IV. Environmental Impact Analysis
H. Noise

1. Introduction

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

2. Environmental Setting

a. Noise and Vibration Fundamentals

(1) Noise

(a) Fundamentals of Sound and Environmental Noise

Noise is commonly defined as sound that is undesirable because it interferes with speech communication and hearing, causes sleep disturbance, or is otherwise annoying (unwanted sound). The decibel (dB) is a conventional unit for measuring the amplitude of sound as it accounts for the large variations in sound pressure amplitude and reflects the way people perceive changes in sound amplitude.[1] Human hearing is not equally sensitive to sound at all frequencies. Therefore, to approximate this human frequency-dependent response, the A-weighted filtering system is used to adjust measured sound levels (dBA). The term "A-weighted" refers to filtering the noise signal in a manner that corresponds to the way the human ear perceives sound. Examples of various sound levels in different environments are shown in Table IV.H-1 on page IV.H-2.

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

Table IV.H-1
Typical Noise Levels

Common Outdoor Activities	Noise Levels (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-Over at 1000 feet		
	100	
Gas Lawn Mower at 3 feet		
	90	
Diesel Truck at 50 feet at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
Gas Lawn Mower at 100 feet	**70**	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	**60**	
		Large Business Office
Quiet Urban Daytime	**50**	Dishwasher Next Room
Quiet Urban Nighttime	**40**	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
	0	

Source: Caltrans, Technical Noise Supplement (TeNS), Table 2-5, 2013.

People commonly judge the relative magnitude of sound sensation using subjective terms, such as “loudness” or “noisiness.” A change in sound level of 3 dB is considered “just perceptible,” a change in sound level of 5 dB is considered “clearly noticeable,” and a change (increase) of 10 dB is typically recognized as “twice as loud.”[2]

(b) Outdoor Sound Propagation

In an outdoor environment, sound energy attenuates through the air as a function of distance. Such attenuation is called “distance loss” or “geometric spreading” and is based on the type of source configuration (i.e., a point source or a line source). The rate of sound attenuation for a point source, such as a piece of mechanical or electrical equipment (e.g.,

[2] *Bies & Hansen, Engineering Noise Control, Table 2.1, 1988.*

air conditioner or bulldozer), is 6 dBA per doubling of distance from the noise source to the receptor at acoustically "hard" sites and 7.5 dBA per doubling of distance from the noise source to the receptor at acoustically "soft" sites.[3] For example, an outdoor condenser fan that generates a sound level of 60 dBA at a distance of 50 feet from a point source at an acoustically hard site would attenuate to 54 dBA at a distance of 100 feet from the point source and attenuate to 48 dBA at 200 feet from the point source. The rate of sound attenuation for a line source, such as a constant flow of traffic on a roadway, is 3 dBA and 4.5 dBA per doubling of distance from the source to the receptor for hard and soft sites, respectively.[4]

In addition, structures (e.g., buildings and solid walls) and natural topography (e.g., hills and berms) that obstruct the line-of-sight between a noise source and a receptor further reduce the noise level if the receptor is located within the "shadow" of the obstruction, such as behind a sound wall. This type of sound attenuation is known as "barrier insertion loss." If a receptor is located behind the wall but still has a view of the source (i.e., the line-of-sight is not fully blocked), some barrier insertion loss would still occur but to a lesser extent. Additionally, a receptor located on the same side of the wall as a noise source may actually experience an increase in the perceived noise level as the wall reflects noise back to the receptor, thereby compounding the noise. Noise barriers can provide noise level reductions ranging from approximately 5 dBA (where the barrier just breaks the line-of-sight between the source and receiver) to an upper range of 20 dBA with a more substantial barrier.[5] Additionally, structures with closed windows can further attenuate exterior noise by a minimum of 20 dBA to 30 dBA.[6]

(c) Environmental Noise Descriptors

Several rating scales have been developed to analyze the adverse effect of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise is dependent upon the total acoustical energy content, as well as the time and duration of occurrence. The most frequently used noise descriptors, including those used by the City of Los Angeles, are summarized below.

Equivalent Sound Level (L_{eq}). L_{eq} is a measurement of the acoustic energy content of noise averaged over a specified time period. Thus, the L_{eq} of a time-varying sound and that of a steady sound are the same if they deliver the same amount of energy to the receptor's ear during exposure. L_{eq} for 1-hour periods, during the daytime or nighttime

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[3] *Caltrans, Technical Noise Supplement (TeNS), Chapter 2.1.4, 2013*.

[4] *Ibid.*

[5] *Ibid.*

[6] *Ibid, Table 7-1*.

hours, and 24-hour periods are commonly used in environmental assessments. For evaluating community impacts, this rating scale does not vary regardless of whether the noise occurs during day or night.

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

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

(2) Ground-borne Vibration

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

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

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

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

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

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

b. Regulatory Framework

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

(1) Applicable State Noise Standards

The State of California has adopted noise compatibility guidelines for general land use planning. The types of land uses addressed by the state and the acceptable noise categories for each land use are included in the *State of California General Plan Guidelines,* which is published and updated by the Governor's Office of Planning and Research. The level of acceptability of the noise environment is dependent upon the activity associated with the particular land use. For example, according to the State, an exterior noise environment up to 65 dBA CNEL is "normally acceptable" for single- and multi-family residential uses, without special noise insulation requirements. In addition, noise levels up to 75 dBA CNEL are "conditionally acceptable" with special noise insulation requirements, while noise levels at 75 dBA CNEL and above are "clearly unacceptable" for residential and hotel uses.[11] In addition, the 2016 California Building Standards Code requires that where the ambient noise environment exceeds 65 dBA or 65 CNEL, measures should be implemented to achieve an interior noise environment (measured within habitable room) not to exceed 45 dBA CNEL.

(2) City of Los Angeles Regulations and Policies

The Noise Element of the City of Los Angeles General Plan (General Plan) establishes CNEL guidelines for land use compatibility and includes a number of goals, objectives, and policies for land use planning purposes. The City also has regulations to control unnecessary, excessive, and annoying noise, as set forth in the Los Angeles

[11] *State of California, Governor's Office of Planning and Research, General Plan Guidelines, October 2003, p. 250.*

Municipal Code (LAMC) Chapter XI, Noise Regulation. In addition, the *L.A. CEQA Thresholds Guide* provides criteria for determining noise impacts of a project. These regulations are described further below.

(a) Noise Element

The overall purpose of the Noise Element of the General Plan is to guide policymakers in making land use determinations and in preparing noise ordinances that would limit exposure of citizens to excessive noise levels. The following policies and objectives from the Noise Element of the General Plan are applicable to the Project:[12]

- Objective 2 (Non-airport): Reduce or eliminate non-airport related intrusive noise, especially relative to noise-sensitive uses.
- Policy 2.2: 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 impacts associated with proposed development of land and changes in land use.
- Policy 3.1: Develop land use policies and programs that will reduce or eliminate potential and existing noise impacts.

The City's noise compatibility guidelines are provided in Table IV.H-2 on page IV.H-7.

(b) City of Los Angeles Noise Regulations (Chapter XI of the LAMC)

Chapter XI, Noise Regulation, of the LAMC (referred to herein as the Noise Regulations) establishes acceptable ambient sound levels to regulate intrusive noises (e.g., stationary mechanical equipment and vehicles other than those traveling on public streets) within specific land use zones and provides procedures and criteria for the measurement of the sound level of noise sources. These procedures recognize and account for differences in the perceived level of different types of noise and/or noise sources. In accordance with the Noise Regulations, a noise level increase from certain regulated noise sources of 5 dBA over the existing or presumed ambient noise level at an adjacent property line is considered a violation of the Noise Regulations. The 5-dBA increase above ambient is applicable to City-regulated noise sources (e.g., mechanical equipment), and it is applicable any time of the day.[13]

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

[13] *Los Angeles Municipal Code, Chapter XI, Section 112.02.*

Table IV.H-2
City of Los Angeles Guidelines for Noise Compatible Land Use

Land Use	Day-Night Average Exterior Sound Level (CNEL dBA)						
	50	55	60	65	70	75	80
Residential Single-Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditoriums, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playgrounds, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building s, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

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

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

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

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

Source: City of Los Angeles Noise Element, 1999.

The Noise Regulations state that the baseline ambient noise shall be the actual measured ambient noise level or the City's presumed ambient noise level, whichever is greater. The actual ambient noise level is the measured noise level averaged over a period of at least 15 minutes, L_{eq} (15-minute). The Noise Regulations indicate that in cases where the actual measured ambient conditions are not known, the City's presumed daytime (7:00 A.M. to 10:00 P.M.) and nighttime (10:00 P.M. to 7:00 A.M.) ambient noise levels defined in Section 111.03 of the LAMC should be used. The City's presumed ambient noise levels for specific land use zones, as set forth in LAMC Section 111.03, are provided in Table IV.H-3 on page IV.H-8.

To account for people's increased tolerance for short-duration noise events, the Noise Regulations provide an additional 5 dBA allowance beyond the 5 dB above ambient for noise sources occurring more than 5 minutes but less than 15 minutes in any 1-hour

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

Zone	Daytime (7:00 A.M. to 10:00 P.M.) dBA (L_{eq})	Nighttime (10:00 P.M. to 7:00 A.M.) dBA (L_{eq})
Residential, School, Hospitals, Hotels	50	40
Commercial	60	55
Manufacturing (M1, MR1, and MR2)	60	55
Heavy Manufacturing (M2 and M3)	65	65

Source: LAMC Section 111.03.

period (for a total of 10 dBA above the ambient), and an additional 5-dBA allowance (total of 15 dBA above the ambient) for noise sources occurring 5 minutes or less in any 1-hour period. These additional allowances for short-duration noise sources are applicable to noise sources occurring between the hours of 7:00 A.M. and 10:00 P.M. (daytime hours). Furthermore, the Noise Regulations provide that 5 dBA shall be added to the noise level for steady high-pitched noise or repeated impulsive noises.[14,15]

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

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

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

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

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

prohibits construction noise that disturbs persons occupying sleeping quarters in any dwelling, hotel, or apartment or other place of residence between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, before 8:00 A.M. and after 6:00 P.M. on Saturday or national holiday, and at any time on Sunday. Construction hours may be extended with approval from the Executive Director of the Board of Police Commissioners. In general, the City of Los Angeles Department of Building and Safety enforces noise ordinance provisions relative to noise generated by operation of equipment, and the Los Angeles Police Department enforces provisions relative to noise generated by people.

(3) Ground-borne Vibration

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

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

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

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17 *FTA, "Transit Noise and Vibration Impact Assessment," Chapter 7, May 2006.*

18 *Caltrans, "Transportation Related Earthborne Vibrations," February 2002.*

19 *FTA, "Transit Noise and Vibration Impact Assessment," May 2006.*

Table IV.H-4
FTA Construction Vibration Impact Criteria for Building Damage

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.50
II. Engineered concrete and masonry (no plaster)	0.30
III. Non-engineered timber and masonry buildings	0.20
IV. Building s extremely susceptible to vibration damage	0.12

Source: Federal Transit Administration, 2006.

c. Existing Conditions

As discussed in Section II, Project Description, of this Draft EIR, the Project Site is located in a highly urbanized area. The predominant source of noise in the vicinity of the Project Site is vehicular traffic on adjacent roadways, particularly to the west along Vine Street, which has high volumes of traffic. Additional ambient noise sources in the vicinity of the Project Site include periodic helicopters; commercial activities; surface parking lot activities; and other miscellaneous noise sources associated with typical urban activities.

(1) Noise-Sensitive Receptors

Some land uses are considered more sensitive to intrusive noise than others based on the types of activities typically involved at the receptor location. The *L.A. CEQA Thresholds Guide* states that noise-sensitive uses include residences, transient lodgings, schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks.[20] Similarly, the Noise Element of the 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.[21] These uses are generally considered more sensitive to noise than commercial and industrial land uses.

Based on a review of the land uses in the vicinity of the Project Site, six (6) noise receptor locations were selected to represent noise-sensitive uses within 500 feet of the

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

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

Table IV.H-5
FTA Vibration Impact Criteria for Human Annoyance

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

[a] *"Frequent Events" are defined as more than 70 vibration events of the same source per day.*

[b] *"Occasional Events" are defined as between 30 and 70 vibration events of the same source per day.*

[c] *"Infrequent Events" are defined as fewer than 30 vibration events of the same source per day.*

[d] *This criterion limit is based on the levels that are acceptable for most moderately sensitive equipment such as optical microscopes.*

Source: Federal Transit Administration, 2006.

Project Site. These locations represent areas with land uses that could qualify as noise-sensitive uses according to the definition of such uses in the *L.A. CEQA Thresholds Guide* and the General Plan. As discussed below, noise measurements were conducted at the six measurement locations around and adjacent to the Project Site to establish baseline noise conditions in the vicinity of the Project Site. The monitoring locations essentially surround the Project Site and thereby provide baseline measurements for uses in all directions. In addition, the monitoring locations provide an adequate basis to evaluate potential impacts at the monitoring locations and receptors beyond in the same direction. The noise measurement locations are shown in Figure IV.H-1 on page IV.H-12 and described in Table IV.H-6 on page IV.H-13.

(2) Ambient Noise Levels

To establish baseline noise conditions, existing ambient noise levels were monitored at the six representative receptor locations (identified as R1 to R6) in the vicinity of the Project Site. Although studio uses are not defined as noise sensitive receptors by the *L.A. CEQA Thresholds Guide*, potential noise impacts at Capitol Records north of the Project Site (represented by receptor R4) were evaluated for informational purposes only. The baseline noise monitoring program was conducted on October 31, 2016, using a Quest Technologies

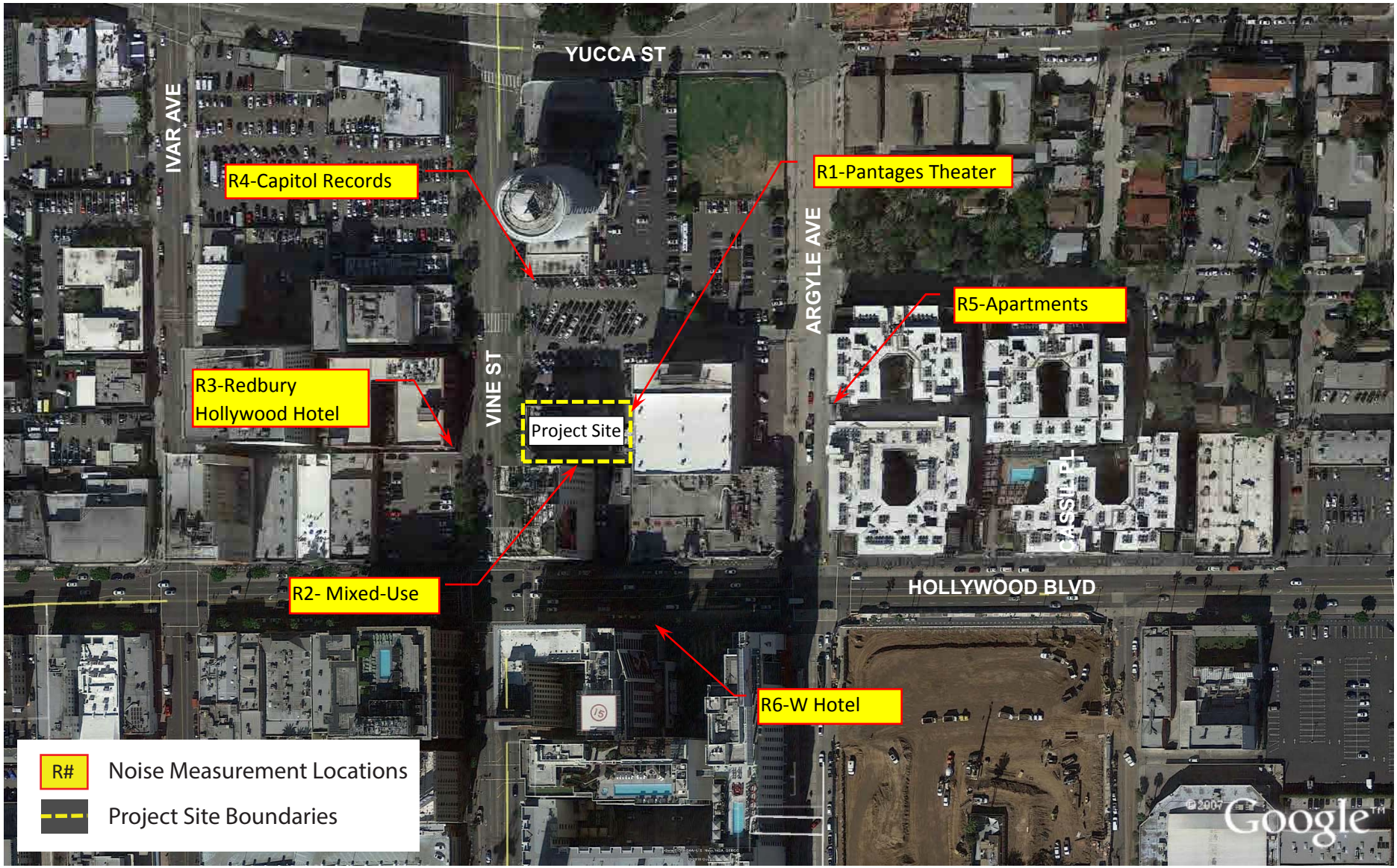

Figure IV.H-1
Noise Measurement Locations

Source: Acoustical Engineering Services, 2016.

Table IV.H-6
Description of Noise Measurement Locations

Receptor Location	Description	Approximate Distance from Measurement Location to Nearest Project Site Boundary[a]	Nearest Noise-Sensitive Land Use(s)
R1	Project Site eastern boundary, adjacent to the Pantages Theatre	Eastern Boundary of Project Site	Theatre
R2	Project Site southern boundary, adjacent to the Equitable Building	Southern Boundary of Project Site	Residential
R3	Redbury Hollywood Hotel on the west side of Vine Street, across the Project Site	105	Hotel
R4	Capitol Records Building on the east side of Vine Street, north of the Project Site	180	Studio[b]
R5	Apartment building on the east side of Argyle Avenue, east of the Project Site	275	Residential
R6	W Hotel on the south side of Hollywood Boulevard, south of the Project Site	240	Hotel

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

[b] *Studio uses are not considered noise sensitive uses by the L.A. CEQA Thresholds Guide. Therefore, the Capitol Records building (assumed to have recording studios) represented by receptor location R4 is included for informational purposes only.*

Source: Acoustical Engineering Services (AES), 2016. See Appendix F of this Draft EIR.

Model 2900 Integrating/Logging Sound Level Meter.[22] Two 15-minute measurements were conducted at each of the receptor locations during daytime and nighttime hours. The daytime ambient noise levels were taken between 10:00 A.M. and 1:00 P.M., and the nighttime ambient noise levels were taken between 10:00 P.M. and 1:00 A.M. The ambient noise measurements were taken in accordance with the City's standards, which require ambient noise to be measured over a period of at least 15 minutes.[23]

Table IV.H-7 on page IV.H-14 provides a summary of the ambient noise measurements taken at the six (R1 through R6) selected noise receptor locations. Based on field observations, the ambient noise at the measurement locations is dominated by local traffic and, to a lesser extent, helicopter flyovers and other typical urban noises. As

[22] *This sound meter meets and exceeds the minimum industry standard performance requirements for "Type 2" standard instruments as defined in the American National Standard Institute (ANSI) S1.4. It also meets the requirement specified in Section 111.01(l) of the LAMC that instruments be "Type S2A" standard instruments or better. The sound meter was calibrated and operated according to the manufacturer's written specifications.*

[23] *LAMC Section 111.01.*

Table IV.H-7
Existing Ambient Noise Levels

Receptor Location	Noise-Sensitive Land Use	Measured Noise Levels, L_{eq} (dBA)		CNEL[a] (24-hour)
		Daytime Hours (7:00 A.M.–10:00 P.M.)	Nighttime Hours (10:00 P.M.–7:00 A.M.)	
R1	Theatre	60.6	58.4	63.6
R2	Residential	60.8	58.6	63.8
R3	Hotel	69.5	68.2	73.2
R4	Studio	66.9	68.8	73.2
R5	Residential	72.0	68.6	74.2
R6	Hotel	71.7	71.2	76.0

[a] *Estimated based on short-term (15-minute) noise measurement based on FTA procedures.*
Source: AES, 2016. See Appendix F of this Draft EIR.

indicated in Table IV.H-7, the existing daytime ambient noise levels at the off-site noise receptor locations ranged from 60.6 dBA (L_{eq}) at receptor location R1 to 72.0 dBA (L_{eq}) at receptor location R5. The measured nighttime ambient noise levels ranged from 58.4 dBA (L_{eq}) at receptor location R1 to 71.2 dBA (L_{eq}) at receptor location R6. Thus, the existing ambient noise levels at all off-site locations are above the City's presumed daytime and nighttime ambient noise standards of 50 dBA (L_{eq}) and 40 dBA (L_{eq}), respectively, for residential uses, as presented above in Table IV.H-3 on page IV.H-8. Therefore, consistent with LAMC procedures, the measured existing ambient noise levels are used as the baseline conditions for the purposes of determining Project impacts.

In addition to the ambient noise measurements in the vicinity of the Project Site, the existing traffic noise on local roadways in the surrounding area was calculated to quantify the 24-hour CNEL noise levels using information provided by the *Traffic Study for the citizenM Hotel Project*, *October 2016* (Traffic Study) and the *Traffic Impact Analysis for the Revised citizenM Hotel Project, Hollywood, California, May 18, 2018,* (Revised Traffic Analysis) prepared for the Project by Gibson Transportation Consulting, Inc., which are included in Appendix H of this Draft EIR. Thirty-five (35) roadway segments were selected for the existing off-site traffic noise analysis based on proximity to noise-sensitive uses along the roadway segments and potential increases in traffic volumes from the Project. Traffic noise levels were calculated using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM) and traffic volume data from the Traffic Study prepared for the Project.[24] The TNM traffic noise prediction model calculates the hourly L_{eq} noise levels

[24] *Ibid.*

based on specific information including the hourly traffic volume, vehicle type mix, vehicle speed, and lateral distance between the noise receptor and the roadway. To calculate the 24-hour CNEL levels, the hourly L_{eq} levels were calculated during daytime hours (7:00 A.M. to 7:00 P.M.), evening hours (7:00 P.M. to 10:00 P.M.), and nighttime hours (10:00 P.M. to 7:00 A.M.).

The traffic noise prediction model calculates the 24-hour CNEL noise levels based on specific information, including Average Daily Traffic (ADT); percentages of day, evening, and nighttime traffic volumes relative to ADT; vehicle speed; and distance between the noise receptor and the roadway. Vehicle mix/distribution information used in the noise calculations is shown in Table IV.H-8 on page IV.H-16.

Table IV.H-9 on page IV.H-17 provides the calculated CNEL for the analyzed local roadway segments based on existing traffic volumes. As shown therein, the existing CNEL due to surface street traffic volumes ranges from 64.0 dBA CNEL along Gower Street (north of Franklin Avenue) to 73.4 dBA CNEL along Franklin Avenue (east of Bronson Avenue). Currently, the existing traffic-related noise levels along some of the analyzed roadway segments, including Ivar Avenue, Argyle Avenue, Gower Street (north of Franklin Avenue), Yucca Street, and Selma Avenue fall within the conditionally acceptable noise levels for residential uses (i.e., between 60 and 70 dBA CNEL). The existing traffic noise levels along portions of Cahuenga Boulevard, Vine Street, Gower Street, Franklin Avenue, Hollywood Boulevard, and Sunset Boulevard range between 70 dBA CNEL and 75 dBA CNEL and are considered normally unacceptable for residential uses.

(3) Existing Ground-Borne Vibration Levels

Based on field observations, the primary source of existing ground-borne vibration in the vicinity of the Project Site is vehicular travel (e.g., standard cars, refuse trucks, delivery trucks, construction trucks, school buses, and transit buses) on local roadways. According to the FTA technical study "Federal Transit Administration: Transit Noise and Vibration Impacts Assessments," typical road traffic-induced vibration levels are unlikely to be perceptible by people. Specifically, the FTA study reports that "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads."[25] Trucks and buses typically generate ground-borne vibration velocity levels of around 63 VdB (at 50 feet distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the road. Per the FTA, 75 VdB is the dividing line between barely perceptible (with regards to ground vibration) and distinctly perceptible.[26] Therefore,

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

[26] *FTA, "Transit Noise and Vibration Impact Assessment," May 2006, p. 10-1.*

Table IV.H-8
Vehicle Mix for Traffic Noise Model

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

[a] *Medium Truck—Trucks with 2 axles.*

[b] *Heavy Truck—Trucks with 3 or more axles.*

Source: AES, 2016. See Appendix F of this Draft EIR.

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

Table IV.H-9
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent Land Use	Approximate Distance to Roadway Center Line, (feet)	Calculated Traffic Noise Levels,[a] CNEL (dBA)	Noise-Sensitive Land Uses	Existing Noise Exposure Compatibility Category[b]
Cahuenga Boulevard					
– North of Hollywood Blvd.	Hotel, Commercial	35	72.9	Yes	Normally Unacceptable
– South of Hollywood Blvd.	Motel, Commercial	35	72.4	Yes	Normally Unacceptable
Ivar Avenue					
– North of Hollywood Blvd.	Residential, Commercial	30	67.1	Yes	Conditionally Acceptable
– South of Hollywood Blvd.	Residential, Commercial	30	66.9	Yes	Conditionally Acceptable
Vine Street					
– Between Franklin Ave. and Yucca St.	Residential, Hotel	45	70.9	Yes	Normally Unacceptable
– Between Yucca St. and Hollywood Blvd.	Residential, Hotel, Studio	45	71.5	Yes	Normally Unacceptable
– Between Hollywood Blvd. and Sunset Blvd.	Residential, Theater	45	72.0	Yes	Normally Unacceptable
– South of Sunset Blvd.	Theater, Religious	45	72.4	Yes	Clearly Unacceptable
Argyle Avenue					
– North of Franklin Ave.	Residential	35	64.4	Yes	Conditionally Acceptable
– Between Franklin Ave. and Yucca St.	Hotel, Commercial	35	68.9	Yes	Conditionally Acceptable
– Between Yucca St. and Hollywood Blvd.	Residential, Theater	35	68.0	Yes	Conditionally Acceptable
– South of Hollywood Blvd.	Residential, Commercial	35	68.2	Yes	Conditionally Acceptable
Gower Street					
– North of Franklin Ave.	Residential	35	64.0	Yes	Conditionally Acceptable
– Between Franklin Ave. and Yucca St.	Residential	35	70.3	Yes	Normally Unacceptable
– Between Yucca St. and Hollywood Blvd.	Residential, Religious	35	70.5	Yes	Normally Unacceptable
– South of Hollywood Blvd.	Residential, Commercial	35	70.3	Yes	Normally Unacceptable

Table IV.H-9 (Continued)
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent Land Use	Approximate Distance to Roadway Center Line, (feet)	Calculated Traffic Noise Levels,[a] CNEL (dBA)	Noise-Sensitive Land Uses	Existing Noise Exposure Compatibility Category[b]
Bronson Avenue					
– North of Franklin Ave.	Residential, Commercial	30	68.0	Yes	Conditionally Acceptable
– Between Franklin Ave. and Hollywood Blvd.	Residential, Commercial	30	68.8	Yes	Conditionally Acceptable
– South of Hollywood Blvd.	Residential	35	68.8	Yes	Conditionally Acceptable
Franklin Avenue					
– West of Vine St.	Residential	35	71.6	Yes	Normally Unacceptable
– Between Vine St. and Gower St.	Residential, Commercial	35	72.5	Yes	Normally Unacceptable
– Between Gower St. and Bronson Ave.	Residential, School, Religious	35	73.2	Yes	Normally Unacceptable
– East of Bronson Ave.	Residential, Commercial	35	73.4	Yes	Normally Unacceptable
Yucca Street					
– West of Vine St.	Residential, School	40	66.8	Yes	Conditionally Acceptable
– Between Vine St. and Argyle Ave.	Residential, Studio	40	65.7	Yes	Conditionally Acceptable
– Between Argyle Ave. and Gower St.	Residential, Hotel	30	64.1	Yes	Conditionally Acceptable
Hollywood Boulevard					
– West of Cahuenga Blvd.	Theater, Commercial	45	71.1	Yes	Clearly Unacceptable
– Between Cahuenga Blvd. and Vine St.	Residential, Hotel, Theater, Commercial	45	71.0	Yes	Normally Unacceptable
– Between Vine St. and Gower St.	Residential, Hotel, Theater, Commercial	45	71.6	Yes	Normally Unacceptable
– Between Gower St. and Bronson Ave.	Hotel, Commercial	40	71.6	Yes	Normally Unacceptable
– East of Bronson Ave.	Religious, Commercial	40	71.8	Yes	Normally Unacceptable
Selma Avenue					
– West of Vine St.	Residential, Commercial	30	67.6	Yes	Conditionally Acceptable
– East of Vine St.	Residential, Commercial	30	67.7	Yes	Conditionally Acceptable

Table IV.H-9 (Continued)
Existing Roadway Traffic Noise Levels

Roadway Segment	Adjacent Land Use	Approximate Distance to Roadway Center Line, (feet)	Calculated Traffic Noise Levels,[a] CNEL (dBA)	Noise-Sensitive Land Uses	Existing Noise Exposure Compatibility Category[b]
Sunset Boulevard					
– West of Vine St.	Residential, Studio, Commercial	45	72.5	Yes	Normally Unacceptable
– East of Vine St.	Residential, Studio, Commercial	45	72.8	Yes	Normally Unacceptable

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

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

Source: AES, 2018.

3. Project Impacts

a. Thresholds of Significance

(1) State CEQA Guidelines Appendix G

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

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

Threshold (b): Generation of excessive ground-borne vibration or ground-borne noise levels.

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?

(2) 2006 L.A. CEQA Thresholds Guide

The *L.A. CEQA Thresholds Guide* identifies the following criteria for evaluating noise impacts:

(a) Construction Noise

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

Construction of the Project is anticipated to require approximately 21 months to complete. Therefore, the 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.

(b) Operational Noise

The following significance criteria are applied to the Project, as set forth in the *L.A. CEQA Thresholds Guide* and the City's Noise Regulations, with the more restrictive provisions of the two applied:

- The Project (on-site and off-site sources) causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category (see Table IV.H-2 on page IV.H-7 for a description of these categories); or

- The Project (on-site and off-site sources) causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 5 dBA in CNEL or greater for noise levels remain within the "conditionally acceptable" or "normally acceptable" category; or

- Project-related operational on-site (i.e., non-roadway) noise sources, such as outdoor building mechanical/electrical equipment, outdoor activities, or parking facilities, increase the ambient noise level (hourly L_{eq}) at noise-sensitive uses by 5 dBA.

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

(c) Airport Noise

The *L.A. CEQA Thresholds Guide* identifies the following significance criteria for evaluating airport noise:

- Noise levels at a noise sensitive use attributable to airport operations exceed 65 dB CNEL and the project increases ambient noise levels by 1.5 dB CNEL or greater.

In assessing impacts related to noise and vibration in this section, the City will use Appendix G as the thresholds of significance. The criteria identified above from the *L.A. CEQA Thresholds Guide* will be used where applicable and relevant to assist in analyzing the Appendix G threshold questions.

(3) Federal Transit Administration Guidelines

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

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

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

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

- Project construction activities cause ground-borne vibration levels to exceed 72 VdB at off-site residential and hotel uses, or 65 VdB at off-site recording studios.

a. Methodology

(1) On-Site Construction Activities

Construction noise impacts due to on-site construction activities associated with the Project were evaluated by calculating the construction-related noise levels at representative sensitive receptor locations and comparing these estimated construction-related noise levels associated with construction of the Project to the existing ambient noise levels (i.e., noise levels without construction noise from the Project). Construction noise associated with the Project was analyzed based on the Project's potential construction equipment inventory, construction durations, and construction schedule. The construction noise model for the Project is based on construction equipment noise levels as published by the FHWA's "Roadway Construction Noise Model (FHWA 2006)."[27] The ambient noise levels at surrounding sensitive receptor locations were based on field measurement data (see Table IV.H-7 on page IV.H-14). The construction noise levels were then calculated for sensitive receptor locations based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance (as described above in Section 2.a(1)(b), Outdoor Sound Propagation). Additional noise attenuation was assigned to receptor locations where the line-of-sight to the Project Site was interrupted by the presence of intervening structures.

(2) Off-Site Construction Haul Trucks

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

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

On-site stationary point-source noise impacts were evaluated by: (1) identifying the noise levels that would be generated by the Project's stationary noise sources, such as rooftop mechanical equipment, outdoor activities (e.g., use of the outdoor terraces), parking

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

facilities, loading and trash compactor; (2) calculating the noise level from each noise source at surrounding sensitive receptor property line locations; and (3) comparing such noise levels to ambient noise levels to determine significance.

(4) Off-Site Roadway Noise (Operation)

As discussed in Section 2.c, Existing Conditions, above, off-site roadway noise was analyzed using the FHWA TNM model and traffic data from the Project's Traffic Study and Revised Traffic Analysis. Roadway noise conditions without the Project were calculated and compared to noise levels that would occur with implementation of the Project to determine Project-related noise impacts for operational off-site roadway noise.

(5) Construction Vibration

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

(6) Operational Vibration

The primary source of vibration related to operation of the Project would include vehicle circulation within the proposed parking garage and off-site vehicular trips. However, as discussed above, vehicular-induced vibration is unlikely to be perceptible by people. The Project would also include typical commercial-grade stationary mechanical equipment, such as air-condenser units (mounted at the roof level), that would include vibration-attenuation mounts to reduce the vibration transmission. The Project does not include land uses that would generate high levels of vibration. In addition, ground-borne vibration attenuates rapidly as a function of distance from the vibration source. Therefore, operation of the Project would not increase the existing vibration levels in the immediate vicinity of the Project Site, and, as such, vibration impacts associated with operation of the Project would be less than significant. Accordingly, the ground-borne vibration analysis presented in this section is limited to Project-related construction activities.

(7) Land Use Compatibility

The Project's land use compatibility was evaluated based on the measured site ambient noise levels as compared to the City of Los Angeles Guidelines for Compatible Land Use (as provided in Table IV.H-2 on page IV.H-7).[28]

c. Project Design Features

The following Project Design Features are proposed with regard to noise and vibration:

NOI-PDF-1: Power construction equipment (including combustion engines), fixed or mobile, would be equipped with state-of-the-art noise shielding and muffling devices (consistent with manufacturers' standards) and shall include the use of solar-powered generators, to the extent feasible. All equipment would be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.

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

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

NOI-PDF-4: Outdoor amplified sound systems would be designed so as not to exceed a maximum noise level of 75 dBA ($L_{eq\text{-}1hr}$) at a distance of 15 feet from the amplified sound systems (i.e., speaker face) at the Level 1 Main Entrance, and 90 dBA ($L_{eq\text{-}1hr}$) at the Level 13 Hotel Guest Terrace.

NOI-PDF-5: Truck loading/unloading operations shall be conducted within the interior of the ground floor loading/parking elevator level.

d. Analysis of Project Impacts

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

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

(1) Construction Noise

As discussed in Section II, Project Description, of this Draft EIR, construction of the Project is anticipated to occur over approximately 21 months. Construction of the Project would commence with demolition of the existing building, followed by grading and excavation. Building foundations would then be constructed, followed by building construction, paving/concrete installation, and landscape installation. The Project would require approximately 29,300 cubic yards of soil removal from the Project Site.

(a) On-Site Construction Noise

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

Individual pieces of construction equipment anticipated to be used during construction of the Project could produce maximum noise levels (L_{max}) of 74 dBA to 85 dBA at a reference distance of 50 feet from the noise source, as shown in Table IV.H-10 on page IV.H-27. These maximum noise levels would occur when equipment is operating under full power conditions (i.e., the equipment engine at maximum speed). However, equipment used on construction sites often operates under less than full power conditions, or part power. To more accurately characterize construction-period noise levels, the average (Hourly L_{eq}) noise level associated with each construction phase is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction phase.[29] These noise levels are typically associated with multiple pieces of equipment operating on part power, simultaneously.

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

Table IV.H-10
Construction Equipment Noise Levels

Equipment	Estimated Usage Factor[a] %	Typical Noise Level at 50 feet from Equipment, dBA (L_{max})
Air Compressor	40	78
Cement and Mortar Mixer	50	80
Concrete Mixer Truck	40	79
Crane	16	81
Drill Rig	20	84
Forklift	10	75
Generator	50	81
Grader	40	85
Dump/Haul Truck	40	76
Excavator	40	81
Paver	50	77
Pump	50	81
Roller	20	80
Rubber Tired Loader	40	79
Tractor/Loader/Backhoe	40	80
Delivery Truck	40	74
Welders	40	74

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

Table IV.H-11 on page IV.H-28 provides the estimated construction noise levels for various construction phases at the off-site noise-sensitive receptors. To present a conservative impact analysis, the estimated noise levels were calculated for a scenario in which construction equipment were assumed to operate simultaneously and be located at the construction area nearest to the affected receptors. These assumptions represent the worst-case noise scenario because construction activities would typically be spread out throughout the Project Site, and, thus, some equipment would be farther away from the affected receptors. In addition, the noise modeling assumes that construction noise is constant, when, in fact, construction activities and associated noise levels are periodic and fluctuate based on the construction activities.

As discussed above, since construction activities would occur over a period longer than 10 days for all phases, the corresponding significance criteria used in the construction noise analysis is an increase in the ambient L_{eq} noise level of 5 dBA at a noise-sensitive use. As presented in Table IV.H-11, construction activities would generate the highest

Table IV.H-11
Construction Noise Impacts

Off-Site Receptor Location	Approximate Distance from Receptor to Project Construction Area (feet)	Estimated Construction Noise Levels by Construction Phases, L_{eq} (dBA)					Existing Daytime Ambient Noise Levels, L_{eq} (dBA)	Significance Criteria[a] L_{eq} (dBA)	Maximum Noise Exceedance Above the Criteria, L_{eq} (dBA)	Sig. Impact?
		Demolition	Shoring/ Excavation	Foundation/ Parking Garage	Building Construction	Paving/ Concrete/ Landscape				
R1	10	91.5	91.8	90.6	88.9	89.5	60.6	65.6	26.2	Yes
R2	10	91.5	91.8	90.6	88.9	89.5	60.8	65.8	26.0	Yes
R3	105	75.2	78.6	76.4	77.1	71.6	69.5	74.5	4.1	Yes
R4	180	71.6	76.1	73.6	74.1	66.9	66.9	71.9	4.2	No[b]
R5	275	52.9	57.4	54.9	55.4	48.2	72.0	77.0	—	No
R6	240	69.1	73.6	71.1	71.6	64.4	71.7	76.7	—	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-14) plus 5 dBA, per the L.A. CEQA Thresholds Guide for construction activities lasting longer than 10 days in a three-month period. If the estimated construction noise levels exceed those significance criteria, a construction-related noise impact is identified.*

[b] *Not applicable as studio uses are not considered noise sensitive uses by the L.A. CEQA Thresholds Guide. Therefore, the Capitol Records studio represented by receptor location R4 is included in the noise analysis for informational purposes only.*

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

noise during the excavation phase, as it is anticipated to have the highest number of pieces of construction equipment in the construction area compared to the Project's other construction stages. As indicated in Table IV.H-11 on page IV.H-28, the maximum estimated noise levels associated with construction of the Project would be below the significance criteria at off-site receptor locations R5 and R6. The estimated construction noise levels would exceed the significance threshold by 4.1 dBA at receptor R3, 26.0 dBA at receptor R2, and 26.2 dBA at receptor R1. The estimated noise level at receptor location R4 would be 4.2 dBA above the significance criteria. However, it should be noted that the significance criteria provided in Table IV.H-11 would not apply to receptor location R4 as the studio use is not defined as a noise sensitive use by the *L.A. CEQA Thresholds Guide*. **Therefore, under the most conservative impact assessment, temporary noise impacts associated with the Project's on-site construction would be significant at receptor locations R1, R2, and R3.** As provided below in Subsection IV.H.5, Mitigation Measures on page IV.H-60, Mitigation Measure NOI-MM-1 would be implemented to reduce on-site construction noise impacts. As discussed below in Subsection IV.H.6(a)(1) on page IV.H-62, implementation of Mitigation Measure NOI-MM-1 would reduce the Project's on-site construction noise impacts to the extent feasible, including to a less-than-significant level at receptor location R3, but not below a level of significance at receptor locations R1 and R2. To reduce temporary noise impacts from on-site construction activities at receptor location R2, a sound barrier would need to reach 12 stories in height. However, as discussed below in Subsection IV.H.6(a)(1), construction of a barrier of this height would not be feasible. **Thus, construction noise impacts would remain significant and unavoidable.**

(b) Off-Site Construction Noise

In addition to on-site construction noise sources, other noise sources may include materials delivery, concrete mixing, and haul trucks (construction trucks), as well as construction worker vehicles accessing the Project Site during construction. Typically, construction trucks generate higher noise levels than construction worker vehicles. The major noise sources associated with off-site construction trucks would be associated with delivery/haul trucks. It is anticipated that the construction delivery/haul trucks would travel between the Project Site and the US-101 Freeway via the following route:

- To/From the US-101 Ramps at Hollywood Boulevard. Arriving haul truck traffic would exit the US-101 at Hollywood Boulevard, travel westbound to Vine Street and north to the Project Site. Departing haul truck traffic would turn left onto Vine Street, travel south to Hollywood Boulevard, then eastbound to access the US-101 ramps.

The peak period of construction with the highest number of construction trucks would occur during the grading phase. During this phase, there would be approximately 70 construction haul truck loads per day for a total of 140 single trips. The hourly truck trips

were calculated based on an eight-hour period (typical workday) and a uniform distribution of trips, which would result in a maximum of 18 truck trips (nine arriving and nine departing) per hour. In addition, there would be approximately 50 worker trips to and from the Project Site on a daily basis during the grading phase. There would also be construction delivery truck trips (up to 40 delivery truck trips per day) during other construction phases of the Project, but such trips would be significantly less than under the grading phase.

The Project-related construction trucks are estimated to generate a noise level of approximately 64.0 (L_{eq}) along the anticipated haul route, including Vine Street and Hollywood Boulevard. The estimated noise levels from the haul trucks would be below the existing daytime ambient noise level of 66.9 dBA (L_{eq}) along Vine Street (measured at receptor location R4) and 71.2 dBA along Hollywood Boulevard (measured at receptor location R6), which would be below the 5 dBA significance criteria. As described above, the estimated construction truck noise levels represent the worst-case construction phase (i.e., excavation). During other construction phases, the number of construction trucks would be lower, which would result in lower noise levels. Therefore, temporary noise impacts from off-site construction traffic would be less than significant.

(c) Summary of Construction Noise Impacts

As discussed above, under the most conservative noise impact assessment (and not including the nearby studio uses, which are not considered noise-sensitive uses in the *L.A. CEQA Thresholds Guide*), temporary noise impacts associated with the Project's on-site construction would be significant at receptor locations R1, R2, and R3. Implementation of Mitigation Measure NOI-MM-1 would reduce the Project's on-site construction noise impacts during construction by up to 5 dBA at receptor location R3, which would reduce the impacts to a less than significant level. Construction noise levels at receptor location R1 would be reduced by up to 10 dBA. However, noise impacts at receptor locations R1 and R2 would remain significant and unavoidable.

Therefore, construction of the Project would result in generation of a substantial temporary increase in ambient noise levels in the vicinity of the Project Site in excess of standards established by the City. Impacts would be significant and unavoidable.

(2) Operational Noise

This section provides a discussion of potential operational noise impacts on nearby noise-sensitive receptors. Specific operational noise sources addressed herein include: (a) on-site stationary noise sources, including outdoor mechanical equipment (e.g., HVAC equipment), activities within the proposed outdoor spaces, parking facilities, and loading/trash collection areas; and (b) off-site mobile (roadway traffic) noise sources.

(a) On-Site Stationary Noise Sources

(i) Mechanical Equipment

As part of the Project, new mechanical equipment (e.g., air ventilation equipment) would be located at the roof level and within the interior of the building. Although operation of this equipment would generate noise, Project-related outdoor mechanical equipment would be designed so as not to increase the existing ambient noise levels by 5 dBA in accordance with the City's Noise Regulations. Specifically, the Project would comply with Section 112.02 of the LAMC, which prohibits noise from air conditioning, refrigeration, heating, pumping, and filtering equipment from exceeding the ambient noise levels on the premises of other occupied properties by more than 5 dBA. In addition, as provided above in Project Design Feature NOI-PDF-3, all outdoor mounted mechanical equipment would be enclosed or screened from off-site noise-sensitive receptors. Table IV.H-12 on page IV.H-32 presents the estimated noise levels at the off-site receptor locations from operation of the Project mechanical equipment. As indicated in Table IV.H-12, the estimated noise levels from the mechanical equipment would range from 31.2 dBA (L_{eq}) at receptor location R5 to 51.7 dBA (L_{eq}) at receptor location R2. These noise levels would be below the existing ambient noise levels. Accordingly, the estimated noise levels at all off-site receptor locations would be below the significance criteria of 5 dBA (L_{eq}) above ambient noise levels (based on the lowest measured ambient). Therefore, noise impacts from mechanical equipment would be less than significant.

(ii) Outdoor Spaces

The Project would provide various outdoor spaces, including: an outdoor seating area at Level 1 in front of the hotel's main entrance and outdoor terraces at Level 13. Noise sources associated with outdoor uses typically include noise from people gathering and conversing. For this operational noise analysis, reference noise levels of 65 dBA for a male and 62 dBA for a female speaking in a raised voice were used for analyzing potential noise impacts from people gathering at the outdoor spaces.[30] In order to analyze a typical noise scenario, it was assumed that up to 50 percent of the people (half of which would be male and the other half female) would be talking at the same time. In addition, the hours of operation for use of the outdoor areas were assumed to be from 7:00 A.M. to 2:00 A.M.

An additional potential noise source associated with outdoor uses would be the use of an outdoor sound system (e.g., music or other sounds broadcast through an outdoor mounted speaker system). As part of the Project and as set forth in Project Design Feature NOI-PDF-4, any amplified sound system used in the outdoor areas would be designed so

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

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

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Mechanical Equipment, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria[a], dBA (L_{eq})	Exceedance Over Significance Criteria	Significant Impact?
R1	58.4	50.0	59.0	63.4	0.0	No
R2	58.6	51.7	59.4	63.6	0.0	No
R3	68.2	42.9	68.2	73.2	0.0	No
R4	66.9	37.5	66.9	71.9	0.0	No
R5	68.6	31.2	68.6	73.6	0.0	No
R6	71.2	43.1	71.2	76.2	0.0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-7 on page IV.H-14) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

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

as not to exceed maximum noise levels that range from 75 to 90 dBA L_{eq} at a referenced distance as indicated in Table IV.H-13 on page IV.H-33. Implementation of these noise specifications for any proposed amplified sound system would ensure that the significance criteria (i.e., an increase of 5 dBA L_{eq} over existing ambient noise levels) would not be exceeded. Table IV.H-13 presents the anticipated number of people at each of the outdoor spaces and the Project's proposed amplified sound levels at each of the outdoor locations.

Table IV.H-14 on page IV.H-34 presents the estimated noise levels at the off-site sensitive receptors, resulting from the use of outdoor areas. The estimated noise levels were calculated with the assumption that all of the outdoor spaces would be fully occupied and operating concurrently to represent a worst-case noise analysis. As presented in Table IV.H-14, the estimated noise levels from the outdoor areas would range from 24.3 dBA (L_{eq}) at receptor location R5 to 52.4 dBA (L_{eq}) at receptor location R4. The estimated noise levels from the outdoor spaces would be below the significance criteria of 5 dBA (L_{eq}) above ambient noise levels at all off-site sensitive receptors. As such, noise impacts from the use of the outdoor spaces would be less than significant.

(iii) Parking Facilities

As discussed in Section II, Project Description, of this Draft EIR, parking for the Project would be provided within a subterranean parking garage that would provide a total of 98 spaces. Vehicular access to the parking garage would be provided via a new driveway entrance off of Vine Street that would lead to a portico for guest drop-off and valet

Table IV.H-13
Outdoor Uses Assumptions

Outdoor Space	Estimated Total Number of People[a]	Amplified Sound System Levels, dBA (L_{eq})
Level 1 Entrance Area	23	75 dBA at 15 feet
Level 13 Hotel Guest Terrace	97	90 dBA at 15 feet

[a] *The estimated total number of people is based on 25 square feet per person at the Level 1 Entrance Area and 15 square feet per person at the Level 13 Terrace.*

Source: AES, 2018.

services. It is anticipated that the parking elevators at the rear of the Project Site would be exclusively used and operated by the hotel's valet parking attendants to gain access to the Project's subterranean parking spaces. Sources of noise within the parking garage would primarily include vehicular movements and engine noise, doors opening and closing, people talking, and intermittent car alarms. Noise levels generated within the parking garage would be effectively shielded from off-site sensitive receptor locations, as the subterranean parking levels would be fully enclosed on all sides. Primary noise sources would be from vehicles within the drop-off area. Table IV.H-15 on page IV.H-35 presents the estimated noise levels from the Project parking facility at the off-site receptor locations. As indicated in Table IV.H-15, the estimated noise from parking activities is estimated to range from 10.8 dBA (L_{eq}) at receptor location R5 to 55.6 dBA (L_{eq}) at receptor location R2. Thus, the noise levels would be less than the ambient noise levels and would be below the significance criteria of 5 dBA (L_{eq}) above ambient noise levels at all off-site receptor locations. Therefore, noise impacts associated with the Project parking facility would be less than significant.

(iv) Loading Dock and Trash Collection Areas

The hotel's loading area would be located within the interior of the ground floor parking level at the eastern portion of the hotel building. In addition, a self-contained trash compactor would be provided, which would be located inside an enclosed separate room at the south side of the ground floor. Noise sources associated with the loading dock and trash collection area would include delivery/trash collection trucks and trash compactor operations. Based on measured noise levels from typical loading dock facilities and trash compactors, delivery/trash collection trucks and trash compactors could generate noise levels of approximately 71 dBA (L_{eq}) and 66 dBA (L_{eq}), respectively, at a distance of 50 feet. Table IV.H-16 on page IV.H-35 presents the estimated noise levels at the off-site receptor locations from operation of the loading dock and trash compactor. As indicated in Table IV.H-16, the estimated noise from the loading dock and trash compactor operation

Table IV.H-14
Estimated Noise Levels from Outdoor Uses

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Outdoor Uses, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria[a]	Exceedance Over Significance Criteria	Significant Impact?
R1	58.4	34.7	58.4	63.4	0	No
R2	58.6	47.5	58.9	63.6	0	No
R3	68.2	56.7	68.5	73.2	0	No
R4	66.9	42.9	66.9	71.9	0	No
R5	68.6	24.3	68.6	73.6	0	No
R6	71.2	52.4	71.3	76.2	0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-7 on page IV.H-14) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

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

range from 16.7 dBA (L_{eq}) at receptor location R5 to 62.9 dBA (L_{eq}) at receptor location R2. The estimated noise levels from the loading dock and trash compactor would be below the significance criteria of 5 dBA (L_{eq}) above the ambient noise levels at all off-site receptor locations. Therefore, noise impacts from loading dock and trash compactor operations would be less than significant.

(b) Off-Site Mobile Noise Sources

(i) Future Plus Project

Future roadway noise levels were calculated along 35 roadway segments in the vicinity of the Project Site. The roadway noise levels were calculated using the traffic data provided in the Traffic Study and Revised Traffic Analysis prepared for the Project. As discussed in the Revised Traffic Analysis, the Project is expected to generate a net increase of 1,296 daily weekday trips. As such, Project-related traffic would increase the existing traffic volumes along the roadway segments in the study area when compared with Future Without Project conditions. This increase in roadway traffic was analyzed to determine if any traffic-related noise impacts would result from operation of the Project.

Table IV.H-17 on page IV.H-36 provides a summary of the roadway noise impact analysis. The calculated CNEL levels are conservatively calculated in front of the roadways and do not account for the presence of any physical sound barriers or intervening structures. As shown in Table IV.H-17, the Project would not result in a measurable increase in noise levels at most of the analyzed roadway segments. The

Table IV.H-15
Estimated Noise Levels from Parking Facilities

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Parking Facilities, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria[a]	Exceedance Over Significance Criteria	Significant Impact?
R1	58.4	38.1	58.4	63.4	0.0	No
R2	58.6	55.6	60.4	63.6	0.0	No
R3	68.2	50.0	68.3	73.2	0.0	No
R4	68.8	38.4	68.8	71.9	0.0	No
R5	68.6	10.8	68.6	73.6	0.0	No
R6	71.2	39.1	71.2	76.2	0.0	No

[a] *Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower (see Table IV.H-7 on page IV.H-14) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

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

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

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise Levels from Loading Dock and Trash Compactor, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria[a]	Exceedance Over Significance Criteria	Significant Impact?
R1	60.6	42.9	60.7	65.6	0	No
R2	60.8	62.9	65.0	65.8	0	No
R3	69.5	48.2	69.5	74.5	0	No
R4	66.9	31.4	66.9	71.9	0	No
R5	72.0	16.7	72.0	77.0	0	No
R6	71.7	36.3	71.7	76.7	0	No

[a] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-14) plus 5 dBA, per the City of Los Angeles Noise Regulations. If the estimated noise levels exceed those significance criteria, a noise impact is identified.*

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

Project is estimated to result in a maximum increase of up to 0.1 dBA (CNEL) in traffic-related noise levels along Vine Street (between Franklin Avenue and Hollywood Boulevard), Argyle Avenue (between Franklin Avenue and Yucca Street), and Yucca Street (between Vine Avenue and Gower Street). The increase in traffic noise levels is considered negligible and would be well below the relevant 3 dBA CNEL significance

Table IV.H-17
Roadway Traffic Noise Impacts—Future Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Project, CNEL (dBA)	Significant Impact?
		Future Without Project	Future Plus Project		
Cahuenga Boulevard					
– North of Hollywood Blvd.	Hotel, Commercial	73.6	73.6	0.0	No
– South of Hollywood Blvd.	Motel, Commercial	73.1	73.1	0.0	No
Ivar Avenue					
– North of Hollywood Blvd.	Residential, Commercial	67.4	67.4	0.0	No
– South of Hollywood Blvd.	Residential, Commercial	67.2	67.2	0.0	No
Vine Street					
– Between Franklin Ave. and Yucca St.	Residential, Hotel	71.6	71.7	0.1	No
– Between Yucca St. and Hollywood Blvd.	Residential, Hotel, Studio	72.5	72.6	0.1	No
– Between Hollywood Blvd. and Sunset Blvd.	Residential, Theater	72.8	72.8	0.0	No
– South of Sunset Blvd.	Theater, Religious	73.3	73.3	0.0	No
Argyle Avenue					
– North of Franklin Ave.	Residential	64.7	64.7	0.0	No
– Between Franklin Ave. and Yucca St.	Hotel, Commercial	69.6	69.7	0.1	No
– Between Yucca St. and Hollywood Blvd.	Residential, Theater	69.0	69.0	0.0	No
– South of Hollywood Blvd.	Residential, Commercial	68.7	68.7	0.0	No
Gower Street					
– North of Franklin Ave.	Residential	64.3	64.3	0.0	No
– Between Franklin Ave. and Yucca St.	Residential	70.8	70.8	0.0	No
– Between Yucca St. and Hollywood Blvd.	Residential, Religious	71.1	71.1	0.0	No
– South of Hollywood Blvd.	Residential, Commercial	71.3	71.3	0.0	No

Table IV.H-17 (Continued)
Roadway Traffic Noise Impacts—Future Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Project, CNEL (dBA)	Significant Impact?
		Future Without Project	Future Plus Project		
Bronson Avenue					
– North of Franklin Ave.	Residential, Commercial	68.4	68.4	0.0	No
– Between Franklin Ave. and Hollywood Blvd.	Residential, Commercial	69.1	69.1	0.0	No
– South of Hollywood Blvd.	Residential,	69.6	69.6	0.0	No
Franklin Avenue					
– West of Vine St.	Residential	72.3	72.3	0.0	No
– Between Vine St. and Gower St.	Residential, Commercial	73.1	73.1	0.0	No
– Between Gower St. and Bronson Ave.	Residential, School, Religious	73.6	73.6	0.0	No
– East of Bronson Ave.	Residential, Commercial	73.8	73.8	0.0	No
Yucca Street					
– West of Vine St.	Residential, School	67.3	67.4	0.1	No
– Between Vine St. and Argyle Ave.	Residential, Studio	66.7	66.8	0.1	No
– Between Argyle Ave. and Gower St.	Residential, Hotel	65.8	65.9	0.1	No
Hollywood Boulevard					
– West of Cahuenga Blvd.	Theater, Commercial	72.4	72.4	0.0	No
– Between Cahuenga Blvd. and Vine St.	Residential, Hotel, Theater, Commercial	72.5	72.5	0.0	No
– Between Vine St. and Gower St.	Residential, Hotel, Theater, Commercial	72.8	72.8	0.0	No
– Between Gower St. and Bronson Ave.	Hotel, Commercial	73.1	73.1	0.0	No
– East of Bronson Ave.	Religious, Commercial	73.3	73.3	0.0	No
Selma Avenue					
– West of Vine St.	Residential, Commercial	68.1	68.1	0.0	No
– East of Vine St.	Residential, Commercial	68.2	68.2	0.0	No

Table IV.H-17 (Continued)
Roadway Traffic Noise Impacts—Future Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Project, CNEL (dBA)	Significant Impact?
		Future Without Project	Future Plus Project		
Sunset Boulevard					
– West of Vine St.	Residential, Studio, Commercial	73.7	73.7	0.0	No
– East of Vine St.	Residential, Studio, Commercial	74.2	74.2	0.0	No

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

Source: AES, 2018.

criteria. Therefore, traffic noise impacts under Future Plus Project conditions would be less than significant.

(ii) Existing Plus Project

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

As shown in Table IV.H-18 on page IV.H-40, when compared with existing conditions, the Project would result in a maximum of 0.2 dBA (CNEL) increase in traffic noise along Yucca Street between Vine Street and Argyle Avenue. At other analyzed roadway segments, the Project traffic-related noise levels would not result in a measurable increase. The Existing Plus Project traffic noise analysis is conservative as baseline ambient mobile noise levels are expected to increase by the time the Project is completed. Nevertheless, the estimated increase in traffic noise levels as compared to existing conditions would be well below the relevant 3 dBA CNEL significance criteria. Therefore, traffic noise impacts under Existing Plus Project conditions would be less than significant.

(c) Composite Noise Level Impacts from Project Operations

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

The primary on-site noise sources associated with the Project operation would include the parking garage, mechanical equipment, and outdoor areas. Other noise sources include the loading dock and trash collection areas; however, these sources are located within the ground-level of the parking garage elevator area and would be mostly shielded to the off-site sensitive receptors. Table IV.H-19 on page IV.H-43 presents the estimated composite noise levels in terms of CNEL at the off-site sensitive receptor locations from these on-site noise sources. As indicated in Table IV.H-19, the Project would result in an increase in composite noise levels ranging from 0.1 dBA at receptor locations R4 and R6 to a maximum of 2.6 dBA at receptor location R2. The composite noise levels from the Project operation at the off-site receptor location R2 would be below

Table IV.H-18
Roadway Traffic Noise Impacts—Existing Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Project, CNEL (dBA)	Significant Impact?
		Existing	Existing Plus Project		
Cahuenga Boulevard					
– North of Hollywood Blvd.	Hotel, Commercial	72.9	72.9	0.0	No
– South of Hollywood Blvd.	Motel, Commercial	72.4	72.4	0.0	No
Ivar Avenue					
– North of Hollywood Blvd.	Residential, Commercial	67.1	67.1	0.0	No
– South of Hollywood Blvd.	Residential, Commercial	66.9	66.9	0.0	No
Vine Street					
– Between Franklin Ave. and Yucca St.	Residential, Hotel	70.9	71.0	0.1	No
– Between Yucca St. and Hollywood Blvd.	Residential, Hotel, Studio	71.5	71.6	0.1	No
– Between Hollywood Blvd. and Sunset Blvd.	Residential, Theater	72.0	72.1	0.1	No
– South of Sunset Blvd.	Theater, Religious	72.4	72.4	0.0	No
Argyle Avenue					
– North of Franklin Ave.	Residential	64.4	64.4	0.0	No
– Between Franklin Ave. and Yucca St.	Hotel, Commercial	68.9	68.9	0.0	No
– Between Yucca St. and Hollywood Blvd.	Residential, Theater	68.0	68.0	0.0	No
– South of Hollywood Blvd.	Residential, Commercial	68.2	68.2	0.0	No
Gower Street					
– North of Franklin Ave.	Residential	64.0	64.0	0.0	No
– Between Franklin Ave. and Yucca St.	Residential	70.3	70.3	0.0	No
– Between Yucca St. and Hollywood Blvd.	Residential, Religious	70.5	70.5	0.0	No
– South of Hollywood Blvd.	Residential, Commercial	70.3	70.3	0.0	No

Table IV.H-18 (Continued)
Roadway Traffic Noise Impacts—Existing Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Project, CNEL (dBA)	Significant Impact?
		Existing	Existing Plus Project		
Bronson Avenue					
– North of Franklin Ave.	Residential, Commercial	68.0	68.0	0.0	No
– Between Franklin Ave. and Hollywood Blvd.	Residential, Commercial	68.8	68.8	0.0	No
– South of Hollywood Blvd.	Residential,	68.8	68.8	0.0	No
Franklin Avenue					
– West of Vine St.	Residential	71.6	71.6	0.0	No
– Between Vine St. and Gower St.	Residential, Commercial	72.5	72.5	0.0	No
– Between Gower St. and Bronson Ave.	Residential, School, Religious	73.2	73.2	0.0	No
– East of Bronson Ave.	Residential, Commercial	73.4	73.4	0.0	No
Yucca Street					
– West of Vine St.	Residential, School	66.8	66.9	0.1	No
– Between Vine St. and Argyle Ave.	Residential, Studio	65.7	65.9	0.2	No
– Between Argyle Ave. and Gower St.	Residential, Hotel	64.1	64.1	0.0	No
Hollywood Boulevard					
– West of Cahuenga Blvd.	Theater, Commercial	71.1	71.2	0.1	No
– Between Cahuenga Blvd. and Vine St.	Residential, Hotel, Theater, Commercial	71.0	71.0	0.0	No
– Between Vine St. and Gower St.	Residential, Hotel, Theater, Commercial	71.6	71.6	0.0	No
– Between Gower St. and Bronson Ave.	Hotel, Commercial	71.6	71.6	0.0	No
– East of Bronson Ave.	Religious, Commercial	71.8	71.9	0.1	No
Selma Avenue					
– West of Vine St.	Residential, Commercial	67.6	67.6	0.0	No
– East of Vine St.	Residential, Commercial	67.7	67.7	0.0	No

Table IV.H-18 (Continued)
Roadway Traffic Noise Impacts—Existing Plus Project

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Project, CNEL (dBA)	Significant Impact?
		Existing	Existing Plus Project		
Sunset Boulevard					
– West of Vine St.	Residential, Studio, Commercial	72.5	72.5	0.0	No
– East of Vine St.	Residential, Studio, Commercial	72.8	72.8	0.0	No

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

Source: AES, 2018.

Table IV.H-19
Composite Noise Impacts

Receptor Location[a]	Existing Ambient Noise Levels, CNEL (dBA)	Calculated Project-Related Noise Sources, CNEL (dBA)					Project Composite Noise Levels, CNEL (dBA)	Ambient plus Project Noise Levels, CNEL (dBA)	Increase in Noise Levels due to Project, CNEL (dBA)	Sig. Impact?
		Traffic	Mechanical	Parking	Loading/ Trash Compactor	Outdoor Spaces				
R1	63.6	48.4	56.7	39.3	37.0	38.8	57.4	64.5	0.9	No
R2	63.8	51.5	58.4	56.8	57.0	51.6	66.4	66.4	2.6	No
R3	73.2	55.2	49.6	51.2	42.3	60.8	62.5	73.6	0.4	No
R4	73.2	55.2	44.2	39.6	25.6	46.9	56.2	73.3	0.1	No
R5	74.2	41.6	37.9	12.0	13.0	28.4	43.3	74.2	0.0	No
R6	76.0	47.6	49.8	40.3	30.4	56.5	57.9	76.1	0.1	No

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

the 5 dBA significance criteria. Therefore, composite noise level impacts due to Project operations would be less than significant.

(d) Land Use Compatibility

Based on the measured ambient noise levels, the exterior noise levels at the Project Site range from 63.6 dBA CNEL at the eastern boundary of the Project Site (based on measurements at receptor location R1) to 73.2 dBA CNEL at the western boundary of the Project Site (based on measurements at receptor location R3). According to the City of Los Angeles Guidelines for Noise Compatible Land Use (refer to Table IV.H-2 on page IV.H-7), the Project Site would be considered "normally unacceptable" for hotel development (between 70 and 75 dBA CNEL). In accordance with Section 91.1207.11.2 of the LAMC and Section 1207 of the 2016 California Building Standards Code, the Project would include necessary noise insulation features, such as insulated glass windows and doors, to achieve an interior noise environment that does not exceed 45 dBA CNEL for the hotel uses. Therefore, noise impacts associated with land use compatibility would be less than significant.

(e) Summary of Operational Noise Impacts

As discussed above, the Project would not result in the generation of a substantial permanent increase in ambient noise levels in the vicinity of the Project Site in excess of standards established by the City. Operational noise impacts from on-site (stationary) and off-site (mobile) sources would be less than significant and no mitigation measures are required.

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

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

(1) Building Damage Impacts from On-Site Construction

With regard to potential building damage, the Project would generate ground-borne construction vibration during building demolition and site excavation/grading activities when heavy construction equipment, such as large bulldozers, drill rigs, and loaded trucks, would be used. The FTA has published standard vibration velocities for various construction equipment operations. Table IV.H-20 on page IV.H-46 provides the estimated vibration levels (in terms of inch per second PPV) at the nearest off-site structures to the Project Site. It is noted that since impact pile driving methods would not be used during construction of the Project, in accordance with Project Design Feature NOI-PDF-2 provided above, impact pile driving vibration is not included in the on-site construction vibration analysis. Installation of piles for shoring and foundation would utilize a drilling method to minimize vibration generation.

As discussed in Section IV.C, Cultural Resources, of this Draft EIR, the Equitable Building , the Pantages Theatre and the Capitol Records Building are considered historical resources. Generally, a criteria of 0.12 PPV is utilized for historic structures that are extremely susceptible to vibration damage. However, the Equitable Building and the Capitol Records Building are reinforced concrete buildings. Therefore, the significance criteria of 0.5 PPV for reinforced concrete structure is applicable for the Equitable Building and the Capital Records Building and 0.12 PPV is applicable for the Pantages Theatre. As indicated in Table IV.H-20, the estimated ground-borne vibration velocity levels from all construction equipment would be below the building damage significance criteria at the Capitol Records building to the north, the Equitable Building to the south, and the Redbury Hollywood Hotel building to the west. However, the estimated vibration levels at the Pantages Theatre to the east would exceed the applicable 0.12 PPV significance criteria. Therefore, vibration impacts associated with potential building damage would be significant without mitigation measures. As provided below in Section IV.H.5, Mitigation Measures, Mitigation Measure NOI-MM-2 would be implemented to reduce the Project's construction vibration impacts associated with potential building damage. **With implementation of mitigation, impacts would be reduced to a less than significant level.**

(2) Human Annoyance Impacts from On-Site Construction

Table IV.H-21 on page IV.H-47 provides the estimated vibration levels at the off-site sensitive uses due to construction equipment operation and compares the estimated vibration levels to the specified significance criteria for human annoyance. Per FTA guidance, the significance criteria for human annoyance is 72 VdB for sensitive uses, including residential and hotel uses (where people normally sleep) and 65 VdB for recording studios, assuming there are a minimum of 70 vibration events occurring during a typical construction day. As indicated in Table IV.H-21, the estimated ground-borne vibration levels from construction equipment would be below the significance criteria for

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

Off-Site Building Structure[a]	Estimated Vibration Velocity Levels at the Outside of and Adjacent to the Nearest Off-Site Structures from the Project Construction Equipment,[b] inch/second (PPV)					Significance Criteria, PPV	Sig. Impact?
	Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	0.089	0.089	0.076	0.035	0.003	—	—
Capitol Records building north of the Project Site	0.005	0.005	0.004	0.002	<0.001	0.5[c]	No
Equitable Building adjacent to the Project Site to the south	0.493	0.493	0.421	0.194	0.017	0.5[c]	No
Pantages Theatre building adjacent to the Project Site to the east	0.238	0.238	0.204	0.094	0.008	0.12[d]	Yes
Redbury Hollywood hotel building, west of the Project Site	0.010	0.010	0.009	0.004	<0.001	0.2[e]	No

[a] *Represents off-site building structures located nearest to the Project Site to the North, South, East and West.*

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

[c] *FTA criteria for reinforced concrete building structures. Generally, a significance threshold of 0.12 PPV is utilized for historic structures that are extremely susceptible to vibration damage. However, the Equitable Building and the Capitol Records Building are reinforced concrete building; therefore, the applicable significance threshold of 0.5 PPV is used.*

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

[e] *FTA criteria for non-engineered timber and masonry building structures.*

Source: FTA, 2006; AES, 2016. See Appendix F of this Draft EIR.

human annoyance at off-site sensitive receptor locations R3 through R6. However, the estimated ground-borne vibration levels from Project construction would exceed the significance criteria at the Pantages Theatre (receptor location R1) and the Equitable Building (receptor location R2). **Therefore, vibration impacts during construction of the Project would be significant, pursuant to the significance criteria for human annoyance.**

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

Off-Site Receptor Location	Estimated Vibration Velocity Levels at the Off-Site Sensitive Uses due to On-Site Construction Equipment Operation,[a] VdB					Significance Criteria, VdB	Sig. Impact?
	Large Bulldozer	Caisson Drilling	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	87	87	86	79	58	—	—
R1	98	98	97	90	69	72[b]	Yes
R2	106	106	105	98	77	72[b]	Yes
R3	68	68	67	60	39	72[b]	No
R4	61	61	60	53	32	65[c]	No
R5	56	56	55	48	27	72[b]	No
R6	58	58	57	50	29	72[b]	No

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

[b] *FTA criteria for residential/hotel/theatre uses with frequent events.*

[c] *FTA criteria for recording studio use.*

Source: FTA, 2006; AES, 2016. See Appendix F of this Draft EIR.

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

As described above, construction delivery/haul trucks would travel between the Project Site and the US-101 Freeway via Hollywood Boulevard and Vine Street. Heavy-duty construction trucks would generate ground-borne vibration as they travel along the Project's anticipated haul route. Thus, an analysis of potential vibration impacts using the building damage and human annoyance criteria for ground-borne vibration along the anticipated local haul route was conducted.

Regarding building damage, based on FTA data, the vibration generated by a typical heavy-duty truck would be approximately 63 VdB (0.006 PPV) at a distance of 50 feet from the truck.[31] According to the FTA "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads." Nonetheless, there are existing buildings along the Project's anticipated haul route that are situated approximately 20 feet from the right-of-way and would be exposed to ground-borne vibration levels of approximately 0.022 PPV, as provided in the noise calculation

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

worksheets included in Appendix F of this Draft EIR. This estimated vibration generated by construction trucks traveling along the anticipated haul route would be well below the most stringent building damage criteria of 0.12 PPV for buildings extremely susceptible to vibration. Therefore, vibration impacts (pursuant to the significance criteria for building damage) from off-site construction activities (i.e., construction trucks traveling on public roadways) would be less than significant.

As discussed above, per FTA guidance, the significance criteria for human annoyance is 72 VdB for sensitive uses, including residential, hotel and theater uses, and 65 VdB for recording studios. It should be noted that buses and trucks rarely create vibration that exceeds 70 VdB at 50 feet from the receptor unless there are bumps in the road.[32] To provide a conservative analysis, the estimated vibration levels generated by construction trucks traveling along the anticipated haul route were assumed to be within 20 feet of the sensitive uses along Hollywood Boulevard and Vine Street. As indicated in the noise calculation worksheets included in Appendix F of this Draft EIR, the temporary vibration levels could reach approximately 75 VdB periodically as trucks pass sensitive receptors along the anticipated haul route. There are residential, hotel and theatre uses along Hollywood Boulevard and Vine Street (between the Project Site and the US-101 Freeway), which would be exposed to ground-borne vibration above the 72-VdB significance criteria from the construction trucks. In addition, the Capitol Records building would be exposed to ground-borne vibration from haul trucks, which would exceed the 65-VdB significance criteria for recording studios. Therefore, potential vibration impacts with respect to human annoyance that would result from temporary and intermittent vibration from construction trucks traveling along the anticipated haul route would be significant.

(4) Summary of Construction Vibration Impacts

As discussed above, the estimated vibration levels from Project construction equipment would be below the building damage significance criteria of 0.2 PPV for the off-site building structures to the west and 0.5 PPV for the off-site building structures to the north and south. However, the vibration levels from construction equipment would exceed the 0.12 PPV significance criteria for the Pantages Theatre building. Therefore, vibration impacts (pursuant to the significance criteria for building damage) during construction of the Project would be significant without mitigation. Implementation of Mitigation Measure NOI-MM-2 would reduce the Project's on-site construction vibration impacts at the off-site Pantages Theatre to a less than significant level.

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[32] *Id. at Section 7.2.1.*

Vibration impacts from on-site construction activities would be significant pursuant to the significance criteria for human annoyance. There are no feasible mitigation measures that could be implemented to reduce the temporary vibration impacts from on-site construction associated with human annoyance to a less-than-significant level. Therefore, vibration impacts from on-site construction activities with respect to human annoyance would be significant and unavoidable.

Vibration impacts (pursuant to the significance criteria for building damage) from off-site construction activities would be less than significant.

Vibration impacts associated with temporary and intermittent vibration from construction trucks traveling along the anticipated haul route would be significant with respect to human annoyance. There are no feasible mitigation measures that would reduce the potential vibration impacts with respect to human annoyance. Therefore, vibration impacts from off-site construction with respect to human annoyance would be significant and unavoidable.

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

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

As discussed in Section VI, Other CEQA Considerations (Subsection VI.6.k.), of this Draft EIR and in the Initial Study (Appendix A of this Draft EIR), the Project Site is not located within the vicinity of a private airstrip, within 2 miles of an airport, or within an area subject to an airport land use plan. The closest airport is the Bob Hope Airport in Burbank, which is located approximately 6.5 miles from the Project Site. **The Project would not expose people residing or working in the Project area to excessive airstrip- or airport-related noise levels. No impacts would occur and no mitigation measures are required.**

4. Cumulative Impacts

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

a. Construction Noise

(1) On-Site Construction Noise

As indicated in Section III, Environmental Setting, of this Draft EIR, a total of 106 related projects, as well as the Hollywood Community Plan Update, have been identified in the vicinity of the Project Site. Noise from construction of development projects is typically localized and has the potential to affect noise-sensitive uses within 500 feet from the construction site, based on the *L.A. CEQA Thresholds Guide* screening criteria. Thus, noise from construction activities for two projects within 1,000 feet of each other can contribute to a cumulative noise impact for receptors located midway between the two construction sites. While the majority of the related projects are located a substantial distance (greater than 1,000 feet) from the Project Site, there are 11 related projects located within 1,000 feet of the Project Site:

- Related Project No. 4 (BLVD 6200 Mixed-Use) a mixed-use development located at 6200 Hollywood Boulevard. This related project is under construction and is likely to be completed before the Project construction. Therefore, Related Project No. 4 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 3 (Yucca Street Condos) a mixed-use development located at 6230 Yucca Street. This related project is also under construction and is likely to be completed before the Project construction. Therefore, Related Project No. 3 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 9 a mixed-use development located at 6140 Hollywood Boulevard, approximately 750 feet southeast of the Project Site. There are sensitive receptors located between the Project Site and Related Project No. 9 including the apartment buildings located along Hollywood Boulevard between Argyle Avenue and El Centro Avenue (receptor location R5) and the Pantages Theater (receptor R1), which could be exposed to the construction noise at the Project and the Related Project No. 9. However, the existing ambient noise levels along Hollywood Boulevard are high and there are intervening buildings located between the Project Site and Related Project No. 9 construction areas. Therefore, cumulative noise impacts would not be expected in the event concurrent construction of the Project and Related Project No. 9 were to occur.

- Related Project No. 10 (Hollywood Gower Mixed-Use) a mixed-use development located at 6100 Hollywood Boulevard, approximately 930 feet southeast of the Project Site. There are sensitive receptors located between the Project Site and Related Project No. 10 including the apartment buildings located along Hollywood Boulevard between Argyle Avenue and El Centro Avenue (receptor location R5), the Pantages Theater (receptor R1), and the W Hollywood Hotel (receptor location R6), which could be exposed to the construction noise at the

Project and the Related Project No. 10. However, the existing ambient noise levels along Hollywood Boulevard are high and there are intervening buildings located between the Project Site and Related Project No. 10 construction areas. Therefore, cumulative noise impacts would not be expected in the event concurrent construction of the Project and Related Project No. 10 were to occur.

- Related Project No. 2 (Pantages Theater Office) an office development located at 6225 Hollywood Boulevard, adjacent to the Project Site to the east. The Equitable Building at the northeast corner of the Vine Street and Hollywood Boulevard (receptor location R2) is located adjacent to both the Project Site (to the north) and Related Project No. 2 (to the east). Due to the close proximity to the construction areas of the Project and the Related Project No. 2, cumulative noise impacts would be significant in the event of concurrent construction of the Project and Related Project No. 2.

- Related Project No. 7 (Selma & Vine Office Project) a commercial/office development located at 1601 Vine Street, approximately 720 feet south of the Project Site. However, Related Project No. 7 has been constructed, and as such, would not contribute to cumulative construction-related noise impacts.

- Related Project No. 6 (Argyle Hotel Project) a 225-room hotel development located at 1800 Argyle Avenue, approximately 580 feet northeast of the Project Site. However, construction for this related project is completed. Therefore, Related Project No. 6 would not contribute to cumulative construction-related noise impacts.

- Related Project No. 8 (Hotel & Restaurant Project) located at 6381 Hollywood Boulevard, approximately 800 feet west of the Project Site. There are sensitive receptors located between the Project Site and Related Project No. 8 including, the Redbury Hotel (receptor location R3) and the Knickerbocker Apartment building (located on Ivar Avenue), which could be exposed to the construction noise at the Project and the Related Project No. 8. However, there are tall buildings located between the Project Site and Related Project No. 8 construction areas, which would provide adequate noise reduction from construction activities at the two project locations. Therefore, cumulative noise impacts would not be expected in the event concurrent construction of the Project and Related Project No. 8 were to occur.

- Related Project No. 1 (Millennium Hollywood Mixed-Use Project) a mixed-use development located at 1740 Vine Street, adjacent to the Project Site to the north. There are sensitive uses located near Related Project No. 1 and the Project Site, including the Pantages Theater (receptor location R1), the Equitable Building south of the Project Site (receptor location R2), the Redbury Hotel to the west (receptor location R3), and the Capitol Records building (receptor location R4), which could be exposed to construction noise from the Project and the Related Project No. 1. As discussed above, the estimated unmitigated Project-related construction noise levels at receptor locations R1, R2, R3 and R4 would

exceed the ambient noise by more than 5 dBA. Therefore, in the event concurrent construction activities occur, cumulative construction noise impacts associated with the Project and Related Project No. 1 would exceed the 5-dBA significance criteria. Therefore, construction noise impacts resulting from both projects would be cumulatively considerable and would be considered significant.

- Related Project No. 11 (Modera Argyle) a mixed-use development located at 1546 Argyle Avenue, approximately 935 feet southeast of the Project Site. There are noise-sensitive uses located between the Project and the Related Project No. 11, including the 1600 Vine apartment, the W Hollywood Hotel (receptor location R6), the Equitable Building at Vine and Hollywood (receptor location R2), and the Pantages Theatre (receptor R1). However, there are multiple buildings located between the Project Site and the Related Project No. 11 construction areas, which would provide adequate noise reduction from construction activities at the two project locations. Therefore, cumulative noise impacts would not be expected in the event concurrent construction of the Project and Related Project No. 11 were to occur.

- Related Project No. 5 (Mixed-Use Project) a hotel, residential and restaurant development located at 6220 Yucca Street, approximately 470 feet north east of the Project Site. There are sensitive uses located between the Related Project No. 5 and the Project Site, including the Pantages Theatre (receptor location R1), the Capitol Records building (receptor location R4), and the apartment building on Argyle Avenue (receptor location R5) which could be exposed to construction noise from the Project and Related Project No. 5. As discussed above, the estimated unmitigated Project-related construction noise levels at receptor locations R1 and R4 would exceed the ambient noise by more than 5 dBA. Therefore, in the event concurrent construction activities occur, cumulative construction noise impacts associated with the Project and Related Project No. 5 would exceed the 5-dBA significance criteria. Therefore, construction noise impacts resulting from both projects would be cumulatively considerable and would be considered significant.

Construction-related noise levels from the related projects would be intermittent and temporary, and it is anticipated that, as with the Project, the related projects would comply with the construction hours and other relevant provisions set forth in the LAMC. Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed mitigation measures for each individual related project and compliance with locally adopted and enforced noise ordinances. Nonetheless, if nearby related projects, including Related Project No. 1, Related Project No. 2, and Related Project No. 5 were to be constructed concurrently with the Project, significant cumulative construction noise impacts would result.

(2) Off-Site Construction Noise

In addition to the cumulative impacts of on-site construction activities, off-site construction haul trucks would have a potential to result in cumulative impacts if the trucks for the related projects and the Project were to utilize the same haul route. Specifically, based on the existing daytime ambient noise level of 66.9 dBA (L_{eq}) measured along Vine Street at receptor location R4 (refer to Table IV.H-7 on page IV.H-14), it is estimated that up to 87 truck trips per hour could occur along Vine Street (between Hollywood Boulevard and the US-101 Freeway) without exceeding the significance criteria of 5 dBA above ambient noise levels (i.e., 71.9 dBA L_{eq}). Therefore, if the total number of trucks from the Project and related projects were to add up to 88 truck trips per hour along Vine Street, the estimated noise level from 88 truck trips per hour would be 71.9 dBA at receptor location R4, which would exceed the ambient noise levels by 5 dBA and exceed the significance criteria. The Project would generate up to 18 truck trips per hour during peak construction period (site excavation). In addition, during peak periods it is possible that the total cumulative truck traffic related to construction of the Project and other related projects would cumulatively add up to 88 or more hourly truck trips. Therefore, it is conservatively concluded that the Project's contribution to cumulative noise impacts would be cumulatively considerable and cumulative noise impacts from off-site construction would be significant and unavoidable.

(3) Summary of Cumulative Construction Noise Impacts

As discussed above, if nearby related projects were to be constructed concurrently with the Project, significant cumulative construction noise impacts could result. Implementation of Mitigation Measure NOI-MM-1 provided below would serve to reduce the Project's construction noise impacts from on-site activities to a less-than-significant level at one impacted receptor location. While it is anticipated that nearby related projects would similarly implement mitigation measures to address any potential noise impacts from on-site construction activities, potential cumulative impacts as a result of construction of the Project and nearby related projects cannot be precluded. **Therefore, cumulative construction noise impacts from on-site activities would be significant and unavoidable.**

Off-site construction activities from the Project and related projects would result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the Project Site in excess of standards established by the City. Therefore, cumulative noise impacts from off-site construction activities would be significant.

b. Construction Vibration

(1) On-Site Construction Vibration

As previously discussed, ground-borne vibration decreases rapidly with distance. Potential vibration impacts due to construction activities are generally limited to buildings/structures that are located in proximity to the construction site (i.e., within 15 feet as related to building damage and 80 feet as related to human annoyance at residential uses). As indicated above, the nearest related projects to the Project Site are Related Project No. 2 (located immediately east of the Project Site) and Related Project No. 1 (located immediately north of the Project Site).

With regard to the potential building damage, the construction activities at Related Project No. 1 would be as close as two feet from the Pantages Theatre.[33] As concluded in the Draft EIR previously prepared for Related Project No. 1, vibration impacts associated with building damage would be significant before mitigation. However, potential for building damage would be reduced to a less than significant level after mitigation. Similarly, potential vibration impacts associated with the Project would be reduced to a less than significant impact. Therefore, potential cumulative construction vibration impact with respect to building damage associated with ground-borne vibration from on-site sources would be less than significant and would not be cumulatively considerable.

With regard to human annoyance, the construction activities from on-site construction activities at the Project and Related Project No. 1 would exceed the vibration criteria at the Pantages Theatre. As concluded in the Draft EIR previously prepared for Related Project No. 1, the potential ground-borne vibration impacts at the Pantages Theatre would be significant and unavoidable. As discussed above, the estimated maximum vibration level from the Project construction would exceed the 72 VdB significance criteria at the Pantages Theatre. There are no feasible physical mitigation measures that would reduce the vibration impacts to less than significant level. Therefore, cumulative construction vibration impacts pursuant to the criteria for human annoyance would be significant in the event concurrent construction of the Project and Related Project No. 1 were to occur.

(2) Off-Site Construction Vibration

As previously discussed, based on FTA data, the vibration generated by a typical heavy truck would be approximately 63 VdB (0.006 PPV) at a distance of 50 feet from the

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[33] *City of Los Angeles, Millennium Hollywood Project Draft Environmental Impact Report, October 2012.*

truck.[34] In addition, according to the FTA "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads." As discussed above, there are existing buildings that are approximately 25 feet from the right-of-way of the anticipated haul route for the Project (i.e., Hollywood Boulevard and Vine Street). These buildings are anticipated to be exposed to ground-borne vibration levels of approximately 0.016 PPV. Trucks from the related projects are expected to generate similar ground-borne vibration levels. Therefore, the vibration levels generated from off-site construction trucks associated with the Project and other related projects along the anticipated haul route(s) would be well below the most stringent building damage criteria of 0.12 PPV. Therefore, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant and would not be cumulatively considerable.

As discussed above, potential vibration impacts associated with temporary and intermittent vibration from project-related construction trucks traveling along the Project's anticipated haul route would be significant with respect to human annoyance. As related projects would be anticipated to use similar trucks as the Project, it is anticipated that construction trucks would generate similar vibration levels along the anticipated haul route as the Project (i.e., Hollywood Boulevard and Vine Street). As discussed above, the estimated vibration level of 75 VdB (from haul trucks) at the sensitive receptors along the Project's haul route would exceed the 72 VdB significance criteria. In addition, the haul truck-generated vibration would exceed the 65 VdB significance criteria for recording studio uses (i.e., Capitol Records located on Vine Street). Therefore, the vibration impacts from the construction trucks associated with the Project would be cumulative considerable. As such, to the extent that other related projects use the same haul route as the Project, potential cumulative human annoyance impacts associated with temporary and intermittent vibration from haul trucks traveling along the designated haul routes would be significant.

(3) Summary of Cumulative Construction Vibration Impacts

As discussed above, there is no potential for a cumulative construction vibration impact with respect to building damage associated with ground-borne vibration from on-site sources (with mitigation measures implemented). In addition, potential cumulative vibration impacts with respect to building damage from off-site construction would be less than significant. **Therefore, on-site and off-site construction activities associated with the Project and related projects would not generate excessive ground-borne vibration levels with respect to building damage.**

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

Cumulative construction vibration impacts pursuant to the criteria for human annoyance would be significant in the event concurrent construction of the Project and Related Project No. 1 (the nearest vibration-producing related project to the Project) were to occur. In addition, to the extent that other related projects use the same haul route as the Project, potential cumulative human annoyance impacts associated with temporary and intermittent vibration from haul trucks traveling along the designated haul route would also be significant. **Thus, on-site and off-site construction activities associated with the Project and related projects would generate excessive ground-borne vibration levels with respect to human annoyance.**

c. Operational Noise

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

(1) On-Site Noise Sources

Due to provisions set forth in the LAMC that limit stationary source noise from items, such as roof-top mechanical equipment, noise levels would be less than significant at the property line for each related project. As discussed above, noise impacts associated with operations within the Project Site would be less than significant with implementation of the proposed project design features. Therefore, cumulative noise impacts from on-site operational noise would be less than significant.

(2) Off-Site Mobile Noise Sources

The Project and related projects in the area would produce traffic volumes (off-site mobile sources) that would generate roadway noise. Cumulative noise impacts due to off-site traffic were analyzed by comparing the projected increase in traffic noise levels from existing conditions to Future Plus Project conditions to the applicable significance criteria. Future Plus Project conditions include traffic volumes from future ambient growth, related projects, and the Project. The calculated traffic noise levels under existing and Future Plus Project conditions are presented in Table IV.H-22 on page IV.H-57. As shown therein,

Table IV.H-22
Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Cumulative, CNEL (dBA)	Significant Impact?
		Existing	Future Plus Project		
Cahuenga Boulevard					
– North of Hollywood Blvd.	Hotel, Commercial	72.9	73.6	0.7	No
– South of Hollywood Blvd.	Motel, Commercial	72.4	73.1	0.7	No
Ivar Avenue					
– North of Hollywood Blvd.	Residential, Commercial	67.1	67.4	0.3	No
– South of Hollywood Blvd.	Residential, Commercial	66.9	67.2	0.3	No
Vine Street					
– Between Franklin Ave. and Yucca St.	Residential, Hotel	70.9	71.7	0.8	No
– Between Yucca St. and Hollywood Blvd.	Residential, Hotel, Studio	71.5	72.6	1.1	No
– Between Hollywood Blvd. and Sunset Blvd.	Residential, Theater	72.0	72.8	0.8	No
– South of Sunset Blvd.	Theater, Religious	72.4	73.3	0.9	No
Argyle Avenue					
– North of Franklin Ave.	Residential	64.4	64.7	0.3	No
– Between Franklin Ave. and Yucca St.	Hotel, Commercial	68.9	69.7	0.8	No
– Between Yucca St. and Hollywood Blvd.	Residential, Theater	68.0	69.0	1.0	No
– South of Hollywood Blvd.	Residential, Commercial	68.2	68.7	0.5	No
Gower Street					
– North of Franklin Ave.	Residential	64.0	64.3	0.3	No
– Between Franklin Ave. and Yucca St.	Residential	70.3	70.8	0.5	No
– Between Yucca St. and Hollywood Blvd.	Residential, Religious	70.5	71.1	0.6	No
– South of Hollywood Blvd.	Residential, Commercial	70.3	71.3	1.0	No

Table IV.H-22 (Continued)
Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Cumulative, CNEL (dBA)	Significant Impact?
		Existing	Future Plus Project		
Bronson Avenue					
– North of Franklin Ave.	Residential, Commercial	68.0	68.4	0.4	No
– Between Franklin Ave. and Hollywood Blvd.	Residential, Commercial	68.8	69.1	0.3	No
– South of Hollywood Blvd.	Residential,	68.8	69.6	0.8	No
Franklin Avenue					
– West of Vine St.	Residential	71.6	72.3	0.7	No
– Between Vine St. and Gower St.	Residential, Commercial	72.5	73.1	0.6	No
– Between Gower St. and Bronson Ave.	Residential, School, Religious	73.2	73.6	0.4	No
– East of Bronson Ave.	Residential, Commercial	73.4	73.8	0.4	No
Yucca Street					
– West of Vine St.	Residential, School	66.8	67.4	0.7	No
– Between Vine St. and Argyle Ave.	Residential, Studio	65.7	66.8	1.1	No
– Between Argyle Ave. and Gower St.	Residential, Hotel	64.1	65.9	1.8	No
Hollywood Boulevard					
– West of Cahuenga Blvd.	Theater, Commercial	71.1	72.4	1.3	No
– Between Cahuenga Blvd. and Vine St.	Residential, Hotel, Theater, Commercial	71.0	72.5	1.5	No
– Between Vine St. and Gower St.	Residential, Hotel, Theater, Commercial	71.6	72.8	1.2	No
– Between Gower St. and Bronson Ave.	Hotel, Commercial	71.6	73.1	1.5	No
– East of Bronson Ave.	Religious, Commercial	71.8	73.3	1.5	No
Selma Avenue					
– West of Vine St.	Residential, Commercial	67.6	68.1	0.5	No
– East of Vine St.	Residential, Commercial	67.7	68.2	0.5	No

Table IV.H-22 (Continued)
Cumulative Roadway Traffic Noise Impacts

Roadway Segment	Adjacent Land Use	Calculated Traffic Noise Levels[a] CNEL (dBA)		Increase in Noise Levels due to Cumulative, CNEL (dBA)	Significant Impact?
		Existing	Future Plus Project		
Sunset Boulevard					
– West of Vine St.	Residential, Studio, Commercial	72.5	73.7	1.2	No
– East of Vine St.	Residential, Studio, Commercial	72.8	74.2	1.4	No

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

Source: AES, 2018.

cumulative traffic volumes would result in a maximum increase of 1.8 dBA (CNEL) along the roadway segments of Yucca Street (between Argyle Avenue and Gower Street), which would be below the relevant 5 dBA significance criteria (applicable when noise levels fall within the conditionally acceptable category). At all other analyzed roadway segments, the increase in cumulative traffic noise would be less than 1.8 dBA (CNEL). Therefore, cumulative noise impacts due to off-site mobile noise sources associated with the Project, future growth, and related projects would be less than significant.

(3) Summary of Cumulative Operational Noise Impacts

As discussed above, cumulative operational noise impacts from on-site and off-site sources would be less than significant. **Therefore, the Project and related projects would not result in the generation of a substantial permanent increase in ambient noise levels in the vicinity of the Project Site in excess of standards established by the City.**

5. Mitigation Measures

a. Construction

As analyzed above, construction of the Project would have the potential to result in significant noise impacts at the off-site sensitive receptor locations and vibration impacts with respect to building damage at the building adjacent to the Project Site to the east (the Pantages Theatre), which would require mitigation. Although the estimated vibration levels at the Equitable Building would be just below the significance threshold, mitigation would be provided to ensure that the construction-related vibration would not exceed the significance threshold. As it relates to potential damages to adjacent buildings from Project construction, the Project would be subject to Section 91.3307 of the LAMC (Protection of Adjoining Property). Specifically, Section 91.3307.1 (Protection Required) states adjoining public and private property shall be protected from damage during construction, remodeling and demolition work. Thus, the following measures would be implemented to minimize construction-related noise and vibration impacts:

NOI-MM-1: A temporary and impermeable sound barrier shall be erected during the Project's construction phase as follows:

1) Along the Project Site's eastern property line. The temporary sound barrier shall be designed to provide a 10-dBA noise reduction at the ground level of the Pantages Theatre.
2) Along the Project Site's western property line. The temporary sound barrier shall be designed to provide a 5-dBA noise reduction at ground level of the Redbury Hotel.

NOI-MM-2: Prior to start of construction, the Project Applicant shall retain the services of a structural engineer to visit the Pantages Theatre and the Equitable Building , to inspect and document (video and/or photographic) the apparent physical condition of the buildings, including but not limited to the building structure, interior wall, and ceiling finishes. In addition, the structural engineer shall establish baseline structural conditions of the building and prepare a shoring design (See Mitigation Measure CUL-MM-1 in Section IV.C, Cultural Resources of this Draft EIR for required qualifications of the structural engineer).

The Project Applicant shall retain the services of a qualified acoustical engineer to review proposed construction equipment and develop and implement a vibration monitoring program capable of documenting the construction-related ground vibration levels at the Pantages Theatre and the Equitable Building during demolition, excavation, and construction of the parking garage. The vibration monitoring system shall measure (in vertical and horizontal directions) and continuously store the peak particle velocity (PPV) in inch/second. Vibration data shall be stored on a one-second interval. The system shall also be programmed for two preset velocity levels: a warning level of 0.10 inch/second (PPV) for the Pantages Theater and 0.45 inch/second (PPV) for the Equitable Building and a regulatory level of 0.12 inch/second (PPV) for the Pantages Theater and 0.50 inch/second (PPV) for the Equitable Building. The system shall also provide real-time alert when the vibration levels exceed the two preset levels.

The vibration monitoring program shall be submitted to the Department of Building and Safety, prior to initiating any construction activities.

In the event the warning level (0.10 inch/second (PPV) for the Pantages Theater and 0.45 inch/second (PPV) for the Equitable Building) is triggered, the contractor shall identify the source of vibration generation and provide feasible steps to reduce the vibration level, including but not limited to halting/staggering concurrent activities and utilizing lower vibratory techniques.

In the event the regulatory level (0.12 inch/second (PPV) for the Pantages Theater and 0.50 inch/second (PPV) for the Equitable Building is triggered, the contractor shall halt the construction activities in the vicinity of the building and visually inspect the building for any damage. Results of the inspection must be logged. The contractor shall identify the source of vibration generation and provide feasible steps to reduce the vibration level. Construction activities may then restart.

In the event damage occurs to historic finish materials due to construction vibration, such materials shall be repaired in consultation

with a qualified preservation consultant and, if warranted, in a manner that meets the Secretary of the Interior's Standards.

b. Operation

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

6. Level of Significance After Mitigation

a. Construction Noise

(1) On-Site Construction Noise

Implementation of Mitigation Measure NOI-MM-1 provided above would reduce the Project's and cumulative construction noise levels to the extent feasible. Specifically, implementation of Mitigation Measure NOI-MM-1 (installation of temporary sound barriers) would reduce the noise generated by on-site construction activities at the off-site sensitive uses, by minimum 5 dBA at the Redbury Hotel (receptor location R3) and by 10 dBA at the Pantages Theatre (receptor location R1). As presented in Table IV.H-23 on page IV.H-63, the estimated construction-related noise levels at off-site sensitive receptor location R3 would be reduced to below a level of significance with implementation of Mitigation Measure NOI-MM-1; however, construction noise levels at the Pantages Theatre would remain significant even after mitigation. In addition, mitigation measures considered to reduce noise impacts from on-site construction activities at the Equitable Building (receptor location R2) included the use of a similar temporary sound barrier to reduce construction noise. However, in order to be effective, a sound barrier in this location would need to break the line-of-sight between construction activities at the Project Site and the residential uses located on the upper floors of the 12-story Equitable Building , and would therefore need to reach the same 12 stories in height. The construction of a barrier of this height would not be feasible.[35] Thus, it is concluded that there are no feasible mitigation measures that could be implemented to reduce the temporary noise impacts from on-site construction to the Equitable Building . Therefore, the construction noise levels at receptor locations R1 and R2 would still exceed the significance criteria. **As such, construction noise impacts associated with on-site noise sources would be significant and unavoidable.**

[35] *Binkley, Clayton. "citizenM Hollywood and Vine, Temporary Construction Sound Barrier at 1718 N. Vine Street." Letter to Stephanie Eyestone-Jones. July 25, 2017.*

Table IV.H-23
Construction Noise Impacts with Mitigation Measures

Off-Site Receptor Location	Minimum Noise Reduction Provided by Mitigation Measures,[a] (dBA)	Estimated Construction Noise Levels by Construction Phases, L_{eq} (dBA)					Existing Daytime Ambient Noise Levels, L_{eq} (dBA)	Significance Criteria[b] L_{eq} (dBA)	Maximum Noise Exceedance Above the Criteria, L_{eq} (dBA)	Sig. Impact?
		Demolition	Shoring/ Excavation	Foundation/ Parking Garage	Building Construction	Paving/ Concrete/ Landscape				
R1	10	81.5	81.8	80.6	78.9	79.5	60.6	65.6	16.2	Yes
R2	—	91.5	91.7	90.6	88.9	89.5	60.8	65.8	26.0	Yes
R3	5	70.2	73.6	71.4	72.1	66.6	69.5	74.5	0.0	No
R4	—	71.6	76.1	73.6	74.1	66.9	66.9	71.9	4.2	No[c]
R5	—	52.9	57.4	54.9	55.4	48.2	72.0	77.0	0.0	No
R6	—	69.1	73.6	71.1	71.6	64.4	71.7	76.7	0.0	No

[a] *Noise reduction (minimum 5 to 10 dB) provided by temporary noise barrier along the Project Site's eastern and western boundaries.*

[b] *Significance criteria are equivalent to the measured daytime ambient noise levels (see Table IV.H-7 on page IV.H-14) plus 5 dBA, per the L.A. CEQA Thresholds Guide for construction activities lasting longer than 10 days in a three-month period. If the estimated construction noise levels exceed those significance criteria, a construction-related noise impact is identified.*

[c] *Not applicable as studio uses are not considered noise sensitive uses by the L.A. CEQA Thresholds Guide. Therefore, the Capitol Records studio represented by receptor location R4 is included in the noise analysis for informational purposes only.*

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

Cumulative construction noise impacts associated with on-site noise sources would remain significant and unavoidable if nearby related projects, including Related Project No. 1, Related Project No. 2, and Related Project No. 5 were to be constructed concurrently with the Project.

(2) Off-Site Construction Noise

Project-level noise impacts from off-site construction would be less than significant. Cumulative noise due to construction truck traffic from the Project and other related projects could exceed the ambient noise levels along the haul route by 5 dBA. **As such, cumulative noise impacts from off-site construction would be significant and unavoidable.**

b. Construction Vibration

(1) On-Site Construction Vibration

Implementation of Mitigation Measure NOI-MM-2 would reduce vibration impacts from on-site construction with respect to building damage at the Pantages Theatre and the Equitable Building adjacent to the Project Site to a less-than-significant level.

Implementation of Mitigation Measure NOI-MM-2 would also reduce the vibration impacts with respect to human annoyance at the Pantages Theatre and the Equitable Building. However, project-level and cumulative vibration impacts from on-site construction activities with respect to human annoyance would remain significant and unavoidable. Additional mitigation measures considered to reduce vibration impacts from on-site construction activities with respect to human annoyance included the installation of a wave barrier, which is typically a trench or a thin wall made of sheet piles installed in the ground (essentially a subterranean sound barrier to reduce noise). However, wave barriers must be very deep and long to be effective and are not considered cost effective for temporary applications, such as construction.[36] In addition, constructing a wave barrier to reduce the Project's construction-related vibration impacts would, in and of itself, generate ground-borne vibration from the excavation equipment. Thus, it is concluded that there are no feasible mitigation measures that could be implemented to reduce the temporary vibration impacts from on-site construction associated with human annoyance to a less-than-significant level. **Therefore, project-level and cumulative vibration impacts from on-site construction activities with respect to human annoyance would remain significant and unavoidable.**

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

(2) Off-Site Construction Vibration

Vibration levels generated by construction trucks (i.e., haul, delivery, and concrete trucks) along the Project's haul route (i.e., Hollywood Boulevard and Vine Street) would be well below the significance criteria for building damage. **Therefore, both Project and cumulative vibration impacts with respect to building damage would be less than significant.**

Vibration levels from construction trucks would exceed the significance criteria for human annoyance at the vibration sensitive receptors along Hollywood Boulevard and Vine Street, resulting in a significant impact. **Therefore, both Project and cumulative vibration impacts from off-site construction with respect to human annoyance would be significant and unavoidable.**

c. Operational Noise

Project-level and cumulative noise impacts associated with on-site sources and off-site traffic would be less than significant.