3.6 NOISE

This section describes the existing noise conditions in the project vicinity for The Bond Project (project or proposed project) identifies associated regulatory requirements, evaluates potential noise impacts, and identifies mitigation measures related to implementation of the proposed project.

3.6.1 Environmental Setting

The project site is located in an urbanized environment and is subject to typical urban noises, such as noise generated by traffic, machinery, and other outdoor activities. The predominant noise sources at the project site include transportation activities and stationary sources. "Transportation noise" typically refers to noise from automobile use, trucking, aircraft, and rail operations. "Stationary noise" typically refers to noise from sources such as heating, ventilation, and air conditioning (HVAC) systems, compressors, landscape maintenance equipment, on-site construction activities or machinery associated with local industrial or commercial activities. Site-specific ambient noise measurements are discussed later in this section.

Noise Characteristics

Sound can be described in terms of level or amplitude (measured in decibels (dB)), frequency or pitch (measured in hertz (Hz) or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the amplitude of sound is the decibel. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear. Table 3.6-1 provides examples of A-weighted noise levels from common sounds.

Table 3.6-1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
—	110	Rock band
Jet flyover at 300 meters (1,000 feet)	100	—
Gas lawn mower at 1 meter (3 feet)	90	—
Diesel truck at 15 meters (50 feet), at 80 kph (50 mph)	80	Food blender at 1 meter (3 feet) Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area, heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quiet urban daytime	50	Large business office Dishwasher, next room

Table 3.6-1
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library
Quiet rural night time	20	Bedroom at night, concert hall (background)
—	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013.
Notes: kph = kilometers per hour; mph = miles per hour

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech interference, sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and local agencies have established criteria to protect public health and safety, to prevent disruption of certain human activities, and to minimize annoyance.

Several descriptors of noise (noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise, on a community. These descriptors include the equivalent noise level over a given period (L_{eq}), the statistical sound level (L_n), the day–night average noise level (L_{dn}), and the community noise equivalent level (CNEL). Each of these descriptors uses units of dBA.

L_{eq} is a sound energy level averaged over a specified time period. L_{eq} is a single numerical value that represents the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour L_{eq} measurement would represent the average amount of energy contained in all the noise that occurred in that 1 hour. L_{eq} is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on sensitive receptors. L_{max} is the greatest sound level measured during a designated time interval or event. L_n is a statistical description of the sound level that is exceeded over some fraction of a given period of time. For example, the L_{50} noise level represents the noise level that is exceeded 50% of the time. L_{90} noise level represents the noise level that is exceeded 90% of the time and for environmental noise is representative of the background ambient noise level.

Unlike the L_{eq} and L_n metrics, L_{dn} and CNEL metrics always represent 24-hour periods, usually on an annualized basis. L_{dn} and CNEL also differ from L_{eq} and L_n because they apply a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when speech and sleep disturbance is of more concern). "Time weighted" refers to the fact that L_{dn} and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL,

noise occurring during the daytime (7:00 a.m.–7:00 p.m.) receives no penalty. Noise during the evening (7:00 p.m.–10:00 p.m.) is penalized by adding 5 dB, while nighttime (10:00 p.m.–7:00 a.m.) noise is penalized by adding 10 dB. L_{dn} differs from CNEL in that the daytime period is defined as 7:00 a.m.–10:00 p.m., thus eliminating the evening period. L_{dn} and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. These two metrics generally differ from one another by no more than 0.5 to 1 dBA.

In the context of community noise (i.e., outside of a listening laboratory or other controlled conditions), it is generally accepted that the average healthy listener can barely perceive a noise level change of 3 dBA (Caltrans 2013). A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as twice or half as loud. A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the average daily numbers of traffic on a road) would result in a barely perceptible change in sound level.

Some guidance regarding the determination of a substantial permanent increase in ambient noise levels in the project vicinity above existing levels is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations (FICON 1992). The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a qualitative measure of the adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment.

The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn}. The changes in noise exposure that are shown in Table 3.6-2 are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis to define a substantial increase in community noise levels related to all transportation noise sources and permanent non-transportation noise sources.

Table 3.6-2
Measures of Substantial Increase for Community Noise Sources

Ambient Noise Level Without Project (L_{dn})	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by:
<60 dBA	+ 5 dBA or more
60-65 dBA	+ 3 dBA or more
>65 dBA	+ 2 dBA or more

Source: FICON Vibration Characteristics

Vibration Characteristics

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. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earth-moving equipment.

Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square amplitude is most frequently used to describe the effect of vibration on the human body and is defined as the average of the squared amplitude of the signal. Decibel notation (vibration decibel (VdB)) is commonly used to measure root mean square. The decibel notation acts to compress the range of numbers required to describe vibration.

High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of vibration can damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes). Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would be considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise. Sensitive receptors near the project site include the following:

- Multifamily homes located directly north of and adjacent to the project site, and east across North Ogden Drive
- Fountain Day School located directly north and adjacent to the project site

The above sensitive receptors represent the closest residential and educational land uses with the potential to be impacted by the proposed project. Additional sensitive receptors are located farther from the project site in the surrounding community and would be less impacted by noise and vibration levels than the above-listed sensitive receptors. In addition to the off-site receptors listed above, the residential units and hotel rooms to be constructed as part of the proposed project are considered sensitive receptors.

Existing Noise Conditions

Currently, the project site generates noise associated with existing commercial, multifamily residential, and parking lot operations. Additionally, the project site is primarily subject to traffic noise associated with adjacent roadways including Santa Monica Boulevard to the south, North Orange Grove Avenue to the west, and North Ogden Drive to the east.

Noise measurements were conducted on and near the project site in March 2017 to characterize the existing noise environment. Table 3.6-3 provides the locations, date, and time the noise measurements were taken, and the field noise measurement data sheets are included in Appendix F. The noise measurements were made using a Rion NL-52 sound level meter equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The sound level meter meets the current American National Standards Institute (ANSI) standard for a Type 1 (Precision) sound level meter. The sound level meter was calibrated before and after the measurements, and the measurements were conducted with the microphone positioned approximately 5 feet above the ground and covered with a foam windscreen.

Six noise measurement locations that represented key potential sensitive receptors or sensitive land uses at or near the project site; these locations are depicted as Receptors 1–6 (ST1–ST6) on Figure 3.6-1. Locations ST1, ST2, ST3, and ST5 were at the project site or immediately adjacent to the project site. ST1 was along Santa Monica Boulevard approximately 10 feet from the edge of the sidewalk. ST2 was located 10 feet from the centerline of the alleyway. ST3 and ST4 were off North Orange Grove Avenue. ST5 was located on the west side of North Ogden Drive. ST6 was located on the east side of North Ogden Drive.

Table 3.6-3
Measured Noise Levels – March 2017

Measurement Location	Location	Time	Description of Noise Sources	L_{eq} (dBA)	L_{max} (dBA)	L_{90} (dBA)
ST1	10 feet from Santa Monica Boulevard between North Orange Grove Avenue and	8:47 a.m. – 8:57 a.m.	Traffic on Santa Monica Boulevard, Distant Conversations/Yelling, Distant Traffic	67	82.2	58.3

Table 3.6-3
Measured Noise Levels – March 2017

Measurement Location	Location	Time	Description of Noise Sources	L_{eq} (dBA)	L_{max} (dBA)	L_{90} (dBA)
ST2	10 feet from alleyway center line	9:00 a.m. – 9:10 a.m.	Traffic, Birds, Distant Traffic	57.9	75.1	50.1
ST3	10 feet from the edge of pavement of North Orange Grove Avenue near parking lot	8:21 a.m. – 8:31 a.m.	Traffic on North Orange Grove Avenue, Distant Conversation, Distant Traffic	60.4	74.6	55
ST4	10 feet from the edge of pavement of North Orange Grove Avenue near school	8:33 a.m. – 8:43 a.m.	Traffic on North Orange Grove Avenue, Distant Conversation, Distant Traffic, Fountain at School, Truck Docking	60.1	69.6	55.1
ST5	20 feet from the edge of pavement of North Ogden Drive	9:12 a.m. – 9:22 a.m.	Traffic, Birds, Distant Traffic	54.3	68	47.9
ST6	8 feet from the centerline of North Ogden Drive	9:24 a.m. – 9:34 a.m.	Traffic, Birds, Rustling Leaves	57	73.8	46.7

Source: Appendix F (noise appendix).
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); L_{max} = maximum sound level during the measurement interval

3.6.2 Relevant Plan, Policies, and Ordinances

State

Government Code Section 65302(g)

California Government Code Section 65302(g) requires the preparation of a Noise Element in a general plan, which must identify and appraise the noise problems in the community. The Noise Element must recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and must quantify, to the extent practicable, current and projected noise levels for the following sources:

- Highways and freeways
- Primary arterials and major local streets
- Passenger and freight on-line railroad operations and ground rapid transit systems
- Aviation and airport-related operations
- Local industrial plants
- Other ground stationary noise sources contributing to the community noise environment.

California Code of Regulations Title 24

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation. State regulations governing noise levels generated by individual motor vehicles and occupational noise control are not applicable to planning efforts, nor are these areas typically subject to CEQA analysis. State noise regulations and policies applicable to the proposed project include Title 24 requirements and noise exposure limits for various land use categories.

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for residential buildings (24 CCR, Part 2, Chapter 12, Section 1207.11.2). Title 24 establishes standards for interior room noise attributable to outside noise sources. Title 24 also specifies acoustical studies should be prepared whenever a residential building or structure is proposed to be located in areas with exterior noise levels 60 dB L_{dn} or greater. The acoustical analysis must show the building has been designed to limit intruding noise to an interior level not exceeding 45 dB L_{dn} for any habitable room.

Local

City of West Hollywood Noise Control Ordinance

The City's Noise Control Ordinance (Chapter 9.08 of the City's Municipal Code) serves to protect people from non-transportation noise sources such as construction activities, commercial operations, machinery, and nightlife (City of West Hollywood 1985). The City's Noise Control Ordinance outlines factors to be considered when determining whether a noise, sound or vibration is a prohibited noise source within the City (Chapter 9.08.040); provides examples of prohibited noises (Chapter 9.08.050); and discusses noise exemptions (Chapter 9.08.060).

The City's Noise Control Ordinance includes general noise regulations (Chapter 9.08.050f) that regulate noise from construction activities. Construction noise deemed to be disturbing is prohibited between the hours of 7:00 p.m. to 8:00 a.m. Monday through Friday, or at any time on Saturdays (except between the hours of 8:00 a.m. and 7:00 p.m., interior construction is permissible); or at any time on Sundays or holidays. Section 9.08.060 allows the City Manager to exempt projects from these limits if necessary to protect or promote public safety or welfare.

In addition, as part of the City's Noise Control Ordinance examples of prohibited noises (Chapter 9.08.050), the City's Noise Control Ordinance regulates noise between the hours of 10:00 p.m. and 8:00 a.m. The City's Noise Control Ordinance prohibits between the hours of 10:00 p.m. and 8:00 a.m. using, operating or permitting to be played, used or operated any radio, musical instrument, phonograph, television set, instrument or any similar device at a volume sufficiently loud as to be plainly audible at a

distance of fifty feet or more (Chapter 9.08.050a). The City's Noise Control Ordinance also prohibits continuous, repeated or sustained noise from the premises of any commercial establishment which is adjacent to residential dwelling units, that is plainly audible from the residential dwelling units between the hours of 10:00 p.m. and 8:00 a.m. (Chapter 9.08.050k).

City of West Hollywood General Plan 2035 Safety and Noise Element

The Safety and Noise Element of the West Hollywood General Plan 2035 (City of West Hollywood 2011) identifies noise standards that have been adopted by the City for the purpose of establishing standards for noise exposure. Figure 10-4 and Figure 10-5 in the West Hollywood General Plan 2035 depicts the 2010 traffic noise contours and future traffic noise contours for the City, respectively. Transportation noise impacted areas are those areas that fall within the 60 dBA CNEL or greater noise contours.

Table 10-1 of the West Hollywood General Plan 2035 (City of West Hollywood 2011) summarizes compatibility guidelines for non-transportation source noise[1] affecting noise-sensitive land uses (notably, residential properties). A project should not cause noise-sensitive land uses to be exposed to noise levels that exceed 55 dBA L_{eq} during daytime hours (8 a.m. to 10 p.m.) or 50 dBA L_{eq} for nighttime hours (10 p.m. to 8 a.m.).

Table 3.6-4 shows the land use compatibility guidelines based on the City's noise level guidance for residential properties. A project is considered to be compatible with the noise environment if the noise level generated by the project falls within Zone A (normally acceptable) or Zone B (conditionally acceptable). If the noise level of a project falls into Zone A, typically no mitigation is needed and if it falls into Zone B, noise reduction mitigation measures may be required to meet City and State Title 24 noise standards. If the noise level of a project falls within Zone C, mitigation is likely needed to meet City noise standards. Mitigation may include, but is not limited to, construction of noise barriers, and/or the inclusion of substantial building sound insulation. If noise levels of a project falls within Zone D, the project is incompatible with the noise environment. The City's conditionally acceptable noise level for residential land uses is 55-65 dBA CNEL, and for transient lodging (hotels and motels) is 60-70 dBA CNEL; therefore, the more conservative threshold of 55 – 65 dBA CNEL is utilized for this analysis, for the habitable spaces within the project site.

[1] Not including noise from construction activities, which is addressed in the City's Noise Control Ordinance.

Table 3.6-4
Noise/Land Use Compatibility Matrix

Land Use	Community Noise Exposure (Ldn or CNEL)						
	50	*55*	*60*	*65*	*70*	*75*	*80*
Residential							
Transient Lodging – Motel, Hotel							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Parks							
Golf Course, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial, and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Source: City of West Hollywood 2011.

ZONE A - Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved meet conventional Title 24 construction standards. No special noise insulation requirements.

ZONE B - Conditionally Acceptable: New construction or development shall be undertaken only after a detailed noise analysis is made and noise reduction measures are identified and included in the project design.

ZONE C- Normally Unacceptable: New construction or development is discouraged. If new construction is proposed, a detailed analysis is required, noise reduction measures must be identified, and noise insulation features included in the design.

ZONE D- Clearly Unacceptable: New construction or development should not be undertaken.

The West Hollywood General Plan 2035 (City of West Hollywood 2011) includes goals and policies that will be applied to the proposed project related to noise. The Safety and Noise Element identifies significant noise issues in the City that include the following:

- Residential neighborhoods are located adjacent to heavily traveled arterials, some of which are exposed to high ambient noise levels;
- Traffic congestion occurs during the evening hours in and around areas containing concentrations of entertainment uses. The associated parking and noise spillover causes disturbances to residential areas;
- Noise generated by customers and operations of night clubs, restaurants, bars, and other similar uses during evening hours often impacts adjacent residences;
- The nighttime use of surface parking lots and unenclosed garages often causes noise impacts on adjacent residences;
- Increases in traffic volumes increase noise levels throughout the City;
- Commercial and residential uses are located in proximity to one another, creating potential noise conflicts between these uses; and
- Mixed-use buildings, which integrate residences above ground floor commercial uses, present potential noise conflicts from traffic noise generated from the commercial frontage street and noise generated from ground floor commercial activity.

City of West Hollywood General Plan 2035 Environmental Impact Report

The City's General Plan EIR identifies thresholds specific to individual projects constructed throughout the City. Mitigation measure 3.9-1 in the General Plan EIR states the City shall use the following thresholds and procedures for CEQA analysis of projects, consistent with policies adopted within the General Plan:

- The City shall apply the noise standards specified in Table 10-1 and Table 10-2 of the Safety and Noise Element to projects analyzed under CEQA.
- In addition to the foregoing, an increase in ambient noise levels is assumed to be a significant noise concern if a project would cause ambient noise levels to exceed the following:
    - Where the existing ambient noise level is less than 60 dB, a project-related permanent increase in ambient noise levels of 5 dB Ldn or greater.
    - Where the existing ambient noise level is greater than 60 dB, a project-related permanent increase in ambient noise levels of 3 dB Ldn or greater.
    - A project-related temporary increase in ambient noise levels of 10 dB Leq or greater.

Vibration Standards

CEQA requires the potential for any excessive groundborne noise and vibration levels to be analyzed; however, it does not define the term "excessive" vibration. Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of groundborne noise and vibration. To date, the City has not adopted a threshold for ground-borne vibration impacts. However, the Department of Transportation (Caltrans) has adopted the vibration standards to evaluate potential impacts related to construction activities. Information from Caltrans indicates that continuous vibrations with a peak particle velocity (PPV) of approximately 0.1 inches/second begin to cause annoyance to humans. The threshold at which vibration becomes "unpleasant" for humans is from 0.4–0.5 inches/second PPV (Caltrans 2004). For standard construction buildings that do not include plaster walls, Caltrans identifies a threshold of 0.5 inches/second PPV as the lower limit where building damage is possible. For the purposes of this analysis, 0.5 inches/second PPV is used as the significance threshold for building damage and annoyance to building occupants.

3.6.3 Thresholds of Significance

As part of the October 2016 Initial Study, it was determined the proposed project would have no impact relative to the exposure of people residing or working in the project area to excessive aviation-related noise (i.e., Thresholds E and F). Accordingly, these issues and thresholds are not further analyzed in the EIR.

Since publication of the Initial Study, the CEQA Guidelines have undergone a comprehensive update. Therefore, the analysis that follows relies on the updated thresholds in Appendix G of the 2019 CEQA Guidelines. The following thresholds of significance are based on Appendix G of the 2019 CEQA Guidelines. Based on these thresholds, implementation of the proposed project would have a significant adverse impact related to noise if it would result in:

NOI-1 The generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

NOI-2 The generation of excessive groundborne vibration or groundborne noise levels.

Quantitative thresholds of significance have been established for the purposes of this analysis based on the local polices and regulations described in Section 3.6.2 and are listed below.

- During construction activities, a project-related temporary increase in ambient noise levels of 10 dBA L_{eq} or greater would be considered a significant noise impact, based on the West Hollywood General Plan Environmental Impact Report (City of West Hollywood 2011).

- For operational stationary sources, the exterior noise standard during daytime hours (8 a.m. to 10 p.m.) is 55 dBA L_{eq} and for nighttime hours (10 p.m. to 8 a.m.) is 50 dBA L_{eq}. Exceedance of these standards at sensitive receptors would be considered a significant noise impact, based on the West Hollywood General Plan 2035 Safety and Noise Element (City of West Hollywood 2011).
- The City's conditionally acceptable noise level for hotels and businesses is 60 to 70 dBA CNEL. The City's conditionally acceptable noise level for residential land uses is 55 to 65 dBA CNEL. Operational noise generated by the proposed project in excess of 55 to 60 dBA CNEL would be considered a significant noise impact, based on the West Hollywood General Plan 2035 Safety and Noise Element (City of West Hollywood 2011).
- Title 24 of the California Building Code requires that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} in any residential unit or hotel guest room. Exceedance of this standard within the proposed hotel rooms would be considered a significant noise impact.
- Off-site noise impacts due to project-generated traffic would be considered significant if the project-generated traffic would cause an increase of 5 dB from existing noise levels, based on the FICON recommendations for areas with ambient noise levels of less than 60 dBA without the project.

The City does not have quantitative noise limits as applied to people gathering or outdoor amplified sound systems. However, as noted above, the City's Noise Control Ordinance includes regulations on noise between the hours of 10:00 p.m. and 8:00 a.m. Therefore, to ensure compliance with the City's Noise Control Ordinance's restrictions on noise that is "plainly audible" between the hours of 10:00 p.m. and 8:00 a.m. (Chapter 9.08.050a), the significance threshold for the people gathering in the proposed project's outdoor areas or from the project's outdoor amplified sound system between 10:00 p.m. and 8:00 a.m. would be 5 dBA below the lowest measured background sound level (L_{90}) at the property line of the affected noise sensitive receptor during the nighttime hours. This should reduce the noise to less than "plainly audible." The L_{90} noise level is generally considered to represent the true background or ambient level, as it excludes intermittent peak noise sources such as a truck passing by or dog barking. Further, the significance threshold of 5 dBA below the lowest background sound levels measured in L_{90} is a more conservative threshold than the operational stationary sources threshold listed above.

Therefore, for purposes of analyzing people gathering in the project's outdoor areas and the use of amplified sound systems in those outdoor areas, the proposed project would result in a significant noise impact from people gathering or from outdoor amplified sound system if:

- The noise level generated at the outdoor uses, including people gathering and amplified sound systems, would increase the existing ambient noise level (L_{eq}) at noise sensitive uses

by 5 dBA (where the existing ambient noise level is less than 60 dBA L_{eq}) or 3 dBA (where the existing ambient noise level is 60 dBA L_{eq} or greater), during the daytime hours between 8:00 a.m. and 10:00 p.m.; or

- The noise level generated from the outdoor uses, including people gathering and amplified sound systems, at the property line of a noise sensitive use is greater than the lowest background noise level (L_{90}) minus 5 dBA, during the nighttime hours between 10:00 p.m. and 8:00 a.m.

Finally, groundborne vibration during construction or operation of the proposed project would be considered significant if the proposed project would result in vibration levels of 0.5 inches/second or greater peak particle velocity at adjacent buildings, following the Caltrans threshold.

3.6.4 Methodology

Ambient noise measurements were conducted to quantify the existing daytime noise environment at six sites in L_{eq} and L_{max}. Noise levels resulting from the proposed construction activities have been calculated using data from reports prepared by the Federal Transit Administration (FTA 2006) and other field data. The noise impact assessment utilized criteria established in the West Hollywood General Plan 2035 (City of West Hollywood 2011) and the West Hollywood Noise Control Ordinance (Chapter 9.08 of the City's Municipal Code).

The noise level associated with selected roadways was determined based on ambient noise measurements and using the Federal Highway Administration (FHWA) TNM 2.5 Traffic Noise Model (FHWA 2004). Information used in the model included the Existing (Year 2015), Existing-plus-Project, Cumulative-without-Project, and Cumulative-with-Project traffic volumes. Traffic volumes for each of the previously mentioned scenarios were obtained from the traffic study (Appendix G) conducted for the proposed project area. This traffic data was used to model noise levels under those scenarios. Noise levels were modeled at representative noise-sensitive receivers. The receivers were modeled to be 5 feet above the local ground elevation.

The Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest occupied noise-sensitive land use. Although the model was funded and promulgated by the FHWA, the RCNM is often used for non-roadway projects because the same types of construction equipment used for roadway projects are also used for other project types. Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance from the noise-sensitive receiver. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an

extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis.

3.6.5 Impact Analysis

Threshold NOI-1: ***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?***

On-site noise-generating activities associated with the proposed project would include:

- Short-term construction
- Long-term operational noise associated with the mixed-use operations,
  - hotel,
  - restaurant,
  - residential units,
  - art gallery,
  - proposed subterranean garage,
  - conversations from people gathering in the project's outdoor areas (pool, outdoor dining, etc.),
  - the use of amplified sound systems in the project's outdoor areas, and
  - other on-site noise sources (e.g., HVAC equipment).

The proposed project also would generate off-site traffic noise along various roadways in the area. In addition, the proposed uses on site would be subject to traffic noise from Santa Monica Boulevard, North Orange Grove Avenue, and North Ogden Drive. The short-term construction-related noise impacts of the proposed project are analyzed below, followed by a discussion of the long-term operational noise impacts of the proposed project.

Construction Noise (Short-Term Impacts)

Proposed project construction would begin in Fall 2019 and end in Winter 2021. Construction activities for the project site would involve the following sequence: (1) demolition, (2) site preparation (clearing and grubbing), (3) grading and excavation, (4) building construction, (5) paving, and (6) architectural coating. The following are typical types of construction equipment that would be expected:

- Excavators

- Dozers
- Backhoes
- Forklifts
- Paving equipment
- Materials delivery trucks
- Augers
- Cranes
- Concrete trucks

The types of equipment that would be used to construct the proposed project include standard equipment that would be employed for any routine construction project of this scale; however, construction equipment with substantially higher noise-generation characteristics (such as pile drivers, rock drills, blasting equipment) would not be necessary for construction of the multi-use hotel building, subterranean parking, and related project components.

Construction noise is difficult to quantify because of the many variables involved, including the specific equipment types, size of equipment used, percentage of time each piece is in operation, condition of each piece of equipment, and number of pieces that would operate on the site. The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is depicted in Table 3.6-5. The noise values represent maximum noise generation, or full-power operation of the equipment.

As one increases the distance between equipment, or separation of areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of separate noise sources added together. In addition, typical operating cycles may involve two minutes of full-power operation, followed by three or four minutes at lower levels. The average noise level during construction activities is generally lower, since maximum noise generation may only occur up to 50% of the time.

Table 3.6-5
Typical Construction Equipment Noise Emission Levels and Usage Factors

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec 721.560 Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @50ft (dBA, slow) samples averaged*	Number of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-- N/A --	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372

Table 3.6-5
Typical Construction Equipment Noise Emission Levels and Usage Factors

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec 721.560 Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @50ft (dBA, slow) samples averaged*	Number of Actual Data Samples (Count)
Bar Bender	No	20	80	-- N/A --	0
Blasting	Yes	-- N/A --	94	-- N/A --	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-- N/A --	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-- N/A --	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-- N/A --	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	40	55	75	1
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3

Table 3.6-5
Typical Construction Equipment Noise Emission Levels and Usage Factors

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec 721.560 Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @50ft (dBA, slow) samples averaged*	Number of Actual Data Samples (Count)
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-- N/A --	0
Tractor	No	40	84	-- N/A --	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Source: FHWA 2008.

The nearest noise-sensitive receptor to the construction site would be the residences located to the north and northeast along Ogden Drive and the Fountain Day School, located adjacent to the northern portion of the project site. The nearest residence is represented by receiver ST 2 and the Fountain Day School is represented by receiver ST4 in the measurements section. Construction activities would occur both close to and far from nearby noise-sensitive uses. Noise levels from construction typically decrease at a rate of approximately 6 dB per doubling of distance from the source.

The estimated construction noise levels at nearby noise-sensitive land uses and the resulting noise level increase relative to measured ambient noise levels are summarized in Table 3.6-6, and the RCNM input / output data files are included in Appendix F. At a distance of 50 feet (the distance from the closest receptor to the project site's acoustic center[2]), construction noise levels would range from approximately 75 to 84 dBA.

[2] The acoustic center represents the idealized point from which the energy sum of all construction activity noise, near and far, would be centered. The acoustic center is derived by taking the square root of the product of the nearest and the farthest distances.

Table 3.6-6
Short-Term (Construction) Noise Levels

Construction Phase	Measured Ambient Noise Levels (dBA L_{eq})[1]	Estimated Construction Noise Level (dBA L_{eq})	Resulting Noise Level Increase During Construction (dBA L_{eq})
Receptor 50 feet from Acoustic Center of Project Site			
Demolition	58	83	25
Site Preparation	58	75	17
Grading	58	84	26
Paving	58	83	25
Building Construction	58	81	23

Source: Appendix F (noise appendix).
Note: Per Chapter 9.08.050(f) of the City's Municipal Code, construction noise deemed to be disturbing is prohibited between the hours of 7 p.m. to 8 a.m. Monday through Friday, or at any time on Saturdays (except, between the hours of 8 a.m. and 7 p.m., interior construction is permissible); or at any time on Sundays or holidays.

1 Refer to Table 3.6-2 for measured ambient noise levels representative of noise-sensitive land uses. ST2 is used as the representative measurement location. Documented level for nearest residential land use is 57.9 dBA L_{eq}. That number has been rounded to 58 dBA for comparison to the construction noise levels.

As shown in Table 3.6-6, adjacent residences and Fountain Day School would experience short-term noise level increases in the range of 17 to 26 dBA L_{eq} above ambient levels. Thus, the project would exceed the 10 dBA temporary noise increase threshold, constituting a **potentially significant impact**. Given the proximity to sensitive receptors, the applicant has proposed to the City a number of noise control methods during construction, described below, as Project Design Features to reduce the impact of construction noise on nearby sensitive receptors.

Applicant's Project Design Features During Construction (Mitigation Measure MM-NOI-1)

- The Applicant will install an enhanced noise/dust barrier around the perimeter of the site, with shoring piles extending 15' above street level[3], pursuant to the document entitled Phase 1 Demolition / Shoring & Sound Wall in the Construction Schedule (refer to the noise appendix). The noise barrier includes sound blankets (STC 29) which can be installed in multiple layers for improved insulation from noise for neighboring receptors.
- The Phase 1 Demolition / Shoring & Sound Wall process has been divided into four sub-phases to further reduce impacts upon neighboring receptors. The Applicant will coordinate with Fountain Day School so the Phase 1 Demolition / Shoring & Sound Wall construction occurs while the school is closed.

3 Based upon noise barrier calculations (Appendix F), the 15-foot high temporary noise barrier would result in a noise level reduction of approximately 19 decibels.

- The Applicant will use a backhoe instead of an excavator until the sound wall is in place; the Applicant will also limit use of heavy equipment such as excavator/forklift/loader so no duplicative units are operating concurrently.

The erection of the sound barrier early in the construction process, and limiting the number of heavy equipment operating simultaneously, would reduce construction noise at adjacent land uses to less than the levels illustrated in Table 3.6-6. Because construction noise could still be annoying, disruptive, and exceed the 10 dBA temporary noise increase threshold, further mitigation is required.

The Municipal Code requires limited construction hours, so construction does not happen during sleeping hours. Mitigation measure MM-NOI-2 requires construction noise control efforts such as ensuring that equipment is fitted with effective mufflers, shutting off idling equipment, placing stationary equipment and staging areas as far as practical from noise sensitive receptors, and using temporary barriers around individual equipment generating particularly high noise levels. These were required under the General Plan 2035 EIR as a program-level mitigation to address general construction noise for projects within the City, and will be applicable to the proposed project. The General Plan EIR concluded construction noise would be reduced to less than significant through incorporation of the mitigation measures required therein, but that additional controls could be necessary for construction immediately adjacent to noise-sensitive land uses. Beyond the mitigation required under the General Plan EIR, MM-NOI-3 and MM-NOI-4 further capture and refine the construction noise controls proposed by the Applicant by carefully outlining how construction would be done to reduce impacts to adjacent noise-sensitive receptors. For example, under MM-NOI-3, temporary noise barriers with a minimum height of 15 feet above street level are required to be installed along the Fountain Day School property line and along the entire northern and western property boundary of the multi-family residences immediately adjacent to the south of the project site (on North Ogden Drive) prior to initiation of any demolition. In addition, as soon as sufficient framing is completed on each upper floor of the proposed building, sound blankets or exterior sheathing shall be installed on the north façade of the building to reduce transmission of construction activity noise on upper floors to the adjacent Fountain Day School property. Under MM-NOI-4, the construction contractor is limited to using a backhoe instead of an excavator until the soundwalls are in place, and shall also limit use of heavy equipment such as excavator/forklift/loader such that no duplicative units are operating concurrently. MM-NOI-5, also requires the Applicant to reduce potentially significant noise impacts, and provides further requirements for noise reduction in regard to stationary construction equipment. Finally, MM-NOI-6 requires construction noise level verification reporting. Considering Municipal Code restrictions, the Applicant's Project Design Features, which include the erection and maintenance of property-line temporary noise barriers during demolition and constriction and also regulate the timing and location of construction activities on site in a manner that accounts for the sensitive receptors, and with implementation of MM-NOI-1 through MM-NOI-6, temporary construction-related noise impacts would be reduced to **less than significant with mitigation**. Refer to Table 3.6-7.

Table 3.6-7
Short-Term (Construction) Noise Levels – Mitigated

Construction Phase	Measured Ambient Noise Levels (dBA L_{eq})[1]	Construction Noise Level (dBA L_{eq}) Before MM's	Construction Noise Level (dBA L_{eq}) With PDFs and MMs[2]	Construction Noise Level (dBA L_{eq}) With PDFs and MMs plus Ambient	Resulting Noise Level Increase During Construction (dBA L_{eq}) with PDFs and MMs
Receptor 50 feet from Acoustic Center of Project Site					
Demolition	54	83	61	62	8
Site Preparation	54	75	53	57	3
Grading	54	84	62	63	9
Paving	54	83	61	62	8
Building Construction	54	81	59	60	6

1 Refer to Table 3.6-2 for measured ambient noise levels representative of noise-sensitive land uses. ST5 is used as the representative measurement location. Documented level for nearest residential land use is 54.3 dBA Leq. That number has been rounded to 54 dBA for comparison to the construction noise levels

2 Estimated construction noise reduction based upon combined noise barrier performance of approximately 19 dB plus an additional 3 dB reduction from the other measures listed in Section 3.6.6 (Mitigation Measures).

Long-term operational noise associated with the mixed-use project would include noise from residences, hotel operations, retail uses (art gallery), dining, proposed subterranean garage, conversations from people gathering in the proposed project's outdoor areas, the use of outdoor amplified sound systems in the proposed project's outdoor areas, and other on-site noise sources (e.g., HVAC equipment). Long-term operational noise also would include project-generated traffic and overall traffic noise at the site.

Residences, Hotel Operations, Retail Uses, and Dining

Exterior

The proposed residential, hotel, retail, and dining uses would generate noise typical of these types of uses, such as conversations, music, restaurant noise, and noise from loading and unloading activities. The proposed project includes loading spaces on ground level. All outdoor loading dock and trash/recycling areas would be partially or fully enclosed. The planned loading dock area is located approximately 90 feet from existing residences. Some shielding may be provided by other project elements.

Table 3.6-8 shows sound levels for specific events that are part of loading dock operations, based on a loading dock noise study conducted by Charles M. Salter Associates (2014).

Table 3.6-8
Loading Dock Event Noise

Event	Sound Levels (dB)	At Reference Distance (feet)
Truck Passby (arrival, departure)	65	@ 30 feet
Truck Air Breaks	72	@ 25 feet
Truck Backup Alarm	79	@ 30 feet
Brief Idle Before Engine Shutoff	70	@ 25 feet
Truck Engine Ignition and Air Breaks	71	@ 25 feet
Truck Accelerating From Stop	74	@ 25 feet

Source: Midpoint at 237, San Jose, CA Loading Dock Noise Study Prepared by Charles M. Salter Associates for Trammell Crow Company. 27 March 2014.

According to the Salter study, the truck backup alarm is the source of the highest sound levels. As a warning device, this is a critical noise source. Based on the noise levels in Table 3.6-8, the loudest loading dock noise experienced at the nearest adjacent residences is expected to be approximately 42 dBA, accounting for the acoustical shielding provided by the proposed hotel structure. Loading dock operations may occasionally be heard outdoors in the residential area adjacent to the project site, though the noise would be substantially less than the typical ambient noise levels. Assuming loading dock noise levels of 42 dBA for not more than 30 minutes and a background L_{eq} of 54 dBA (as measured at location ST5), the hourly L_{eq} would be approximately 54.1 dBA[4] at the adjacent residences. Thus, daytime noise levels due to loading dock operations would be less than significant. However, nighttime hours (10:00 p.m. to 8:00 a.m.) have a lower noise level standard and nighttime ambient noise levels would be lower than daytime noise levels, and thus loading dock operations should be limited during these hours in order to avoid potentially significant nighttime noise impacts. As such, mitigation measure MM-NOI-7 is provided to limit the hours for loading dock operations. With implementation of this mitigation, daytime and nighttime noise impacts would be **less than significant with mitigation**.

In addition, the proposed project would include people gathering in the project's outdoor areas (pool, outdoor dining, etc.) and the use of amplified sound systems in those outdoor areas. The amplified sound system in those areas would be employed primarily to broadcast background music.

The outdoor spaces would generally be shielded to the off-site uses by parapet walls and other structural parts of the proposed project. Additionally, the outdoor speaker system is expected to be designed so speakers aim toward the audience/guest area and away from the off-site noise sensitive receptors.

Noise levels associated with people gathering at outdoor areas were assumed to be 62 to 65 dBA at a distance of 3.3 feet (1 meter), for women and men speaking, respectively. To represent a typical

[4] Exterior on-site noise calculations are provided in Appendix F.

scenario, the noise analysis assumed that up to 50% of the people (half female and half male) would be talking at the same time. The ground level outdoor portion of the restaurant is approximately 150 feet from the nearest residential receptors. Crowd noise levels were calculated to be approximately 44 dBA at the nearest residences due to crowd noise from this location. For the courtyard on Level 4, calculated crowd noise would be approximately 45 dBA at the nearest residences. Finally, for the pool deck, noise levels would be approximately 43 dBA at the nearest residences. Based on these results, the crowd noise levels at off-site noise-sensitive receptors would be below the significance threshold.

Outdoor sound systems would likely be part of the outdoor uses for these areas. At this time, the details and extent of the outdoor sound system are not known, and therefore there is the potential for the amplified sound to result in potentially significant noise impacts. MM-NOI-8, which requires that the sound system be calibrated for the outdoor uses so as to not exceed the noise level standards and be measured, verified, and documented by a qualified acoustical engineer, is provided to ensure that noise levels generated by the amplified sound systems remain below the applicable significance threshold. When this study is performed, it is recommended that crowd noise be analyzed with any updated data.

In addition to the project's outdoor use areas, the proposed residential, hotel, retail, and restaurant uses would be designed with materials appropriate to ensure that noise is limited within the interior of structures or otherwise complies with the City's Noise Control Ordinance (the City's conditionally acceptable noise level for residences is 55-65 dBA CNEL and hotels and businesses is 60–70 dBA CNEL). As such, noise generated by the operational activities from the proposed project would not exceed applicable standards. Therefore, based on the analysis above, the project's exterior operational noise impacts would be **less than significant with mitigation**.

Hotel Room and Residential Interiors

Title 24 of the California Building Code requires that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} in the habitable rooms of residential units or hotel guest rooms. Title 24 also requires that an acoustical analysis be carried out that shows that the maximum interior limit is achieved where exterior noise levels are above 60 dB $L_{dn.}$ Noise levels at the project site may exceed 60 dB L_{dn} due to nearby traffic noise and surrounding activities. As such, operational noise within habitable rooms would potentially exceed applicable standards, resulting in a potentially significant impact. Mitigation measure MM-NOI-9, which requires a review of the construction plans to ensure interior noise levels are less than 45 dBA CNEL, is required to reduce potentially significant noise impacts on the proposed habitable rooms. With implementation of this mitigation, the proposed project would comply with applicable noise standards. As such, operational impacts to interior noise levels of the proposed hotel rooms would be **less than significant with mitigation**.

Subterranean Parking Garage

Traffic associated with the subterranean parking garage would not be of sufficient volume to exceed community noise standards based on a time-averaged scale such as CNEL or L_{eq} (Mestre Greve Associates 2011). The instantaneous maximum sound levels generated by a car door slamming, an engine starting up, or cars going in and out of the subterranean garage (including any tire squeal) is not expected to cause annoyance to people at the closest sensitive receptors because the garage would be underground and therefore shielded from noise-sensitive uses. Thus, the majority of the noise would be contained within the garage and would not represent a significant impact at nearby noise-sensitive land uses. Operational noise impacts related to the proposed subterranean garage would therefore be **less than significant.**

Mechanical Noise Generators

The proposed project would require building mechanical equipment (e.g., air handlers, exhaust fans, and pool equipment). On-site stationary mechanical equipment, including HVAC, kitchen, and pool equipment, would be located on the roof tops. The equipment would be enclosed; thus, noise-sensitive receivers (including residences and hotel guests) would not have a direct view of the units. The specific details (sizes, manufacturers, and models) of the mechanical equipment have not yet been determined. Typically, the noise levels generated by this equipment would vary from approximately 50 dBA to 65 dBA at a distance of 50 feet (City of Santa Ana 2010). The City of Santa Ana zoning code is referenced because of the typical levels contained therein. Assuming the enclosures/barriers around the equipment provide at least 10 dB of attenuation, the resulting noise levels from the mechanical equipment are expected to be approximately 52 dBA.

The noise levels from mechanical equipment would potentially exceed the City's noise standards. As such, to reduce potentially significant noise impacts from stationary source equipment, MM-NOI-10, which requires an assessment of mechanical noise systems and the incorporation of noise control measures if necessary, would be required as part of the proposed project to ensure that equipment meets City noise standards. Operational noise impacts related to mechanical noise generators would therefore be **less than significant with mitigation.**

To summarize with regard to on-site operational noise, mitigation measures are provided to ensure that operation of the proposed project would not exceed applicable noise standards or otherwise result in a substantial permanent increase in ambient noise levels. Upon implementation of MM-NOI-7 through MM-NOI-10, operational noise impacts would be **less than significant with mitigation.**

Off-Site Traffic Noise Levels

The proposed project would generate traffic along adjacent roads including Santa Monica Boulevard, North Ogden Drive, North Fairfax Avenue, North Genesee Avenue and North

Orange Grove Avenue. The City does not have specific noise criterion for evaluating off-site noise impacts to residences or noise-sensitive areas from project-related traffic. For the purposes of this noise analysis, such impacts are considered significant when they cause an increase of 5 dBA from existing noise levels. An increase or decrease in noise level of at least 5 dBA is required before a noticeable change in community response would be expected (Caltrans 2013). Therefore, a clearly perceptible increase (+5 dBA) in noise exposure of sensitive receptors would be considered significant.

Based on the anticipated trip generation rates and trip distribution patterns, the existing- plus-project traffic noise would generate a noise level increase of 1 dBA CNEL or less (rounded to whole numbers) along the studied roads in the vicinity of the site. The noise level increases associated with the additional traffic volumes are depicted in Table 3.6-9, and the TNM noise model input/output files are included in Appendix F. Increases would be below the significance threshold of 5 dBA. The additional traffic volume along the adjacent roads would not substantially increase the existing noise level in the project vicinity, and operational traffic-related noise impacts would be **less than significant**.

Table 3.6-9
Traffic Noise (Existing and Cumulative-Plus-Project Noise Levels)

Modeled Receptor	Existing	Existing with Project	Difference	Cumulative	Cumulative with Project	Difference
R1 / ST1 Project Site on Santa Monica Blvd	68	68	0	69	69	0
R2 /ST2 Residences north of Project Site	43	44	1	45	45	0
R3 / ST3 Project Site on North Orange Grove Blvd	57	57	0	57	58	1
R4 / ST4 Child care facility on North Orange Grove Blvd	54	55	1	55	55	0
R5 / ST5 Residences on North Ogden Drive north of Santa Monica Blvd	55	55	0	55	56	1
R6 / ST6 Residences on North Ogden Drive north of Santa Monica Blvd	58	58	0	59	59	0
R7 Residences on North Fairfax Avenue north of Santa Monica Blvd	63	63	0	64	64	0
R8 Residences on North Fairfax Avenue south of Santa Monica Blvd	66	66	0	67	67	0
R9 Residences on North Orange Grove Blvd south of Santa Monica Blvd	54	54	0	54	54	0
R10 Residences on North Ogden Drive south of Santa Monica Blvd	56	56	0	56	56	0
R11 Residences on North Genesee Avenue north of Santa Monica Blvd	57	57	0	58	58	0
R12 Residences on North Genesee Avenue south of Santa Monica Blvd	56	56	0	57	57	0

Threshold NOI-2: ***Would the project result in generation of excessive groundborne vibration or groundborne noise levels?***

Construction activity may generate vibration that could either damage nearby buildings or annoy people in the project vicinity. Construction activities can generate varying degrees of ground-borne vibration, depending on the construction procedures and the type of construction equipment operated. Construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effects on buildings (i.e., building damage) are dependent on the location of the buildings to the source and the characteristic of the building structure.

During construction, heavier pieces of construction equipment used at the project site would include dozers, graders, augers, cranes, loaded trucks, water trucks, and pavers. Ground-borne vibration is typically attenuated over short distances. Assuming a 10-foot distance between the project construction area and the nearest noise- and vibration-sensitive receptors, the PPV is estimated to be up to 0.352 inches/second, which would fall below the threshold of significance of 0.5 inches/second for building damage; it would also fall below the limit of 0.4 inches/second PPV where vibration begins to be unpleasant for building occupants. Consequently, temporary vibration from construction would be **less than significant** at the closest existing structures to the project site.

Noise- and vibration-sensitive receptors located 25 feet from the construction equipment would experience vibration levels of 0.089 inches/second, well below the limit for building damage or annoyance for building occupants. The heavy construction equipment would not be in operation during the entire work day, nor would equipment operate continuously for long periods of time immediately adjacent to the noise- and vibration-sensitive receptors and thus vibration levels would not be continuous in nature.

Therefore, temporary groundborne vibration or groundborne noise levels from construction equipment would be **less than significant.**

3.6.6 Mitigation Measures

The following mitigation measures would reduce construction and operation-related noise levels to less than significant.

Construction

MM-NOI-1 Applicant's Project Design Features

The Applicant will install an enhanced noise/dust barrier around the perimeter of the site, with shoring piles extending 15 feet above street level, pursuant to the document entitled Phase 1 Demolition/Shoring & Sound Wall in the Construction

Schedule (refer to the noise appendix). The noise barrier includes sound blankets (STC 29), which can be installed in multiple layers for improved insulation from noise for neighboring receptors.

The Phase 1 Demolition/Shoring & Sound Wall process has been divided into four sub-phases to further reduce impacts upon neighboring receptors. The details of the construction noise wall implementation process are provided in MM-NOI-3. The Applicant will coordinate with Fountain Day School so the Phase 1 Demolition/Shoring & Sound Wall construction occurs while the school is closed.

The Applicant will use a backhoe instead of an excavator until the sound wall is in place; the Applicant will also limit use of heavy equipment such as excavator/forklift/loader so no duplicative units are operating concurrently.

MM-NOI-2 Construction Activity Conditions

The City of West Hollywood shall require the Applicant's construction contractor to implement the following measures as a condition of approving the project (West Hollywood General Plan EIR MM 3.9-2):

- Construction equipment shall be properly maintained per manufacturers' specifications and fitted with the best available noise suppression devices (i.e. mufflers, silencers, wraps, etc.).
- Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on power equipment.
- Construction operations and related activities associated with the proposed project shall comply with the operational hours outlined in the West Hollywood Municipal Code (WHMC) Noise Ordinance, or mitigate noise at sensitive land uses to below WHMC standards.
- Construction equipment should not be idled for extended periods of time in the vicinity of noise-sensitive receptors.
- Locate fixed and/or stationary equipment as far as possible from noise-sensitive receptors (e.g., generators, compressors, rock crushers, cement mixers). Shroud or shield all impact tools, and muffle or shield all intake and exhaust ports on powered construction equipment.
- Where feasible, temporary barriers shall be placed as close to the noise source or as close to the receptor as possible and break the line of sight between the source and receptor where modeled levels exceed applicable standards. Acoustical barriers shall be constructed of material having a minimum surface weight of 2 pounds per square

foot or greater, and a demonstrated Sound Transmission Class (STC) rating of 25 or greater as defined by American Society for Testing and Materials (ASTM) Test Method E90. Placement, orientation, size, and density of acoustical barriers shall be specified by a qualified acoustical consultant.

- Music from a construction site shall not be audible at off-site locations.

MM-NOI-3 Construction Noise Barriers

The City of West Hollywood shall require the Applicant's construction contractor to adhere to the following measures as a condition of approving the project:

- Prior to commencing demolition activities, a noise barrier shall be erected along the entire southern property boundary of the Fountain Day School property. The noise barrier shall be a minimum height of 15 feet above street level, and shall consist of at least two layers of sound blankets possessing a minimum acoustic rating of STC 29 (apiece). The layers shall be installed with joints staggered between the layers, to avoid gaps in the sound blanket coverage. A single auger-style drill rig may be used for installation of the piles necessary to support the sound barrier. The construction contractor shall coordinate with Fountain Day School so, if possible, this sound wall construction occurs while the school is closed. This sound barrier shall be maintained for the duration of project construction, and be removed only to allow landscape installation when all other project construction is complete.
- Prior to commencing demolition activities, a noise barrier shall be erected along the entire northern and western property boundary of the multifamily residences immediately adjacent to the south of the project site (on North Ogden Drive). The noise barrier shall be a minimum height of 15 feet above street level, and shall consist of at least two layers of sound blankets possessing a minimum acoustic rating of STC 29 (apiece). The layers shall be installed with joints staggered between the layers, to avoid gaps in the sound blanket coverage. A single auger-style drill rig may be used for installation of the piles necessary to support the sound barrier. This sound barrier shall be maintained for the duration of project construction, and be removed only to allow landscape installation when all other project construction is complete.
- As soon as the minimum amount of demolition has occurred to allow access of a drill rig for pile installation, a noise barrier shall be erected along the entire remaining northern property boundary of the subject property. The noise barrier shall be a minimum height of 15 feet above street level, and shall consist of at least two layers of sound blankets possessing a minimum acoustic rating of STC

29 (apiece). The layers shall be installed with joints staggered between the layers, to avoid gaps in the sound blanket coverage. A single auger-style drill rig may be used for installation of the piles necessary to support the sound barrier. This sound barrier shall be maintained for the duration of project construction, and may be removed only to allow landscape installation when all other project construction is complete.

- As soon as exterior wall framing allows at each individual level of the structure, northern building facades (i.e., those facing the Fountain Day School), and portions of the eastern and southern building facades (i.e., those facing the North Ogden Drive residences) shall either be covered with temporary sound blankets possessing a minimum acoustic rating of STC 29, or the exterior sheathing of the building shall be installed on the framing.

MM-NOI-4 Construction Equipment Restrictions

The City of West Hollywood shall require the Applicant's construction contractor to adhere to the following measures as a condition of approving the project:

- The construction contractor shall use a backhoe instead of an excavator until the sound walls are in place; the construction contractor shall also limit use of heavy equipment such as excavator/forklift/loader such that no duplicative units are operating concurrently.

MM-NOI-5 Stationary Construction Equipment Location/Shielding

The City of West Hollywood shall require the Applicant's construction contractor to adhere to the following measures as a condition of approving the project:

- Temporary electricity generators used for construction shall be located as far as possible from the Fountain Day School and North Ogden Drive residences, and temporary electrical power connections to the electrical utility provider shall be established at the earliest feasible point in the construction to prelude the further need for or use of generators.
- Within the second and higher building levels, until the sound blankets or exterior cladding is installed on the building facades facing the Fountain Day School and North Ogden Drive residences, stationary construction equipment (e.g., compressors, welders, etc.) that generates noise that exceeds 58 dB(A) at the property boundaries shall be individually shielded with a barrier that meets a STC rating of 29.

MM-NOI-6 Construction Noise Compliance Verification Reports

The City of West Hollywood shall require the Applicant's construction contractor to adhere to the following measures as a condition of approving the project:

- 8-hour noise measurements shall be conducted at the Fountain Day School and North Ogden Drive residences, at the ground level and behind the temporary noise barrier, not less frequently than one construction day per month. The measurement results will be presented each month to the City in a brief memorandum that compares measured noise levels to the threshold of not greater than 10 dBA L_{eq} over ambient noise levels.
- Should the verification report in any month indicate construction noise levels in excess of the allowable limit, an acoustical consultant shall be retained by the contractor to devise additional noise control methods, such methods shall be implemented, and the noise measurements shall be performed again to verify the new controls are effective.

Effectiveness of these mitigation measures would vary from several decibels (which in general is a relatively small change) to ten or more decibels (which subjectively would be perceived as a substantial change), depending upon the specific equipment and the original condition of that equipment, the specific locations of the noise sources and the receivers, etc. Installation of a noise barrier, for example, would vary in effectiveness depending upon the degree to which the line-of-sight between the source and receiver is broken, but for the nearest receivers is estimated to provide as much as 19 decibels of noise reduction. Installation of more effective silencers could range from several decibels to well over 10 decibels. Reduction of idling equipment could reduce overall noise levels from barely any reduction to several decibels. Cumulatively, however, these measures would result in substantial decreases in the noise from construction. With implementation of these measures, short-term construction impacts associated with exposure of persons to or generation of noise levels in excess of established standards would be less than significant.

Operation

MM-NOI-7 Loading Dock Hours

Loading dock activities shall be limited to between the hours of 8:00 a.m. and 10:00 p.m.

MM-NOI-8 Outdoor Amplification System

Prior to certificate of occupancy, the restaurant and pool deck sound systems shall be calibrated for the outdoor uses so as to not exceed the noise level standards. The amplified sound system sound output shall be measured, verified, and documented by a qualified acoustical engineer to meet the exterior noise standard during daytime hours (8:00 a.m. to 10:00 p.m.) of 55 dBA L_{eq} based on the West Hollywood General Plan 2035 Safety and Noise Element (City of West Hollywood 2011).

In addition, the project's outdoor amplified sound system shall be calibrated such that between the hours of 10:00 p.m. and 8:00 a.m. the sound levels shall be 5 dBA below the lowest measured background sound level (L_{90}) at the property line of the affected noise sensitive receptor.

MM-NOI-9 Noise Level Analysis for Habitable Rooms

Prior to certificate of occupancy, noise measurements shall be conducted to be reviewed and approved by City staff, to demonstrate that the habitable areas (hotel rooms) have been designed to reduce interior noise to 45 dBA or lower (community noise equivalent level (CNEL) or day–night average noise level (L_{dn})).

MM-NOI-10 Mechanical Equipment

Prior to approval of the plans and specifications for the project, City staff shall review and approve the proposed heating, ventilation, and air conditioning (HVAC), outdoor mechanical equipment, and kitchen mechanical equipment unit specifications to ensure that the on-site stationary equipment does not exceed 55 dBA at 50 feet, or otherwise exceed any established noise thresholds for stationary sources.

3.6.7 Level of Significance after Mitigation

Upon implementation of MM-NOI-1 through MM-NOI-10, the noise and vibration impacts of the proposed project would be reduced to **less than significant**.

3.6.8 References Cited

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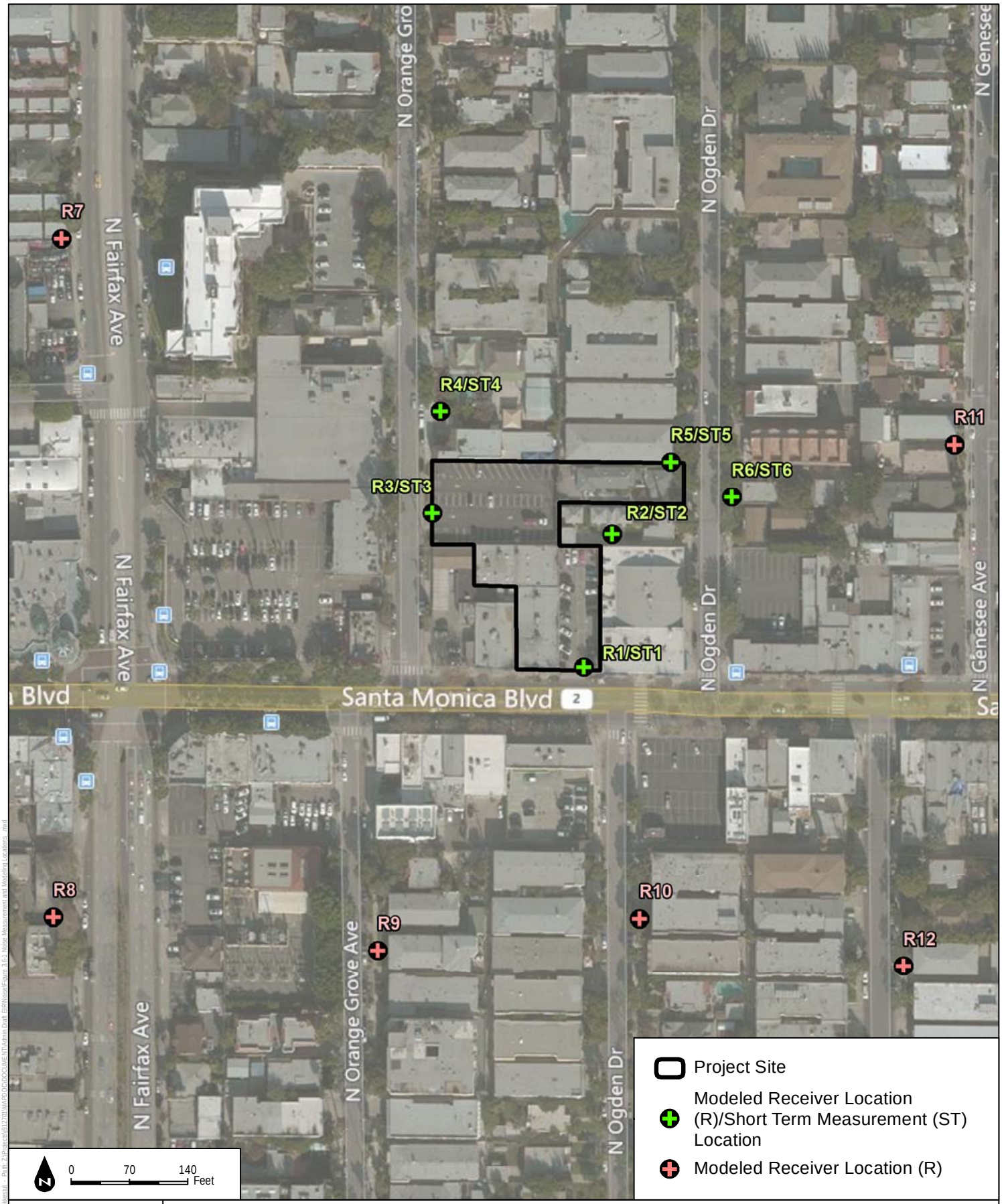

DUDEK

SOURCE: Bing Imagery (Accessed in 2017), DUDEK2017

FIGURE 3.6-1

Noise Measurement and Modeling Locations

The Bond Project Draft EIR

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