

Draft

2005 W. JAMES M WOOD BLVD HOTEL PROJECT

Noise and Vibration Technical Report

Prepared for
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1717 S. Vermont Avenue
Los Angeles, CA 90006

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EXECUTIVE SUMMARY

The purpose of this Noise and Vibration Technical Report is to assess and discuss the impacts of potential noise and vibration impacts that may occur with the implementation of the proposed 2005 James M Wood Boulevard Hotel Project located in the City of Los Angeles. The Project site is located on the northwest corner of the intersection of James M Wood Boulevard and Westlake Avenue. The Project would remove existing commercial/retail uses on the Project site and develop a hotel use with 100 hotel rooms (a hotel with up to 110 hotel rooms is analyzed in this Technical Report).

The analysis describes the existing noise environment in the Project area, estimates future noise and vibration levels at surrounding land uses resulting from construction and operation of the Project, and identifies the potential for significant impacts. An evaluation of the Project's contribution to potential cumulative noise impacts is also provided. Noise worksheets and technical data used in this analysis are provided in the Appendices. The report summarizes the potential for the Project to conflict with applicable noise and vibration regulations, standards, and thresholds. The findings of the analyses are as follows:

- Construction activities would potentially result in short-term and temporary noise impacts to nearby noise-sensitive receptors due to on-site construction equipment and activities. Implementation of **Mitigation Measure NOISE-1**, listed below, would reduce this impact to less than significant.

Mitigation Measure NOISE-1: The Project shall provide a temporary 15-foot tall construction noise barrier (i.e., wood, sound blanket) between the Project construction site and off-site noise sensitive uses along the entire north and east boundaries of the Project site, with a performance standard of achieving a 20 dBA noise level reduction along the north boundary and a 15 dBA noise level reduction along the east boundary. The temporary noise barriers shall be used during early Project construction phases (up through building framing) when the use of heavy equipment is prevalent. The Project shall also avoid locating or using stationary construction equipment near off-site noise sensitive uses.

- Operation of the Project would generate noise from Project-related traffic or from on-site sources (parking structure, loading dock area, refuse collection area, mechanical equipment) that would not exceed the significance thresholds and operational noise impacts would be less than significant.
- Construction of the Project would generate sporadic, temporary vibration effects adjacent to the Project area, but would not be expected to exceed the significance thresholds. Thus, construction vibration impacts would be less than significant.

- Project operation would not generate excessive vibration levels at nearby sensitive receptor locations. Thus, long-term vibration impacts would be less than significant.
- Noise associated with cumulative construction activities would be reduced to the degree reasonably and technically feasible through proposed mitigation measures for each individual project and compliance with locally adopted and enforced noise ordinances. As construction activities would be required to comply with the City's allowable hours as described above and would be temporary, construction-related noise would result in a less than significant cumulative noise impact.
- Noise associated with cumulative operational sources would be less than the significance threshold. Therefore, Project operations would result in a less than significant cumulative noise impact.
- Due to the rapid attenuation characteristics of ground-borne vibration and distance of the cumulative projects to the Project site, there is no potential for cumulative construction- or operational-period impacts with respect to ground-borne vibration. Therefore, impacts would be less than significant.

1.0

Introduction

1.1 Project Description

The Project Applicant proposes to redevelop an approximately 20,256 net square foot (22,500 gross square foot) parcel located at 2005 James M Wood Boulevard in the City of Los Angeles with a hotel use (“the Project”). The location of the Project site and nearby vicinity is shown in **Figure 1, Regional and Vicinity Location Map**.

The Project would consist of a hotel use with 100 hotel rooms (a hotel with up to 110 hotel rooms is analyzed in this Technical Report) consisting of studio units and suites, and hotel amenities including meeting rooms, kitchen and breakfast area, lobby and reception area, office space, and a luggage room. Vehicle loading would occur in an enclosed area on the ground floor. The refuse collection area would be located in an enclosed area on the ground floor on the northeast end of the building. The proposed building would be six floors totaling approximately 60,631 square feet with two basement levels totaling approximately 37,020 square feet. The floor-to-area ratio would be 2.99 (60,631 square feet / 20,256 net square feet = 2.99). The Project would provide 100 parking spaces in an enclosed structure on the ground floor and basement levels, which would exceed the City of Los Angeles parking requirement. Short-term and long-term bicycle parking would also be provided. The Project site plan is shown in **Figure 2, Project Site Plans**.

1.2 Existing Site Uses

The Project site is developed with approximately 8,228 square feet of commercial/retail uses and surface parking areas. The Project would remove existing commercial/retail uses on the Project site and the existing surface parking areas.

Figure 1 Regional and Vicinity Location Map

Figure 2 Project Site Plan

2.0

Regulatory and Environmental Setting

2.1 Noise and Vibration Fundamentals

2.1.1 Noise

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perceptibility of sound is subjective and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.” Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate the human, frequency-dependent response, the A-weighted filter system is used to adjust measured sound levels. The A-weighted sound level (dBA) de-emphasizes low frequencies to which human hearing is less sensitive and focuses on mid- to high-range frequencies. The range of human hearing is approximately 3 to 140 dBA, with 110 dBA considered intolerable or painful to the human ear. Another commonly used scale is the C-weighted sound level (dBC), which includes low-frequency noise. In a non-controlled environment, 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 in 10 dB is perceived as a doubling of sound volume (Bies & Hansen 1988). A comparison of types of commonly experienced environmental noise is provided in **Figure 3, Common Noise Levels**.

Although the A-weighted scale accounts for the range of people’s response, and is therefore commonly used to quantify individual event or general community sound levels, the degree of annoyance or other response effects also depends on several other factors. These factors include:

- Ambient (background) sound level;
- Magnitude of sound event with respect to the background noise level;
- Duration of the sound event;
- Number of event occurrences and their repetitiveness; and
- Time of day that the event occurs.

Figure 3 Common Noise Levels

In an outdoor environment, sound levels attenuate with distance. Such attenuation is called “distance loss” or “geometric spreading” and is influenced by the noise source configuration (i.e., point source or line source). For a point source, such as stationary equipment, the rate of sound attenuation is usually 6 dB per doubling of distance from the noise source at urban, acoustically “hard” sites, or highly acoustically reflective settings that preserve sound energy (water, asphalt, and concrete). Within such environments, a sound level of 50 dBA at a distance of 25 feet from the noise source would attenuate to 44 dBA at a distance of 50 feet. The equation presented below (FHWA 2011).

$$NR_p = 20 \log (d_2 / d_1) \quad \text{(Equation 1)}$$

Where: NR_p = noise reduction for point source.

d_1 = distance from sound source at one location.

d_2 = distance from sound source at a different location.

For a line source within an acoustically hard environment, such as a roadway with a constant flow of traffic, the rate of sound attenuation is 3 dB per doubling of distance. The equation presented below (FHWA 2011; Caltrans 2013).

$$NR_L = 10 \log (d_2 / d_1) \quad \text{(Equation 2)}$$

Where: NR_L = noise reduction for line source.

d_1 = distance from sound source at one location.

d_2 = distance from sound source at a different location.

In addition, structures (e.g., buildings and solid walls) and natural topography (e.g., hills) 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., line-of-sight not fully blocked), some barrier insertion loss would still occur, but to a lesser extent. 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) up to 20 dBA with a more substantial barrier (Caltrans 2013a).

Community noise levels usually change continuously during the day. The equivalent sound level (L_{eq}) is normally used to describe community noise. The L_{eq} is the equivalent steady-state A-weighted sound level that would contain the same acoustical energy as the time-varying A-weighted sound level during the same time interval. For intermittent noise sources, the maximum noise level (L_{max}) is normally used to represent the maximum noise level measured during the measurement. Maximum and minimum noise levels, as compared to the L_{eq} , are a function of the

characteristics of the noise source. As an example, sources such as generators have maximum and minimum noise levels that are similar to L_{eq} since noise levels for steady-state noise sources do not substantially fluctuate. However, as another example, vehicular noise levels along local roadways result in substantially different minimum and maximum noise levels when compared to the L_{eq} since noise levels fluctuate during pass-by events. The City of Los Angeles Noise Ordinance typically uses the L_{eq} metric for the evaluation of noise levels.

To assess noise levels over a given 24-hour time period, the Community Noise Equivalent Level (CNEL) descriptor is used in land use planning. 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 at night (10:00 P.M. to 7:00 A.M.) and a 5 dBA adjustment (upward) added to the sound levels that occur in the evening (7:00 P.M. to 10:00 P.M.). A similar metric, the Day-Night Noise Level (L_{dn}), 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 at night (10:00 P.M. to 7:00 A.M.); L_{dn} does not include the evening adjustment. In practice, the CNEL and L_{dn} metrics are often used interchangeably and typically differ by only 1 dBA or less. The noise adjustments, or “penalties,” account for increased human sensitivity to noise during the quieter nighttime periods when sleep is the most probable human activity. The CNEL metric has been adopted by the State of California to define the community noise environment for development of a community noise element of a General Plan and is also used by the City of Los Angeles for land use planning in the City’s Noise Element of the General Plan.

Sound Transmission Class (STC) is an integer rating of how well a building partition attenuates airborne sound. In the United States, it is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating figure very roughly reflects the decibel reduction in noise that a partition can provide.

2.1.2 Vibration

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. The response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration. (FTA 2006) Vibration amplitudes are usually described in terms of peak levels, as in peak particle velocity (PPV). The peak level represents the maximum instantaneous peak of the vibration signal. In addition, vibrations can be measured in the vertical, horizontal longitudinal, or horizontal transverse directions. Ground vibrations are most often greatest, and can damage buildings, when they propagate in the vertical direction (Caltrans 2002, pg. 4). Therefore, the analysis of ground-borne vibration associated with the Project was evaluated in the vertical direction. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Man-made vibration issues are therefore usually confined to short distances from the source (i.e., 50 feet or less). The vibration attenuation equation is presented below (FTA 2006).

$$PPV_{\text{equip}} = PPV_{\text{ref}} (25 / D)^n \quad \text{(Equation 3)}$$

Where: PPV_{ref} = reference source vibration

D = distance

n = factor for soil attenuation (default value is 1.5).

2.2 Regulatory Setting

2.2.1 Federal

Noise Control Act

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

Occupational Safety and Health Act

Under the Occupational Safety and Health Act of 1970 (29 U.S.C. §1910 et seq.), the Occupational Safety and Health Administration (OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. Feasible administrative or engineering controls or personal protective equipment is required for employees subjected to sound exceeding those listed in § 1910.95. For an 8-hour duration per day, the sound level is 90 dBA. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, ensuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

2.2.2 State

California Noise Standards

The State of California does not have statewide standards for environmental noise, but the California Department of Health Services (DHS) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land

use types. Noise compatibility by different land uses types is categorized into four general levels: “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.” For instance, a noise environment ranging from 50 dBA CNEL to 65 dBA CNEL is considered to be “normally acceptable” for multi-family residential uses, while a noise environment of 75 dBA CNEL or above for multi-family residential uses is considered to be “clearly unacceptable.” In addition, California Government Code Section 65302(f) requires each county and city in the State to prepare and adopt a comprehensive long-range general plan for its physical development, with Section 65302(g) requiring a noise element to be included in the general plan. The noise element must: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

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

California Division of Occupational Health and Safety

The California Division of Occupational Health and Safety (CalOSHA) provides guidelines to ensure people employed in the State of California are not exposed to noise levels greater than 85 dBA. An employer would be required to administer a continuing effective hearing conservation program whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 dBA (referred to as the “action level”), or equivalently, a dose of 50 percent. The following procedures shall be implemented as part of the hearing conservation program when the action level is exceeded: personal or area noise monitoring, implementation of an audiometric testing program, an evaluation of an audiogram, audiometric test requirements, and audiometric calibration. Furthermore, if the action level is exceeded, the employer shall institute a training program for all employees who are exposed to noise at or above an 8-hour time-weighted average of 85 dBA, and shall ensure employee participation in the program. The training program shall be repeated annually for each employee included in the hearing conservation program, and information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes.

California Vibration Standards

There are no state vibration standards. Moreover, according to the California Department of Transportation’s (Caltrans) *Transportation and Construction Vibration Guidance Manual*, there are no official Caltrans standards for vibration. However, this Caltrans manual provides guidance that can be used as screening tools for assessing the potential for adverse vibration effects related to structural damage and human perception (Caltrans 2013b). The manual is meant to provide

practical guidance to Caltrans engineers, planners, and consultants who must address vibration issues associated with the construction, operation, and maintenance of Caltrans projects.

2.2.3 Local

In California, local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans, and noise ordinances set forth the specific standards and procedures for addressing particular noise sources and activities. General plans recognize that different types of land uses have different sensitivities toward their noise environment; residential areas are considered to be the most sensitive type of land use to noise and industrial/commercial areas are considered to be the least sensitive.

City of Los Angeles General Plan Noise Element

The overall purpose of the City of Los Angeles Noise Element of the General Plan is to protect citizens from the harmful and annoying effects of exposure to excessive noise. City of Los Angeles Noise Element policies that relate to the proposed Project include the following:

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

Los Angeles Municipal Code

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

The LAMC indicates that in cases where the actual ambient conditions are not known, the City's presumed daytime (7:00 A.M. to 10:00 P.M.) and nighttime (10:00 P.M. to 7:00 A.M.) minimum ambient noise levels as defined in Section 111.02 of the LAMC should be used. The presumed ambient noise levels for these areas as set forth in the LAMC Sections 111.02 and 112.05 are provided in **Table 1**, *City of Los Angeles Presumed Ambient Noise Levels*. For residential-zoned areas, the presumed ambient noise level is 50 dBA during the daytime and 40 dBA during the nighttime. Section 112.02 limits increases in noise levels from air conditioning, refrigeration, heating, pumping and filtering equipment. Such equipment may not be operated in such manner as to create any noise which would cause the noise level on the premises of any other occupied

property, or, if a condominium, apartment house, duplex, or attached business, within any adjoining unit, to exceed the ambient noise level by more than five (5) decibels.

Section 112.05 of the LAMC sets a maximum noise level for construction equipment of 75 dBA at a distance of 50 feet when operated within 500 feet of a residential zone. Compliance with this standard is required where “technically feasible.” Chapter VI, Section 41.40 of the LAMC prohibits construction between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, 6:00 P.M. and 8:00 A.M. on Saturday, and at any time on Sunday (i.e., construction is allowed Monday through Friday between 7:00 A.M. to 9:00 P.M.; and Saturdays and National Holidays between 8:00 A.M. to 6:00 P.M.). In general, the City’s Department of Building and Safety enforces noise ordinance provisions relative to equipment and the Los Angeles Police Department enforces provisions relative to noise generated by people.

TABLE 1
CITY OF LOS ANGELES PRESUMED AMBIENT NOISE LEVELS

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

Source: LAMC, Section 111.03.

Section 113.01 of LAMC prohibits collecting or disposing of rubbish or garbage, to operate any refuse disposal truck, or to collect, load, pick up, transfer, unload, dump, discard, or dispose of any rubbish or garbage, as such terms are defined in Section 66.00 of LAMC, within 200 feet of any residential building between the hours of 9:00 P.M. and 6:00 A.M. of the following day, unless a permit therefore has been duly obtained beforehand from the Board of Police Commissioners.

Guidelines for Noise-Compatible Land Uses

The City has adopted local guidelines based, in part, on the community noise compatibility guidelines established by the State Department of Health Services for use in assessing the compatibility of various land use types with a range of noise levels. These guidelines are set forth in the *City of L.A. CEQA Thresholds Guide* in terms of the CNEL (City of L.A. 2006). CNEL guidelines for specific land uses are classified into four categories: (1) “normally acceptable,” (2) “conditionally acceptable,” (3) “normally unacceptable,” and (4) “clearly unacceptable.” As shown in **Table 2**, *City of Los Angeles Land Use Compatibility for Community Noise*, a CNEL value of 70 dBA is the upper limit of what is considered a “conditionally acceptable” noise environment for hotel uses, although the upper limit of what is considered “normally acceptable”

for hotel uses is set at 65 dBA CNEL. New development should generally be discouraged within the “normally unacceptable” or “clearly unacceptable” categories. However, if new development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

TABLE 2
CITY OF LOS ANGELES LAND USE COMPATIBILITY FOR COMMUNITY NOISE

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

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

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

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

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

SOURCE: City of L.A. CEQA Thresholds Guide, 2006.

2.3 Environmental Setting

2.3.1 Noise Sensitive Receptors

Some land uses are considered more sensitive to noise than others due to the amount of noise exposure and the types of activities typically involved at the receptor location. The City of Los Angeles CEQA Thresholds Guide states that residences, schools, motels and hotels, libraries, religious institutions, hospitals, nursing homes, and parks are generally more sensitive to noise

than commercial and industrial land uses. The nearest existing noise sensitive uses in close proximity to the Project site include the following:

- **Multi-Family Residential Dwellings:** A two-story multi-family residential building is located adjacent to the Project site property to the north. Two- and three story multi-family residential buildings are located further to the north (approximately 80 feet and greater from the Project site) and to the east across Westlake Avenue (approximately 60 feet and greater from the Project site). Residential uses are also located to the south of James M Wood Boulevard (approximately 180 feet and greater from the Project site), but are located further away from the Project site and generally have intervening commercial uses on the south side of James M Wood Boulevard that would mask, shield, or partially shield noise from the Project site.
- **Religious Facility:** A Christian fellowship land use is located on Westlake Avenue to the east of the Project site (approximately 60 feet from the Project site) with a building setback of approximately 40 to 50 feet from Westlake Avenue (for a total of approximately 100 to 110 feet between the Project site and the building).

All other noise-sensitive uses are located at greater distances from the Project site and would experience lower noise levels associated with the Project. Therefore additional sensitive receptors beyond those identified above are not required to be evaluated.

2.3.2 Vibration Sensitive Receptors

Typically, ground-borne vibration generated by man-made activities (i.e., rail and roadway traffic, mechanical equipment and typical construction equipment) diminishes rapidly as the distance from the source of the vibration become greater. The Federal Transportation Association (FTA) uses a screening distance of 100 feet for high vibration sensitive buildings (e.g., hospital with vibration sensitive equipment) and 50 feet for residential uses (FTA 2006). When vibration sensitive uses are located within those distances from a project site, vibration impact analysis is required. With respect to structures, vibration-sensitive receptors generally include historic buildings with construction susceptible to damage, buildings in poor structural condition, and uses that require precision instruments (e.g., hospital operating rooms or scientific research laboratories). The residential uses located adjacent to the north of the Project site would be within the screening distance (less than 50 feet) with the potential for perceptible vibration due to short-term Project construction and long-term Project operations. Therefore, vibration impacts will be quantified and evaluated for the nearby residential uses.

2.3.3 Ambient Noise Levels

The predominant existing noise source surrounding the Project site is traffic noise from James M Wood Boulevard to the south of the Project site, Westlake Avenue to the east of the Project site, and from Alvarado Street to the west of the Project site. Secondary noise sources include general commercial and residential-related activities, such as heating, ventilation, and air conditioning (HVAC) units, periodic landscape maintenance, residential and commercial delivery trucks, and refuse service activities.

Ambient noise measurements were conducted at three locations, representing the nearby land uses in the vicinity of the Project site to establish the ambient noise levels. The measurement locations along with surrounding land uses are shown on **Figure 4, Noise Measurement Locations**. Short-term (15-minute) measurements were conducted at locations R1, R2, and R3. Ambient sound measurements were conducted on Wednesday, February 15, 2017, to characterize the existing noise environment in the Project vicinity. Ambient noise monitoring printouts are provided in **Appendix A** of this Technical Report.

The ambient noise measurements were conducted using the Larson-Davis Sound Track LxT1 Sound Level Meter (SLM). The Larson-Davis LxT1 is a Type 1 standard instrument as defined in the American National Standard Institute S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification. The microphone was placed at a height of 5 feet above the local grade, at the following locations as shown in **Figure 4**:

- **Measurement Location R1:** This location represents the existing noise environment of the Project vicinity along James M Wood Boulevard. The SLM was placed on the southern boundary of the Project site along James M Wood Boulevard.
- **Measurement Location R2:** This location represents the existing noise environment of the Project vicinity along Westlake Avenue, and is considered representative of the noise environment of the existing off-site multi-family residential uses to the north of the Project site and on the east side of Westlake Avenue as well as the religious facility to the east of the Project site. The SLM was placed on the eastern boundary of the Project site along Westlake Avenue.
- **Measurement Location R3:** This location represents the existing noise environment of the Project vicinity north of James M Wood Boulevard and east of Alvarado Street, and is considered representative of the existing off-site multi-family residential uses to the north and east of the Project site. The SLM was placed on the western boundary of the Project site adjacent to a commercial land use.

A summary of noise measurement data is provided in **Table 3, Summary of Ambient Noise Measurements**. As shown in **Table 3**, the existing ambient noise level in the vicinity of the Project site currently exceed the City's presumed ambient noise levels for residential areas of 50 dBA during the measurement period. The ambient noise levels in the immediate Project vicinity are representative of an urban area with a mix of commercial uses.

Figure 4 Noise Measurement Locations

TABLE 3
SUMMARY OF AMBIENT NOISE MEASUREMENTS

Location, Duration, Existing Land Uses, and Date of Measurements	Measured Ambient Noise Levels (dBA, L_{eq})		
	Equivalent Noise Level, L_{eq}	Maximum Noise Level, L_{max}	Minimum Noise Level, L_{min}
R1 Wednesday 2/15/17 (10:40 a.m. to 10:55 a.m.)	67.2	87.4	51.0
R2 Wednesday 2/15/17 (10:57 a.m. to 11:12 a.m.)	63.2	82.2	51.8
R3 Wednesday 2/15/17 (11:13 a.m. to 11:28 a.m.)	61.0	76.5	52.4

SOURCE: ESA 2017.

To further characterize the Project area's ambient noise environment, the noise levels attributed to existing traffic on local roadways were calculated using a noise prediction model which was developed based on calculation methodologies provided in the California Department of Transportation (Caltrans) Technical Noise Supplement (TeNS) document and traffic data provided in the Project traffic impact analysis prepared by Linscott, Law & Greenspan Engineers (LLG) for the Project (LLG 2017). This methodology, considered an industry standard, allows for the definition of roadway configurations, barrier information (if any), and receiver locations.

A traffic model calibration test was performed to establish the noise prediction model's accuracy. The road segments included in the calibration test were along James M Wood Boulevard, between Alvarado Street and Westlake Avenue, and along Westlake Avenue, between James M Wood Boulevard and 8th Street. At the locations identified above (R1 and R2), a 15-minute noise recording was made concurrent with logging of actual traffic volumes and auto fleet mix (i.e., standard automobile, medium duty truck, or heavy duty truck). The traffic counts were entered into the noise model along with the observed speed, lane configuration, and distance to the roadway to calculate the traffic noise levels. The results of the traffic noise model calibration are provided in **Table 4, Traffic Noise Model Validation Results**. As indicated, the noise model results are within 2 dBA of the measured noise levels, which is within the industry standard tolerance of the noise prediction model. Therefore, the Project-specific traffic noise prediction model is considered accurate and reflective of the Project's physical setting.

TABLE 4
TRAFFIC NOISE MODEL VALIDATION RESULTS

Measurement Location	Measured Noise Level (dBA, L _{eq})	Calculated Noise Level (dBA, L _{eq})	Net Difference (dBA, L _{eq})
R1	67.2	68.1	0.9
R2	63.2	61.6 ^a	1.6

^a R2 is located on Westlake Avenue and had very few vehicles during the short-term measurement time resulting in a calculated value of 51.5 dBA L_{eq} (based solely on the relatively few vehicles on Westlake Avenue during the measurement time). However, R2 is located approximately 125 feet north of James M Wood Boulevard. Therefore, the calculated noise level at R2, taking into account the higher traffic noise level from James M Wood Boulevard (R1) is expected to result in a calculated value of approximately 61.6 dBA, L_{eq}.

SOURCE: ESA 2017.

Because the monitoring data validates the use of a project-specific traffic noise prediction model, the ambient noise environment of the Project vicinity can be characterized by the levels attributable to existing traffic on local roadways. As indicated in **Table 3** and **Table 4**, the off-site multi-family residential uses at location R2 and R3 are within the “normally acceptable” community noise category (refer to **Table 2**), which is an exterior noise level of up to 65 dBA for multi-family homes. As indicated in **Table 3** and **Table 4**, the off-site religious facility at location R2 is within the “normally acceptable” community noise category (refer to **Table 2**), which is an exterior noise level of up to 70 dBA for churches.

3.0

Environmental Impacts

3.1 Significance Thresholds

Appendix G of the State CEQA Guidelines provides a set of screening questions that address impacts with regard to noise and vibration. These questions are as follows:

Would a project result in:

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (Impact Threshold NOISE-1);
- b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels (Impact Threshold NOISE-2);
- c. A substantial permanent increase in ambient noise levels in the vicinity of the project above levels existing without the project (Impact Threshold NOISE-3);
- d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (Impact Threshold NOISE-4);
- e. For a project located within 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
- f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels

The Project is not located within an airport land use plan and is not located within two miles of a public airport or public use airport or within the vicinity of a private airstrip, as discussed in items “e” and “f” above. As such, the Project would result in no impacts to these screening criteria and no further analyses of these topics are necessary.

With respect to items “a” through “d” above, the quantitative thresholds described below are used to evaluate the potential for the Project to result in noise and vibration impacts.

3.1.1 Construction

The City of L.A. CEQA Thresholds Guide defines the following significance thresholds for construction activities lasting more than 10 days in a three month period or occurring during the

hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, before 8:00 A.M. or after 6:00 P.M. on Saturday, or anytime on Sunday:

- On-site Project construction activities cause the exterior ambient noise level to increase by 5 dBA or more at a noise-sensitive use, as measured at the property line of any sensitive use (evaluated under Impact Thresholds NOISE-1 and NOISE-4).
- Off-site Project construction traffic causes the exterior ambient noise level to increase by 5 dBA CNEL or more at a noise-sensitive use, as measured at the property line of any sensitive use (evaluated under Impact Thresholds NOISE-1 and NOISE-4).

3.1.2 Operation

Operational noise impacts are evaluated for Project-related off-site roadway traffic noise impacts and on-site stationary source noise from on-site activities and equipment.

- The Project would cause any ambient noise levels to increase by 5 dBA, CNEL or more and the resulting noise falls on a noise-sensitive land use within an area categorized as either “normally acceptable” or “conditionally acceptable” (see **Table 2** for description of these categories); or cause ambient noise levels to increase by 3 dBA, CNEL or more and the resulting noise falls on a noise-sensitive land use within an area categorized as either “normally unacceptable” or “clearly unacceptable” (evaluated under Impact Thresholds NOISE-1 and NOISE-3).
- Project-related operational (i.e., non-roadway) noise sources such as outdoor activities, building mechanical/electrical equipment, etc., increase ambient noise level by 5 dBA, causing a violation of the City Noise Ordinance (evaluated under Impact Thresholds NOISE-1 and NOISE-3).
- The maximum noise level (L_{\max}) generated from the operation of the loading dock, refuse collection area, or parking structure (i.e., car alarm) exceeds the average (L_{eq}) ambient noise level by 10 dBA (evaluated under Impact Thresholds NOISE-1 and NOISE-3).

3.1.3 Ground-Borne Vibration

The City of Los Angeles has not adopted a significance threshold to assess vibration impacts during construction. Thus, the Caltrans *Transportation and Construction Vibration Guidance Manual* is used as screening tools to assess the potential for adverse vibration effects related to structural damage and human perception (Caltrans 2013b).

- Potential Building Damage - Project construction activities cause ground-borne vibration levels to exceed 0.5-inch-per second PPV at the nearest off-site residential buildings (evaluated under Impact Threshold NOISE-2).
- Potential Human Annoyance - Project construction and operation activities cause ground-borne vibration levels to exceed 0.035-inch-per-second PPV at nearby residential uses (evaluated under Impact Threshold NOISE-2).

3.2 Methodology

The evaluation of potential noise and vibration impacts that may result from the construction and long-term operation of the Project is conducted as follows.

3.2.1 Construction Noise

On-Site Construction Noise

On-site construction noise impacts were evaluated by determining the noise levels generated by the different types of construction activity anticipated, calculating the construction-related noise levels at nearby sensitive receptor locations, and comparing these construction-related noise levels to existing ambient noise levels (i.e., noise levels without construction noise) at those receptors. More, specifically, the following steps were undertaken to assess construction-period noise impacts.

- Ambient noise levels at surrounding sensitive receptor locations were estimated based on field measurement data (see **Table 3**, above)
- Typical noise levels for each type of construction equipment were obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model;
- Distances between construction site locations (noise sources) and surrounding sensitive receptors were estimated using Project architectural drawings, Project site plans, and aerial imagery (e.g., Google Earth);
- The construction noise level was then estimated, in terms of hourly L_{eq} , for sensitive receptor locations based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance; and
- Construction noise levels were then compared to the construction noise significance thresholds.

Off-Site Roadway Construction Noise

Roadway noise impacts were evaluated using the Caltrans TeNS method based on the roadway traffic volume data provided in the traffic impact analysis prepared by LLG for the Project (LLG 2017). This method allows for the definition of roadway configurations, barrier information (if any), and receiver locations. Roadway noise attributable to Project development was quantified and compared to baseline noise levels that would occur under the “Without Project” condition.

3.2.2 Operational Noise

Off-Site Roadway Traffic Noise

Similar to off-site roadway construction noise, roadway traffic noise impacts were evaluated using the Caltrans TeNS method based on the roadway traffic volume data provided in the traffic impact analysis prepared by LLG for the Project (LLG 2017). This method allows for the

definition of roadway configurations, barrier information (if any), and receiver locations. Roadway noise attributable to Project development was quantified and compared to baseline noise levels that would occur under the “Without Project” condition.

Stationary Point-Source Noise

Stationary point-source noise impacts were evaluated by identifying the noise levels generated by outdoor stationary noise sources, such as rooftop mechanical equipment and loading area activity, estimating the hourly L_{eq} noise level from each noise source at sensitive receptors, and comparing such noise levels to existing ambient noise levels. More specifically, the following steps were undertaken to calculate outdoor stationary point-source noise impacts:

- Ambient noise levels at surrounding sensitive receptor locations were estimated based on field measurement data (see Table 3);
- Distances between stationary noise sources and surrounding sensitive receptor locations were estimated using Project architectural drawings, Project site plans, and aerial imagery (e.g., Google Earth);
- Stationary-source noise levels were then estimated for each sensitive receptor location based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance and incorporating noise attenuating features and design standards such as outdoor mechanical equipment enclosures or noise mufflers; and
- Noise level increases were compared to the stationary source noise significance thresholds.

3.2.3 Groundborne Vibration

Ground-borne vibration impacts were evaluated by identifying potential vibration sources, estimating the distance between vibration sources and surrounding structure locations and vibration sensitive receptors using Project architectural drawings, Project site plans, and aerial imagery (e.g., Google Earth), and making a significance determination based on the significance thresholds.

3.2.4 Project Characteristics

The Project would replace the existing retail uses on the site with a new hotel use. As a result sound levels could increase on the Project site and in the vicinity due to activity associated with occupants, visitors, consumers, and the operation of mechanical equipment and automobiles. Applicable regulations with which the Project must comply that would minimize Project-related noise sources include the following:

- Chapter VI, Section 41.40 of the LAMC limits construction hours for exterior construction and hauling activities to between the hours of 7:00 A.M. and 9:00 P.M., Monday through Friday, and 8:00 A.M. and 6:00 P.M. on Saturday.

- All building outdoor mounted mechanical and electrical equipment would be designed to meet the requirements of LAMC, Chapter XI, Section 112.02, which limits the noise output from such equipment to no more than a five decibel increase over the ambient noise level.

3.2.5 Project Design Features

In addition to compliance with regulatory requirements, contractors are expected to implement industry-wide best management practices to ensure equipment are operating in accordance with industry standards. The analysis of construction noise incorporates—and the analysis assumes implementation of—the following industry-wide best management practice, referred to as a Project Design Feature (PDF) that would minimize construction-related noise and vibration levels:

PDF-NOISE-1: Equipment Noise Control: The Project contractor(s) shall equip all construction equipment, fixed or mobile, with properly operating and maintained noise mufflers, consistent with manufacturers' standards and specifications.

3.3 Project Impacts

Impact Threshold NOISE-1: A significant impact would occur if the Project would result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Impact Statement: Noise from on-site construction equipment and activities would potentially increase noise levels at off-site noise-sensitive receptors in the Project vicinity in excess of the significance thresholds and would result in a potentially significant impact. Implementation of Mitigation Measure NOISE-1 would reduce this impact to less than significant. Noise from off-site construction truck trips would not be expected to increase noise levels at off-site noise-sensitive receptors in the Project vicinity in excess of the significance thresholds and this impact would be less than significant. Operational noise impacts from Project-related traffic would not be expected to increase noise levels at off-site noise-sensitive receptors in excess of the significance thresholds and this impact would be less than significant. Operational noise from the on-site Project parking structure, loading dock area, refuse collection area, and mechanical equipment would not be expected to increase noise levels at off-site noise-sensitive receptors in excess of the significance thresholds and this impact would be less than significant.

On-Site Construction Noise

Noise impacts from construction activities are generally a function of the noise generated by construction equipment, equipment locations, the sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Construction of the Project would involve the following phases of activity: (1) demolition; (2) site preparation; (3) grading and excavation; (4) building construction and architectural coatings; and (5) paving. Each phase involves the use of different types of construction equipment and, therefore, has its own distinct noise characteristics. Demolition would typically include equipment such as a concrete saw, dozer, and

tractors/loaders/backhoes. Site preparation would typically include equipment such as a dozer and tractors/loaders/backhoes. Grading and excavation would typically include equipment such as an excavator, tractors/loaders/backhoes, dozer, and drill rig. An estimate of up to approximately 16,500 cubic yards of earth would be excavated for the two basement levels beneath the hotel. Building construction and architectural coatings would typically include equipment such as a crane, forklift, generator set, tractor/loader/backhoe, and air compressor. Paving would typically include equipment such as a paver, roller, and mixer. The Project would be constructed using typical construction techniques; no blasting, impact pile driving, or jackhammers would be required. Project construction could begin as early as mid-2017 with completion anticipated in 2018.

As would be the case for construction of most land use development projects, construction of the proposed Project would require the use of heavy-duty equipment with the potential to generate audible noise above the ambient background noise level. Even with implementation of PDF NOISE-1, individual pieces of construction equipment anticipated during Project construction could produce maximum noise levels of 75 dBA to 90 dBA at a reference distance of 50 feet from the noise source, as shown in **Table 5, Construction Equipment Noise Levels**. These maximum noise levels would occur when equipment is operating under full power conditions. The estimated usage factor for the equipment is also shown in **Table 5**. The usage factors are based on the FHWA Roadway Construction Noise Model User's Guide (FHWA 2006). To more accurately characterize construction-period noise levels, the average (Hourly L_{eq}) noise level associated with each construction phase is estimated based on the quantity, type, and usage factors for each type of equipment used during each construction phase and are typically attributable to multiple pieces of equipment operating simultaneously.

TABLE 5
CONSTRUCTION EQUIPMENT NOISE LEVELS

Type of Equipment	Estimated Usage Factor (%)	Reference Noise Level at 50 feet (dBA, L_{max})
Air Compressor	50%	78
Bore/Drill Rig	20%	79
Cement and Mortar Mixer	40%	79
Concrete Saw	20%	90
Crane	40%	81
Dozer	40%	82
Excavator	40%	81
Forklift	10%	75
Generator Set	50%	81
Paver	50%	77
Paving Equipment	20%	90
Roller	20%	80
Tractor / Loader / Backhoe	25%	80

SOURCE: FHWA 2006; and ESA 2017.

During Project construction, the nearest and most affected off-site noise sensitive receptors that would be exposed to increased noise levels would be the existing residential uses located in proximity to the Project site as well as the noise sensitive religious facility (refer to Section 2.3.2, Noise Sensitive Receptors, for a description of the noise sensitive uses in the Project vicinity).

Over the course of a construction day, the highest noise levels would be generated when multiple pieces of construction equipment are operated concurrently. The Project's estimated construction noise levels were calculated for a scenario in which a reasonably number of construction equipment was assumed to be operating simultaneously, given the physical size of the site and logistical limitations, and with the noisiest equipment located at the construction area nearest to the affected receptors to present a conservative impact analysis. This is considered a worst-case evaluation because the Project would typically use fewer overall equipment simultaneously at any given time, and as such would likely generate lower noise levels than reported herein. The estimated noise levels at the off-site sensitive receptors were calculated using the FHWA's Roadway Construction Noise Model. **Table 6, Estimated Construction Noise levels (L_{eq}) at Existing Off-Site Sensitive Receptor Locations**, shows the estimated construction noise levels that would occur at the nearest off-site sensitive uses during a peak day of construction activity at the Project Site. Detailed noise calculations for construction activities are provided in **Appendix B** of this Technical Report.

TABLE 6
ESTIMATED CONSTRUCTION NOISE LEVELS (L_{eq}) AT OFF-SITE SENSITIVE RECEIVER LOCATIONS

Offsite Sensitive Receptor Location	Location	Distance from Closest Edge of Construction Activity to Noise Receptor (ft.) ^a	Estimated Maximum Construction Noise Levels (dBA L_{eq})	Significance Threshold ^b	Exceed Significance Threshold?
R1	Multi-family residential uses south of the Project site across James M Wood Boulevard	180	72	72	No
R2	Multi-family residential uses and religious facility to the west of the Project site across Westlake Avenue	60	79	68	Yes
R3	Multi-family residential uses adjacent to the north of the Project site	25	85	66	Yes

^a The distance represents the nearest construction area on the Project site to the property line of the offsite receptor.

^b The significance threshold is the daytime ambient equivalent noise levels (L_{eq}) as shown in **Table 3** plus 5 dBA.

SOURCE: ESA 2017.

As shown in **Table 6**, the Project would have a potentially significant short-term and temporary construction noise impact on residential uses located to the north and east of the Project site and the religious facility to the east of the Project site. Mitigation measures are therefore prescribed to reduce construction noise impacts to these sensitive noise receptors.

Off-Site Construction Noise

Construction of the Project would require haul and vendor truck trips to and from the site to export soil and delivery supplies to the site. Trucks traveling to and from the Project site would be required to travel along a haul route approved by the City of Los Angeles. Approximately 10 haul truck trips per hour would occur during a workday. Haul truck traffic would take the most direct route to the appropriate freeway ramp.

Noise associated with construction truck trips were estimated using the Caltrans TeNS method based on the maximum number of truck trips in a day. The noise calculation worksheets for construction truck trips are provided in **Appendix B** of this Technical Report. The results of the analysis indicate that the Project truck trips would generate noise levels of approximately 59 dBA, measured at a distance of 25 feet along James M Wood Boulevard. As shown in **Table 3**, the existing noise level along James M Wood Boulevard is approximately 67 dBA. Construction traffic noise levels generated by truck trips would increase traffic noise levels along James M Wood Boulevard by up to approximately 68 dBA (59 dBA + 67 dBA = 68 dBA). The noise level increases by truck trips would be below the significance threshold of 5 dBA. Therefore, off-site construction traffic noise impacts would be less than significant and no mitigation measures would be required.

Operational Off-Site Roadway Traffic Noise

Existing roadway noise levels were calculated along arterial segments in the Project site vicinity based on traffic data provided in the Project traffic impact analysis prepared by LLG for the Project (LLG 2017). Roadway noise attributable to Project development was calculated using the Caltrans TeNS methodology previously described and was compared to baseline noise levels that would occur under the “Without Project” condition.

Project impacts are shown in **Table 7**, *Operational Off-Site Traffic Noise – Existing Conditions*. As shown in **Table 7**, there would be no increase in Project-related traffic noise levels over existing traffic noise levels. This increase in sound level would be well below a “clearly noticeable” increase of 5.0 dBA in areas characterized by “normally acceptable” noise levels, and also well below a “just perceptible” increase of 3.0 dBA in areas characterized as “conditionally acceptable” noise levels. The increase in noise levels would be lower at the remaining roadway segments analyzed. As a result, the Project-related noise increases would be less than the threshold and therefore less than significant, and no mitigation measures would be required.

TABLE 7
OPERATIONAL OFF-SITE TRAFFIC NOISE – EXISTING CONDITIONS

Roadway Segment	Calculated Traffic Noise Levels Measured at 25 Feet from the Roadway (dBA, Peak Hour L_{eq} ; Equivalent to CNEL)			
	Existing (A)	Existing with Project (B)	Project Increment (B-A)	Exceed Threshold?
James M Wood				
Between Hoover Street and Alvarado Street	68.4	68.5	0.1	No
Between Alvarado Street and Union Avenue	68.7	68.7	0.0	No
Hoover Street				
Between James M Wood Boulevard and Olympic Boulevard	71.8	71.8	0.0	No
Alvarado Street				
Between Olympic Boulevard and James M Wood Boulevard	71.7	71.7	0.0	No
Between James M Wood Boulevard and 8th Street	71.6	71.6	0.0	No
Between 8th Street and 7th Street	71.6	71.6	0.0	No
SOURCE: ESA 2017.				

Operational Parking Structure Noise

Vehicle access to structured parking on the Project site would be accommodated via an entrance driveway on the existing alley from James M Wood Boulevard. Parking stalls would be located in the interior of the building and in subterranean floors and would be screened from public view and shielded from surrounding off-site development by the Project building itself. Automobile movements within parking structures represent the most continuous noise source and can in certain circumstances generate noise levels with the potential to adversely impact adjacent land uses. However, due to the slow speeds of the vehicles in the garage, and because views of the parking levels would be visually screened (enclosed) by the Project building, blocking the line of sight between the noise source and sensitive receptors, parking-related noise would be shielded and would not increase the ambient noise levels at the nearest off-site future sensitive receptor locations. As such, parking structure noise would not increase the exterior noise level above the City's thresholds of significant and impacts would be less than significant and no mitigation would be required.

Operational Loading Dock Area Noise

Loading dock activities such as truck movements/idling and loading/unloading operations generate noise levels that have the potential to adversely impact adjacent land uses during long-term Project operations. The Project's loading area would be located in the interior of the building and would be screened from public view and shielded from surrounding off-site development by the Project building itself. Therefore, operational loading dock area noise would not increase exterior ambient noise levels and would not exceed the City's thresholds of significance. Impacts would be less than significant.

Operational Refuse Collection Area Noise

The Project's refuse and recycling collection bins would be stored in a dedicated area at the southwest portion of the Project Site. This area would be fully enclosed by permanent walls and access doors. In addition, collecting or disposing of rubbish or garbage would not occur between the hours of 9:00 p.m. and 6:00 a.m. of the following day to comply with Section 113.01 of the LAMC. Therefore, operational refuse collection area noise would not increase exterior ambient noise levels and would not exceed the City's thresholds of significance. Impacts would be less than significant.

Operational Fixed Mechanical Equipment Noise

The operation of mechanical equipment typically installed for developments like the Project, such as HVAC systems and related equipment, may generate audible noise levels. Project mechanical equipment including air conditioning condensers would be installed on the building rooftop, with other equipment contained within the building. The Project's HVAC units would either be mini-split systems or conventional system mounted on the roof and screened from view. As stated in Section 3.2.4, Project Characteristics, all Project mechanical equipment would be required to be designed with appropriate noise control devices, such as sound attenuators, acoustic louvers, or sound screens/parapet walls to comply with noise limitation requirements provided in LAMC, Chapter XI, Section 112.02, which prohibits the noise from such equipment from causing an increase in the ambient noise level of more than 5 dB. Therefore, operation of mechanical equipment on the Project building would not exceed the City's thresholds of significance and impacts would be less than significant.

Composite Noise Level Impacts from Project Operations

An evaluation of the combined noise levels from the Project's various operational noise sources (i.e., composite noise level) was conducted to conservatively ascertain the potential maximum Project-related noise level increase that may occur at the noise-sensitive receptors considered in this analysis. Noise sources associated with the Project include traffic on nearby roadways, the parking structure, the loading dock and refuse collection areas, and on-site mechanical equipment.

As discussed above, the Project would generate an increase in traffic-related noise that would be substantially below the "clearly noticeable" increase of 5.0 dBA and also well below a "just perceptible" increase of 3.0 dBA. Furthermore, the parking structure and loading dock and refuse collection areas would be located in the interior of the building and acoustically shielded by the Project building itself. Operational mechanical equipment would be required to be designed with appropriate noise control devices, such as sound attenuators, acoustic louvers, or sound screens/parapet walls to comply with noise limitation requirements provided in LAMC, Chapter XI, Section 112.02. As a result, the Project's combined operational noise increase would not exceed the City's thresholds of significance and impacts would be less than significant.

Mitigation Measure

Construction-related noise has the potential to result in a significant noise impact at sensitive receptor locations to the north and east of the Project site. Thus, the following mitigation measure is prescribed to minimize construction-related noise impacts.

Mitigation Measure NOISE-1: The Project shall provide a temporary 15-foot tall construction noise barrier (i.e., wood, sound blanket) between the Project construction site and off-site noise sensitive uses along the entire north and east boundaries of the Project site, with a performance standard of achieving a 20 dBA noise level reduction along the north boundary and a 15 dBA noise level reduction along the east boundary. The temporary noise barriers shall be used during early Project construction phases (up through building framing) when the use of heavy equipment is prevalent. The Project shall also avoid locating or using stationary construction equipment near off-site noise sensitive uses.

Mitigation Measure NOISE-1 provides for noise barriers that would achieve a noise reduction of up to 20 dBA along the north boundary and 15 dBA along the east boundary between Project construction and off-site receptor locations north and east of the Project site. The noise reduction provided by the noise barrier would reduce construction-related noise to less than the significance threshold at the off-site sensitive uses. Thus, construction noise impacts would be mitigated to less than significant.

Impact Threshold NOISE-2: A significant impact would occur if the Project would result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Impact Statement: Construction equipment and activities would not be expected to result in vibration levels at off-site vibration sensitive receptors in excess of the structural or human annoyance significance thresholds. Construction-related vibration impacts would be less than significant. Operational equipment and activities would not be expected to result in vibration levels at off-site vibration sensitive receptors in excess of the structural or human annoyance significance thresholds. Operational-related vibration impacts would be less than significant.

Structural Vibration Impacts

Construction machinery and operations can generate varying degrees of ground vibration, depending on the construction procedures and the 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 a construction site often varies depending on soil type, ground strata, and construction characteristics of the receptor buildings. The results from vibration impacts can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible

vibration at moderate levels, to slight damage at the highest levels. Ground-borne vibration from construction activities rarely reaches the levels that damage structures. The FTA has published standard vibration velocities, in terms of PPV, for construction equipment operations. The typical vibration PPV levels for construction equipment pieces anticipated to be used during Project construction are listed in **Table 8, Typical Vibration Velocities for Potential Project Construction Equipment**.

TABLE 8
TYPICAL VIBRATION VELOCITIES FOR POTENTIAL PROJECT CONSTRUCTION EQUIPMENT

Equipment	Reference Vibration Source Levels, PPV (inch/second)			
	25 feet	50 feet	100 feet	200 feet
Large bulldozer	0.089	0.031	0.011	0.004
Loaded trucks	0.076	0.027	0.010	0.003
Small bulldozer	0.003	0.001	0.0004	0.0001

SOURCE: USDOT Federal Transit Administration 2006.

With regard to the proposed Project, ground-borne vibration would be generated primarily during site clearing and grading activities and by off-site haul-truck traveling on surface streets. Ground-borne vibration impacts are confined to short distances (i.e., 50 feet or less) from the vibration source and decrease rapidly with distance. As indicated in **Table 8**, vibration velocities from the operation of construction equipment would range from approximately 0.003 to 0.089 inches per second PPV at 25 feet from the equipment. As indicated in **Table 8**, the vibration velocity of 0.089 inches per second PPV at a distance of 25 feet from construction equipment would be reduced to 0.031 inches per second PPV at 50 feet distance and reduced to 0.011 inches per second PPV at 100 feet distance.

The nearest off-site residential building is located to the north of the Project site. The existing building on the Project site is located approximately 50 feet away from the nearest off-site residential building. Therefore, bulldozers and loaded trucks would be expected to generate vibration levels of approximately 0.031 inches per second PPV or less and would not generate vibration levels in excess of 0.5 inches per second PPV. Therefore, construction vibration impacts would be less than significant and mitigation measures would not be required.

The Project's operations would include typical commercial-grade stationary mechanical and electrical equipment, such as air handling units, condenser units, and exhaust fans, which could produce vibration. In addition, the primary sources of transient vibration would include passenger vehicle circulation within the parking structure area. Ground-borne vibration generated by each of the above-mentioned activities would generate approximately up to 0.005 inches per second PPV adjacent to the Project site based on FTA data (FTA 2006). The potential vibration levels from all Project operational sources at the closest existing and future sensitive receptor locations would be less than the significance threshold of 0.5 inches per second PPV for structural damage. As such, operational vibration impacts associated with operation of the Project would be

below the significance threshold and impacts would be less than significant and mitigation measures would not be required.

Human Annoyance Vibration Impacts

As discussed in the preceding section, construction of the Project would be expected to generate vibration levels of approximately 0.031 inches per second PPV or less and would not generate vibration levels in excess of 0.035 inches per second PPV. Therefore, construction vibration impacts would be less than significant and mitigation measures would not be required.

Ground-borne vibration generated by commercial-grade stationary mechanical and electrical equipment, such as air handling units, condenser units, and exhaust fans would generate approximately up to 0.005 inches per second PPV adjacent to the Project site based on FTA data (FTA 2006). The potential vibration levels from all Project operational sources at the closest existing and future sensitive receptor locations would be less than the significance threshold of 0.035 inches per second PPV for perceptibility. As such, operational vibration impacts associated with operation of the Project would be below the significance threshold and impacts would be less than significant and mitigation measures would not be required.

Impact Threshold NOISE-3: A significant impact would occur if the Project would result in a substantial permanent increase in ambient noise levels in the vicinity of the project above levels existing without the project.

Impact Statement: Operational noise impacts from Project-related traffic would not be expected to increase noise levels at off-site noise-sensitive receptors in excess of the significance thresholds. Operational noise from the on-site Project parking structure, loading dock area, refuse collection area, and mechanical equipment would not be expected to increase noise levels at off-site noise-sensitive receptors in excess of the significance thresholds. Therefore, the Project would not be expected to result in a substantial permanent increase in ambient noise levels in the vicinity of the Project above levels existing without the Project and impacts would be less than significant.

As discussed under Impact Threshold NOISE-1, existing roadway noise levels were calculated along arterial segments in the Project site vicinity based on traffic data provided in the Project traffic impact analysis prepared by LLG for the Project (LLG 2017). As shown in **Table 7**, the maximum increase in Project-related traffic noise levels over existing traffic noise levels would be well below a “clearly noticeable” increase of 5.0 dBA in areas characterized by “normally acceptable” noise levels, and also well below a “just perceptible” increase of 3.0 dBA in areas characterized as “conditionally acceptable” noise levels. As a result, the Project-related traffic noise increases would be less than the threshold.

In addition, as discussed under Impact Threshold NOISE-1, operational noise from the Project’s parking structure, loading dock, and refuse collection areas would be located in the interior of the

building and acoustically shielded by the Project building itself. Operational mechanical equipment would be required to be designed with appropriate noise control devices, such as sound attenuators, acoustic louvers, or sound screens/parapet walls to comply with noise limitation requirements provided in LAMC, Chapter XI, Section 112.02. As a result, the Project's combined operational noise increase from on-site noise sources would not exceed the City's thresholds of significance.

Based on the results of the analysis, the Project would not be expected to result in a substantial permanent increase in ambient noise levels in the vicinity of the Project above levels existing without the Project and impacts would be less than significant and mitigation measures would not be required.

Impact Threshold NOISE-4: A significant impact would occur if the Project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Statement: Short-term and temporary noise from on-site construction equipment and activities would potentially increase noise levels at off-site noise-sensitive receptors in the Project vicinity in excess of the significance thresholds. Short-term and temporary noise from off-site construction truck trips would not be expected to increase noise levels at off-site noise-sensitive receptors in the Project vicinity in excess of the significance thresholds. Short-term and temporary noise from on-site construction equipment and activities could result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project. This impact would be potentially significant. Implementation of Mitigation Measure NOISE-1 would reduce this impact to less than significant.

During Project construction, the nearest and most affected off-site noise sensitive receptors that would be exposed to increased noise levels would be the existing residential uses located in proximity to the Project site as well as the noise sensitive religious facility (refer to Section 2.3.2, Noise Sensitive Receptors, for a description of the noise sensitive uses in the Project vicinity).

As shown in **Table 6**, the Project would have a potentially significant short-term and temporary construction noise impact on residential uses located to the north and east of the Project site and the religious facility to the east of the Project site. Implementation of **Mitigation Measure NOISE-1** would reduce construction-related noise to less than the significance threshold at the off-site sensitive uses. Thus, the short-term and temporary construction noise impact from on-site equipment and activities would be mitigated to less than significant.

Construction of the Project would require haul and vendor truck trips to and from the site to export soil and delivery supplies to the site. Trucks traveling to and from the Project site would be required to travel along a haul route approved by the City of Los Angeles. As discussed under Impact Threshold NOISE-1, the noise level increases by truck trips would be below the

significance threshold of 5 dBA. Therefore, off-site construction traffic noise impacts would be less than significant and no mitigation measures would be required.

3.4 Cumulative Impacts

3.4.1 Construction Noise

Noise from construction of the Project plus related projects would be localized, thereby potentially affecting areas immediately within 500 feet from each projects' construction site. Due to distance attenuation (more than 500 feet away) and intervening structures, construction noise from one site would not result in a noticeable increase in noise at sensitive receptors near another site, precluding a cumulative noise impact. In addition, all related projects would be required to implement noise mitigation measures as required by the California Environmental Quality Act (CEQA), if necessary to reduce significant impacts. Therefore, the Project's contribution to cumulative construction noise impacts would not be expected to be cumulatively considerable. As such, cumulative impacts would be less than significant.

3.4.2 Operational Noise

The Project site and surrounding area would generate noise that may contribute to cumulative noise from a number of community noise sources including vehicle travel, mechanical equipment (e.g., HVAC systems), and other noise typical of an urban environment. Due to City's provisions that limit on-site stationary-source mechanical equipment noise such as outdoor air-conditioning equipment, noise levels would be less than significant at the property line for each related project. As the Project's stationary-source impacts would be less than significant, stationary-source noise impacts attributable to cumulative development would also be less than significant.

However, the proposed Project and other developments in the Project area could produce traffic volumes that are capable of generating a roadway noise impacts. Cumulative noise impacts due to roadway traffic have been assessed based on the difference between noise generated by existing traffic volumes and traffic volumes projected under "Future With Project" conditions, based on traffic data provided in the Project traffic impact analysis prepared by LLG for the Project (LLG 2017). The traffic noise levels are provided in **Table 9, Operational Off-Site Traffic Noise – Future Conditions**. As indicated in **Table 9**, there would be no cumulative noise increase from the Project on future noise conditions. This increase in sound level would be attributed to other related projects and not to the proposed Project and would be well below a "clearly noticeable" increase of 5.0 dBA in areas characterized by "normally acceptable" noise levels, and also well below a "just perceptible" increase of 3.0 dBA in areas characterized as "conditionally acceptable" noise levels. The increase in noise levels would be lower at the remaining roadway segments analyzed. As a result, the Project-related cumulative noise increases would be less than the threshold and therefore less than significant, and no mitigation measures would be required.

TABLE 9
OPERATIONAL OFF-SITE TRAFFIC NOISE – FUTURE CONDITIONS

Roadway Segment	Calculated Traffic Noise Levels Measured at 25 Feet from the Roadway (dBA, Peak Hour L_{eq} ; Equivalent to CNEL)			
	Existing (A)	Future with Project (B)	Cumulative Increment (B-A)	Exceed Threshold?
James M Wood				
Between Hoover Street and Alvarado Street	68.4	69.6	1.2	No
Between Alvarado Street and Union Avenue	68.7	69.8	1.1	No
Hoover Street				
Between James M Wood Boulevard and Olympic Boulevard	71.8	72.5	0.7	No
Alvarado Street				
Between Olympic Boulevard and James M Wood Boulevard	71.7	72.7	1.0	No
Between James M Wood Boulevard and 8th Street	71.6	72.8	1.2	No
Between 8th Street and 7th Street	71.6	72.7	1.1	No

SOURCE: ESA 2017.

3.4.3 Groundborne Vibration

Due to the rapid attenuation characteristics of ground-borne vibration and distance of the cumulative projects to the Project site, there is no potential for cumulative construction- or operational-period impacts with respect to ground-borne vibration. Therefore, impacts would be less than significant.

4.0

Summary of Results

The Project would replace the existing retail uses on the site with a new hotel use. As a result sound levels could increase on the Project site and in the vicinity due to activity associated with occupants, visitors, consumers, and the operation of mechanical equipment and automobiles. The following is a summary of the Project's construction and operational noise impacts.

4.1 Construction Noise

As would be the case for construction of most land use development projects, construction of the proposed Project would require the use of heavy-duty equipment with the potential to generate audible noise above the ambient background noise level. Noise impacts from construction activities are generally a function of the noise generated by construction equipment, equipment locations, the sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. Construction of the Project must comply with applicable regulations that would minimize Project-related noise sources. These regulations include Chapter VI, Section 41.40 of the LAMC (permissible construction hours) and Chapter XI, Section 112.02 of the LAMC (noise limits for all building outdoor mounted mechanical and electrical equipment). In addition, contractors are expected to implement industry-wide best management practices to ensure equipment are operating in accordance with industry standards, which includes equipping all construction equipment, fixed or mobile, with properly operating and maintained noise mufflers, consistent with manufacturers' standards and specifications.

During Project construction, the nearest and most affected off-site noise sensitive receptors that would be exposed to increased noise levels would be the existing residential uses located in proximity to the Project site as well as the noise sensitive religious facility (refer to Section 2.3.2, Noise Sensitive Receptors, for a description of the noise sensitive uses in the Project vicinity). As shown in **Table 6**, the Project would have a potentially significant short-term and temporary construction noise impact on residential uses located to the north and east of the Project site and the religious facility to the east of the Project site. Implementation of **Mitigation Measure NOISE-1** would reduce construction-related noise to less than the significance threshold at the off-site sensitive uses. Thus, the short-term and temporary construction noise impact from on-site equipment and activities would be mitigated to less than significant.

Construction of the Project would require haul and vendor truck trips to and from the site to export soil and delivery supplies to the site. The noise level increases by truck trips would be below the significance threshold of 5 dBA. Therefore, off-site construction traffic noise impacts would be less than significant and no mitigation measures would be required.

4.2 Operational Noise

The Project would generate operational noise from Project-related vehicle travel, mechanical equipment (e.g., HVAC systems), the on-site parking structure, loading dock area, and refuse collection area. Roadway noise levels were calculated along arterial segments in the Project site vicinity based on traffic data provided in the Project traffic impact analysis prepared by LLG for the Project (LLG 2017). As shown in **Table 7**, the increase in traffic noise level would be well below a “clearly noticeable” increase of 5.0 dBA in areas characterized by “normally acceptable” noise levels, and also well below a “just perceptible” increase of 3.0 dBA in areas characterized as “conditionally acceptable” noise levels. As a result, the Project’s traffic-related noise increases would be less than the threshold and therefore less than significant, and no mitigation measures would be required.

The Project’s parking structure and loading dock and refuse collection areas would be located in the interior of the building and acoustically shielded by the Project building itself. Operational mechanical equipment would be required to be designed with appropriate noise control devices, such as sound attenuators, acoustic louvers, or sound screens/parapet walls to comply with noise limitation requirements provided in LAMC, Chapter XI, Section 112.02. As a result, the Project’s combined operational noise increase from on-site noise sources would not exceed the City’s thresholds of significance and impacts would be less than significant.

4.3 Groundborne Vibration

Construction machinery and operations can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment used. The results from vibration impacts can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. With regard to the proposed Project, ground-borne vibration would be generated primarily during site clearing and grading activities and by off-site haul-truck traveling on surface streets. Ground-borne vibration impacts are confined to short distances (i.e., 50 feet or less) from the vibration source and decrease rapidly with distance.

The nearest off-site residential building is located to the north of the Project site. The existing building on the Project site is located approximately 50 feet away from the nearest off-site residential building. Therefore, bulldozers and loaded trucks would be expected to generate vibration levels of approximately 0.031 inches per second PPV or less and would not generate vibration levels in excess of the significance threshold for structural damage (0.5 inches per second PPV) or the significance threshold for human annoyance (0.035 inches per second PPV). Therefore, construction vibration impacts would be less than significant and mitigation measures would not be required.

The Project’s operations would include typical commercial-grade stationary mechanical and electrical equipment, such as air handling units, condenser units, and exhaust fans, which could produce vibration. In addition, the primary sources of transient vibration would include passenger vehicle circulation within the parking structure area. Ground-borne vibration generated

by each of the above-mentioned activities would generate approximately up to 0.005 inches per second PPV adjacent to the Project site based on FTA data (FTA 2006). The potential vibration levels from all Project operational sources at the closest existing and future sensitive receptor locations would be less than the significance threshold for structural damage (0.5 inches per second PPV) or the significance threshold for human annoyance (0.035 inches per second PPV). As such, operational vibration impacts associated with operation of the Project would be below the significance threshold and impacts would be less than significant and mitigation measures would not be required.

5.0

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