activities. The City's comprehensive noise ordinance, found in Chapter XI of the LAMC, sets forth sound measurement and criteria, minimum presumed ambient noise levels for different land use zoning classifications, sound emission levels for specific uses, hours of operation for certain uses, standards for

determining when noise is deemed to be a disturbance, and legal remedies for violations. Key provisions of Chapter XI of the LAMC are discussed below.

Section 111.01 and Section 111.03 of the LAMC define the ambient noise as the actual measured ambient noise level or the City's presumed ambient noise level, whichever is greater. The actual ambient noise level is the measured noise level averaged over a period of at least 15 minutes L_{eq}. The LAMC Noise Regulations state that where the ambient noise level is less than the presumed ambient noise level designated, the presumed ambient noise level shall be deemed to be the minimum ambient noise level. The City's presumed ambient noise levels are provided in Table IV.F-5 below. The measured ambient noise levels in the vicinity of the Project Site exceed these presumed ambient noise levels; therefore, the measured ambient noise levels recorded in this analysis represent the baseline ambient noise levels. In cases where the actual ambient conditions are not known, the City's presumed daytime (7:00 AM to 10:00 PM) and nighttime (10:00 PM to 7:00 AM) ambient noise levels defined in Section 113.03 of the LAMC should be used.

Table IV.F-5
City of Los Angeles Presumed Ambient Noise Levels

Land Use Type (Zone)	Presumed Ambient Noise Level (dBA)	
	Day (7 AM to 10 PM)	Night (10 PM to 7 AM)
Residential, School, Hospital, Hotel, Agriculture (A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5)	50	40
Commercial (P, PB, CR, C1, C1.5, C2, C4, C5, and CM)	60	55
Manufacturing (M1, MR1, and MR2)	60	55
Heavy Manufacturing (M2 and M3)	65	65

Source: LAMC Chapter XI, Noise Regulations, Section 111.03. Minimum Ambient Noise Level.

Section 111.02 of the LAMC provides procedures and criteria for the measurement of the sound level of "offending" noise sources. In accordance with the LAMC, a noise level increase of 5 dBA over the existing average ambient noise level at an adjacent property line is considered a noise violation. To account for people's increased tolerance for short-duration noise events, the Noise Regulation provides a 5 dBA allowance for noise occurring more than five but less than fifteen minutes in any one-hour period and an additional 5 dBA allowance (total of 10 dBA) for noise occurring five minutes or less in

any one-hour period.[9] Section 112.01 of the LAMC prohibits noise from any radio, musical instrument, phonograph, television receiver, or other machine or device for the producing, reproducing or amplification of the human voice, music, or any other sound, in such a manner, as to disturb the peace, quiet, and comfort of neighbor occupants or any reasonable person residing or working in the area or that exceeds the ambient noise level on the premises of any other occupied property, or if a condominium, apartment house, duplex, or attached business, within any adjoining unit, by more than 5 dBA.

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

Section 112.05 of the LAMC prohibits the operation of any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet from the source of the noise between the hours of 7:00 A.M. and 10:00 P.M. when the source is located within 500 feet of a residential zone:

- 75 dBA for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors, and pneumatic or other powered equipment;

- 75 dBA for powered equipment of 20 horsepower or less intended for infrequent use in residential areas, including chain saws, log chippers, and powered hand tools; or

- 65 dBA for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools, and riding tractors.

The noise limitations above do not apply where compliance is deemed to be technically infeasible. The term technically infeasible means that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction device or techniques during the operation of the equipment. The aforementioned limitations apply only to uses in residential zones or within 500 feet thereof.

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

Section 41.40 of the LAMC prohibits construction activity (including demolition) and repair work, where the use of any power tool, device, or equipment would disturb persons occupying sleeping quarters in any dwelling hotel, apartment, or other place of residence, between the hours of 9:00 P.M. and 7:00 A.M., Monday through Friday, and between 6 P.M. and 8 A.M. on Saturday. All such activities are also prohibited on Sundays and all federal holidays.

The City of Los Angeles Building Regulations Ordinance No. 178,048 requires a construction site notice to be provided that includes the following information: job site address; permit number; name and phone number of the contractor and owner or owner's agent; hours of construction allowed by code or any discretionary approval for the Project Site; and City telephone numbers where violations can be reported. The notice is required to be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public.

(c) City Ground-borne Vibration Regulations

The City has not adopted any regulations for construction or operational groundborne vibration impacts. As such, available guidelines from the FTA as discussed above are utilized to assess impacts due to ground-borne vibration.

b) Existing Conditions

The Project Site is located at the Town and Country Shopping Center ("the Center"). The Development Site, which is on the eastern portion of the Project Site, is currently developed and operating with 151,048 square feet of commercial, retail, and restaurant buildings with an associated surface parking lot. The existing commercial operations at the Center contribute to the ambient noise levels in the vicinity. These operations include retail delivery trucks and commercial loading and unloading activities, employee and patron parking and use of the Center, and traffic to, from, and through the Center. In addition, the tenants of the Center periodically do tenant improvements and maintenance activities that can produce noise. The operator of the Center also periodically improves and maintains the Center, which can create noise associated with construction activities at the Center that are not a part of the Proposed Project. Traffic and transit operations around the Center also contribute noise to the baseline noise conditions. Collectively, these noise sources contribute to ambient noise levels in the baseline condition.

(1) Sensitive Receptors

For purposes of assessing the Proposed Project's noise and vibration impacts, existing land uses in the project vicinity were surveyed and assessed to determine their sensitivity to noise and vibration impacts. Some land uses are considered more sensitive to noise than others due to the types of activities typically involved at the receptor location, and

the effect that noise can have on those activities and the persons engaged in them. The L.A. CEQA Thresholds Guide states that residences, schools, transient lodging, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks can be considered sensitive receptors for noise analysis. Similarly, the Noise Element of the City of Los Angeles General Plan (General Plan) 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.[10] These uses are generally considered more sensitive to noise than commercial and industrial land uses.

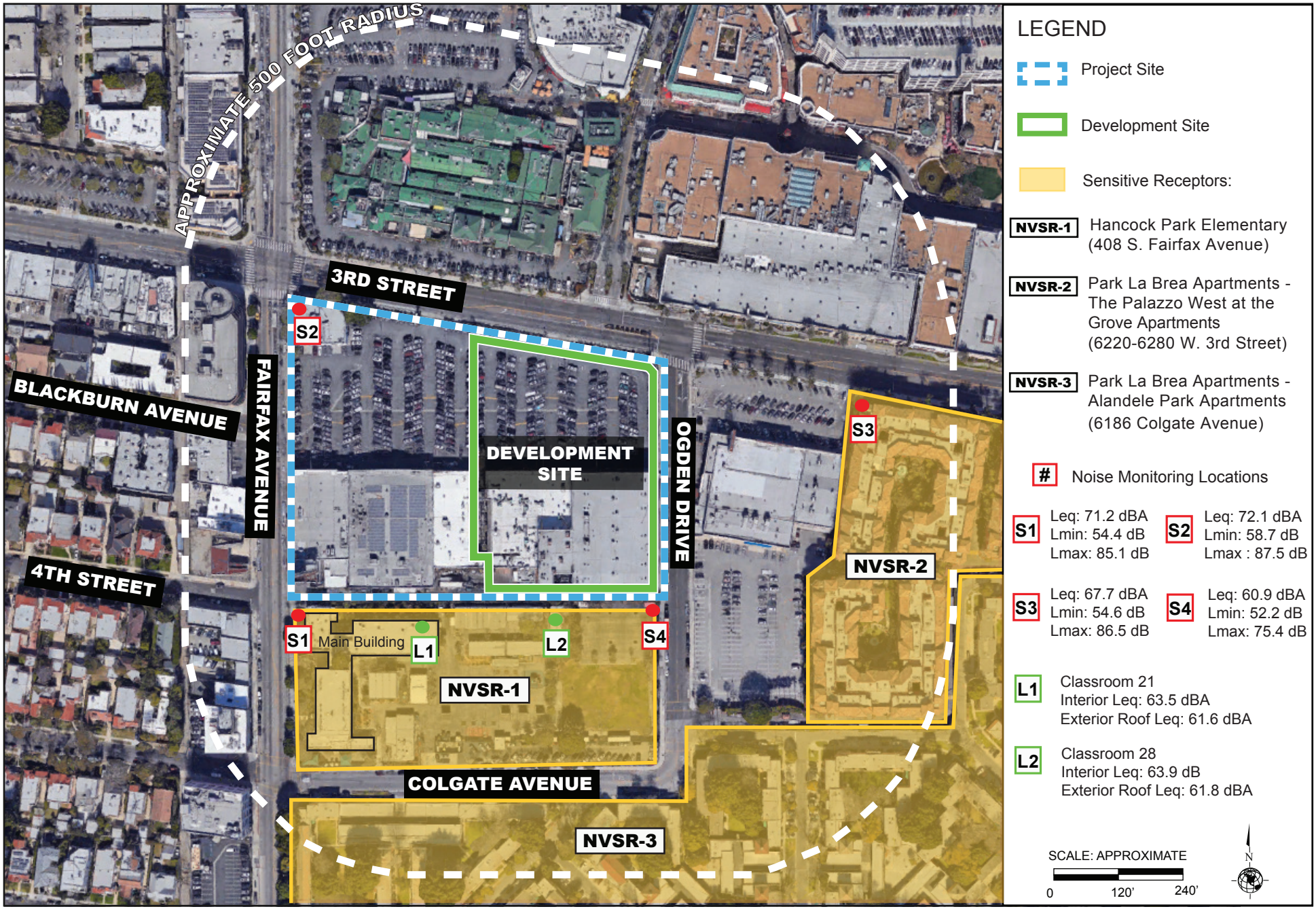
Sensitive receptors identified within 500 feet of the Project Site are depicted in Figure IV.F-2, Noise Monitoring and Sensitive Receptor Location Map and listed under Table IV.F-6. As shown in Table IV.F-6, noise and vibration sensitive receptors (NVSRs) include the Hancock Park Elementary School (NVSR-1), the Park La Brea Apartments – Palazzo West at the Grove Apartments (NVSR-2), and the Park La Brea Apartments – Alandele Park Apartments (NVSR-3). The Project Site and the Hancock Park Elementary School have adjacent property lines. The actual receptors, such as students in the classroom, or buildings subject to vibration, are in most instances not located exactly on the property line. Thus, the noise and vibration impacts on the actual receptors within NVSR-1 (i.e., Classrooms 21 and 28) were identified for purposes of analyzing the noise and vibration impacts upon individual receptors within the campus.

Table IV.F-6
Noise and Vibration Sensitive Receptors (NVSR)

Receptor Group for Analysis	Address	Cardinal Direction from Project Site	Type of Receptor Distance from Project Site (ft)
NVSR-1	408 S. Fairfax Avenue (Hancock Park Elementary School)	South	Educational 15 [a]
NVSR-2	6220 W. 3rd Street (Park La Brea Apartments - Palazzo West at the Grove)	East	Residential 280
NVSR-3	6186 Colgate Avenue (Park La Brea Apartments - Alandele Park Apartments)	Southeast	Residential 330

[a] Distance measured from the Project Site boundary to the nearest classroom building.
Source: Veneklasen Associates, Construction Noise and Vibration Technical Report, October 9, 2020.

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



Source: Google Earth, Aerial View, 2018; Veneklasan Associates, October 2020.

Figure IV.F-2
Noise Monitoring and Sensitive Receptor Location Map

(2) Ambient Noise Measurements

(a) Short-Term Measurements

Short-term exterior daytime noise levels were monitored at four locations in the vicinity of the Project Site to measure ambient noise conditions. The approximate locations of where the noise measurements were taken are depicted in Figure IV.F-1, Noise Monitoring and Sensitive Receptor Location Map. The locations of these noise measurements were selected based on the close distances to the identified sensitive receptors and nearby roadways in order to determine an accurate ambient exterior noise measurement for these sensitive receptors. The noise measurements were conducted on May 21, 2019 generally between the hours of 11:00 a.m. and 12:48 p.m. over a period of 15 minutes in accordance with LAMC Section 111.01(a), and are summarized in Table IV.F-7, Measures Short-Term Ambient Noise Levels in the Project Site Vicinity. The short-term measurement locations are labeled S1, S2, S3 and S4, respectively. The measurements were taken after the morning peak traffic hour to represent ambient noise levels in the vicinity when multiple noise sources contribute to ambient conditions and also during a time when school is in session.

Table IV.F-7
Measured Short-Term Ambient Noise Levels in Project Site Vicinity

No.	Location	Noise Level Statistics [a, b]		
		LAeq (dBA)	LAS_{max} (dB)	LAS_{min} (dB)
S1	On the east side of Fairfax Avenue, on the northwest corner of Hancock Park Elementary School	71.2	85.1	54.4
S2	On the east side of Fairfax Avenue, on the northwest corner of the Project Site	72.1	87.5	58.7
S3	On the south side of 3rd Street, east of the Project Site at the northwest corner of the Park La Brea Apartments – Palazzo West at the Grove Apartments	67.7	86.5	54.6
S4	On the west side of Ogden Drive, on the northeast corner of the Hancock Park Elementary School	60.9	75.4	52.2

Notes:

[a] *Noise measurements were taken on May 21, 2019 at each location for a duration of 15 minutes. See Appendix F.1 of this EIR for the Construction Nosie and Vibration Report.*

[b] *LAS_{max} and LAS_{min} represent the time weighted average noise level for the short term noise measurements were taken on May 21, 2019 at each location. See Appendix F.1 of this EIR for noise monitoring data.*

Source: Veneklasen Associates, Construction Noise and Vibration Technical Report, October 9, 2020. (See Appendix F.1)

As shown in Table IV.F-7, above, the ambient recorded short-term noise levels (L_{eq}) ranged from 60.9 dBA to 72.1 dBA in the vicinity the Project Site. The primary noise sources that contributed most to the measured ambient noise levels included roadway traffic, transit buses, and pedestrian activity.

(b) Long-Term Measurements at Hancock Park Elementary

For purposes of assessing potential impacts upon the Hancock Park Elementary School, long-term ambient noise levels were monitored at four locations within the Hancock Park Elementary School campus – two locations at the perimeter of the campus (Locations S1 and S2) and two at classroom locations within the campus (Locations L1 and L2). The purpose of these measurements was to determine the interior classroom noise levels throughout the school day, and the attenuation factor between indoor and outdoor spaces. Noise meters were placed inside classroom 21 (interior measurement) and on its roof (L1), and inside classroom 28 (interior measurement) and on its roof (L2), to capture the hourly sound levels for up to 9 days total (6 weekdays, 2 weekend days and Memorial Day) during the hours of 8:00 a.m. to 3:00 p.m. while school was in session from May 20, 2019 to May 29, 2019. The locations of the long-term measurements are depicted in Figure IV.F-2 and are labeled L1 and L2, respectively. These measurements, shown in Table IV.F-8 below, captured the ambient noise levels when the classrooms were occupied and unoccupied, and represent the noise exposure to students relative to exterior noise levels.

Table IV.F-8
Measured Long-Term Ambient Noise Levels
at Hancock Park Elementary

No.	Location		Noise Level Statistics [a] LA_{eq} (dBA)
L1	Classroom 21	Interior	63.5
		Exterior roof	61.6
L2	Classroom 28	Interior	63.9
		Exterior roof	61.8

Notes:
[a] *LA_{eq} represents the time weighted average noise level for the entire measurement duration of this specific noise monitoring event. Noise measurements were taken for a duration of nine days from May 20, 2019 to May 29, 2019. See Appendix F.1 of this EIR for noise monitoring data.*
Source: Veneklasen Associates, Construction Noise and Vibration Technical Report, October 9, 2020. (See Appendix F.1)

(3) Existing Mobile Noise Levels

Existing mobile noise levels were estimated for four roadway segments located in proximity to the Project Site, as shown in Figure IV.F-3, Roadway Segment Traffic Noise Location Map. These roadway segments were selected for analysis because they would be most directly impacted by Project-related traffic as determined in the Project's Traffic Impact Study. The analysis of mobile noise levels determines whether the Proposed Project's increase in traffic noise would impact sensitive receptors, such as residential uses, along these selected roadway segments. Any sensitive receptors located farther away would result in reduced mobile noise impacts compared to the sensitive receptors along these selected roadways. These roadway segments, when compared to other roadway segments located further away from the Project Site, would experience the greatest percentage increase in traffic generated by the Proposed Project.

Traffic noise levels were calculated using the FHWA Traffic Noise Model (TNM) and traffic volume data from the Traffic Impact Study.[11] The TNM traffic noise prediction model calculates the 24-hour CNEL levels based on specific information, including the peak hour traffic volume, vehicle fleet mix, roadway speed limits, roadway geometrics, and lateral distance between the noise receptor and the roadway. The existing ambient roadway noise levels and corresponding community noise exposure categories as identified in the City's Community Noise Compatibility Guidelines are presented in Table IV.F-9, Existing Vehicular Traffic Noise Levels, below. As shown in Table IV.F-9, the existing noise levels on local roadway segments analyzed are approximately 60.08 dBA CNEL at local residential roadways (i.e., Colgate Avenue) and from 60.84 dBA CNEL to 71.57 dBA CNEL on commercial corridors (i.e., Fairfax Avenue, 3rd Street, and Ogden Drive). The roadway segments analyzed are currently operating under "conditionally acceptable," "normally acceptable," or "normally unacceptable" community noise compatibility categories.

[11] *The Traffic Impact Study is provided in Appendix H.2 to this EIR.*

Table IV.F-9
Existing Vehicular Traffic Noise Levels

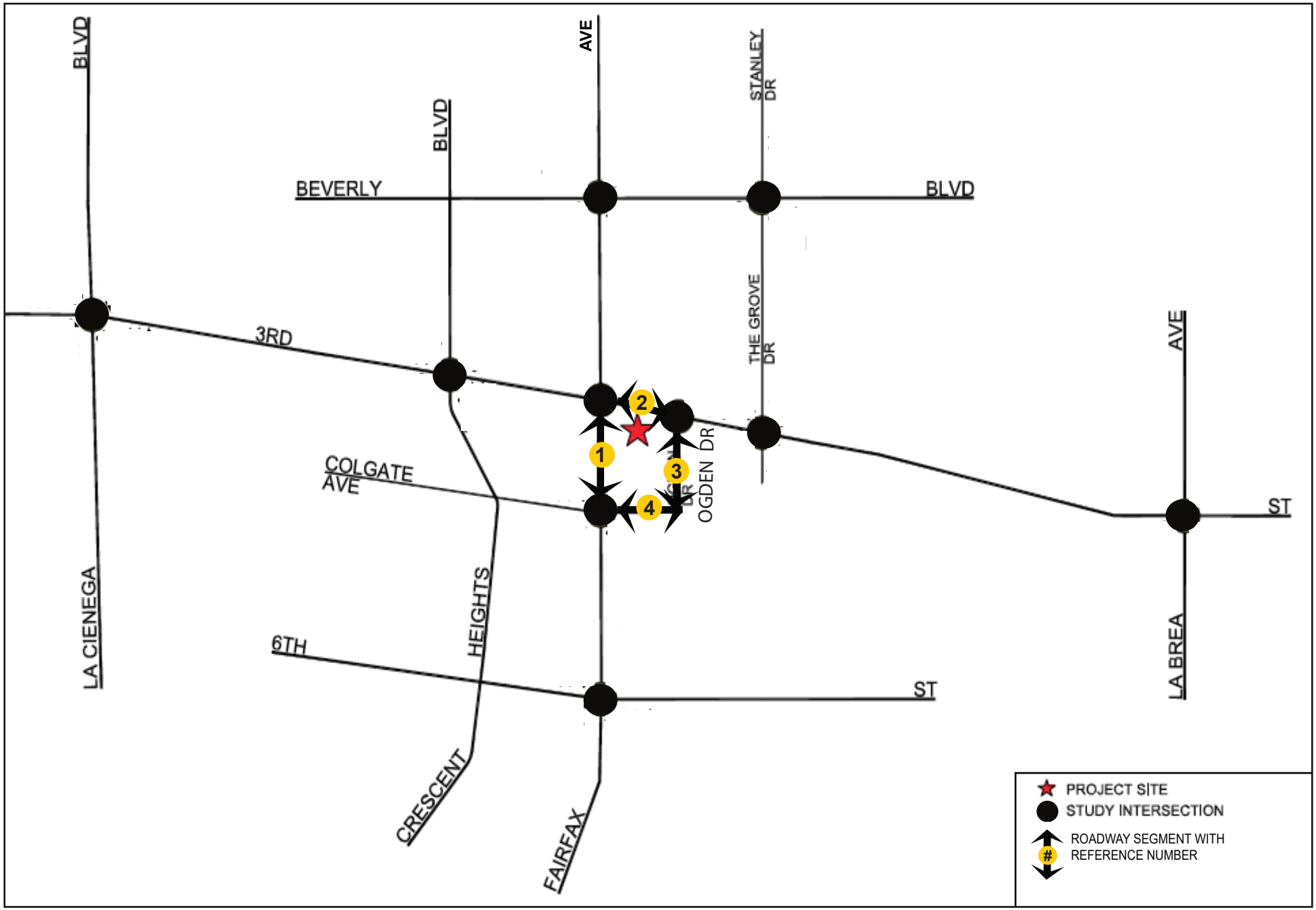
Roadway Segment		Adjacent Land Uses	Existing Noise Exposure Compatibility Category [a]	Existing CNEL (dBA) at the Roadway Right-of-Way
1.	Fairfax Avenue, between 3rd St. and Colgate Ave.	School, Commercial	Normally Unacceptable	71.57
2.	3rd Street, between Fairfax Ave. and Ogden Dr.	Commercial	Conditionally Acceptable	70.57
3.	Ogden Drive, between 3rd St. and Colgate Ave.	Commercial, School	Normally Acceptable	60.84
4.	Colgate Avenue, between Fairfax Ave. and Ogden Dr.	Multi-family Residential, School	Conditionally Acceptable	60.08

Notes:
[a] The applicable noise level ranges for the existing noise exposure compatibility category are defined in Table IV.F-5, Community Noise Exposure Guidelines, above.
Source: Parker Environmental Consultants, 2019. The TNM worksheets are provided in Appendix F.2 to the EIR.

(4) Existing Groundborne Vibration Levels

The main sources of groundborne vibration near the Development Site include heavy-duty (e.g., refuse trucks and delivery trucks) vehicles on local roadways and the adjacent service driveway to the south. According to the FTA Transit Noise and Vibration Impact Assessment Manual, 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."[12]

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



Source: Linscott Law & Greenspan, June 25, 2019.

Figure IV.F-3
Roadway Segment Traffic Noise Location Map

3. Project Impacts

a) Thresholds of Significance

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

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

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

Threshold (c): For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airstrip, 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 L.A. CEQA Thresholds Guide (Thresholds Guide), as appropriate, to inform certain impact analyses. The factors listed below are not thresholds of significance. The Thresholds Guide identifies the following factors to evaluate noise impacts on a case-by-case basis:

(1) Construction Noise

a) 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;

b) Construction activities lasting more than ten 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

c) Construction activities 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 anytime on Sunday.

Therefore, for construction noise, since construction activities would occur over a period longer than 10 days for all phases, the corresponding significance criteria used in the

construction noise analysis presented in this section of the Draft EIR is an increase in the ambient exterior noise levels by 5 dBA (hourly L_{eq}) or more at a noise-sensitive use.

(2) Operational Noise

The Thresholds Guide and City's LAMC Noise Regulations identified the following criteria to evaluate the Project's operational noise impacts:

a) The Project causes the ambient noise level measured at the property line of affected uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category (as specified in Table IV.F-5, Community Noise Exposure Guidelines), or
b) Any 5 dBA or greater noise increase.

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

For operational noise impacts, the significance criteria used in the noise analysis applies to operational noise generated by on-site operations (i.e., outdoor amenity spaces, loading dock, parking structure, and HVAC systems), as well as at off-site locations (i.e., roadway noise impacts).

(3) Construction Vibration

The City has not adopted any regulations or thresholds of significance for construction groundborne vibration impacts. Consequently, for purposes of this analysis, the FTA's guidelines were used to evaluate potential impacts related to groundborne vibration during construction.

Based on the FTA guidance, the existing conditions at sensitive receptors in the vicinity of the Development Site, character-defining features of the buildings associated with the receptors, and the land use at the receptors, the following vibration criteria apply to the following receptors for impact analysis purposes:

- Due to the age of operation for NVSR-2 and NVSR-3, the maximum vibration level of 0.2 inches per second PPV was applied for building damage at receptors NVSR-1 (except Hancock Elementary School Main Building), NVSR-2, and NVSR-3;
- The maximum vibration level of 75 VdB was applied for human annoyance within Hancock Elementary School in receptor NVSR-1, according to the criteria description in Table IV.F-3, above, for institutional land uses;
- Due to the historic status of the school's main building, the maximum vibration level of 0.12 inches per second PPV was applied within the Hancock Elementary School Main Building (historic building) at receptor NVSR-1; and
- The maximum vibration level of 72 VdB was applied for human annoyance within residential receptors at receptors NVSR-2 and NVSR-3, according to the criteria description in Table IV.F-3, above, for residential land uses.

b) Methodology

The Proposed Project's potential noise and vibration impacts were evaluated with respect to impacts upon noise-sensitive land uses identified within the project area. Specifically, the noise impact analysis addresses potential construction-related noise impacts that would occur on a short-term basis during the construction period and the operational impacts that would occur over the life of the Proposed Project. The following presents the methodology for each aspect of the analysis.

(1) On-Site Construction Activities

(a) On-Site Construction Noise

The construction noise impacts analysis is based on the Construction Noise and Vibration Technical Report in Appendix F.1 to this Draft EIR. Noise impacts associated with on-site construction activities were evaluated by calculating the construction activity noise levels at representative sensitive receptor locations in the vicinity of the Project Site and comparing the estimated construction noise levels to the existing ambient noise measurements recorded in proximity to the same receptors. Construction noise levels are based on the Proposed Project's anticipated construction equipment inventory, construction activities for each phase of construction, and the anticipated construction schedule. Noise from construction equipment is based on construction equipment noise levels as published by the FHWA's "Roadway Construction Noise Model (RCNM).[13] (See Table IV.10, Noise Data for Selected Construction Equipment, below). The predicted

[13] *Federal Highway Administration, Highway Construction Noise Model, Users Guide, Final Report, January 2006.*

noise levels are then analyzed against the ambient noise levels identified in Table IV.F-7, Measured Short-Term Ambient Noise Levels in Project Site Vicinity, above, to determine whether the construction noise levels would exceed the applicable threshold levels upon nearby sensitive receptors.

The list of construction equipment was compared to industry standard reference databases, including the FHWA Highway Construction Noise Handbook (2006), for equipment typical to projects of this scale. The listed noise levels do not include the effects of any noise mitigation measures.

Table IV.F-10
Noise Data for Selected Construction Equipment

Construction Equipment	Phase(s) of Construction	Estimated Usage Factor %	Actual Measures Noise Level at 50 Feet (dBA Lmax)
Excavator	Demolition & Site Clearance, Grading & Excavation	73	81
Front End Loader	Grading & Excavation, Building Construction	73	79
Grader	Grading & Excavation	73	85
Dozer	Demolition & Site Clearance, Grading & Excavation	73	82
Dump/Haul Truck	Grading & Excavation	73	76
Concrete/Industrial Saw	Demolition & Site Clearance	73	90
Concrete Pump Truck	Building Construction	73	81
Concrete Mixer Truck	Building Construction	73	79
Fork Lift	Building Construction	73	75
Crane	Building Construction	64	81
Air Compressor	Architectural Coating/Finishing	55	78
Welder	Building Construction	73	74
Generator	Building Construction	73	81
Backhoe	Grading & Excavation, Building Construction	73	78
Drill Rig	Grading & Excavation	73	84
Aerial Lift	Architectural Coating/Finishing	73	75
Tractor	Grading & Excavation, Building Construction	73	84

Source: FHWA Highway Construction Noise Handbook Final Report, Table 9.1, August 2006.

The construction noise calculations at each receptor location incorporated a standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance (as described above in Subsection (1)(a), Fundamentals of Sound and Environmental Noise). Additional noise attenuation was assigned to receptor locations where the line-of-sight to the Project Site was interrupted by the presence of any existing intervening structures. Additionally, as identified below, under project Design Features, the Project's

construction activities will not include the use of impact driven pile systems (i.e., pile drivers) (see PDF-NOI-1, below). It was further assumed that all construction equipment would utilize mufflers and other devices to minimize noise levels (see PDF-NOI-2, below).

(b) On-Site Vibration Impacts

On-site vibration impacts would be generated by building demolition, and operation of heavy equipment for grading, excavation and shoring activities. Groundborne vibration levels for on-site activities were estimated using groundborne vibration prediction data from the FTA's Noise and Vibration Impact Assessment and analyzed against the applicable thresholds based on the sensitive receptor's land use and relative distance to the Development Site.

(c) Off-Site Construction Noise

The Proposed Project's impacts from off-site construction noise, such as haul trucks and construction worker trips calculated from CalEEMod, were analyzed using the trips generated from the total hauling activities and the expected increase in noise on local roadways. The most intensive off-site construction noise impacts would occur during the excavation/shoring phase, which generates the highest number of hauling trips. As discussed in Section II, Project Description, a total of approximately 212 truck round-trips per day (i.e., 106 inbound and 106 outbound) carrying approximately 16 cubic yards of material per truck are expected on weekdays (i.e., 13-14 trucks per hour) during the excavation and grading phase (over an approximate 65 day period). In addition to the trips by hauling trucks, approximately 60 round-trips per day by construction workers (30 inbound and 30 outbound) are expected related to the shoring/excavation phase during peak activity. Ambient roadway noise levels and predicted roadway noise levels were calculated from FHWA's Highway Noise Prediction Model based on the traffic volumes on local roadways as reported in the Traffic Impact Study included in Appendix H.2 to this Draft EIR). Roadway noise attributable to construction trips was compared to the noise levels generated by existing trips on local roadways. As discussed in Section II, Project Description, the proposed haul route to and from the Waste Management Downtown Diversion facility would generate haul trips on W. 3rd Street between S. Ogden Drive and S. La Brea Avenue; and on S. La Brea Avenue between W. 3rd Street and the I-10 Freeway. Additionally, the haul route to and from the Sunshine Canyon Landfill would generate haul trips on W. 3rd Street between S. Ogden Drive and Highland Avenue, and on Highland Avenue from W. 3rd Street to the 101 Freeway. See Figure II-20, Haul Route to and from the I-10 Freeway, and Figure II-21, Haul Route to and from the US-101 Freeway, in Section II, Project Description of this Draft EIR. These waste facilities are anticipated to accept the variety of waste materials the Project could generate due to demolition, grading, and construction activities.

(d) Off-Site Construction Vibration

Groundborne vibration levels for off-site activities were also estimated using the FTA's Noise and Vibration Impact Assessment and analyzed based on the sensitive receptor's land use and relative distance to the Development Site.

(4) Operational Impacts

(a) Roadway Noise Impacts

The Proposed Project's operational impacts from mobile noise sources were analyzed using the FHWA TNM model and traffic data contained in the Traffic Impact Study for the Existing (2019) "No Project", "Existing (2019) With Project", and "Future (2023) with Project" scenarios, respectively. Roadway noise attributable to the Proposed Project was calculated by comparing the "Existing (2019) With Project" noise levels to the existing baseline scenario (i.e., "Existing (2019) No Project"). Future cumulative roadway noise impacts were calculated by comparing the "Future (2023) With Project" noise levels to the future without project scenario.

(b) Stationary Noise Impacts

Stationary point-source noise impacts were evaluated by identifying the noise levels generated by outdoor stationary noise sources, such as building mechanical equipment, loading area activity, and activities anticipated to occur within accessible outdoor open space areas, and calculating the hourly L_{eq} noise level from each noise source at sensitive receptor property lines.

(c) Operational Vibration Impacts

Operational vibration impacts were evaluated by identifying operational sources of vibration, such as vehicular traffic and loading and refuse trucks, and assessing whether the addition of these operations would impact surrounding off-site sensitive receptors.

c) Project Design Features

The following Project Design Features are applicable to the Proposed Project.

PDF-NOI-1: Project construction will not include the use of impact driven pile systems (i.e., pile drivers).

PDF-NOI-2: All construction equipment will utilize mufflers and other devices to minimize noise levels.

d) Analysis of Project Impacts

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

(1) Project Impacts

(a) Construction Noise

Construction of the Proposed Project would require demolition, earthwork, and building construction activities that would generate noise on a temporary and intermittent basis throughout the duration of the construction process. As discussed in Section II, Project Description, construction is anticipated to occur over an approximately 32-month period and would involve the following phases: pre-demolition abatement, demolition and site clearing, excavation and grading, building construction, architectural coatings, and paving. Construction activities would be performed in accordance with all applicable state and federal laws, and City Codes and policies, with respect to building construction and activities.

Per Section 41.40 of LAMC, the permissible hours of construction within the City are 7:00 A.M. to 9:00 P.M. Monday through Friday and between 8:00 A.M. and 6:00 P.M. on any Saturday or national holiday. No construction activities are permitted on Sundays. The Proposed Project would comply with these restrictions. The Applicant has also committed to not using impact pile drivers (see PDF-NOI-1, above), and using construction equipment with sound muffling devices (see PDF-NOI-2, above).

(i) On-Site Construction Noise Calculations

Table IV.F-11, below, shows the construction noise at the sensitive receptor locations based on the maximum predicted levels associated with all phases of construction. Section 7.1, Construction Noise Assessment, of the FTA Noise Guidance Manual[14] sets forth the method to quantitatively analyze construction noise, using either a general assessment or a detailed analysis. Here, construction noise was analyzed pursuant to the more comprehensive detailed analysis, which accounts for noise emission levels, usage factors, distances between construction equipment and receptors, and ground effects. All planned equipment will be mobile which, as defined by the FTA manual, moves around the construction site. As such, the noise levels are calculated using the average distances between near and far source locations to sensitive receptors as shown in Table

[14] *FTA Noise and Vibration Assessment Manual, 2018, Section 5.2 at page 112-113.*

IV.F-7, *Noise and Vibration Sensitive Receptors (NVSR)* above. These methods are consistent with the methodology and standards contained in the FTA Noise Guidance Manual and FHWA Construction Noise Handbook. To provide for a conservative estimate, the construction noise calculations in this analysis is based on the entire fleet of construction equipment involved in each phase operating simultaneously during each phase.[15] In practice, not all of the equipment utilized during a single phase is operated simultaneously. The modeled noise levels during each construction phase at each receptor are shown in Appendix F to this Draft EIR and summarized in Table IV.F-11, below. As shown in Table IV.F-11, the noise levels from construction of the Proposed Project exceed the applicable threshold at five of the six noise monitoring locations, before mitigation is applied. Construction noise impacts would therefore be significant before mitigation.

As discussed in the Regulatory Setting section above, LAMC Section 112.05 prohibits the operation of any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA for construction machinery and power tools at a distance of 50 feet from the source of the noise between the hours of 7:00 A.M. and 10:00 P.M., when the source is located within 500 feet of a residential zone, unless technically infeasible. Project construction activities would be required to comply with the City's Ordinance Nos. 144,331 and 161,574, which prohibit the emission or creation of noise beyond 75 dBA at 50 feet from the equipment, unless technically infeasible.[16] In addition, the Project would be subject to Section 91.106.4.8 (Construction Site Notice, City's Ordinance 178,048), which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported.

In summary, the Proposed Project's construction noise activities would produce noise levels at off-site noise-sensitive receptors that exceed existing ambient levels by more than 5 dBA L_{eq} during the construction of the Proposed Project. As such, construction noise impacts would be considered significant before mitigation.

[15] *The FTA Noise and Vibration Assessment Manual (2018) recommends adding only the two noisiest pieces of equipment expected to be used in each phase of construction (Section 5.2 (at page 178).*

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

Table IV.F-11
Noise Levels to Construct Proposed Project

Receptor Location	Typical Setback Distance from Construction Site to Noise Receptor (ft.)[a]	Existing Ambient Noise Levels (dBA Leq) [b]	Applicable Threshold Criteria (dBA Leq)[c]	Estimated Maximum Construction Noise Levels (dBA Leq)	Exceedance above Threshold (dBA Leq)	Exceed Threshold?
NVSR-1 – Hancock Park Elementary School Property Line (L1)	240	61.6	66.6	77.1	+15.5	Yes
NVSR-1 – Classroom 28 Exterior (L2)	255	61.8	66.8	76.7	+14.8	Yes
NVSR-1 - Inside Classroom 28 (L2)	255	63.9	68.9	53.7	0	No
NVSR-1 – Classroom 21 Exterior (L1)	320	61.6	66.6	74.7	+13.1	Yes
NVSR-1 - Inside Classroom 21 (L1)	320	63.5	68.5	51.8	0	No
NVSR-2 – Park La Brea Apartments - Palazzo West at the Grove (S4) [d]	510	60.9	65.9	70.9	+10	Yes
NVSR-3 – Park La Brea Apartments – Alandele Park Apartments (S4)	590	60.9	65.9	69.7	+8.8	Yes

[a] *Distance is measured from the center of the Development Site relative to the sensitive receptor.*

[b] *See Table IV.F-7 for short term measurements S1-S3 and Table IV.F-8 for long-term measurements at L1-L2.*

[c] *Pursuant to the guidance in the LA CEQA Thresholds Guide, the applicable threshold of significance is an increase of 5 dBA L_{eq} above ambient noise levels (see Section 3.a) Thresholds of Significance, above).*

[d] *The ambient noise level at Receptor NVSR-2 is reflected in the short-term measurements at location S3 (fronting W. 3rd Street) and S4 (along S. Ogden Drive). Because the ambient noise level at S4 (60.9 dBA L_{eq}) was lower than that at location S3 (67.7 dBA L_{eq}), the ambient measurement at location S4 was used in this analysis to provide for a conservative estimate.*

Source: Veneklasen Associates, October 9, 2020.

(ii) Off-Site Construction Noise

In addition to the on-site construction noise sources addressed above, other noise sources may be generated off-site resulting from materials delivery, concrete mixing trucks, haul trucks, and construction trucks from workers accessing the Project Site during construction.

The highest level of noise from these noise sources would be generated by haul trucks for demolition debris and soil export during the first phases of construction. Based on the soil material being exported to area landfills and demolition debris being transported to a materials recovery and recycling center, two haul routes were identified to access different freeways. It is anticipated that the proposed haul route to and from the Waste Management Downtown Diversion facility or the United Rock facility would include traveling west on W. 3rd Street between S. Ogden Drive and S. La Brea Avenue; and on S. La Brea Avenue between W. 3rd Street and the I-10 Freeway. Additionally, the haul route to and from the Sunshine Canyon Landfill would include W. 3rd Street between S. Ogden Drive and Highland Avenue, and Highland Avenue between W. 3rd Street and the US-101 Freeway. The returning trips would utilize the same routes but in the opposite direction, as none of the roadways are one-way streets. The proposed haul route maps are provided in Figure II-20, Haul Route to and from the I-10 Freeway, and Figure II-21, Haul Route to and from the US-101 Freeway, in Section II, Project Description of this Draft EIR.

As discussed above under the Methodology subsection, the highest volume of daily vehicle trips generated during construction would be 272 vehicles.[17] Table IV.F-12, below, shows the estimated increase in noise levels from the addition of haul truck trips along the designated haul routes. As shown, the haul trips would increase noise levels by a maximum of 1.88 dBA CNEL above the existing ambient noise levels along any haul route segment. This minimal increase in noise levels would not be audible by sensitive uses along the haul route. Haul truck noise increase would be well below the significance criteria of 5 dBA above ambient noise levels for both haul routes' street segments closest to the Project Site. ***As such, the hauling activities during construction would result in a less than significant impact.***

[17] *Based on a total of 212 haul truck trips and 60 construction worker trips.*

Table IV.F-12
Predicted Roadway Noise Levels From Haul Trips

	Haul Route Roadway Segment	Existing (2019) CNEL (dBA) at the Edge of Right-of-Way[a]	Existing + Project CNEL (dBA) at the Edge of Right-of-Way	Significance Criteria CNEL (dBA) [b]	Impact CNEL (dBA)	Significant Impact?
1	**3rd Street** (Between S. Ogden Dr. and La Brea Ave.)	70.73	72.60	73.73	1.87	No
2	**La Brea Avenue (**Between 3rd St. and San Vicente Blvd.)	74.37	76.23	77.37	1.86	No
3	**La Brea Avenue** (Between San Vicente Blvd. and the 10 Fwy)	72.15	74.01	75.15	1.86	No
4	**3rd Street** (Between La Brea Ave. and Highland Ave.)	73.25	75.13	76.25	1.88	No
5	**Highland Avenue** (Between 3rd St. and the 101 Freeway)	72.06	73.93	75.06	1.87	No

Notes:
[a] Existing (2019) CNEL calculations were based on the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). See Operational Noise Calculation Worksheets in Appendix F.2 to this DEIR.
[b] The thresholds of significance are either a 3-dBA CNEL or greater increase over ambient noise levels for land uses that would be impacted to or within the "normally unacceptable" or "clearly unacceptable" range (as identified in Table IV.F-5), or a 5-dBA CNEL or greater noise increase. To provide a conservative analysis a 3-dBA CNEL exceedance over the ambient noise level was applied to all haul route segments.
Source: Parker Environmental Consultants. TNM noise calculation worksheets for the haul route segments are provided in Appendix F.2 to the EIR. See Figures II-20 and II-21 in Section II, Project Description, for the designated haul route segments.

(b) Operational Noise Impacts

Operation of the Proposed Project would have the potential to increase ambient noise levels through the increase in vehicle trips entering and leaving the Project Site (i.e., roadway noise), outdoor courtyards and gathering spaces (including the roof deck and pool deck) that have the potential to attract people and utilize amplified music, building mechanical equipment (i.e., Heating, Ventilation, and Air Conditioning systems), on-site loading dock, and parking structure noise. A discussion of these potential impact sources is provided below.

(i) Roadway Noise

Existing Plus Project

The Proposed Project would generate an increase in vehicle trips to and from the Project Site, which would have the potential to increase roadway traffic noise on the surrounding roadways. As noted in the Project Traffic Study, the Proposed Project is anticipated to generate a total of 1,609 daily vehicle trips, including 142 AM peak hour trips and 87 PM peak hour trips. Using the FHWA TNM model and traffic volume data from the Traffic

Impact Study,[18] the Proposed Project's roadway noise impacts were calculated at four street segments in the Project vicinity previously identified in Subsection 2.b, Existing Conditions, above. These four identified roadway segments are anticipated to receive the greatest amount of trips based on the close distance to the Project Site, and therefore impacts on any other streets in the Project vicinity would be less than the impacts shown here. As shown in Table IV.F-13, below, roadway noise impacts were determined by comparing the relative increase in roadway noise levels based on a comparison of the Existing (2019) conditions and Existing With Project conditions, and comparing the noise level impact to the applicable thresholds pursuant to the Community Noise Exposure Guidelines discussed above. A summary of the Proposed Project's roadway traffic noise levels is provided in Table IV.F-13, below.

As indicated in Table IV.F-13, the maximum increase in Project-related traffic noise levels over existing traffic noise levels would be 0.52 dBA CNEL, which would occur along S. Ogden Drive, between W. 3rd Street and Colgate Avenue. This increase in noise level would be well below the most stringent significance threshold of 3 dBA CNEL increase over ambient noise levels (applicable to noise levels within the "normally unacceptable" or "clearly unacceptable" category). The increase in noise levels would be lower at the remaining roadway segments analyzed. Accordingly, the Project-related noise increases would be less than the applicable thresholds. ***As such, the Proposed Project's roadway noise impacts would be considered less than significant.***

Table IV.F-13
Existing (2019) and Predicted Project Roadway Traffic Noise Levels

	Roadway Segment	Existing (2019) CNEL (dBA) at the Edge of Right-of-Way	Existing + Project CNEL (dBA) at the Edge of Right-of-Way	Significance Criteria CNEL (dBA) [a]	Impact CNEL (dBA)	Significant Impact?
1.	Fairfax Avenue, between 3rd St. and Colgate Ave.	71.57	71.59	74.57	0.02	No
2.	3rd Street, between Fairfax Ave. and Ogden Dr.	70.57	70.65	73.57	0.08	No
3.	Ogden Drive, between 3rd St. and Colgate Ave.	60.84	61.36	65.84	0.52	No
4.	Colgate Avenue, between Fairfax Ave. and Ogden Dr.	60.08	60.36	65.08	0.28	No

Notes:
[a] The thresholds of significance are either a 3-dBA CNEL or greater increase over ambient noise levels for land uses that would be impacted to or within the "normally unacceptable" or "clearly unacceptable" range (as identified in Table IV.F-5), or a 5-dBA CNEL or greater noise increase.
Source: Parker Environmental Consultants. TNM noise calculation worksheets are provided in Appendix F.2 to the EIR.

[18] *The Traffic Impact Study is provided in Appendix H.2 to this EIR.*

Future Plus Project

Using the FHWA TNM model and traffic volume data from the Traffic Impact Study (Appendix H.2 to this Draft EIR), the analysis of future roadway noise impacts was based on the incremental increase in traffic roadway noise levels attributable to the Proposed Project based on a comparison of Future with Project traffic volumes to Existing conditions. However, as the Proposed Project's anticipated buildout year is 2023, the existing roadway noise would be affected by ambient traffic growth between 2019 and 2023. As such, the following analysis was also performed to determine the potential noise impacts based on the increase in roadway noise levels as compared to the Future Without Project conditions in 2023. As mentioned previously, the four identified roadway segments are anticipated to receive the greatest amount of trips based on the close distance to the Project Site, and therefore impacts on any other streets in the Project vicinity would be less than the impacts shown here. As summarized in Table IV.F-14, Future (2023) Baseline and Predicted Project Roadway Traffic Noise Levels, impacts would be similar to the Existing with Project conditions described above. Under the Future with Project Scenario, the maximum increase in Project-related traffic noise levels over the future traffic noise levels would be 0.51 dBA CNEL, which would occur along Ogden Drive, between 3rd Street and Colgate Avenue. This increase in noise level would be well below the most stringent significance threshold of 3 dBA CNEL increase over ambient noise levels (applicable to noise levels within the "normally unacceptable" or "clearly unacceptable" category). The increase in noise levels would be lower at the remaining roadway segments analyzed. Accordingly, the Project-related noise increases would be less than the applicable thresholds. ***The Project-related noise increases would be less than the applicable thresholds and, therefore, impacts would be less than significant. No mitigation measures would be required.***

Table IV.F-14
Future (2023) Baseline and Predicted Project Roadway Traffic Noise Levels

	Roadway Segment	Future (2023) CNEL (dBA) at the Edge of Right-of-Way	Future (2023) + Project CNEL (dBA) at the Edge of Right-of-Way	Significance Criteria CNEL (dBA) [a]	Impact CNEL (dBA)	Significant Impact?
1.	Fairfax Avenue, between 3rd St. and Colgate Ave.	72.07	72.09	75.07	0.02	No
2.	3rd Street, between Fairfax Ave. and Ogden Dr.	70.87	70.95	73.87	0.08	No
3.	Ogden Drive, between 3rd St. and Colgate Ave.	61.00	61.51	66.00	0.51	No
4.	Colgate Avenue, between Fairfax Ave. and Ogden Dr.	60.26	60.51	65.26	0.25	No

Notes:
[a] The thresholds of significance are either a 3-dBA CNEL or greater increase over ambient noise levels for land uses that would be impacted to or within the "normally unacceptable" or "clearly unacceptable" range (as identified in Table IV.F-5), or a 5-dBA CNEL or greater noise increase.
Source: Parker Environmental Consultants. TNM noise calculation worksheets are provided in Appendix F.2 to the EIR.

(ii) Outdoor Activity Noise Levels

Noise levels from outdoor activities were determined based on a prediction of the combined noise impact from the Proposed Project's outdoor noise sources. Sources of outdoor noise due to human activities and uses include gatherings within the open-air amenity courtyards located on the 4th Floor Roof Deck, 5th Floor Roof Deck, and 7th Floor Roof Deck.

The Proposed Project provides approximately 31,585 square feet of common outdoor open space for future residents. A majority of the open space would be concentrated in outdoor courtyards to be improved with a swimming pool, spa, and barbeque counters. The courtyards on the 5th and 7th levels are oriented towards the north and west and are effectively shielded by the proposed building configuration such that activity noise would not affect neighboring properties to the south or east. As such, these areas would not generate any noise impacts upon the adjacent school and nearby residential land uses. For purposes of estimating noise from people congregating on the fourth floor amenity deck, which is oriented towards the south, reference noise levels of 65 dBA and 62 dBA (L_{eq} at a distance of 3.3 feet) for a male and a female speaking in a raised voice, respectively, were used to analyze noise from the use of the outdoor roof decks. For the 4th Floor Roof Deck, assuming 194 individuals[19] occupy this space at one time and up to 50 percent of the people (half of which would be male and the other half female) would

[19] *Based on an average of 50 square feet per occupant for the 9,677 square feet of open space closest to the southern property line on the 4th floor.*

be talking at the same time, the noise levels from activities would be approximately 83.61 dBA L_{eq} within the courtyard.[20]

The noise levels of the outdoor use area on the 4th Floor Roof Deck were calculated at the three sensitive receptor locations (identified in Figure IV.F-1) factoring distance between the source and receptor and barrier attenuation. The 4th Level Roof Deck would be designed with a solid glass partition with a metal railing which would provide for additional sound attenuation. The outdoor deck would also provide a privacy hedge or landscaped setback along the southern edge of the building. This setback would further attenuate noise levels from the roof deck as the line-of-sight between the source and the sensitive receptors to the south would be blocked. As shown in Table IV.F-15, below, the estimated outdoor noise levels would not exceed 5 dBA above the respective ambient noise level thresholds for daytime or nighttime noise at any of the sensitive receptors. ***As such, noise impacts from outdoor activities would be less than significant.***

Table IV.F-15
Estimated Outdoor Noise Levels for Nearest Sensitive Receptors

Sensitive Receptor [a]	Ambient Noise Levels (CNEL) [b]	Outdoor Deck Noise Levels (CNEL)[c]	Ambient + Project Noise Levels (CNEL)	Threshold of Significance Criteria [d]	Exceedance Over Significance Criteria	Significant Impact?
NVSR-1 (Hancock Park Elementary School)	59.07	46.5	59.3	64.07	**0**	**No**
NVSR-2 (Park La Brea Apartments – The Palazzo West at the Grove)	65.70	31.63	65.7	70.70	**0**	**No**
NVSR-3(Park La Brea Apartments – Alandele Park Apartments)	59.07	31.43	59.08	64.07	**0**	**No**

Notes

[a] *See Figure IV.F-1, Noise Monitoring and Sensitive Receptor Location Map.*

[b] *The daytime ambient noise levels are based on the noise measurements previously identified in Table IV.F-8 and the L_{eq} to CNEL conversion calculations provided in Caltrans' Technical Noise Supplement to the Traffic Noise Analysis Protocol (September 2013). See Appendix F.2 to this DEIR for calculation worksheets.*

[c] *Includes the composite noise levels of outdoor noise on Levels 4, 5 and 7 as depicted in Figure II-19, Composite Landscape Plan.*

[d] *The significance criteria are based on the ambient noise levels plus 5 dBA L_{eq}. For ambient CNEL calculations, see Appendix F.2.*

Source: Calculations based on Federal Transit Administration, Transit Noise and Vibration Impact Assessment, Final Report, May 2006 and Caltrans' Technical Noise Supplement, September 2013. Parker Environmental Consultants, 2019. (See calculation worksheets in Appendix F to this EIR.)

[20] *Cyril M. Harris, Handbook of Acoustical Measurements and Noise Control, Third Edition, 1991. See Noise calculation worksheets in Appendix F.*

(iii) Mechanical and Heating, Ventilation, and Air Conditioning (HVAC) Equipment Noise Levels

As part of the Proposed Project, new mechanical equipment, HVAC units, and exhaust fans would be installed on the roof of the proposed new structures. Although the operation of this equipment would generate noise, the design of these on-site HVAC units and exhaust fans would be required to comply with the regulations under Section 112.02 of the LAMC, which prohibits noise from air conditioning, refrigeration, heating, pumping, and filtering equipment from exceeding the ambient noise level on the premises of other occupied properties by more than five decibels. Thus, the on-site equipment would be designed such that they would be shielded, and appropriate noise muffling devices would be installed on the equipment to reduce noise levels that affect nearby uses. In addition, nighttime noise limits would be applicable to any equipment items required to operate between the hours of 10:00 P.M. and 7:00 A.M.

Table IV.F-16, below, shows the predicted noise levels from on-site mechanical equipment at nearby sensitive receptors. Based on estimated A-weighted noise ratings published for standard HVAC equipment,[21] sound power from rooftop mounted HVAC equipment would be expected to range from 69 dBA L_{eq} to 74 dBA L_{eq} at the source. Sound power is the sound energy released from a source, which cannot be heard, while sound pressure is the sound that is heard based on the environment and distance to a receptor. By converting a 74-dBA sound power level at a source to sound pressure levels at 50 feet using standard acoustical fundamentals and formulas,[22] the sound pressure level for HVAC equipment would be approximately 39.9 dBA at 50 feet. Since the HVAC equipment would most likely operate for 24 hours a day, the presumed ambient noise levels for nighttime were factored with the daytime ambient noise levels to calculate a baseline 24-hour CNEL noise level for a conservative estimate. Based on the approximate distances to the nearby sensitive receptors, the estimated 24-hour CNEL at nearby sensitive receptors would range from 59.1 dBA L_{eq} to 65.7 dBA L_{eq}, which would be below the 5-dBA L_{eq} increase above ambient noise levels at the sensitive receptors. ***As such, noise impacts from mechanical equipment would be less than significant.***

[21] *Carrier Corporation, Product Data Sheet for 25HBC5 Base 15 Heat Pump with Puron Refrigerant (1 ½ to 5 Nominal Tons.*

[22] *Daikin, HVAC Acoustic Fundamentals, Application Guide 31-010, Calculating Sound Pressure from Sound Power, pg. 16.*

Table IV.F-16
Estimated Noise Levels from Mechanical Equipment

Sensitive Receptor [a]	Sensitive Land Use	Distance to Project Site (feet)[b]	Ambient Noise Levels (CNEL) [c]	Estimated Exterior Peak HVAC Noise Levels (CNEL)	Ambient + HVAC Noise Levels (CNEL)	Significant Impact? [d]
NVSR-1	408 S. Fairfax Avenue (Hancock Park Elementary School)	90	59.07	34.79	59.09	No
NVSR-2	6220 W. 3rd Street (Park La Brea Apartments - Palazzo West at the Grove)	290	65.70	24.63	65.70	No
NVSR-3	6186 Colgate Avenue (Park La Brea Apartments - Alandele Park Apartments)	340	59.07	23.25	59.07	No

Notes:
[a] *See Figure IV.F-1, Noise Monitoring and Sensitive Receptor Location Map.*
[b] *The distance to HVAC equipment factors in the height of the building in addition to the ground level distance from the receptor to the property line.*
[c] *See Appendix F.2 for ambient CNEL calculations.*
[d] *The significance threshold is defined by a 5 dBA or greater noise increase from the ambient noise level.*

Source: Parker Environmental Consultants, calculation worksheets are provided in Appendix F.2 to this Draft EIR.

(iv) Loading Dock and Parking Garage Noise

Access to the parking structure would be from two driveways on S. Ogden Drive and a driveway from the existing retail parking lot on the west side of the structure. More specifically, the parking structure includes two ingress and egress points S. Ogden Drive; one ingress and egress point on the west side; and two egress-only points located on south side of the structure. In addition, there are two loading bay driveways located on S. Ogden Drive adjacent to the ground-floor retail areas, which provide access to the interior loading areas. As discussed in Section II, Project Description, the Proposed Project would provide 996 on-site parking spaces within three levels of above-grade parking and two levels of subterranean parking. Parking structures generate noise from vehicle engines, tires squealing, doors closing, car alarms, and people talking. Noise levels within the garage structure would fluctuate based on the types of simultaneous noise sources and the overall level of activity within the garage. Noise levels are anticipated to be highest during the A.M. and P.M. peak hours, corresponding to the volumes of Project-generated traffic as reported in the Traffic Impact Study (Appendix H.2 to this Draft EIR).

As noted in the Traffic Impact Study, the Proposed Project's highest peak hourly traffic volumes would be 187 vehicles, generated during the AM commuter peak hour. The predicted noise levels from the parking garage for the highest peak hour were estimated using the recommended methodology for calculating parking structure noise as published by the FTA.[23] The parking garage noise levels were based on the southern driveway egress points from the garage, which is the closest ingress or egress point to the sensitive receptors. Based on measured noise levels from typical parking garage activities, loading dock facilities and trash collection areas, noise levels within the ground level of the parking structure would be expected to range from 72.0 dBA L_{eq} to 66 dBA L_{eq} at a distance of 50 feet. Note also that the trash collection and loading dock area is located interior to the parking structure on S. Ogden Drive, approximately 250 feet north of the southern property line (see Figure II-10, Level 1 Floor Plan in Section II, Project Description) and thus noise levels from those areas are attenuated by the walls of the parking structure.

The combined noise level from loading dock and parking garage activities were calculated and added to the ambient noise levels at the three identified sensitive receptors. As shown in Table IV.F-17, the estimated "Existing Ambient Plus Project Noise Levels" from the parking garage and loading dock would not exceed the 5-dBA CNEL increase above ambient noise levels threshold at all three sensitive receptor locations. ***As such, noise impacts from the parking structure would be less than significant.***

[23] *U.S. Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.*

Table IV.F-17
Estimated Noise Levels from Parking Garage

SR [a]	Sensitive Land Use	Existing Ambient Noise Levels (CNEL)[b]	Parking Garage Noise (dBA L_{eq})	Loading Dock Noise (dBA L_{eq})	Ambient + Project Noise (dBA L_{eq})	Significance Threshold dBA L_{eq} [c]	Significant Impact?
NVSR-1	Hancock Park Elementary School	59.07	53.6	31.0	60.2	64.07	No
NVSR-2	Park La Brea Apartments (The Palazzo West at the Grove)	65.70	34.5	51.4	65.9	70.70	No
NVSR-3	Park La Brea Apartments (Alendale Park Apartments)	59.07	33.1	24.9	59.1	64.07	No

Notes:
[a] *See Figure IV.F-1, Noise Monitoring and Sensitive Receptor Location Map.*
[b] *For ambient CNEL calculations, see Appendix F.2.*
[c] *The significance thresholds is defined by a 5 dBA or greater noise increase from the ambient noise level.*
Source: Parker Environmental Consultants, calculation worksheets are provided in Appendix F.2 to the EIR.

(v) Composite Noise Levels

On-site noise sources associated with the Proposed Project would include the outdoor amenity area on the 4th level outdoor deck, 5th level outdoor deck, 7th level roof deck, as well as mechanical HVAC equipment, the parking structure, and loading dock. Composite noise levels were estimated to analyze the impact from the combination of all on-site noise sources from the Project Site to the surrounding sensitive receptors. Compared to the individual noise sources calculated above, the composite noise levels were analyzed by calculating a 24-hour average CNEL for ambient noise levels and each stationary operational noise source on the Project Site. Then all operational CNEL values were combined with the estimated ambient noise level to determine if the Proposed Project would result in a long-term significant increase in ambient noise levels.

The existing ambient noise levels for the sensitive receptors were calculated by assuming the measured daytime L_{eq} from 7 A.M. to 10 P.M. and assuming the 40 dBA presumed nighttime ambient from 10 P.M. to 7 A.M to calculate a 24-hour CNEL at each sensitive receptor. For the outdoor amenity decks, it was assumed that all amenity decks would be filled at 50 percent capacity from 10 A.M. to 3 P.M. and at 100 percent capacity from 3 P.M. to 10 P.M. The nighttime presumed ambient of 40 dBA was assumed from 10 P.M. to 7 A.M. and the daytime presumed ambient of 60 dBA was assumed from 7 A.M. to 10

A.M. The Leq values calculated above for the mechanical equipment would be the same as a 24-hour CNEL, since it assumed that the mechanical equipment would operate for 24 hours per day. As a conservative estimate, the parking garage was assumed to operate at peak hour rate from 7 A.M. to 10 P.M., and the nighttime presumed ambient of 40 dBA was assumed from 10 P.M. to 7 A.M. The loading dock assumes the 60 dBA daytime and 40 dBA nighttime presumed ambient noise levels, except from 10 A.M. to 2 P.M. when loading would most likely occur, which has a reference noise level of 66 dBA. CNEL calculations for existing and operational activities from the Proposed Project are provided in Appendix F.2 to this Draft EIR.

Table IV.F-18, Estimated Composite Noise Levels for Nearest Sensitive Receptors, shows the 24-hour CNEL from all on-site sources and estimates the total composite noise levels at the surrounding sensitive receptors from the Project Site. The combination of operational activities from the Proposed Project would not exceed the 5-dBA increase threshold for any of the sensitive receptors. ***Therefore, operational composite noise levels impacts due to the Proposed Project would be less than significant impact .***

Table IV.F-18
Estimated Composite Noise Levels for Nearest Sensitive Receptors

Sensitive Receptor [a]	Ambient CNEL	Estimated Project-Related CNEL at Receptor					Composite CNEL	Composite + Ambient CNEL	Threshold [c]	Significant Impact?
		Roadway Traffic	Outdoor Amenity Decks	HVAC System	Parking Garage	Loading Dock				
NVSR-1	59.07	60.26	46.50	34.79	53.60	31.00	61.27	**63.32**	**64.07**	**No**
NVSR-2	65.70	61.00	31.63	24.63	34.50	51.40	61.47	**67.09**	**70.70**	**No**
NVSR-3	59.07	60.26	31.43	23.25	33.10	24.90	60.28	**62.73**	**64.07**	**No**

Notes:
All noise levels are estimated CNEL dBA.
[a] *See Figure IV.F-1, Noise Monitoring and Sensitive Receptor Location Map.*
[b] *Significance thresholds are based on the ambient CNEL plus 5 dBA since the existing ambient CNEL are within the "normally acceptable" and "conditionally acceptable" categories.*
Source: CNEL Calculations based on Federal Transit Administration, Transit Noise and Vibration Impact Assessment, Final Report, May 2006; Formulas for adding sound levels based on Caltrans' Technical Noise Supplement, September 2013.
Parker Environmental Consultants, 2020. Calculation worksheets are provided in Appendix F.2 to this Draft EIR.

(2) Mitigation Measures

MM-NOI-1 **School Property Noise Barrier.** A temporary 10-foot high sound blanket shall be installed on top of the existing concrete wall located along the southern property line prior to commencement of construction activities, as shown in Figure IV.F-4, Proposed Construction Noise Barrier Diagram. The sound blanket can be any solid material with a density no less than 2 lb. per square foot. Materials meeting this requirement include 3/4-inch thick wood, 3/4-inch outdoor plywood, and 16-gauge steel sheet. Support frames shall be constructed in sections which allow overlapping between barrier panels when multiples are attached. Gaps between barrier units and between the bottom edge of barrier panels where they meet the top of the existing concrete wall shall be covered or sealed with material of no less 2 pounds per cubic foot (pcf) density. These barriers shall be capable of achieving a minimal Sound Transmission Class (STC) rating of 32. Use of equivalent noise barrier systems shall be reviewed and approved by the acoustical engineer verifying the required level of noise attenuation. Barrier design and construction shall be approved by a structural engineer. The design details and materials for the movable noise barriers and supports shall be prepared for approval and stamped by a Professional Engineer licensed in the state of California and submitted to the Department of City Planning prior to issuance of the first demolition or building permit.

MM-NOI-2 **Ogden Drive Noise Barrier.** A temporary 10-foot high noise barrier shall be erected along Ogden Drive, as shown in Figure IV.F-4, Proposed Construction Noise Barrier Diagram. The sound blanket can be any solid material with a density no less than 2 lb. per square foot. Materials meeting this requirement include 3/4-inch thick wood, 3/4-inch outdoor plywood, and 16-gauge steel sheet. Support frames should be constructed in sections which allow overlapping between barrier panels when multiples are attached. These barriers shall be capable of achieving a minimal Sound Transmission Class (STC) rating of 32. Use of equivalent noise barrier systems shall be reviewed and approved by the acoustical engineer verifying the required level of noise attenuation. Barrier design and construction shall be approved by a structural engineer. The design details and materials for the movable noise barriers and supports shall be prepared for approval and stamped by a Professional Engineer licensed in the state of California and submitted to the Department of City Planning prior to issuance of the first demolition or building permit.

(3) Level of Significance After Mitigation

(a) Construction

The Proposed Project's construction noise activities were modeled with the mitigation measure (i.e. a temporary sound barrier on top of the existing concrete wall) identified above. As shown in Table IV.F-19, Construction Noise Levels with Mitigation, construction noise levels would increase exterior ambient noise levels at off-site noise-sensitive receptors by less than 5 dBA L_{eq}. ***As such, construction noise impacts would be considered less than significant with mitigation.***

Table IV.F-19
Construction Noise Levels with Mitigation

Receptor Location	Existing Ambient Noise Levels (dBA Leq)[a]	Typical Setback Distance from Construction Site to Noise Receptor (ft.)[b]	Estimated Maximum Construction Noise Levels (dBA Leq)	Applicable Threshold Criteria (+5 dBA Leq above Ambient)[c]	Exceed Threshold?
NVSR-1 - Hancock Park Elementary School Property Line	61.6	240	57.1	66.6	No
NVSR-1 - Classroom 28 Exterior (L2)	61.8	255	56.6	66.8	No
NVSR-1 - Inside Classroom 28 (L2)	63.9	255	33.7	68.9	No
NVSR-1 - Classroom 21 Exterior (L1)	61.6	320	54.7	66.6	No
NVSR-1 - Inside Classroom 21 (L1)	63.5	320	31.8	68.5	No
NVSR-2 - Park La Brea Apartments - Palazzo West at the Grove	60.9	510	63.9	65.9	No
NVSR-3 - La Brea Park Apartments - Alandele Park Apartments	60.9	590	62.7	65.9	No

[a] *See Table IV.F-7 for short term measurements S1-S3 and Table IV.F-8 for long-term measurements at L1-L2.*
[b] *Distance is measured from the center of the Development Site relative to the sensitive receptor*
[c] *Pursuant to the guidance in the LA CEQA Thresholds Guide, the applicable threshold of significance is an increase of 5 dBA L_{eq} above ambient noise levels (see Section 3.a) Thresholds of Significance, above).*
Source: Veneklasen Associates, Construction Noise and Vibration Technical Report, October 9, 2020.

Source: Veneklasen Associates, 2020.

Figure IV.F-4
Proposed Construction Noise Barrier Diagram

(b) Operation

Operational noise levels would 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) Project Impacts

(a) On-Site Construction Vibration

Construction activities that would occur within the Development Site would have the potential to generate low levels of groundborne vibration on a temporary and intermittent basis during construction. Construction equipment may cause the ground to vibrate, which can impact nearby buildings or cause human annoyance for people in the vicinity. The estimated groundborne vibration impacts due to each of the construction activities at each receptor are presented in Table IV.F-20, Construction Vibration Levels Without Mitigation, below. Vibration levels for various equipment were assumed to be equivalent to similar equipment specified in the FTA Transit Noise and Vibration Guidance Manual. As noted in Table IV.F-20, the projected unmitigated maximum PPV levels at each sensitive receptor would not exceed the applicable threshold of significance for building damage criteria. As summarized in Table IV.F-20, the Proposed Project's construction vibration levels at the Hancock Park Elementary School's Main Building, which is a historic structure, would be 0.019 PPV (in/s/VdB). The threshold criteria for building damage is 0.12 PPV (in/s/VdB). Thus, the Proposed Project's construction vibration impacts would not result in a significant impact with respect to structural impacts upon historic structures. Additionally, the projected maximum VdB levels would not exceed the human annoyance threshold at sensitive receptor location NVSR-1 within the Main Building, NVSR-2, or at NVSR-3. However, the construction vibration levels would exceed the human annoyance threshold at sensitive receptor location NVSR-1 within Classrooms 21 and 28. ***As such, construction activities would have the potential to result in significant vibration annoyance impacts upon NVSR-1 on a short-term and temporary basis, before mitigation.***

Table IV.F-20
Construction Vibration Levels Without Mitigation

Receptor	Minimum Distance from Construction Site to Vibration Receptor (ft.)	Vibration Level Criteria (Exterior) (PPV (in/s)/VdB)	Predicted Construction Maximum Vibration Level (PPV (in/s)/VdB)	Compliance with Building Damage Criteria	Compliance with Human Annoyance Criteria
NVSR-1 (School Classrooms 21 and 28)	15	0.2 / 75	0.156 / 98	Yes	No
NVSR-1 (School Main Building)	100	0.12 / 75	0.019 / 69	Yes	Yes
NVSR-2 (Palazzo at Park La Brea Apartments)	280	0.2 / 72	0.006 / 56	Yes	Yes
NVSR-3 (Park La Brea Apartments)	330	0.2 / 72	0.005 / 53	Yes	Yes

Source: Veneklasen Associates, October 9, 2020.

(b) Off-Site Construction Vibration

During the course of the combined excavation and other construction activities, it is estimated that a total of approximately 110,000 cubic yards (cy) of soil material would be transported to and from the Project, and approximately 151,048 square feet of demolition debris, and 70,000 cy of asphalt debris would be exported to a landfill located within the City. It is anticipated that 16 cy capacity haul trucks would be used to export the soil and construction/demolition debris. It is assumed that haul truck trips would occur predominately outside of peak hours. The proposed haul truck routes would be identified for the Proposed Project and approved by LADOT as part of the Construction Traffic Control/Management Plan (refer to Project Design Features PDF-TRAFFIC-1). These construction delivery/haul trucks would travel along the haul routes from the Development Site to offsite locations during phases of construction. Heavy-duty construction trucks would generate ground-borne vibration (similar to the trucks and buses that uses these routes in the existing conditions) as they travel along the anticipated truck route(s).

The construction activity is temporary and the source of potential off-site vibration (delivery/haul trucks on the haul routes) is not materially different than the type and volume of vehicles currently on the haul routes. The haul routes are heavily traveled vehicular routes that provide access to regional freeways. In the existing conditions, there is a high volume of vehicular traffic, including heavy trucks and numerous buses that travel on the proposed haul routes. Moreover, hauling activity would not occur during nighttime hours, which according to the FTA guidance is a consideration for impact analysis. According to the FTA, it is unusual for vibration from sources such as buses and

trucks to be perceptible, even in locations close to major roads. Busses and trucks rarely generate vibration that exceeds 70 Vdb, which would be less than the significance threshold of 72 VdB for human annoyance or building damage.[24] Therefore, vibration impacts from off-site construction activities would be less than significant.

c) Operational Vibration Impacts

The Proposed Project would include a mixed-use residential and commercial development. The Proposed Project would not involve the use of stationary equipment that would result in high vibration levels, which are more typical for large commercial and industrial projects. Groundborne vibration occurs at the Center and immediate vicinity under existing conditions from heavy-duty vehicular travel (e.g., refuse trucks, delivery trucks, and transit buses) on nearby local roadways. The proposed land uses at the Development Site would have similar operational vibration characteristics. The proposed residential land uses would not introduce substantially more heavy-duty trucks and therefore would not result in a substantial use of heavy-duty vehicles on the public roadways that would generate excessive vibration impacts beyond existing conditions. Similarly, while refuse trucks would be used for the removal of solid waste at the Development Site, these trips already occur a few times a week to service the existing Center and would not be materially different than those presently occurring in the vicinity of and on the Development Site. ***As such, vibration impacts associated with operation of the Proposed Project would be less than significant.***

(2) Mitigation Measures

The following mitigation measures are recommended to mitigate potentially significant vibration annoyance impacts during construction.

MM NOI-3 **Setback Distance.** Heavy machinery (excavators, dozers, cranes and drill rig) must work at least 70 feet from the exterior wall of the nearest occupied School Bungalow Buildings (Classrooms 21 and 28) while school is in session. Compliance with this measure shall be enforced through a written Construction Management Plan and shall be verified through written field notes documenting the location and date/time of heavy machinery relative to the Hancock Park Elementary School classroom schedule.

[24] *FTA Noise and Vibration Assessment Manual, 2018, Section 5.2 at page 112-113.*

(3) Level of Impact After Mitigation

(a) Construction Vibration Impacts

Mitigation Measure MM-NOI-3 requires heavy machinery (excavators, dozers, cranes and drill rig) to be operated at least 70 feet from the exterior walls of School Bungalow Buildings (Classrooms 21 and 28) while school is in session. Construction activity that must occur within 70 feet of the exterior walls of the School Bungalow Buildings (Classrooms 21 and 28) would need to be performed with smaller equipment types that do not exceed the vibration thresholds applied herein. As shown in Table IV.F-21, Construction Vibration Levels with Mitigation, below, the estimated maximum vibration levels for the construction of the Proposed Project with the use of required setback distance mitigation measure (MM-NOI-3) would be less than significant. ***In summary, during the construction of the Proposed Project, setback distance attenuation during school hours would reduce the vibration annoyance levels to a less than significant level with the incorporation of Mitigation Measure MM-NOI-3.***

Table IV.F-21
Construction Vibration Levels with Mitigation

Receptor	Minimum Distance from Construction Site to Vibration Receptor (ft.)	Vibration Level Criteria (Exterior) (PPV [in/s)/VdB)	Predicted Construction Maximum Vibration Level (PPV [in/s)/VdB)	Compliance with Damage Criteria	Compliance with Annoyance Criteria
NVSR-1 Hancock Park Elementary School (Bungalow Classrooms 21 and 28)	70	0.2 / 75	0.029 / 74	Yes	Yes
NVSR-1 Hancock Park Elementary School (Main Building)	100	0.12 / 75	0.019 / 69	Yes	Yes
NVSR-2 (Park La Brea Apartments - Palazzo West at Park La Brea)	280	0.2 / 72	0.006 / 56	Yes	Yes
NVSR-3 (Park La Brea Apartments – Alendele Park Apartments)	330	0.2 / 72	0.005 / 53	Yes	Yes

Source: Veneklasen Associates, October 9, 2020.

(b) Operational Vibration Impacts

The Proposed Project's impacts related to the exposure of persons to or generation of excessive groundborne vibration during Project operation would 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 (provided in Appendix A to this Draft EIR), the Proposed Project is not located within a private airstrip, airport land use plan or within two miles of a public airport or public use airport. The nearest public airport to the Project Site is the Santa Monica Airport, which is located over six miles to the southwest. ***As such, the Proposed Project would not expose people residing or working in the project area to excessive noise levels associated with an airport, and no impact would occur with respect to Threshold (c). Therefore, no further analysis is required.***

e) Cumulative Impacts

(1) Impact Analysis

(a) Construction

This cumulative impact analysis considers development of the Proposed Project in combination with ambient growth and other development projects within the vicinity. As noise is a localized phenomenon and decreases in magnitude as distance from the source increases, the cumulative noise analysis assesses projects and ambient growth in the nearby area that could combine with the Proposed Project to result in cumulatively considerable noise impacts. Also, the analysis assesses cumulative traffic noise that the related projects could add to the surrounding roadway network.

(i) On-Site Construction Noise and Vibration

Construction of the Proposed Project, in combination with related projects, would result in an increase in construction-related noise and vibration. All of the related projects would be subject to LAMC Section 41.40, which limits the hours of allowable construction activities. In addition, each of the related projects would be subject to Section 112.05 of the LAMC, which prohibits any powered equipment or powered hand tool from producing

noise levels that exceed 75 dBA at a distance of 50 feet from the noise source within 500 feet of a residential zone. Noise levels are only allowed to exceed this noise limitation under conditions where compliance is technically infeasible. Noise from construction of development projects is typically localized and has the potential to affect noise-sensitive uses within 500 feet from the construction site, based on the L.A. CEQA Thresholds Guide screening criteria. Thus, noise from construction activities for two projects within 1,000 feet of each other can contribute to a cumulative noise impact for receptors located midway between the two construction sites.

As previously discussed above, on-site construction noise levels for the Proposed Project would not exceed existing ambient noise levels by more than 5 dBA with implementation of mitigation measures.

The closest related projects to the Development Site are Related Projects No. LA41 and LA32, both of which are located over 1,000 feet from the Development Site. Related Project No. LA41 is the 3rd Street Mixed-Use Project located at 8000 W. 3rd Street. Related Project No. LA32 is the Fairfax Apartments, located at 105 S. Fairfax Avenue, and is currently under construction. Even if both of these related projects and the Proposed Project were to have concurrent or overlapping construction activities, there would not be a combined noise impact because the closest related projects to the Development Site are located more than 1,000 feet from the Development Site. ***Therefore, cumulative on-site construction noise impacts would be less than significant.***

With respect to on-site groundborne vibration impacts, the Proposed Project's groundborne vibration impacts were determined to be less than significant at the nearest adjacent receptor (i.e., various structures associated with the Hancock Park Elementary School to the south). Ground-borne vibration decreases rapidly with distance. Potential vibration impacts due to construction activities are generally limited to buildings/structures that are located in proximity to the construction site (i.e., within 10 feet as related to building damage and 80 feet as related to human annoyance at residential uses).

As discussed above, there are no related projects within 1,000 feet of the Development Site and thereby no cumulative vibration impacts from the Proposed Project and the related projects would occur. ***Therefore, impacts associated with cumulative on-site vibration would be less than significant.***

(ii) Off-Site Construction Noise and Vibration

With respect to off-site construction noise and vibration, the concurrent construction activities, especially the number of haul trucks and heavy-duty trucks from the related projects and the Proposed Project could increase noise and vibration along the

surrounding roadways. In instances where the construction timelines for the related projects could overlap with the Project, it would be expected that the related projects would use similar types of trucks for hauling and construction activities. As discussed above, construction activity (for both the related projects and the Project) is temporary and the source of potential off-site vibration (delivery/haul trucks on the haul routes) is not materially different than the type and volume of vehicles currently on the haul routes. The haul routes for major projects are heavily traveled vehicular routes that provide access to regional freeways. In the existing conditions, there is a high volume of vehicular traffic, including heavy trucks and numerous buses that travel on the proposed haul routes. Also as previously discussed, 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." According to the FTA, it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads; and buses and trucks rarely generate vibration that exceeds 70 Vdb, which would be less than the significance threshold of 72 VdB for human annoyance or building damage. The addition of new haul trucks (from the Project and related projects) to the roadways during temporary construction activities would not generate excessive vibrations levels compared to the existing conditions, or in comparison the FTA criteria. Therefore, to the extent that other related projects use the same truck routes as the Project, potential cumulative vibration impacts would be less than significant. ***Therefore, cumulative off-site vibration impacts would be less than significant.***

b) Operation

(iii) On-Site Operational Noise and Vibration

The closest related projects to the Development Site, Related Project LA41 and Related Project LA32, would have the potential to increase on-site operational noise and vibration. However as discussed above, both of the closest related projects are located more than 1,000 feet away from the Development Site. As such, there would be no potential for significant cumulative operational noise and vibration impacts to occur.

Therefore, based on the distance of the related projects cumulative on-site operational noise and vibration impacts would be less than significant.

(iv) Off-site Cumulative Operational Vibration and Roadway Noise

Vibration levels from operations are generally limited to building mechanical equipment and vehicle circulations and would be limited to immediate vicinity of the project sites. The related projects would generate similar vibration levels as the Project. As described above, the nearest related projects to the Development Site are more than 1,000 feet

away. Since ground-borne vibration decreases rapidly with distance, operation of the related projects would not contribute to cumulative vibration impacts due to distance between the Project and the related projects. As analyzed above, Project operation would not result in the generation of excessive off-site ground-borne vibration levels in the vicinity of the Development Site. Therefore, based on the distance of the related projects from the Development 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.

Cumulative roadway noise impacts would occur primarily as a result of increased traffic on local roadways and intersections due to the Proposed Project, ambient growth, and related projects within the study area. To assess the cumulative roadway noise impacts, the Future Year With Project (2023) traffic volumes were compared to the Existing (2019) traffic volumes at the four identified street segments presented in Figure IV.F, Roadway Segment Traffic Noise Location Map. The resulting noise levels for both Existing (2019) and Future Year With Project (2023) conditions are presented in Table IV.F-22, below.

As shown in Table IV.F-22, Future Year With Project (2023) roadway noise levels would increase less than the applicable CNEL significance criteria at all roadway segments analyzed. Future cumulative roadway noise levels would increase by a maximum of 0.67 dBA CNEL on Ogden Drive (between 3rd Street and Colgate Avenue), which would be imperceptible to most people and would not result in a significant impact. ***Therefore, the cumulative impact associated with roadway noise would be less than significant at these locations.***

Table IV.F-22
Cumulative Roadway Traffic Noise Levels

	Roadway Segment	Existing (2019) CNEL (dBA) at the Edge of Right-of-Way	Future (2023) + Project CNEL (dBA) at the Edge of Right-of-Way	Significance Criteria CNEL (dBA) [a]	Impact CNEL (dBA)	Significant Impact?
1.	Fairfax Avenue, between 3rd St. and Colgate Ave.	71.57	72.09	74.57	0.52	No
2.	3rd Street, between Fairfax Ave. and Ogden Dr.	70.57	70.95	73.57	0.38	No
3.	Ogden Drive, between 3rd St. and Colgate Ave.	60.84	61.51	65.84	0.67	No
4.	Colgate Avenue, between Fairfax Ave. and Ogden Dr.	60.08	60.51	65.08	0.43	No

Notes:
[a] The thresholds of significance are either a 3-dBA CNEL or greater increase over ambient noise levels for land uses that would be impacted to or within the "normally unacceptable" or "clearly unacceptable" range (as identified in Table IV.F-5), or a 5-dBA CNEL or greater noise increase.
Source: Parker Environmental Consultants. TNM noise calculation worksheets are provided in Appendix F.2 to the EIR.

(2) Mitigation Measures

a) Cumulative Construction Impacts

The Proposed Project would incorporate Mitigation Measures MM-NOI-1 through MM-NOI-3 in order to reduce Project-level construction noise and vibration impacts to below significance thresholds. Cumulative construction noise and vibration impacts would be less than significant, no cumulative construction mitigation measures are required.

b) Cumulative Operational Impacts

No cumulative operational mitigated measures are required.

(3) Level of Significance After Mitigation

a) Cumulative Construction Impacts

Cumulative impacts with respect to construction noise levels would be less than significant. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.

b) Cumulative Operation Impacts

Cumulative impacts with respect to operational noise levels would be less than significant. Therefore, no mitigation measures were required or included, and the impact level remains less than significant.