3.7 NOISE

This section provides an overview of noise and vibration levels and evaluates the construction and operational impacts associated with the Proposed Project. Topics addressed include short-term construction and long-term operational noise and groundborne vibration. This section was prepared by Terry A. Hayes Associates Inc. Noise modeling results are included in Appendix F.1 Noise Modeling. In addition the following technical study is summarized in the analysis:

- Harvard-Westlake Upper School Parking Improvement Plan, Sound Propagation Analysis, Arup, August 20, 2013.

The following background information provides noise and vibration characteristics and effects.

EXISTING CONDITIONS

Noise Characteristics and Effects

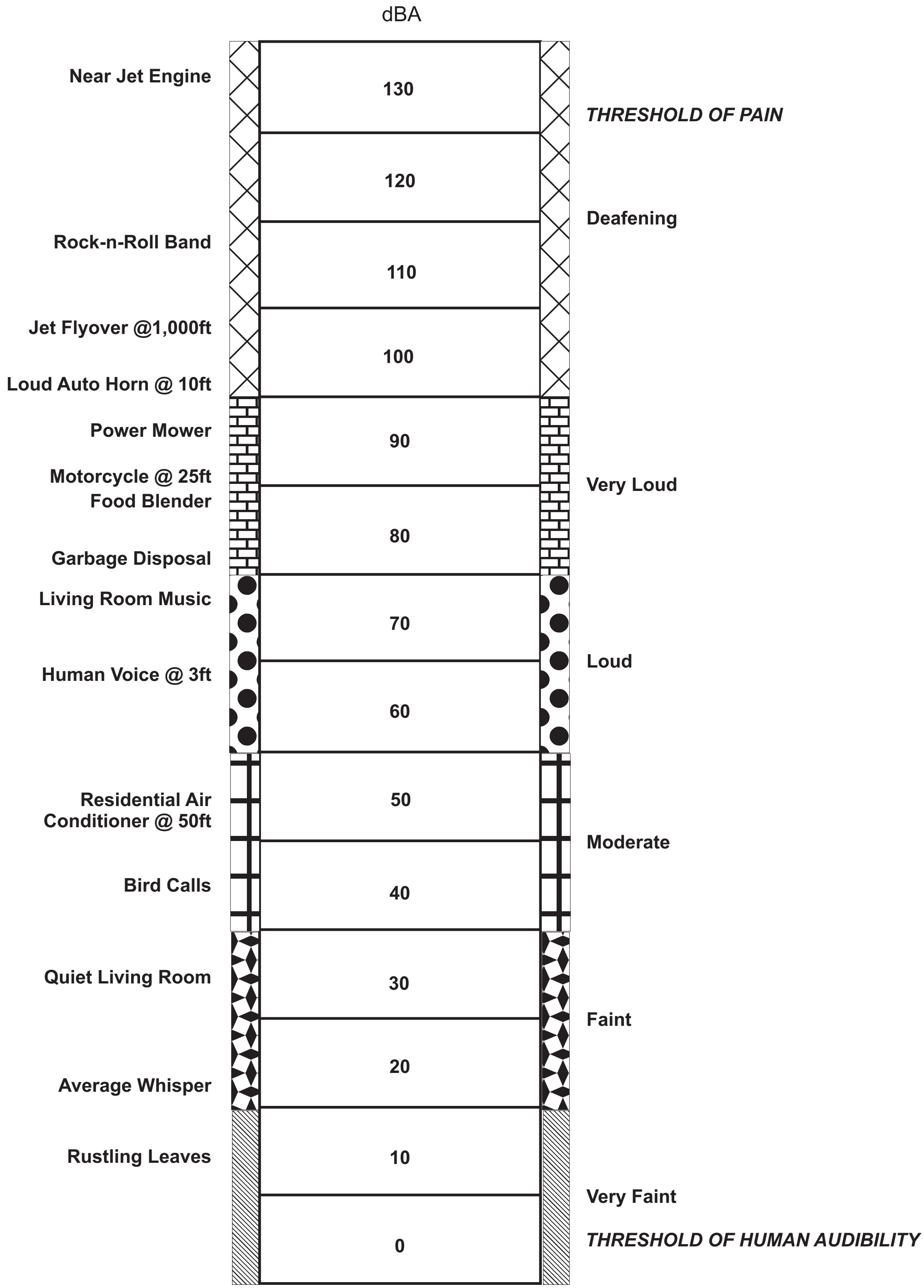
Characteristics of Sound. Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The "A-weighted scale," abbreviated dBA, reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dBA. **Figure 3.7-1** provides examples of A-weighted noise levels from common sounds.

Noise Definitions. This noise analysis discusses sound levels in terms of Community Noise Equivalent Level (CNEL) and Equivalent Noise Level (L_{eq}).

Community Noise Equivalent Level. CNEL is an average sound level during a 24-hour period. CNEL is a noise measurement scale, which accounts for noise source, distance, single event duration, single event occurrence, frequency, and time of day. Human reaction to sound between 7:00 p.m. and 10:00 p.m. is as if the sound were actually 5 dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher due to the lower background level. Hence, the CNEL is obtained by adding an additional 5 dBA to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and 10 dBA to sound levels in the night from 10:00 p.m. to 7:00 a.m. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual 24-hour average.

Equivalent Noise Level. L_{eq} is the average noise level on an energy basis for any specific time period. The L_{eq} for one hour is the energy average noise level during the hour. The average noise level is based on the energy content (acoustic energy) of the sound. L_{eq} can be thought of as the level of a continuous noise which has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in units of dBA.

Effects of Noise. Noise is generally defined as unwanted sound. The degree to which noise can impact the human environment range from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, and the nature of work or human activity that is exposed to the noise source.



SOURCE: Cowan, James P., *Handbook of Environmental Acoustics*

Figure 3.7-1

A-Weighted Decibel Scale

Audible Noise Changes. Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA would be noticeable and would likely evoke a community reaction. A 10-dBA increase is subjectively heard as a doubling in loudness and would cause a community response.

Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or "point source," will decrease by approximately 6 dBA over hard surfaces (e.g., reflective surfaces such as parking lots or smooth bodies of water) and 7.5 dBA over soft surfaces (e.g., absorptive surfaces such as soft dirt, grass, or scattered bushes and trees) for each doubling of the distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level would be 83 dBA at a distance of 100 feet from the noise source, 77 dBA at a distance of 200 feet, and so on. Noise generated by a mobile source will decrease by approximately 3 dBA over hard surfaces and 4.8 dBA over soft surfaces for each doubling of the distance.

Generally, noise is most audible when traveling by direct line-of-sight. Line-of-sight is an unobstructed visual path between the noise source and the noise receptor. Barriers, such as walls, berms, or buildings that break the line-of-sight between the source and the receiver greatly reduce noise levels from the source since sound can only reach the receiver by bending over the top of the barrier. Sound barriers can reduce sound levels by up to 20 dBA. However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

Vibration Characteristics and Effects

Characteristics of 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. 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.

Vibration Definitions. There are several different methods that 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 (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

Effects of Vibration. High levels of vibration may cause physical personal injury or damage to buildings. However, groundborne vibration levels rarely affect human health. Instead, most people consider groundborne vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of groundborne vibration can damage fragile buildings or interfere with equipment that is highly sensitive to groundborne vibration (e.g., electron microscopes). To counter the effects of groundborne vibration, the Federal Transit Administration (FTA) has published guidance relative to vibration impacts.

Perceptible Vibration Changes. In contrast to noise, groundborne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 RMS or lower, well below the threshold of perception for humans, which is around 65 RMS. 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 groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

Noise

The existing noise environment near the Development Site is characterized by vehicular traffic, activity associated with Harvard-Westlake School, St. Michael and All Angeles Church, and Sunnyside Preschool, and residential uses in the vicinity. Sound measurements were taken at a representative sample of residential land uses using a SoundPro DL Sound Level Meter on October 16, 2012 to determine existing noise levels in the Project vicinity. Daytime measurements were used to establish existing ambient noise conditions and to provide a baseline for evaluating construction impacts and after school measurements were used to assess operational impacts. Noise monitoring locations are shown in **Figure 3.7-2**. As shown in **Table 3.7-1**, daytime existing ambient sound levels ranged between 50.2 and 69.0 dBA L_{eq} and after school sound levels ranged between 44.9 and 68.2 dBA L_{eq}. In addition, noise levels were monitored during existing playfield activity to identify the noise levels at the proposed athletic field. Activity included football, cross-country, and soccer and the noise level was 52.7 dBA L_{eq} at 288 feet, which was the distance from the center of the existing field to the noise monitor. Based on distance attenuation, this was converted into a reference noise level of 70.6 dBA at 50 feet.

TABLE 3.7-1: EXISTING NOISE LEVELS

Key to Figure 3.7-2	Noise Monitoring Location	Daytime Sound Levels (dBA, L_{eq})	After School Sound Levels (dBA, L_{eq})
1	Southern End of Football Field	50.7	55.4
2	4006 Coldwater Canyon Avenue	69.0	68.2
3	3923 Avenue Del Sol	55.4	58.6
4	12917 Galewood Street	47.5	44.9
5	3654 Potosi Drive	50.2	50.7

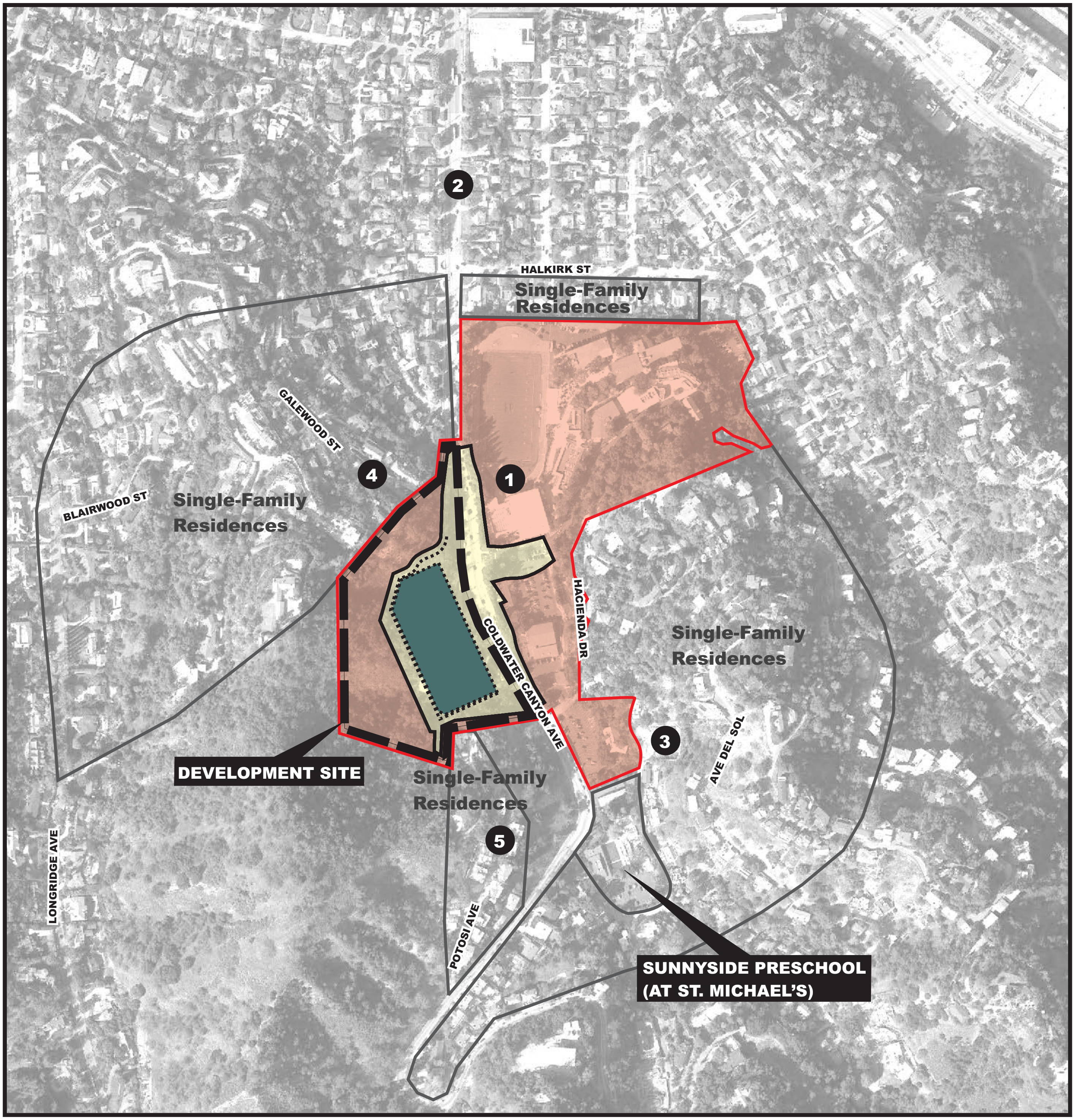
SOURCE: TAHA, 2012.

Vibration

There are no stationary sources of vibration located near the Development Site. Heavy-duty trucks can generate groundborne vibrations that vary depending on vehicle type and weight, and pavement conditions. Vibration levels from adjacent roadways are not typically perceptible at the Development Site.

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 each be considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise. As shown in **Figure 3.7-2**, sensitive receptors near the Development Site include residences, and Sunnyside Preschool. At the same address as the Sunnyside Preschool is St. Michael's Church. The analysis in this report focuses on the impact of the Project on the Preschool rather than the church because church activities are mainly on weekday evenings and Sunday and would therefore not be impacted by construction. (There would be no construction on weekends and only limited athletic activity occurs on Sundays.) These sensitive receptors represent the nearest sensitive receptors with the potential to be impacted by the Proposed Project. Additional sensitive receptors are located in the surrounding community within one-quarter mile of the Development Site and may be impacted by the Proposed Project.



LEGEND: Project Site; Development Site; Construction Limits; Approximate Structure Footprint

Noise Monitoring Locations

1. Southern End of Football Field
2. 4006 Coldwater Canyon Avenue
3. 3923 Avenida Del Sol
4. 12917 Galewood Street
5. 3654 Potosi Avenue

APPROX. SCALE
0 800 1,600 FEET
N

SOURCE: TAHA and Google Earth, 2012.

Figure 3.7-2

Noise Monitoring and Sensitive Receptor Locations

REGULATORY FRAMEWORK

Noise

Noise Element of the General Plan. The City has developed a Noise Element of the General Plan to guide in the development of noise regulations.[1] It addresses noise mitigation regulations, strategies and programs and delineates federal, State and city jurisdiction relative to rail, automotive, aircraft and nuisance noise. Programs included in the Noise Element that are relevant to the Proposed Project include:

- For a proposed development project that is deemed to have a potentially significant noise impact on noise sensitive uses, as defined by this chapter, require mitigation measures, as appropriate, in accordance with California Environmental Quality Act and City procedures.
- Use, as appropriate, the "Guidelines for Noise Compatible Land Use" (**Table 3.7-2**), or other measures that are acceptable to the city, to guide land use and zoning reclassification, subdivision, conditional use and use variance determinations and environmental assessment considerations, especially relative to sensitive uses, as defined by this chapter, within a CNEL of 65 dB airport noise exposure areas and within a line of sight of freeways, major highways, railroads or truck haul routes. (It is estimated that the existing CNEL, which is a 24-hour average, in the project area is approximately 48.3 dBA).

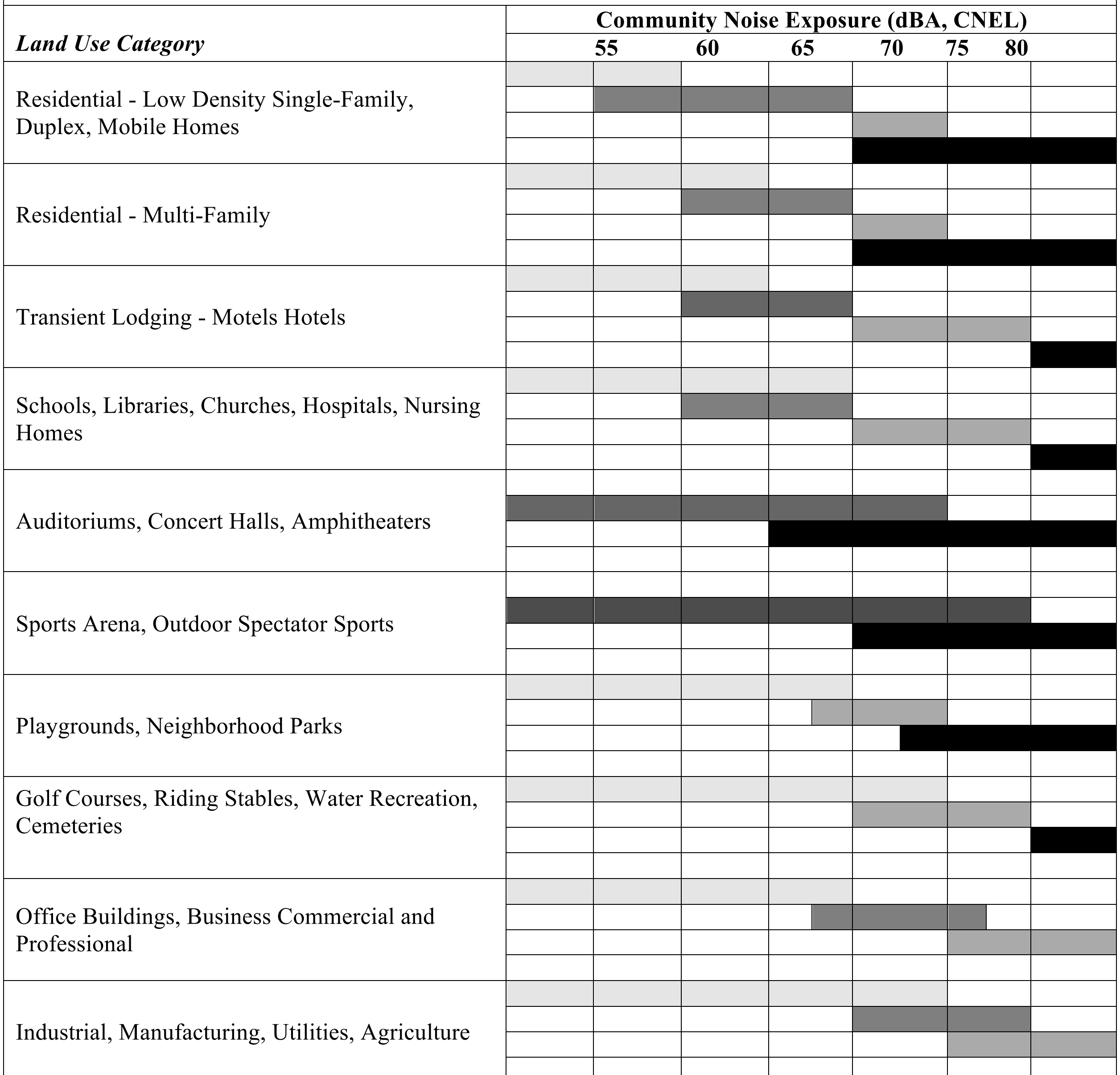
City of Los Angeles Municipal Code – Noise Regulations. The City of Los Angeles has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise sensitive land uses. Los Angeles Municipal Code (LAMC) Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited) indicates that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m., since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment or other place of residence. No person, other than an individual home owner engaged in the repair or construction of his/her single-family dwelling, shall perform any construction or repair work of any kind or perform such work within 500 feet of land so occupied before 8:00 a.m. or after 6:00 p.m. on any Saturday or on a federal holiday, nor at any time on any Sunday. Under certain conditions, the City may grant a waiver to allow limited construction activities to occur outside of the limits described above.

LAMC Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools) also specifies the maximum noise level of powered equipment or powered hand tools. Any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound barriers and/or any other noise reduction device or techniques during the operation of equipment.

City of Los Angeles Municipal Code – Zoning Regulations. The City's planning and zoning code (LAMC Section 11 *et seq*.) contains a variety of provisions that directly or indirectly mitigate noise impacts on or impacts that are associated with, different types of land uses. Permit processing is guided by the General Plan, especially the community plans which together are the City's Land Use Element. The plans designate appropriate land use (zoning) classifications. The noise ordinance guides land use considerations by setting maximum ambient noise levels for specific zones.

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

TABLE 3.7-2: GUIDELINES FOR NOISE COMPATIBLE LAND USE



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 system 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: California Office of Noise Control, Department of Health Services.

Conditional use permits (LAMC Section 12.24) allow the City to assess potential use impacts and impose conditions to mitigate noise impacts. Conditional use permits are required in certain zones for various land uses including, but not limited to, schools, churches, alcohol sales, parks, mixed-use development, and automobile repair facilities. In most cases theuses are allowed-by-right in less restrictive zones. Some are prohibited entirely in residential zones. The permitting procedures include site investigations, notice to neighbors and hearings to assist decision makers in determining if the use should be permitted and, if permitted, allow imposition of appropriate conditions of approval. Typical conditions include specific site design, setbacks, use limitations on all or parts of the site, walls and hours of operation so as to minimize noise and other impacts.

The authority to revoke, discontinue a use or to impose nuisance abatement conditions on established uses has become a major tool for reducing nuisance noise. Use permits may be revoked by the City for nuisance (including disturbance of the peace) or noncompliance with conditions of a conditional use permit. In addition, the City may impose operational conditions on existing commercial or industrial uses that are deemed a nuisance, including for excessive noise or disturbance of the peace (LAMC Section 12.21-A.15). These two procedures have been increasingly utilized in recent years to encourage owners to operate activities on their properties in a manner that is compatible with adjacent uses, particularly residential uses.

Vibration

There are no adopted City or State standards for vibration. **Table 3.7-3** shows federal guidelines for vibration damage criteria. These criteria are based on the type of building construction. Single–family residential buildings typically are non-engineered timber and masonry buildings and can be exposed to 0.2 inches per second PPV without experiencing damage.

TABLE 3.7-3: VIBRATION DAMAGE CRITERIA

Building Category	PPV (Inches Per Second)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

THRESHOLDS OF SIGNIFICANCE

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

- Expose persons or generate noise in levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose people to or generate excessive groundborne vibration or groundborne noise levels;
- Result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project; and/or
- Result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

The City of Los Angeles has established significance thresholds in its *CEQA Thresholds Guide*. The following specific significance thresholds are relevant to the Proposed Project.

<u>Construction Noise.</u> A significant impact related to construction activity would occur if:

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise sensitive use;
- Construction activities lasting more than ten days in a three-month period would exceed existing ambient noise levels by 5 dBA or more at a noise sensitive use; or
- Construction activities would exceed the ambient noise level by 5 dBA at a noise sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or anytime on Sunday.

<u>Operational Noise.</u> A significant impact related to operational activity would occur if:

- Ambient noise level measured at the property line of the affected uses increase by 3 decibels CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase, (see **Table 3.7-2**).

<u>Vibration.</u> There are no adopted State or City of Los Angeles vibration standards. Based on federal guidelines, a significant impact related to operational activity would occur if:

- The Project would generate vibration than exceed 0.2 inches per second PPV at residential land uses.

IMPACTS

Construction

<u>Noise</u>

Equipment Noise. Construction of the Proposed Project would result in temporary increases in ambient noise levels in the Project area on an intermittent basis. The increase in noise would occur during the approximate 25-month construction schedule. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Construction activities typically require the use of numerous pieces of noise-generating equipment. Typical noise levels from various types of equipment that may be used during construction are listed in **Table 3.7-4**. The table shows noise levels at distances of 50 and 100 feet from the construction noise source. The Proposed Project would include soil nailing to stabilize the slope at the Development Site. The soil nailing technique involves the insertion of relatively slender reinforcing elements into the slope and it generates a noise level similar to an auger drill.

TABLE 3.7-4: MAXIMUM NOISE LEVELS OF COMMON CONSTRUCTION EQUIPMENT

	Noise Level (dBA)	
Noise Source	**50 Feet**	**100 Feet**
Front Loader	80	74
Trucks	89	83
Cranes (derrick)	88	82
Back Hoe	84	78
Tractor	88	82
Scraper/Grader	87	81
Paver	87	81
Auger Drilling	77	71

SOURCE: City of Los Angeles, *CEQA Thresholds Guide*, 2006.

The noise levels shown in **Table 3.7-5** take into account the likelihood that more than one piece of construction equipment would be in operation at the same time and lists the typical overall noise levels that would be expected for each phase of construction. The highest noise levels are expected to occur during the grading/excavation and finishing phases of construction. A typical piece of noisy equipment is assumed to be active for 40 percent of the eight-hour workday, in the absence of a specific construction plan this assumption is consistent with the USEPA studies of typical construction operations and associated construction noise, generating a noise level of 89 dBA L_{eq} at a reference distance of 50 feet.

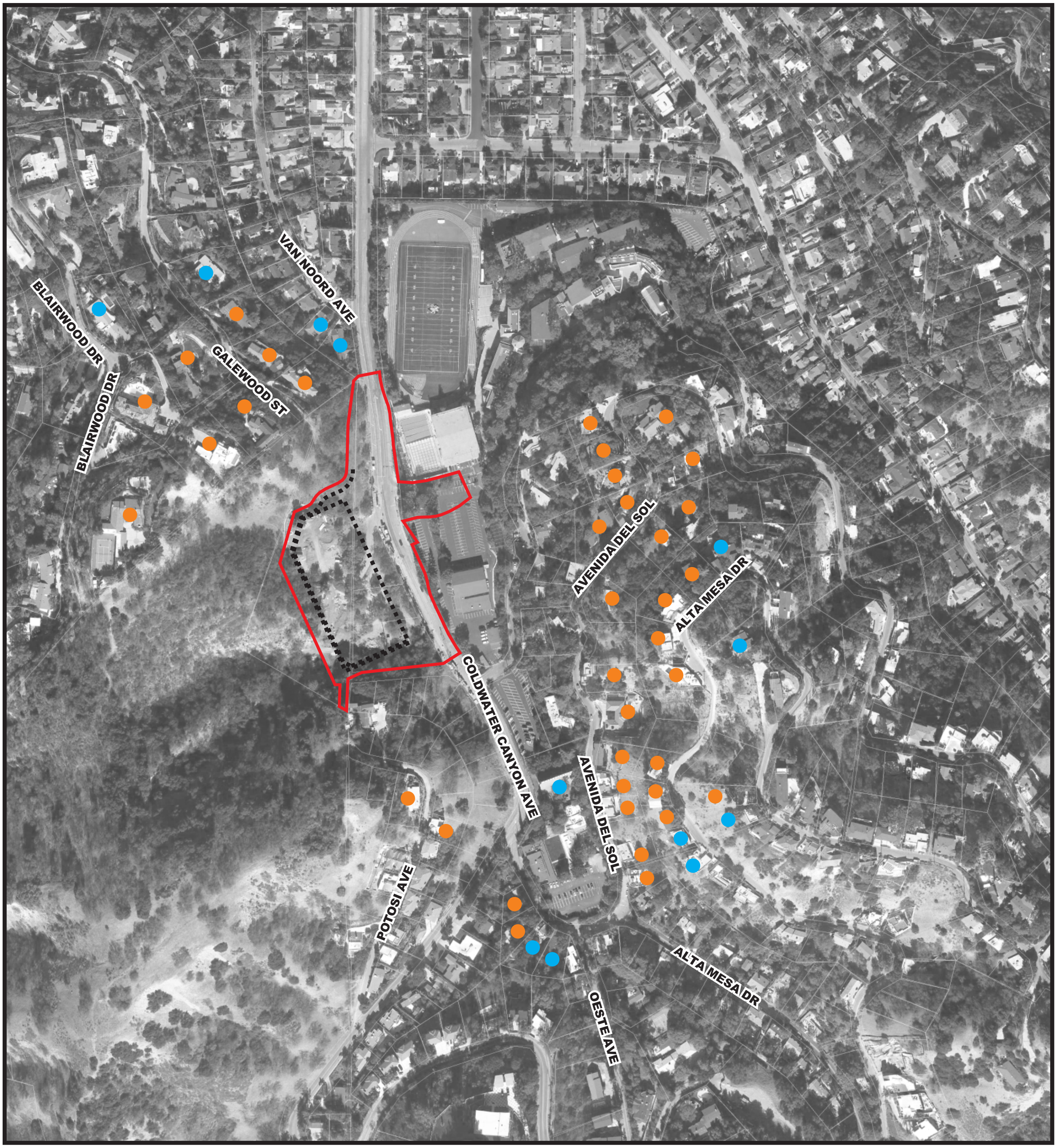
TABLE 3.7-5: OUTDOOR CONSTRUCTION NOISE LEVELS	
Construction Phase	**Noise Level at 50 Feet (dBA)**
Ground Clearing	84
Grading/Excavation	89
Foundations	78
Structural	85
Finishing	89
SOURCE: City of Los Angeles, *CEQA Thresholds Guide*, 2006.	

The noise level during the construction period at each receptor location was calculated by (1) making a distance adjustment to the construction source sound level and (2) logarithmically adding the adjusted construction noise source level to the ambient noise level. These calculations and the estimated noise levels are presented in **Appendix F.1**. **Table 3.7-6** identifies the location (by street) and number of significantly impacted sensitive receptors. **Figure 3.7-3** shows the location of these significantly impacted receptors. (Not included in this analysis or in **Table 3.7-6** or **Figure 3.7-3** are residences owned by Harvard-Westlake and the Harvard-Westlake School itself.) **Figure 3.7-4** shows distance contours from the construction limit lines. Houses closest to the construction would experience the highest increase in noise levels. It is difficult to accurately predict the noise levels at each residence due to the complex terrain associated with the Santa Monica Mountains as well as intervening structures (trees and plant materials have limited effects on noise). It was generally assumed that terrain features that block the line-of-sight from the receptor to the construction area would decrease noise levels by 10 to 15 dBA.

TABLE 3.7-6: UNMITIGATED CONSTRUCTION NOISE – SIGNIFICANTLY IMPACTED RESIDENCES AND SUNNYSIDE PRESCHOOL

Street/ Receptor	**Number of Significantly Impacted Receptors**	**Distance from Construction Limit Line to Property Line (feet) /a/**	**Maximum Construction Noise Level (dBA) /b/**	**Existing Ambient (dBA L_{eq}) /c/**	**Temporary New Ambient (dBA L_{eq}) /d/**	**Range of Noise Increases**
Galewood Street	6	43 - 354	54.7 - 84.6	44.9 – 60.7	55.2 - 84.7	10.3 - 28.3
Van Noord Avenue	2	54 - 125	76.1 - 88.2	68.2	76.7 - 88.2	8.5 - 20
Blairwood Drive	4	163 - 531	53.3 - 66.2	44.9	53.9 - 66.2	9.0 – 21.3
Potosi Drive	2	189 - 320	54.8 - 74.6	50.2	56.1 - 74.6	5.9 - 24.4
Avenida Del Sol	22	251 - 810	58.8 - 71.5	55.4	60.4 - 71.6	5.0 – 16.2
Alta Mesa Drive	12	484 - 760	59.1 - 64.4	55.4	60.6 - 64.9	5.2 – 9.5
Sunnyside Preschool	1	329	68.5	55.4	68.7	13.3

/a/ Distance of noise source from receptor. The distance is from the construction limit line to the property line.
/b/ Construction noise source's sound level at receptor location with distance and building adjustment as applicable.
/c/ Pre-construction activity ambient sound level at receptor locations.
/d/ New sound level at receptor location during the construction period, including noise from construction activity.
SOURCE: TAHA, 2013; see Appendix F.1 a) Construction Noise Level Calculations



LEGEND:
Construction Limits
Parking Structure and Retaining Wall Footprint
Construction Impact Measured from Parking Structure and Athletic Field
Construction Impact Measured from Construction Limit/Retaining Wall

APPROX. SCALE
0 200 400 FEET
N

SOURCE: Google Earth and TAHA, 2013.

Harvard-Westlake School Parking Structure

Figure 3.7-3

Construction Noise Impacts

Note: These contours strictly represent distances from the construction limit. The impact distances vary depending on existing ambient noise levels and topographical features.

LEGEND:
Construction Limits
Parking Structure and Retaining Wall Footprint
100-foot Intervals from Construction Boundary

APPROX. SCALE
0 200 400 FEET
N

SOURCE: Google Earth and TAHA, 2013.

Harvard-Westlake School Parking Structure

Figure 3.7-4

Construction Distance Contours

A sound transmission analysis (see **Appendix F2**) was conducted to study potential echoing affects associated with topography in the area of the Development Site. Eight loudspeakers in a hemispherical configuration (the test noise source) were connected to an electronic noise generator capable of producing a maximum 104-dBA sound level, 10 feet from the face of the loudspeakers. The loudspeakers were set up in a hemispherical arrangement to characterize potential reflections from topography and structures. The hemispherical configuration of the sound source provided sound transmission in all directions that would allow reflected sound waves, if present, to be detected at the receiver locations. The study included 14 receiver locations around the Development Site, at representative locations east and west of Coldwater Canyon Avenue. The sound transmission tests and analysis show there are no significant sound reflections (defined as being within 10dB of the direct sound), from local topography or neighboring buildings at the surrounding receptor locations.

Construction noise levels would exceed the 5-dBA incremental increase significance threshold at approximately 48 residences, including along Avenida del Sol, Alta Mesa Boulevard, at the ends of Van Noord Avenue, Blairwood Drive, Potosi Drive, and Galewood Street nearest to the Development Site. There would also be a significant increase in noise during construction at the Sunnyside Preschool. Therefore, without mitigation, the Proposed Project would result in a significant impact related to construction noise.

The analysis presented above identifies maximum noise levels associated with all construction activity including all activities at the construction limits (such as within the school driveway and construction of the north retaining wall north along Coldwater Canyon Avenue). Construction activity within the Main Entrance Driveway would impact residences along Avenida del Sol and Alta Mesa Boulevard. Construction of the retaining wall at the northern tip of the Development Site would impact residences at the eastern end of Van Noord Avenue where it intersects Coldwater Canyon Avenue. Construction of the Parking Structure would include grading and building activities for a much longer duration (24 months) and would impact residences on Potosi Drive, Blairwood Avenue, and Galewood Avenue. Impacted Residences, and the Sunnyside Preschool, that would be impacted by construction activities are shown in **Figure 3.7-3**.

Interior speech would not be interfered with at adjacent residences; however construction activity could disrupt daytime sleepers. This potential disruption would be short-term and intermittent and could likely be avoided in some rooms of the house away from the construction site.

Truck Noise. During peak construction activity, it is anticipated that ten haul truck trips per hour (i.e., five inbound trips and five outbound trips) would travel Coldwater Canyon Avenue between the Development Site and the Ventura Freeway. **Table 3.7-7** presents the estimated noise levels at sensitive receptors located along the haul route. Truck activity would not generate noise levels that exceed the 5-dBA incremental increase significance threshold. Therefore, the Proposed Project would result in a less-than-significant impact related to truck noise.

TABLE 3.7-7: OFF-SITE CONSTRUCTION HAUL TRUCK NOISE LEVELS			
Scenario and Roadway Segment	**Baseline ($dBA\ L_{eq}$)**	**Construction ($dBA\ L_{eq}$)**	**Increase ($dBA\ L_{eq}$)**
Coldwater Canyon Avenue between Ventura Freeway and Moorpark Street	71.1	71.3	0.2
Coldwater Canyon Avenue between Moorpark Street and Ventura Boulevard	69.9	70.2	0.3
Coldwater Canyon Avenue south of Ventura Boulevard	68.4	68.8	0.4
SOURCE: TAHA, 2012 ; see Appendix F.1 a) Construction Noise Level Calculations			

Vibration

Typical vibration levels associated with construction equipment are provided in **Table 3.7-8**. Heavy equipment (e.g., a large bulldozer) generates vibration levels of 0.089 inches per second PPV at a distance of 25 feet. Soil nailing would generate vibration levels similar to caisson drilling. The closest residential structure not owned by Harvard-Westlake is about 91 feet from the construction limit line on the Development Site. The maximum vibration level at this distance would be less than 0.01 inches per second PPV. Construction vibration would not exceed the 0.2 inches per second PPV at any residential structure. Therefore, the Proposed Project would result in a less-than-significant impact related to construction vibration.

TABLE 3.7-8: VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT	
Equipment	**PPV at 25 feet (Inches/Second)**
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003
SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.	

Operations

Noise

Parking Structure Noise. Parking structure would periodically result in noise events associated with car alarms, car horns, slamming of car doors, engine revs, and tire squeals. Automobile movements would generate a noise level of approximately 58.1 dBA L_{eq} at a distance of 50 feet. The Proposed Project includes 750 enclosed parking spaces within the three-floor structure. As shown in **Table 3.7-9**, parking activity would not generate noise levels that exceed 3 dBA L_{eq}. The parking structure activity would result in an incremental increase in the 24-hour average noise levels from 48.3 dBA CNEL to 48.6 dBA CNEL. This negligible increase in CNEL would be well under the 5 dBA CNEL incremental increase significance threshold applicable to this area where homes are in the “normally acceptable” range of noise levels for single-family homes (noise level ranges are shown in **Table 3.7-2**). Therefore, the Project would result in a less-than-significant impact related to parking activity.

TABLE 3.7-9: PARKING STRUCTURE NOISE LEVELS					
Sensitive Receptor	**Distance from Parking Structure to Property Line (feet) /a/**	**Maximum Noise Level (dBA) /b/**	**Existing Ambient (dBA L_{eq}) /c/**	**New Ambient (dBA L_{eq}) /d/**	**Increase /e/**
12917 W. Galewood Street	330	31.6	60.7	60.7	0.0
12920 W. Galewood Street	200	37.0	44.9	45.6	0.7
12927 W. Galewood Street	387	29.9	44.9	45.0	0.1
12934 W. Galewood Street	381	23.1	44.9	44.9	0.0
12937 W. Galewood Street	482	17.5	44.9	44.9	0.0
12947 W. Galewood Street	596	18.2	44.9	44.9	0.0
12948 W. Galewood Street	569	11.7	44.9	44.9	0.0
12959 W. Galewood Street	705	9.4	44.9	44.9	0.0
12966 W. Galewood Street	743	8.8	44.9	44.9	0.0
12971 W. Galewood Street	800	8.0	44.9	44.9	0.0
3901 N. Van Noord Avenue	330	27.6	68.2	68.2	0.0
3905 N. Van Noord Avenue	387	32.9	68.2	68.2	0.0
3911 N. Van Noord Avenue	438	28.5	68.2	68.2	0.0
3917 N. Van Noord Avenue	498	24.1	60.7	60.7	0.0
3921 N. Van Noord Avenue	559	19.9	60.7	60.7	0.0
12949 W. Blairwood Drive	200	33.0	44.9	45.2	0.3
12950 W. Blairwood Drive	355	16.8	44.9	44.9	0.0
12951 W. Blairwood Drive	358	26.7	44.9	45.0	0.1
12952 W. Blairwood Drive	237	31.2	44.9	45.1	0.2
12954 W. Blairwood Drive	527	12.5	44.9	44.9	0.0
12956 W. Blairwood Drive	575	11.6	44.9	44.9	0.0
12958 W. Blairwood Drive	504	13.0	44.9	44.9	0.0
12960 W. Blairwood Drive	550	12.1	44.9	44.9	0.0
12965 W. Blairwood Drive	531	22.4	44.9	44.9	0.0
12970 W. Blairwood Drive	688	9.6	44.9	44.9	0.0
12979 W. Blairwood Drive	758	13.6	44.9	44.9	0.0
12980 W. Blairwood Drive	846	7.4	44.9	44.9	0.0
12997 W. Blairwood Drive	921	6.5	44.9	44.9	0.0
13070 W. Blairwood Drive	847	7.4	44.9	44.9	0.0
3630 Potosi Drive	562	11.8	50.2	50.2	0.0
3635 Potosi Drive	486	13.4	50.2	50.2	0.0
3643 Potosi Drive	431	14.7	50.2	50.2	0.0
3646 Potosi Drive	455	17.1	50.2	50.2	0.0
3654 Potosi Drive	407	21.3	50.2	50.2	0.0
3663 Potosi Drive	279	39.4	50.2	50.5	0.3
12850 Halkirk Street	778	18.3	68.2	68.2	0.0
Sunnyside Preschool	830	17.6	55.4	55.4	0.0
Residences on Longridge Avenue	1,070	14.8	47.5	47.5	0.0

/a/ Distance of noise source from receptor. The distance is from the parking structure to the property line.
/b/ Parking activity sound level at receptor location with distance and building adjustment.
/c/ Pre-operational activity ambient sound level at receptor location.
/d/ New sound level at receptor location including parking activity.
/e/ An incremental noise level increase of 5 dBA [averaged over the day (CNEL)] or more would result in a significant impact. Noise levels shown here are more conservative since they show noise levels for the period of use, not a 24-hour day.
SOURCE: TAHA, 2013; see Appendix F.1 b) Operational Noise Level Calculations

Athletic Field Noise. The Proposed Project would include a rooftop athletic practice field to serve as an accessory use to the Harvard-Westlake School. The athletic field does not include amplified program sound (i.e., music or spoken sound broadcast through a loudspeaker system), thereby minimizing noise impacts. The noise level at the rooftop athletic field was determined based on the existing ambient noise level at the existing campus athletic field (Ted Slavin Field) and making a distance adjustment to the measured athletic field source sound level. It is estimated that the rooftop athletic field would generate a noise level of approximately 70.6 dBA L_{eq} at a distance of 50 feet.

As shown in **Table 3.7-10**, athletic field activity would generate noise levels less than a 5-dBA incremental time-averaged (L_{eq}) increase at all residences not owned by Harvard-Westlake except for the closest house on Galewood Street.[2] During athletic activities, the maximum noise increase associated with field activity (averaged over activity periods) is estimated to be approximately 6.6 dBA L_{eq} at the closest house on Galewood Street. This noise level associated with athletic activity would fluctuate throughout the day as the intensity of activity on the field fluctuates. Although field noise levels would intermittently exceed 5 dBA L_{eq} at the nearest residence, the City of Los Angeles significance criteria requires a 24-hour noise analysis to determine the significance of impacts.

On a 24-hour basis, it is estimated that the existing CNEL in the Project area is approximately 48.3 dBA. With the Project it is anticipated that the CNEL with athletic field noise would increase to approximately 51.2 dBA CNEL at the closest house on Galewood Street. Therefore, athletic field activity would increase the existing CNEL by 2.9 dBA at the closest home not owned by Harvard-Westlake, which would not exceed the 5 dBA CNEL significance threshold (which is the appropriate threshold since the resultant noise level would be compatible with single-family residential use). Houses adjacent to the Development Site are located in residential neighborhoods without substantial noise sources (e.g., freeways or airports); the existing (and calculated future with Project) CNELs are within the acceptable ambient noise range for single-family residential use (see **Table 3.7-2** for identification of noise levels compatible with different types of land use).

Certain activities (e.g., whistles and shouting) would generate noise that would be audible at the exterior of homes in the area. Whistles typically generate an instantaneous maximum noise level ranging between 66.7 dBA to 73.1 dBA at a distance of 50 feet. The high pitch of whistle noise would be audible at surrounding land uses and could disturb daytime sleepers and could result in an annoyance to residents in the area. The subjective nature of annoyance means that there are large differences between individuals – some will have a negative reaction to a sound that others accept or even like. The severity of the noise annoyance is dependent on the regularity of the noise source. Because athletic field activity would not significantly impact CNEL (or interior noise levels) at even the closest house on Galewood Street, impacts to exterior noise levels are considered less than significant according to the City of Los Angeles significance criteria. Therefore, the Proposed Project would not result in a significant impact related to athletic field noise levels.

Combined On-Site Noise. An analysis was also completed to assess the potential combined noise impacts of activities associated with the athletic field and parking activities in the structure. **Table 3.7-11** presents the combined on-site noise levels. The maximum combined incremental average noise level increase that would occur at the closest residence (not owned by Harvard-Westlake) on Galewood Street would be 6.8 dBA L_{eq} (during times when both athletic field activities are under way and parking activities are occurring). This 6.8 dBA increase in noise levels would be for the times when activities are occurring in the parking structure and on the athletic field (Leq). In order to compare noise increases to the City's 5 dBA CNEL threshold, the noise levels must be analyzed within the context of a 24-hour day in order to identify the CNEL.

---

[2] The home at the end of Potosi Drive (3680) is owned by Harvard-Westlake and would experience athletic field noise levels greater than 5dBA Leq.

TABLE 3.7-10: ATHLETIC FIELD NOISE LEVELS					
Sensitive Receptor	**Distance from Athletic Field to Property Line (feet) /a/**	**Maximum Noise Level (dBA) /b/**	**Existing Ambient (dBA, L_{eq}) /c/**	**New Ambient (dBA, L_{eq}) /d/**	**Increase /e/**
12917 W. Galewood Street	252	47.0	60.7	60.9	0.2
12920 W. Galewood Street	184	50.5	44.9	51.5	6.6
12927 W. Galewood Street	382	42.5	44.9	46.9	2.0
12934 W. Galewood Street	375	35.7	44.9	45.4	0.5
12937 W. Galewood Street	477	30.1	44.9	45.0	0.1
12947 W. Galewood Street	590	30.8	44.9	45.1	0.2
12948 W. Galewood Street	563	24.3	44.9	44.9	0.0
12959 W. Galewood Street	699	22.0	44.9	44.9	0.0
12966 W. Galewood Street	738	21.4	44.9	44.9	0.0
12971 W. Galewood Street	794	20.6	44.9	44.9	0.0
3901 N. Van Noord Avenue	330	40.1	68.2	68.2	0.0
3905 N. Van Noord Avenue	382	45.5	68.2	68.2	0.0
3911 N. Van Noord Avenue	432	41.2	68.2	68.2	0.0
3917 N. Van Noord Avenue	492	36.8	60.7	60.7	0.0
3921 N. Van Noord Avenue	553	32.5	60.7	60.7	0.0
12949 W. Blairwood Drive	184	46.5	44.9	48.8	3.9
12950 W. Blairwood Drive	349	29.5	44.9	45.0	0.1
12951 W. Blairwood Drive	349	39.5	44.9	46.0	1.1
12952 W. Blairwood Drive	231	44.0	44.9	47.5	2.6
12954 W. Blairwood Drive	505	25.5	44.9	44.9	0.0
12956 W. Blairwood Drive	552	24.5	44.9	44.9	0.0
12958 W. Blairwood Drive	483	26.0	44.9	45.0	0.1
12960 W. Blairwood Drive	544	24.7	44.9	44.9	0.0
12965 W. Blairwood Drive	532	34.9	44.9	45.3	0.4
12970 W. Blairwood Drive	682	22.2	44.9	44.9	0.0
12979 W. Blairwood Drive	752	26.2	44.9	45.0	0.1
12980 W. Blairwood Drive	840	20.0	44.9	44.9	0.0
12997 W. Blairwood Drive	921	19.0	44.9	44.9	0.0
13070 W. Blairwood Drive	746	21.3	44.9	44.9	0.0
3630 Potosi Drive	550	24.6	50.2	50.2	0.0
3635 Potosi Drive	469	26.3	50.2	50.2	0.0
3643 Potosi Drive	418	27.5	50.2	50.2	0.0
3646 Potosi Drive	450	29.7	50.2	50.2	0.0
3654 Potosi Drive	407	33.8	50.2	50.3	0.1
3663 Potosi Drive	276	52.1	50.2	54.2	4.0
12850 Haikirk Street	773	30.9	68.2	68.2	0.0
Sunnyside Preschool	329	40.1	55.4	55.5	0.1
Residences on Longridge Avenue	1070	27.3	47.5	47.5	0.0

/a/ Distance of noise source from receptor. The distance is from the athletic field to the property line.
/b/ Athletic field activitysound level at receptor location with distance and building adjustment.
/c/ Ambient sound level at receptor location prior to proposed activity on the Development Site.
/d/ New sound level at receptor locations on completion of the project, including noise from the athletic fieldactivity.
/e/ An incremental noise level increase of 5 dBA [averaged over a 24-hour day (CNEL)] or more would result in a significant impact. Noise levels shown here are more conservative since they show noise levels averaged over the period of use of the parking structure, not a 24-hour day.
SOURCE: TAHA, 2012; see Appendix F.1 b) Operational Noise Level Calculations

TABLE 3.7-11: COMBINED ATHLETIC FIELD AND PARKING NOISE LEVELS				
Sensitive Receptor/a/	Combined Noise Level (dBA) /b/	Existing Ambient (dBA L_{eq}) /c/	New Ambient (dBA L_{eq}) /d/	Increase /e/
12917 W. Galewood Street	47.2	60.7	60.9	0.2
12920 W. Galewood Street	50.6	44.9	51.7	6.8
12927 W. Galewood Street	42.8	44.9	47.0	2.1
12934 W. Galewood Street	36.0	44.9	45.4	0.5
12937 W. Galewood Street	30.3	44.9	45.0	0.1
12947 W. Galewood Street	31.0	44.9	45.1	0.2
12948 W. Galewood Street	24.5	44.9	44.9	0.0
12959 W. Galewood Street	22.2	44.9	44.9	0.0
12966 W. Galewood Street	21.6	44.9	44.9	0.0
12971 W. Galewood Street	20.8	44.9	44.9	0.0
3901 N. Van Noord Avenue	40.3	68.2	68.2	0.0
3905 N. Van Noord Avenue	45.8	68.2	68.2	0.0
3911 N. Van Noord Avenue	41.4	68.2	68.2	0.0
3917 N. Van Noord Avenue	37.0	60.7	60.7	0.0
3921 N. Van Noord Avenue	32.7	60.7	60.7	0.0
12949 W. Blairwood Drive	46.6	44.9	48.9	4.0
12950 W. Blairwood Drive	29.7	44.9	45.0	0.1
12951 W. Blairwood Drive	39.7	44.9	46.1	1.2
12952 W. Blairwood Drive	44.2	44.9	47.6	2.7
12954 W. Blairwood Drive	25.7	44.9	45.0	0.1
12956 W. Blairwood Drive	24.7	44.9	44.9	0.0
12958 W. Blairwood Drive	26.2	44.9	45.0	0.1
12960 W. Blairwood Drive	24.9	44.9	44.9	0.0
12965 W. Blairwood Drive	35.2	44.9	45.3	0.4
12970 W. Blairwood Drive	22.5	44.9	44.9	0.0
12979 W. Blairwood Drive	26.4	44.9	45.0	0.1
12980 W. Blairwood Drive	20.2	44.9	44.9	0.0
12997 W. Blairwood Drive	19.2	44.9	44.9	0.0
13070 W. Blairwood Drive	21.4	44.9	44.9	0.0
3630 Potosi Drive	24.8	50.2	50.2	0.0
3635 Potosi Drive	26.5	50.2	50.2	0.0
3643 Potosi Drive	27.8	50.2	50.2	0.0
3646 Potosi Drive	30.0	50.2	50.2	0.0
3654 Potosi Drive	34.1	50.2	50.3	0.1
3663 Potosi Drive	52.3	50.2	54.4	4.2
12850 Halkirk Street	31.1	68.2	68.2	0.0
Sunnyside Preschool	40.2	55.4	55.5	0.1
Residences on Longridge Avenue	27.6	47.5	47.5	0.0

/a/ Distance from the athletic field or parking structure to the receptor (property line) can be found in Tables 3.7-9 and 3.7-10.
/b/ Sound level at receptor location including athletic field activity with distance and building adjustment.
/c/ Ambient sound level at receptor location prior to proposed activity on the Development Site.
/d/ New sound level at receptor location, including noise from combined parking and athletic field activity.
/e/ An incremental noise level increase of 5 dBA [averaged over a 24-hour day (CNEL)] or more would result in a significant impact. Noise levels shown here are more conservative since they show noise levels averaged over the period of use of the athletic field and parking structure, not a 24-hour day.
SOURCE: TAHA, 2013; see Appendix F.1 b) Operational Noise Level Calculations

On a 24-hour basis, it is not anticipated that noise levels related to parking activity would substantially affect the existing CNEL (the metric by which a significant impact is identified). Parking-related noise would generally occur over a few hours when vehicles are arriving or departing the structure and the majority of hourly noise levels would not be changed by parking activity. The CNEL would be predominantly affected by athletic field noise. As described above, athletic field noise would not significantly increase the CNEL in the project area. The increase in CNEL as a result of both parking activity and athletic field noise would be approximately 3 dBA CNEL. Therefore, the Proposed Project would result in a less-than-significant impact (according to City of Los Angeles criteria) related to total operational noise as a result of parking and athletic field noise.

Mobile Source Noise. The Proposed Project would not generate new vehicle trips to and from the site since student enrollment at Harvard-Westlake School would not change. According to the traffic analysis, operational changes associated with the Proposed Project would be associated with a localized distribution shift of traffic along Coldwater Canyon Avenue. Mobile source noise levels are not anticipated to increase at nearby residential land uses since trip distribution would not alter roadway volumes beyond the segment in front of the Development Site. Therefore, the Proposed Project would result in a less-than-significant impact related to mobile source noise levels.

As part of the Proposed Project, on-street parking currently permitted along the east side of Coldwater Canyon Avenue – between the North Entrance driveway and the Hacienda Drive driveway – would be removed. Vehicles that currently park on-street on Coldwater Canyon Avenue would therefore be incentivized to park at the proposed Parking Structure. In addition, school-related vehicles parked in the adjacent residential neighborhood, located north of existing Harvard-Westlake School, would therefore be incentivized to the proposed Parking Structure as well. Residential land uses located north of Harvard-Westlake School would benefit from a mobile noise level reduction.

School Bus Noise. As part of Proposed Project, the South Parking Lot located immediately south of Hacienda Drive would no longer be available for student parking. Instead, the South Parking Lot would be utilized for school bus drop-off/pick-up and school bus turnaround. As a result, bus traffic would shift accordingly to the Hacienda Drive driveway from Coldwater Canyon Avenue. School bus noise would be related to idling and engine revs. Bus horns and back up alarms would generate the loudest instantaneous noise levels. Sound measurements were taken using a SoundPro DL Sound Level Meter on October 29, 2012 at 2:00 p.m.to determine school bus noise. The instantaneous noise levels for start-up, back-up alarm, and horn generated from a single bus is approximately 62.0, 63.1, and 77.5 dBA L_{max} at a distance of 50 feet, respectively. Bus noise may be intermittently audible at nearby residential land uses. Bus activity would be short-term and limited to a few minutes in the morning and after school. In addition, drivers would shut off bus engines during the drop-off/pick-up and would not idle the buses for extended periods of time. School bus noise levels would beshort-term and would not significantly change existing CNEL ambient noise. Therefore, the Proposed Project would result in a less-than-significant impact related to school bus noise.

<u>Vibration</u>

The Proposed Project would not include significant stationary sources of ground-borne vibration, such as heavy equipment operations. Operational ground-borne vibration in the Project vicinity would be generated by vehicular travel on the local roadways. However, similar to existing conditions, Project-related traffic vibration levels would not be perceptible by sensitive receptors. Therefore, the Proposed Project would result in a less-than-significant impact related to operational vibration.

CUMULATIVE IMPACTS

A significant impact would occur if the Proposed Project resulted in a cumulative increase noise levels. The Proposed Project would result in significant construction noise impact. Construction noise is a local impact and the nearest related project is a mixed-use development located at 12548 Ventura Boulevard. This related project is located over 2,000 feet from the Development Site and separated by hilly terrain. Construction noise from this Project would not combine to increase ambient noise levels. The Department of Water and Power (DWP) is constructing a trunk line along Coldwater Canyon Avenue. Construction of the Project would not overlap with construction on the trunk line (construction activities are already about ½ mile from the School to the north and approximately 2 miles from the School to the south). The Proposed Project would not generate new vehicle trips to and from the site since student enrollment at Harvard-Westlake School would not change. Therefore, the Proposed Project would not contribute to cumulative operational noise levels.

REGULATORY COMPLIANCE MEASURES

RC-N-1: All construction truck traffic shall be restricted to truck routes approved by the City of Los Angeles Department of Building and Safety, which shall avoid residential areas and other sensitive receptors to the extent feasible.

RC-N-2: The Proposed Project shall comply with the City of Los Angeles Noise Ordinance (LAMC Chapter XI), and any subsequent ordinances, which prohibits the emission or creation of noise beyond certain levels at adjacent uses unless technically infeasible.

RC-N-3: Construction and demolition shall be restricted to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday, and prohibited on all Sundays and federal holidays.

RC-N-4: The Proposed Project shall comply with the LAMC Section 91.106.4.8, which requires a construction site notice to be provided that includes the following information: job site address, permit number, name and phone number of the contractor and owner or owner's agent, hours of construction allowed by code or any discretionary approval for the site, and City telephone numbers where violations can be reported. The notice shall be posted and maintained at the construction site prior to the start of construction and displayed in a location that is readily visible to the public and approved by the City's Department of Building and Safety.

MITIGATION MEASURES

The following mitigation measures would reduce construction noise but not to a less than significant level.

MM-N-1: The construction contractor shall ensure that noise-generating equipment operated at the Development Site is equipped with the most effective noise control devices (i.e., mufflers, lagging, and/or motor enclosures).

MM-N-2: The construction contractor shall ensure that all equipment is properly maintained to prevent additional noise due to worn or improperly maintained parts.

MM-N-3: The construction contractor shall use quieter equipment as opposed to noisier equipment (such as rubber-tired equipment rather than metal-tracked equipment).

MM-N-4: The construction contractor shall minimize the use of equipment or methods with the greatest peak noise generation potential.

MM-N-5: The construction contractor shall schedule construction activities to avoid operating several pieces of equipment simultaneously, where feasible.

MM-N-6: When possible, the construction contractor shall use on-site electrical sources to power equipment rather than diesel generators.

MM-N-7: The construction contractor shall locate construction staging areas away from sensitive uses.

MM-N-8: Two weeks prior to the commencement of construction at the Development Site, notification shall be provided to the immediate surrounding off-site residential uses that discloses the construction schedule, including the various types of activities and equipment that would be occurring throughout the duration of the construction period.

MM-N-9: A "noise disturbance coordinator" shall be established. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures such that the complaint is resolved. All notices that are sent to residential units within 500 feet of the construction site and all signs posted at the construction site shall list the telephone number for the disturbance coordinator.

MM-N-10: The site administrator for Harvard-Westlake School shall coordinate with the construction contractor to schedule construction activity such that student exposure to noise is minimized.

Impacts related to construction vibration would be less than significant. No mitigation measures are required.

Impacts related to operational noise and vibration would be less than significant. No mitigation measures are required.

SIGNIFICANCE AFTER MITIGATION

Mitigation Measure **MM-N-1** would reduce construction noise levels by approximately 3 dBA. Mitigation Measures **MM-N-2** through **MM-N-9**, while difficult to quantify, would assist in attenuating construction noise levels. **Table 3.7-12** shows mitigated construction noise levels after application of Mitigation Measure **MM-N-1** at receptors that would be significantly impacted; the other measures could further reduce noise levels. Mitigated construction noise levels would still exceed the 5-dBA City of Los Angeles construction noise significance threshold at approximately 13 residences adjacent to the construction site west of Coldwater Canyon Avenue and 22 residences on the east side of Coldwater Canyon Avenue. In addition, the Sunnyside Preschool would be significantly impacted. Therefore, the Proposed Project would result in a significant and unavoidable impact related to construction noise.

Mitigation Measure **MM-N-10** would ensure that the school coordinates with the construction contractor to keep student exposure to noise at a minimum.

Operational noise from all sources (mobile, athletic field, parking and bus activity) would be less than significant. Impacts related to construction vibration and operational noise and vibration would also be less than significant without mitigation.

TABLE 3.7-12: MITIGATED CONSTRUCTION NOISE – SIGNIFICANTLY IMPACTED RESIDENCES AND SUNNYSIDE PRESCHOOL						
Street/ Receptor	**Number of Significantly Impacted Receptors**	**Distance from Construction Limit Line to Property Line (feet) /a/**	**Maximum Construction Noise Level (dBA) /b/**	**Existing Ambient (dBA L_{eq}) /c/**	**Temporary New Ambient (dBA L_{eq}) /d/**	**Range of Noise Increases**
Galewood Street	6	43 - 354	51.7 - 81.6	44.9 – 60.7	52.6 - 81.7	7.7 – 25.3
Van Noord Avenue	2	54 - 125	73.1 - 85.2	68.2	74.3 - 85.3	6.1 – 17.1
Blairwood Drive	4	163 - 531	50.3 - 63.2	44.9	51.4 - 63.2	6.5 – 18.3
Potosi Drive	1	189	71.6	50.2	71.6	21.4
Avenida Del Sol	16	251 - 550	60 - 68.5	55.4	61.3 – 68.7	5.9 – 13.3
Alta Mesa Drive	6	484 - 606	58.9 - 61.4	55.4	60.5 - 62.3	5.1– 6.9
Sunnyside Preschool	1	329	65.5	55.4	65.9	10.5

/a/ This distance is from the construction limit line to the property line of the receptor.
/b/ Construction noise source's sound level at receptor location with distance and building adjustment as applicable.
/c/ Pre-construction activity ambient sound level at receptor locations.
/d/ New sound level at receptor location during the construction period, including noise from construction activity.
SOURCE: TAHA, 2013; see Appendix F.1 a) Construction Noise Level Calculations