Noise Analysis for the Granada Hills Home Depot Project Los Angeles, California

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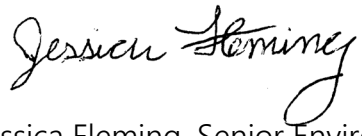

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Acronyms and Abbreviations

Caltrans	California Department of Transportation
City	City of Los Angeles
CNEL	community noise equivalent level
CPU	Community Plan Update
dB	decibel
dB(A)	A-weighted decibel
FHWA	Federal Highway Administration
HVAC	heating, ventilation, and air conditioning
in/sec	inch per second
L_{eq}	one-hour equivalent noise level
L_{pw}	sound power level
PPV	peak particle velocity
project	Granada Hills Home Depot Project
STC	sound transmission class

Executive Summary

The Granada Hills Home Depot (project) is located at 16830 Devonshire Street in Granada Hills within the city of Los Angeles, California. The project site is situated on a developed commercial lot within the North Hills Plaza at the southeast corner of Balboa Boulevard and Devonshire Street. The 8.97-acre project site is currently occupied by a movie theater and retail uses and associated asphalt concrete parking lots. The project would demolish the entire theatre building and partially demolish the adjoining shopping mall building and construct a new 107,560-square-foot Home Depot Store with a 28,420-square-foot Garden Center. Other improvements would include vehicular pavements for drive aisles and parking lots, a pylon sign, surface concrete flatwork, and underground utilities.

This report evaluates potential noise impacts associated with construction and operation of the project. As part of this assessment, noise levels due to construction and operation were calculated and evaluated against City of Los Angeles (City) noise standards. A summary of the findings is provided below.

Construction Noise

The project site fronts on Devonshire Street to the north and is bounded by commercial buildings and associated parking lots to the west, by single-family residential properties and a commercial building to the east, and single-family residential properties to the south. Pursuant to Municipal Code Section 112.05, construction equipment noise levels are restricted to 75 A-weighted decibels [dB(A)] at 50 feet from the source unless compliance is "technically infeasible" despite the use of mufflers, shields, sound barriers and/or other noise reduction devices or techniques during the operation of the equipment. As calculated in this analysis, maximum construction equipment noise levels are not projected to exceed 75 dB(A) with incorporation of the existing barrier located between the project site and the adjacent residences. Therefore, the project would comply with Municipal Code Section 112.05.

Additionally, the hourly average noise levels generated by the simultaneous use of construction equipment would be less than the maximum construction noise levels as construction equipment pieces do not constantly operate at full power during typical construction activities. As calculated in this analysis, average hourly noise levels generated by project-related construction activities are projected to range from 60 to 66 dB(A) one-hour equivalent noise level (L_{eq}) at the adjacent land uses. Although the adjacent residences would be exposed to construction noise levels that could be heard above ambient conditions, the exposure would be temporary. Construction activities would only occur during the hours allowed by Section 41.40 of the Municipal Code. Therefore, on-site construction activities would not generate a substantial temporary increase in ambient noise levels, and impacts would be less than significant.

On-site Generated Noise

On-site noise sources on the project site after completion of construction would include parking lot activities, rooftop HVAC equipment, loading docks, and delivery trucks. As specified in Municipal

Code Section 111.02, on-site noise sources may not increase the ambient level by more than 5 dB above ambient levels. The presumed ambient noise levels specified in Section 111.03 were used in this analysis. As calculated in this analysis, project-generated noise levels are projected to range from 33 to 40 dB(A) L_{eq} at the adjacent residential uses and would be 45 dB(A) L_{eq} at the adjacent commercial use. The total ambient noise level plus project-generated noise levels would not result in any change in the daytime presumed ambient noise level at the adjacent residential and commercial uses, and would result in less than a 5 dB increase in the nighttime presumed ambient noise level at the adjacent residential and commercial uses. Therefore, operational HVAC noise would not generate a substantial permanent increase in ambient noise levels in excess of limits established in the Municipal Code, and impacts would be less than significant.

Vehicle Traffic Noise

The project would result in a change in traffic volumes on local roadways. The project would not substantially alter the vehicle classifications mix on local or regional roadways, nor would the project alter the speed on an existing roadway or create a new roadway. Thus, the primary factor affecting off-site noise levels would be the change in traffic volumes. As calculated in the Transportation Assessment Report prepared for the project, as a result in the change of retail use and size, the project would result in a net decrease of 2,018 daily trips. Therefore, the project would result in a decrease of vehicle traffic on area roadways when compared to the existing condition. Thus, operational roadway noise would not generate a substantial permanent increase in ambient noise levels for off-site noise sensitive land uses, and impacts would be less than significant.

Vibration

The vibration evaluation is based on the California Department of Transportation (Caltrans) criterion for vibration levels to cause structural damage for older residential structures, which is 0.3 peak particle velocity (PPV) inches per second (in/sec) and the Caltrans criterion for vibration levels to cause structural damage for modern industrial/commercial buildings, which is 0.5 PPV in/sec. The nearest receptors are the residential uses located as close as 15 feet from the project boundary. The largest piece of vibration-generating equipment that could be used for project construction is a large loaded truck. Vibration levels from a loaded truck would be 0.113 in/sec PPV at 15 feet. Vibration levels would not exceed the threshold of 0.3 PPV in/sec for older residential structures. Additionally, construction equipment would move throughout the entire site and would only be located near the project boundaries for short periods of time. Thus, vibration levels at the receptors located near the project boundaries would be less than these maximum levels for a majority of the construction period. Although vibration levels may be perceptible for short periods of time, maximum vibration levels would not exceed Caltrans criterion. Therefore, construction would not generate excessive ground borne vibration or ground borne noise levels, and impacts would be less than significant. Once operational, the project would not be a source of ground borne vibration or ground borne noise. On-road delivery trucks associated with operation would not generate significant levels of vibration.

1.0 Introduction

1.1 Project Description

The project is located at 16830 Devonshire Street in Granada Hills within the city of Los Angeles, California. The project site is situated on a developed commercial lot within the North Hills Plaza at the southeast corner of Balboa Boulevard and Devonshire Street. The 8.97-acre project site is currently occupied by a movie theater and retail uses and associated asphalt concrete parking lots. The project site fronts on Devonshire Street to the north and is bounded by commercial buildings and associated parking lots to the west, by single-family residential properties and a commercial building to the east, and single-family residential properties to the south. Figure 1 shows the regional location of the project. Figure 2 shows an aerial photograph of the project site and vicinity.

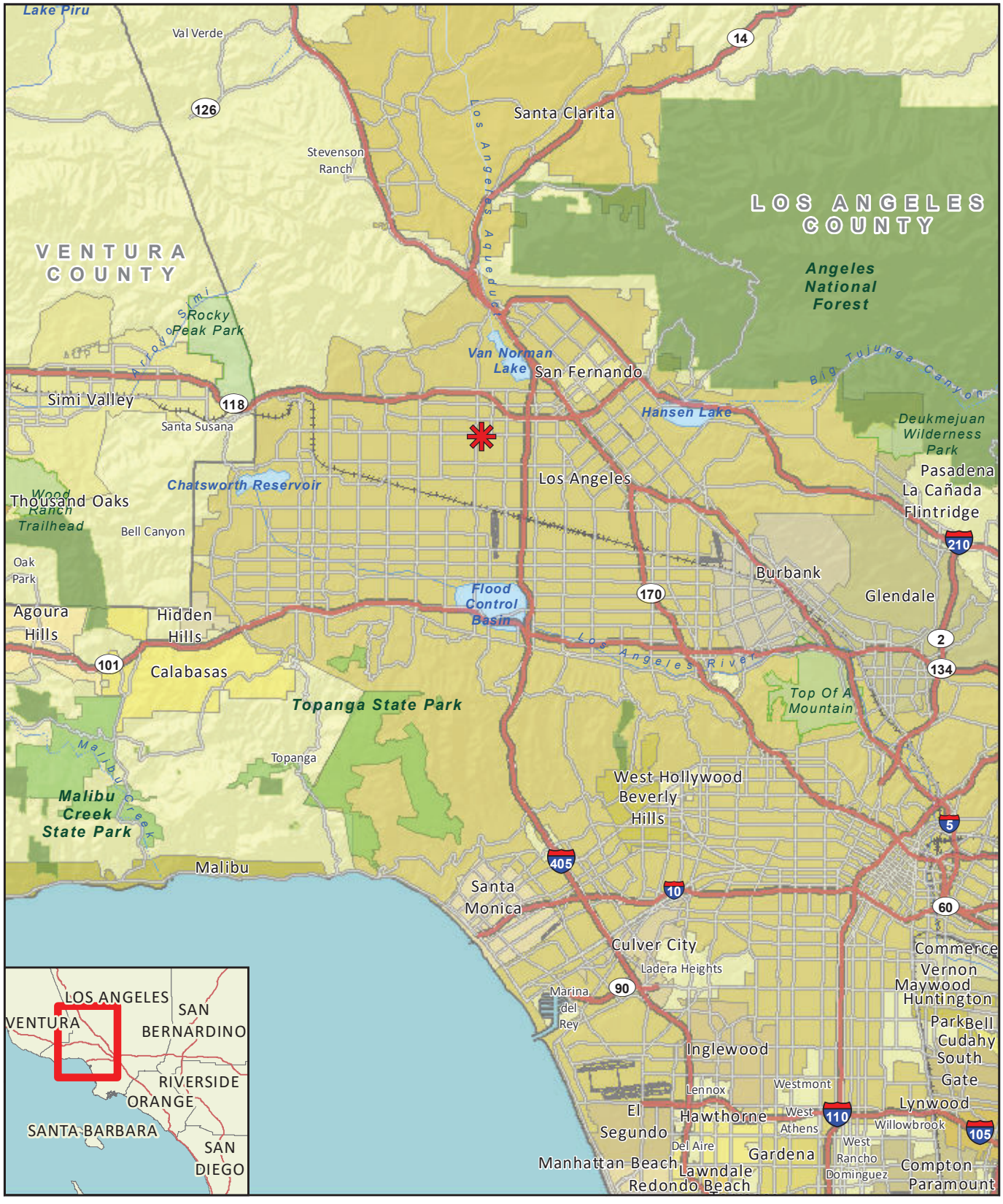
The project would demolish the existing theatre building and partially demolish the existing shopping mall building and construct a new 107,560-square-foot Home Depot Store with a 28,420-square-foot Garden Center. Other improvements would include vehicular pavements for drive aisles and parking lots, a pylon sign, surface concrete flatwork, and underground utilities. Figure 3 shows the proposed site plan.

1.2 Fundamentals of Noise

Sound levels are described in units called the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease.

Additionally, in technical terms, sound levels are described as either a "sound power level" or a "sound pressure level," which while commonly confused, are two distinct characteristics of sound. Both share the same unit of measure, the dB. However, sound power, expressed as L_{pw}, is the energy converted into sound by the source. The L_{pw} is used to estimate how far a noise will travel and to predict the sound levels at various distances from the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers such as an eardrum or microphone and is the sound pressure level. Noise measurement instruments only measure sound pressure, and noise level limits used in standards are generally sound pressure levels.

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Therefore, the "A-weighted" noise scale is used for measurements and standards involving the human perception of noise. Noise levels using A-weighted measurements are designated with the notation dB(A).



Project Location

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FIGURE 1
Regional Location

Image Source: NearMap (flown January 2022)

Project Boundary

FIGURE 2
Project Location on Aerial Photograph

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Map Source: Lars Andersen & Associates

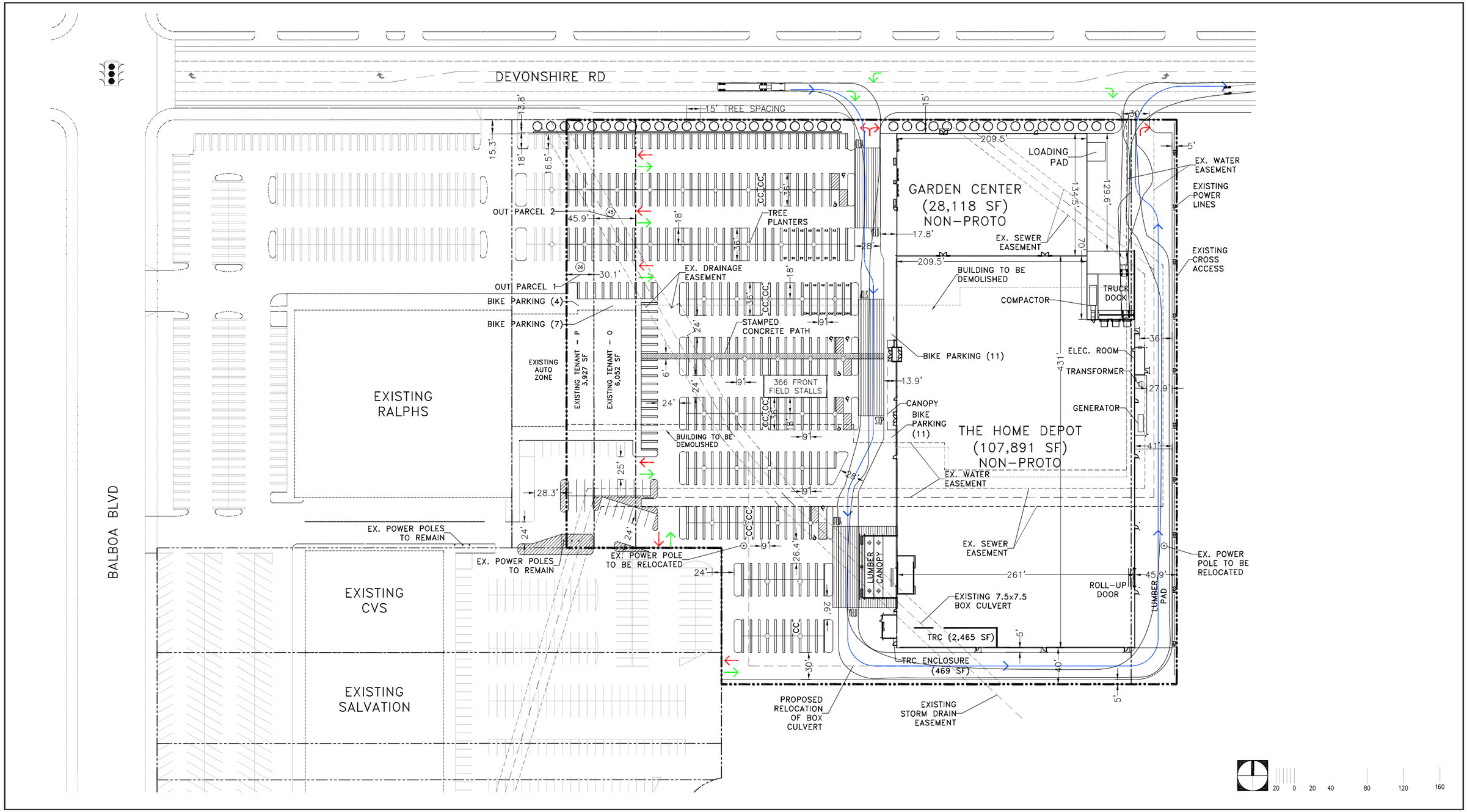

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FIGURE 3
Site Plan

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this study are the one-hour equivalent noise level (L_{eq}), the community noise equivalent level (CNEL), and the sound exposure level. The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and an additional 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night. The sound exposure level is a noise level over a stated period of time or event and normalized to one second. Sound from a small, localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate of 6 dB(A) for each doubling of the distance.

Traffic noise is not a single, stationary point source of sound. The movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The drop-off rate for a line source is 3 dB(A) for each doubling of distance.

The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site (such as parking lots or smooth bodies of water) receives no additional ground attenuation, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the source. A soft site (such as soft dirt, grass, or scattered bushes and trees) receives an additional ground attenuation value of 1.5 dB(A) per doubling of distance. Thus, a point source over a soft site would attenuate at 7.5 dB(A) per doubling of distance.

Human perception of noise has no simple correlation with acoustical energy. A change in noise levels is generally perceived as follows: 3 dB(A) barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise (California Department of Transportation [Caltrans] 2013).

2.0 Applicable Standards

2.1 City of Los Angeles General Plan

The Noise Element of the City's General Plan establishes policies to guard against creation of new noise/land use conflicts and to minimize the impact of existing noise sources on the community. Table 1 identifies noise level compatibility standards (City of Los Angeles 1999).

Table 1 Guidelines for Noise Compatible Land Use							
	Community Noise Exposure (CNEL)						
	50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Homes	A	C	C	C	N	U	U
Residential Multiple Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	N/U	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

A	**Normally Acceptable:** Specified land use is satisfactory, based upon the assumption that any buildings involved are conventional construction, without any special noise insulation.
C	**Conditionally Acceptable:** New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
N	**Normally Unacceptable:** New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design of a project.
U	**Clearly Unacceptable:** New construction or development generally should not be undertaken.

The Noise Element contains the following goal, objectives, and policies related to noise:

Goal: A city where noise does not reduce the quality of urban life.

- Objective 1 (Airports and Harbor): Reduce airport and harbor related noise impacts.
    - Policy 1.1: Incompatibility of airports declared by Los Angeles County to be "noise problem airports" (LAX, Van Nuys, and Burbank) and land uses shall be reduced to achieve zero incompatible uses within a CNEL of 65 dB airport noise exposure area, as required by the California Department of Transportation pursuant to the California Code of Regulations Title 21, Section 5000, et seq., or any amendment thereto.
- Objective 2 (Nonairport): Reduce or eliminate nonairport related intrusive noise, especially relative to noise sensitive uses.
    - Policy 2.2: Enforce and/or implement applicable city, state and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise an alleviate noise that is deemed a public nuisance.
- Objective 3 (Land Use Development): Reduce or eliminate noise impacts associated with proposed development of land and changes in land use.
    - Policy 3.1: Develop land use policies and programs that will reduce or eliminate potential and existing noise impacts.

2.2 City of Los Angeles Municipal Code

2.2.1 Operational Noise

The City regulates noise from local on-site noise sources, such as mechanical equipment, through Municipal Code Chapter XI Noise Regulation. The Noise Regulation provides numerical standards that apply to "stationary" sources of noise generation (mechanical equipment such as air conditioning, refrigeration, heating, or pumping). If such activities are not specifically prohibited by the Noise Regulation, the noise constraint for general stationary sources is that they may not increase the ambient level by more than 5 dB above ambient levels (Municipal Code Section 111.02). Additionally, as specified in Municipal Code Section 111.03, where the ambient noise level is less than the presumed ambient noise level summarized in Table 2, the presumed ambient noise levels in Table 2 shall be deemed to be the minimum ambient noise level for purposes of the Noise Regulation. At the boundary line between two zones, the presumed ambient noise level of the quieter zone shall be used.

Table 2
Presumed Ambient Noise Level [dB(A) L_{eq}]

Zone	Daytime 7:00 a.m. to 10:00 p.m.	Nighttime 10:00 p.m. to 7:00 a.m.
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50	40
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60	55
M1, MR1, and MR2	60	55
M2 and MN3	65	65
SOURCE: Municipal Code Section 111.03		

The project site and the adjacent commercial use are zoned C2-1VL and the adjacent residential uses are zoned RS-1 and R3-1. Therefore, for the purposes of this analysis, the presumed ambient noise levels between the project site and the adjacent residential uses are 50 dB(A) L_{eq} during the daytime hours and 40 dB(A) L_{eq} during the nighttime hours, and the presumed ambient noise levels between the project site and the adjacent commercial uses are 60 dB(A) L_{eq} during the daytime hours and 55 dB(A) L_{eq} during the nighttime hours.

2.2.2 Construction Noise

Section 41.40 of the City' Municipal Code regulates construction noise by limiting construction activities to certain hours. Section 41.40 limits construction activities to the hours of 7:00 a.m. to 9:00 p.m. on weekdays, and 8:00 a.m. to 6:00 p.m. on Saturdays. Construction is not permitted on Sundays or national holidays.

Pursuant to Municipal Code Section 112.05, construction equipment noise levels are restricted to 75 dB(A) at 50 feet from the source unless compliance is "technically infeasible" despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during the operation of the equipment.

2.2.3 Vibration

The Municipal Code does not establish quantified limits for vibration levels. A vibration descriptor commonly used to determine structural damage is the PPV, which is defined as the maximum instantaneous positive or negative peak of the vibration signal, usually measured in inches per second (in/sec). Caltrans provides criteria for determining the potential for structural damage to various types of structures. According to the City's Zoning Information and Map Access System, the nearest residences were generally constructed in the 1950s, 1960s, and 1970s. As some of the residences were constructed in the 1950s, this evaluation is based on the Caltrans criterion for vibration levels to cause structural damage for older residential structures, which is 0.3 PPV in/sec and the Caltrans criterion for vibration levels to cause structural damage for modern industrial/commercial buildings, which is 0.5 PPV in/sec.

3.0 Existing Conditions

Existing noise levels at the project site were measured on June 13, 2022, using one Larson-Davis LxT Sound Expert Sound Level Meters, serial number 3896. The following parameters were used:

Filter:	A-weighted
Response:	Slow
Time History Period:	5 seconds

The meter was calibrated before and after the measurements. The meter was set 5 feet above the ground level for each measurement.

Noise measurements were taken to obtain typical ambient noise levels at the project site and in the vicinity. The weather was warm and sunny with a slight breeze. Three 15-minute measurements were taken, as described below. The measurement locations are shown on Figure 4, and detailed data is presented in Attachment 1.

Measurement 1 was located at the southeastern corner of the project site, approximately 50 feet from the existing 10-foot masonry wall between the project site and the adjacent residential uses. The main source of noise at the measurement location were occasional aircraft flyovers and distance vehicle traffic noise. Noise levels were measured for 15 minutes. The average measured noise level was 56.8 dB(A) L_{eq}.

Measurement 2 was located east of the project site, approximately 12 feet west of the edge of Petit Avenue in the southeast corner of the parking lot. The main sources of noise at the measurement location were parking lot activities and aircraft flyovers. Secondary sources of noise included vehicle traffic on Devonshire Street and a few vehicles on Petit Avenue. During the 15-minute measurement period, vehicle traffic on Petit Avenue was counted. The average measured noise level was 55.8 dB(A) L_{eq}.

Image Source: NearMap (flown January 2022)

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FIGURE 4
Noise Measurement Locations

Measurement 3 was located at the northern project boundary, approximately 50 feet south of Devonshire Street. The main source of noise at the measurement location was vehicle traffic on Devonshire Street. Secondary sources of noise included parking lot activities, aircraft flyovers, and a leaf blower. During the 15-minute measurement period, vehicle traffic on Devonshire Street was counted. The average measured noise level was 65.2 dB(A) L_{eq}.

Noise measurements are summarized in Table 3, and vehicle traffic counts are summarized in Table 4.

Table 3
Noise Measurements

Measurement	Location	Time	Noise Sources	L_{eq}
1	Southeast corner of project site	1:03 p.m. – 1:18 p.m.	Aircraft, distant vehicle traffic	56.8
2	East of project site, 12 feet west of Petit Avenue	2:28 p.m. – 2:43 p.m.	Parking lot, aircraft, vehicle traffic on Devonshire Street and Petit Avenue	55.8
3	Northern project boundary, 50 feet south of Devonshire Street	2:58 p.m. – 3:13 p.m.	Vehicle traffic on Devonshire Street, parking lot, aircraft, leaf blower	65.2
NOTE: Noise measurement data is contained in Attachment 1.				

Table 4
15-minute Traffic Counts

Measurement	Roadway	Direction	Autos	Medium Trucks	Heavy Trucks	Buses	Motorcycles
2	Petit Avenue	Southbound	3	0	0	0	0
		Northbound	2	0	0	0	0
3	Devonshire Street	Eastbound	251	3	0	1	0
		Westbound	258	1	0	0	0

4.0 Analysis Methodology

Noise level predictions and contour mapping were developed using noise modeling software, SoundPlan Essential, version 4.1 (Navcon Engineering 2018). SoundPLAN calculates noise propagation based on the International Organization for Standardization method (ISO 9613-2 – Acoustics, Attenuation of Sound during Propagation Outdoors). The model calculates noise levels at selected receiver locations using input parameter estimates such as total noise generated by each noise source; distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. The model outputs can be developed as noise level contour maps or noise levels at specific receivers. In all cases, receivers were modeled at 5 feet above ground elevation, which represents the average height of the human ear.

4.1 Construction Noise Analysis

Project construction noise would be generated by diesel engine-driven construction equipment used for site preparation and grading, building construction, loading, unloading, and placing materials

and paving. Diesel engine-driven trucks also would bring materials to the site and remove the soils from excavation.

Construction equipment with a diesel engine typically generates maximum noise levels from 70 to 95 dB(A) L_{eq} at a distance of 50 feet (Federal Highway Administration [FHWA] 2006). Table 5 summarizes typical construction equipment noise levels.

Table 5
Typical Construction Equipment Noise Levels

Equipment	Maximum Noise Level at 50 Feet [dB(A) L_{eq}]	Typical Duty Cycle
Auger Drill Rig	85	20%
Backhoe	80	40%
Blasting	94	1%
Chain Saw	85	20%
Clam Shovel	93	20%
Compactor (ground)	80	20%
Compressor (air)	80	40%
Concrete Mixer Truck	85	40%
Concrete Pump	82	20%
Concrete Saw	90	20%
Crane (mobile or stationary)	85	20%
Dozer	85	40%
Dump Truck	84	40%
Excavator	85	40%
Front End Loader	80	40%
Generator (25 kilovolt amps or less)	70	50%
Generator (more than 25 kilovolt amps)	82	50%
Grader	85	40%
Hydra Break Ram	90	10%
Impact Pile Driver (diesel or drop)	95	20%
Insitu Soil Sampling Rig	84	20%
Jackhammer	85	20%
Mounted Impact Hammer (hoe ram)	90	20%
Paver	85	50%
Pneumatic Tools	85	50%
Pumps	77	50%
Rock Drill	85	20%
Roller	74	40%
Scraper	85	40%
Tractor	84	40%
Vacuum Excavator (vac-truck)	85	40%
Vibratory Concrete Mixer	80	20%
Vibratory Pile Driver	95	20%

SOURCE: FHWA 2006.

During excavation, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks,

such as measurement. Although maximum noise levels may be 70 to 95 dB(A) at a distance of 50 feet during most construction activities, hourly average noise levels from the loudest phase of construction would be 84 dB(A) L_{eq} at 50 feet from the center of construction activity when assessing the loudest pieces of equipment–dump truck, excavator, and loader–working simultaneously.

4.2 On-Site Generated Noise Analysis

On-site noise sources on the project site after completion of construction would include parking lot activities, rooftop heating, ventilation, and air conditioning (HVAC) equipment, loading docks, and delivery trucks. Noise levels associated with these sources were calculated and compared to City limits. Modeled noise levels take into account shielding provided by the proposed building, an existing masonry wall located at the eastern and southern project boundaries between the project site and the adjacent residential uses, the proposed rooftop parapet screening wall, and the proposed eight-foot screening wall located east of the proposed loading docks. The following is a discussion of the parameters used to model each of the on-site noise sources.

4.2.1 Parking Lot

Noise would be generated by customer vehicles. Parking lot activities that generate noise include vehicles traveling to and from parking spaces, shopping carts, and brief noise instances associated with parking such as opening and closing car doors, engines starting, and alarm activation noises. The parking area was modeled based on a typical vehicle movement generating a sound power level of 62.7 dB(A) per parking movement in a one-hour period (Bayerisches Landesamt für Umwelt 2007). The City's Municipal Code provides noise level limits for the daytime hours between 7:00 a.m. and 10:00 p.m. and the nighttime hours between 10:00 p.m. and 7:00 a.m. Typical Home Depot shopping hours range from as early as 6:00 a.m. to as late as 11:00 p.m., with the possibility of delivery trucks and employees working while the store is closed. The parking lot was modeled assuming 100 percent parking capacity during the daytime hours (7:00 a.m. to 10:00 p.m.), 50 percent capacity during the early morning and late night hours (6:00 a.m. to 7:00 a.m. and 10:00 p.m. to 11:00 p.m.), and 25 percent capacity during the closed hours (11:00 p.m. to 6:00 a.m.). This is conservative since parking lot activities would likely be less than this during the nighttime hours.

4.2.2 Heating, Ventilation, and Air Conditioning Equipment

The HVAC equipment would be on the rooftop of the proposed building and would be screened with parapet walls. The HVAC equipment would be distributed across the entire rooftop, and the center of the rooftop was assumed to be the acoustical center of the HVAC equipment. It is not known at this time which manufacturer, brand, or model of unit or units will be selected for use in the project. Typically, a capacity of 1-ton per 400 square feet would be required. This ratio was used to determine that the total HVAC capacity required for the building would be approximately 270 tons. Based on review of manufacturer specifications for a sample unit (Trane Mode T/YSCE120ED), a representative noise level for a 10-ton unit would be a sound power level of 79 dB, which is equivalent to a sound pressure level of 47.4 dB(A) L_{eq} at 50 feet. Noise specifications are contained in Attachment 2. All units were modeled at full capacity during the store hours of 6:00 a.m. to 11:00 p.m., and at 50 percent capacity between 11:00 p.m. and 6:00 a.m.

4.2.3 Loading Docks and Delivery Trucks

Three loading docks would be located at the northeast corner of the proposed building. Additionally, a lumber loading area would be located at the southwest corner of the building. The on-site maneuvering associated with the delivery trucks consists of the truck entering the site and backing into the loading dock, idling, loading and unloading, and leaving the site. Delivery trucks would enter the site using the western project driveway off Devonshire Road, would travel counterclockwise around the building, and position at the loading docks at the northeast corner of the building. Trucks would then exit using the eastern project driveway to Devonshire Road. Delivery trucks were modeled as line sources (i.e., noise radiating from a linear source such as driving vehicles) while entering and exiting the project site, and were modeled as point sources as they idle at the loading docks. It was assumed that it would take 5 minutes for a truck to enter the site and position itself at a loading dock, and an additional minute to pull away from the loading dock and leave the project site. During the loading/unloading of the truck, the engine can only idle for a maximum of 5 minutes in compliance with state regulations for air quality. Enforcement of these idling restrictions would limit idling at the loading docks. The unmitigated exterior noise levels for truck drive-by noise and truck engine noise were measured at 66.5 dB(A) L_{eq} at a distance of 25 feet from the loading dock. This is equivalent to a sound power level of 92.1 dB(A). As a conservative analysis, one truck per hour was modeled at each of the loading docks during all daytime and nighttime hours. This noise level was also modeled at the lumber loading area during the store hours of 6:00 a.m. to 11:00 p.m. This is conservative since the trucks idling at the lumber loading area would likely consist of pickup trucks and contractor trucks that are quieter than delivery trucks.

5.0 Future Acoustical Environment and Impacts

5.1 Construction Noise

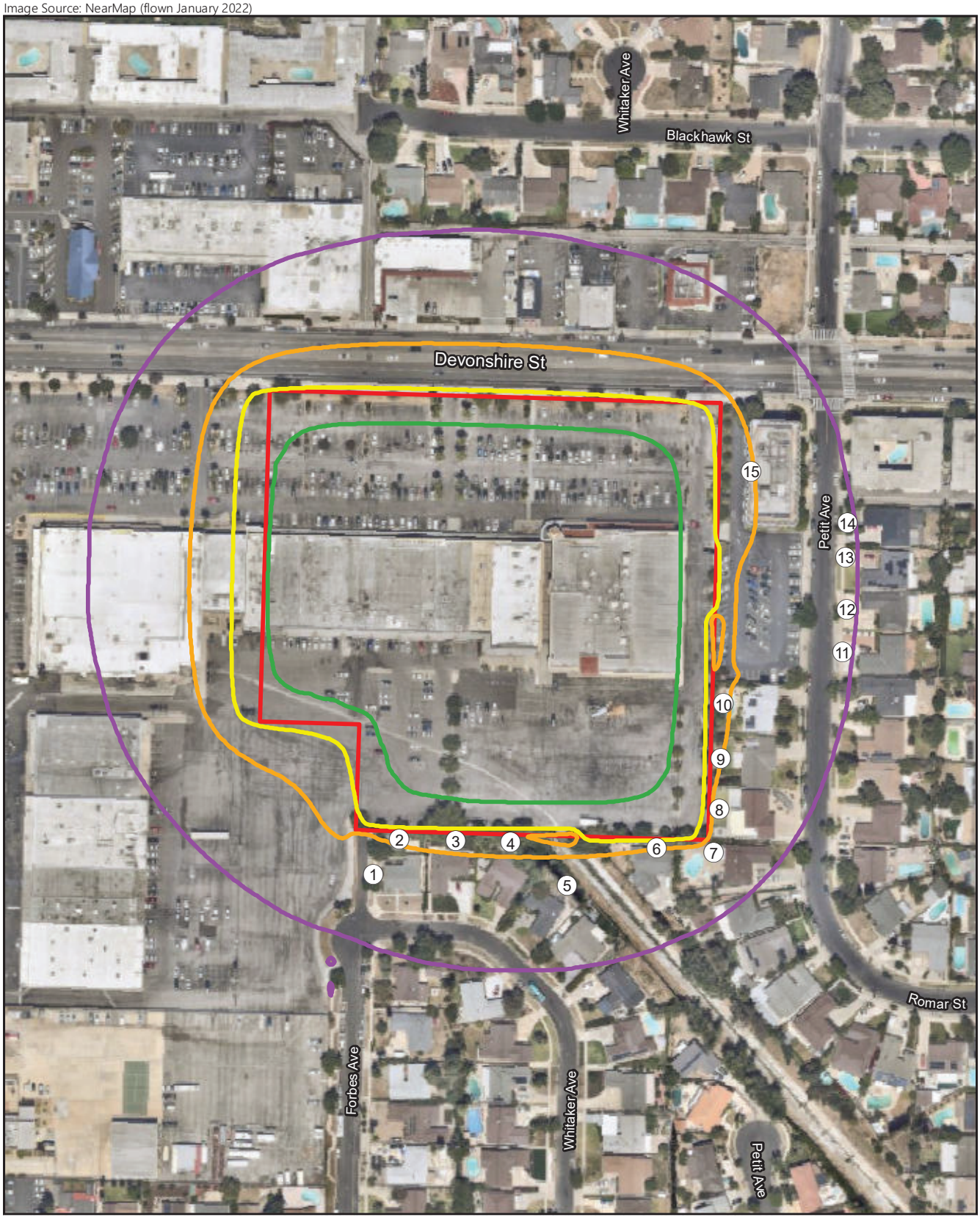
The project site fronts on Devonshire Street to the north and is bounded by commercial buildings and associated parking lots to the west, by single-family residential properties and a commercial building to the east, and single-family residential properties to the south. Pursuant to Municipal Code Section 112.05, construction equipment noise levels are restricted to 75 dB(A) at 50 feet from the source unless compliance is "technically infeasible" despite the use of mufflers, shields, sound barriers and/or other noise reduction devices or techniques during the operation of the equipment. Project construction would require the use of a variety of diesel-powered construction equipment. Noise levels due to this equipment would be reduced at the adjacent residential receivers due to an existing 10-foot masonry wall located between the project site and the receivers. Using FHWA algorithms, it was calculated that a 10-foot barrier located between a source and a receiver that are 50 feet apart would reduce noise levels by approximately 10 dB(A). Table 6 shows the construction equipment that is likely to be used for project construction, the maximum and hourly average equipment noise levels without the barrier, and the maximum and hourly average equipment noise levels with the barrier.

Table 6 Project Construction Equipment Noise Levels				
	Without Barrier		With Barrier	
Equipment	Maximum Noise Level at 50 Feet [dB(A) L_{eq}]	Average Noise Level at 50 Feet [dB(A) L_{eq}]	Maximum Noise Level at 50 Feet [dB(A) L_{eq}]	Average Noise Level at 50 Feet [dB(A) L_{eq}]
Backhoe	80	76	70	66
Compactor (ground)	80	73	70	63
Compressor (air)	80	76	70	66
Concrete Mixer Truck	85	81	75	71
Concrete Pump	82	75	72	65
Crane (mobile or stationary)	85	73	75	63
Dozer	85	81	75	71
Dump Truck	84	80	74	70
Excavator	85	81	75	71
Front End Loader	80	76	70	66
Generator (25 kilovolt amps or less)	70	67	60	57
Generator (more than 25 kilovolt amps)	82	79	72	69
Paver	85	82	75	72
Pneumatic Tools	85	82	75	72
Roller	74	70	64	60
SOURCE: FHWA 2006.				

As shown, maximum construction equipment noise levels are not projected to exceed 75 dB(A) with incorporation of the existing barrier located between the project site and the adjacent residences. Therefore, the project would comply with Municipal Code Section 112.05.

Additionally, the hourly average noise levels generated by the simultaneous use of construction equipment would be less than the maximum construction noise levels as construction equipment pieces do not constantly operate at full power during typical construction activities. In addition, construction would occur throughout the entire project site and would not be concentrated or confined in the area directly adjacent to sensitive receptors. Average hourly construction noise levels were modeled at the adjacent land uses assuming the simultaneous use of a dump truck, excavator, and loader. The total combined noise level would be approximately 84 dB(A) L_{eq} at 50 feet which is equivalent to a sound power level of approximately 116 dB(A) L_{pw}. Noise levels were modeled at a series of 15 receivers located at the adjacent uses. The results are summarized in Table 7. Modeled receiver locations and construction noise contours are shown in Figure 5. SoundPLAN data is presented in Attachment 3.

Image Source: NearMap (flown January 2022)



Project Boundary

Receivers

Construction Noise

60 dB(A) L_{eq}

65 dB(A) L_{eq}

70 dB(A) L_{eq}

75 dB(A) L_{eq}

0 Feet 200

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FIGURE 5
Construction Noise Contours

Table 7 Construction Noise Levels at Off-site Receivers		
Receiver	Land Use	Construction Noise Level [dB(A) L_{eq}]
1	Residential	63
2	Residential	66
3	Residential	66
4	Residential	66
5	Residential	63
6	Residential	65
7	Residential	63
8	Residential	64
9	Residential	65
10	Residential	66
11	Residential	60
12	Residential	60
13	Residential	60
14	Residential	60
15	Commercial	65
dB(A) L_{eq} = A-weighted decibels equivalent noise level		

As shown in Table 7, noise levels generated by project-related construction activities are projected to range from 60 to 66 dB(A) L_{eq} at the adjacent land uses. Although the adjacent residences would be exposed to construction noise levels that could be heard above ambient conditions, the exposure would be temporary. Construction activities would only occur during the hours allowed by Section 41.40 of the Municipal Code. Therefore, on-site construction activities would not generate a substantial temporary increase in ambient noise levels, and impacts would be less than significant.

5.2 On-site Generated Noise

On-site noise sources on the project site after completion of construction would include parking lot activities, rooftop HVAC equipment, loading docks, and delivery trucks. Using the on-site noise source parameters discussed in Section 4.3, noise levels were modeled at a series of 15 receivers located at the adjacent uses. Modeled receivers and operational noise contours are shown in Figures 6a through 6c. Modeled data is included in Attachment 4. Future projected noise levels are summarized in Table 8.

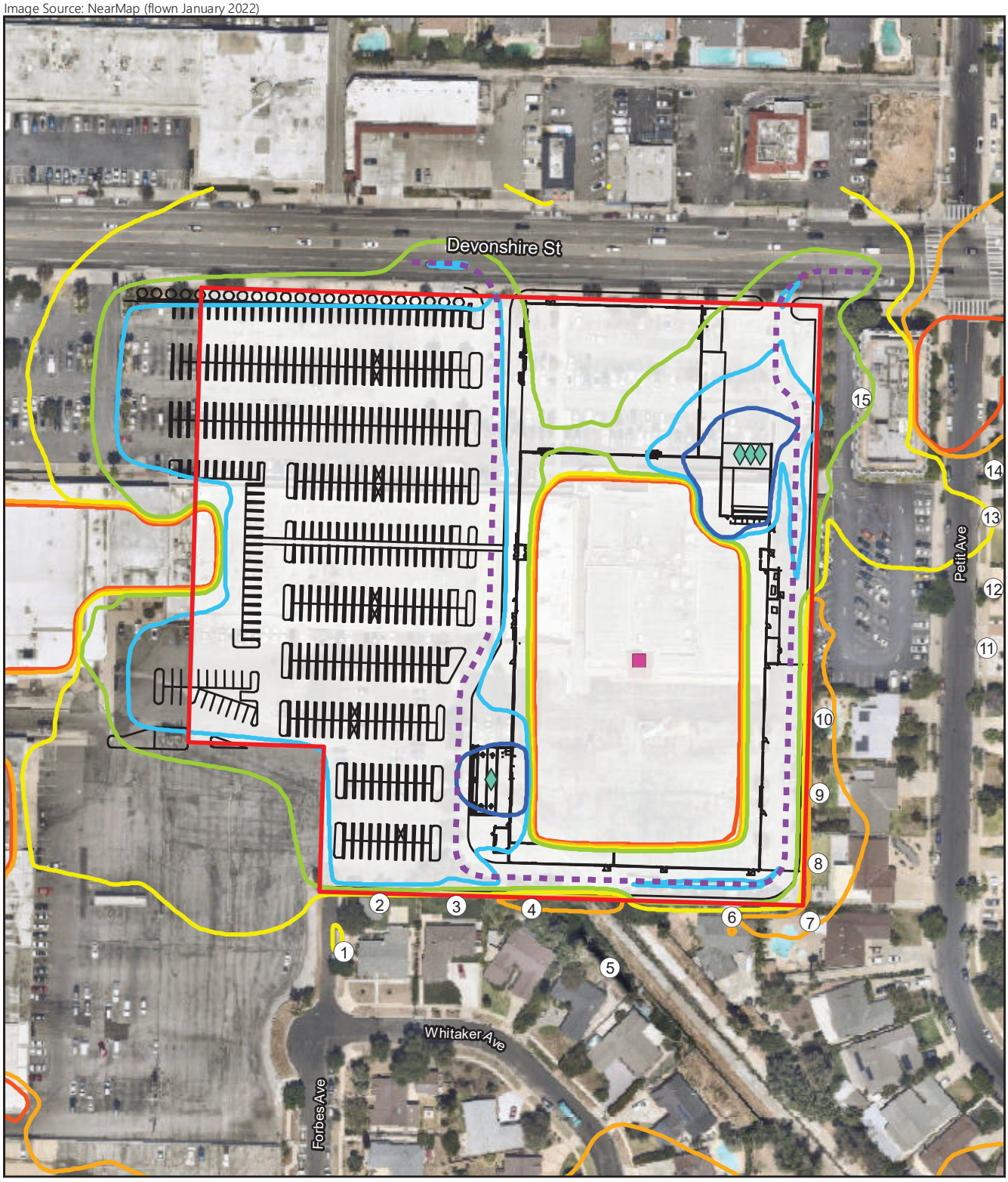
Table 8 Operational Noise Levels at Adjacent Property Lines [dB(A) L_{eq}]								
			Noise Level due to On-Site Activities			Ambient Noise Level Plus Project-Generated Noise Level		
Receiver	Land Use	Presumed Ambient Noise Level (Day/Night)[1]	7 a.m. to 10 p.m.	6 to 7 a.m. and 10 to 11 p.m.	11 p.m. to 6 a.m.	7 a.m. to 10 p.m.	6 to 7 a.m. and 10 to 11 p.m.	11 p.m. to 6 a.m.
1	Residential	50/40	39	38	35	50	42	41
2	Residential	50/40	38	36	33	50	42	41
3	Residential	50/40	38	37	33	50	42	41
4	Residential	50/40	36	35	34	50	41	41
5	Residential	50/40	37	37	34	50	42	41
6	Residential	50/40	35	35	33	50	41	41
7	Residential	50/40	35	35	33	50	41	41
8	Residential	50/40	35	35	34	50	41	41
9	Residential	50/40	36	36	34	50	41	41
10	Residential	50/40	38	38	36	50	42	41
11	Residential	50/40	38	38	37	50	42	42
12	Residential	50/40	39	39	37	50	42	42
13	Residential	50/40	40	40	39	50	43	42
14	Residential	50/40	38	38	37	50	42	42
15	Commercial	60/55	45	45	45	60	55	55
dB(A) L_{eq} = A-weighted decibels equivalent noise level [1]Refer to Section 2.2.1.								

As discussed in Section 2.2.1, on-site noise sources may not increase the ambient level by more than 5 dB above ambient levels (Municipal Code Section 111.02). The presumed ambient noise levels specified in Section 111.03 were used in this analysis. As shown in Table 8, project-generated noise levels are projected to range from 33 to 40 dB(A) L_{eq} at the adjacent residential uses and would be 45 dB(A) L_{eq} at the adjacent commercial use. The total ambient noise level plus project-generated noise levels would not result in any change in the daytime presumed ambient noise level at the adjacent residential and commercial uses, and would result in less than a 5 dB increase in the nighttime presumed ambient noise level at the adjacent residential and commercial uses. Therefore, operational HVAC noise would not generate a substantial permanent increase in ambient noise levels in excess of limits established in the Municipal Code, and impacts would be less than significant.

5.3 Vehicle Traffic Noise

The project would result in a change in traffic volumes on local roadways. The project would not substantially alter the vehicle classifications mix on local or regional roadways, nor would the project alter the speed on an existing roadway or create a new roadway. Thus, the primary factor affecting off-site noise levels would be the change in traffic volumes. While changes in noise levels would occur along any roadway where project-related traffic occurs, for noise assessment purposes, noise level changes are assumed to be greatest nearest the project site, as this location would represent the greatest concentration of project-related traffic. A substantial noise increase is defined as an increase of 3 dB above existing conditions.

Image Source: NearMap (flown January 2022)



Project Boundary
Receivers
Loading Dock
HVAC
Trucks

Operational Noise

30 dB(A) L_{eq}
35 dB(A) L_{eq}
40 dB(A) L_{eq}
45 dB(A) L_{eq}
50 dB(A) L_{eq}
55 dB(A) L_{eq}

0 Feet 150

FIGURE 6a
Operational Noise Contours - 7 a.m. to 10 p.m.

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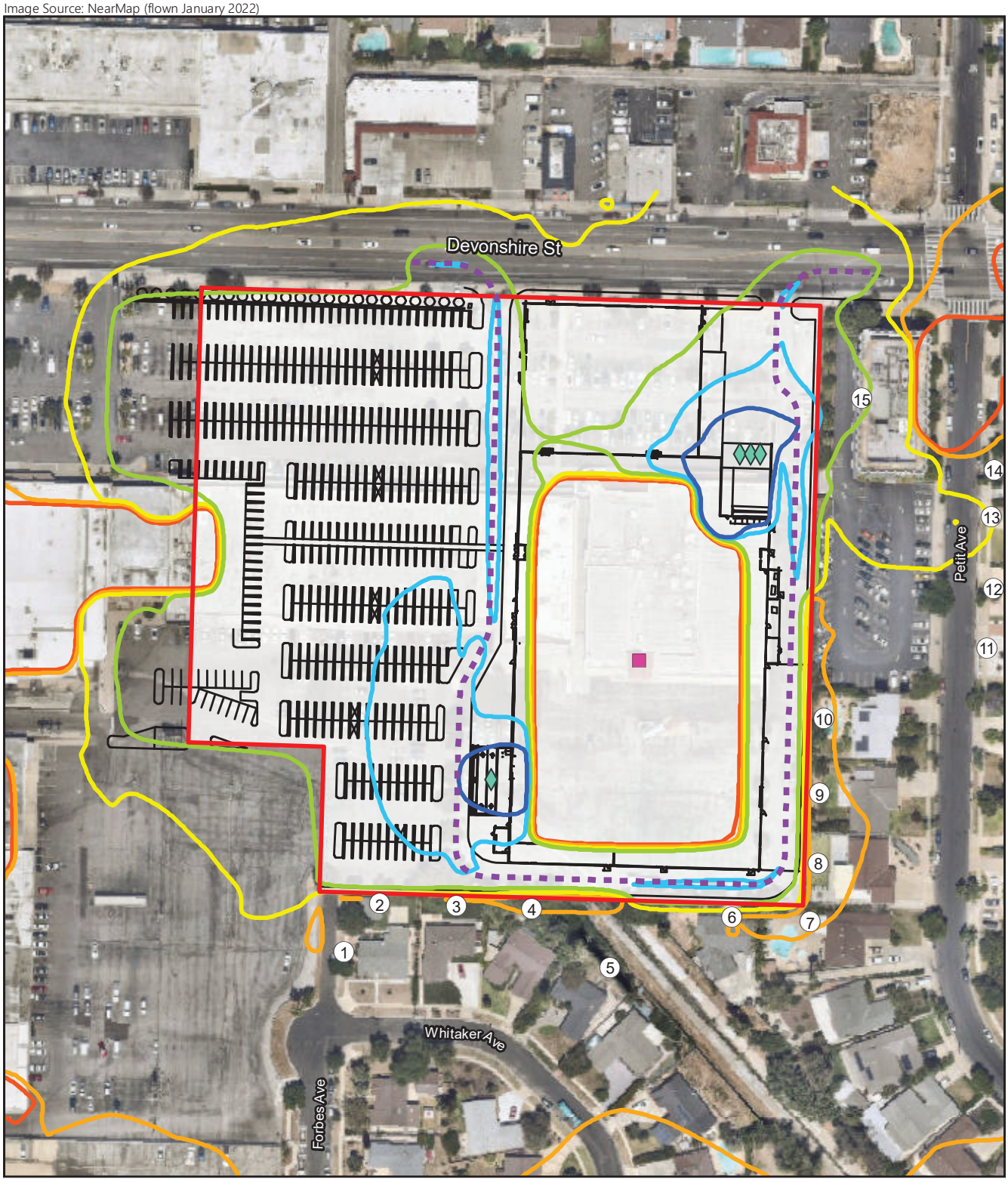
Image Source: NearMap (flown January 2022)



Project Boundary
Receivers
Loading Dock
HVAC
Trucks

Operational Noise

30 dB(A) L_{eq}
35 dB(A) L_{eq}
40 dB(A) L_{eq}
45 dB(A) L_{eq}
50 dB(A) L_{eq}
55 dB(A) L_{eq}

0 Feet 150

FIGURE 6b
Operational Noise Contours - 6 to 7 a.m. and 10 to 11 p.m.

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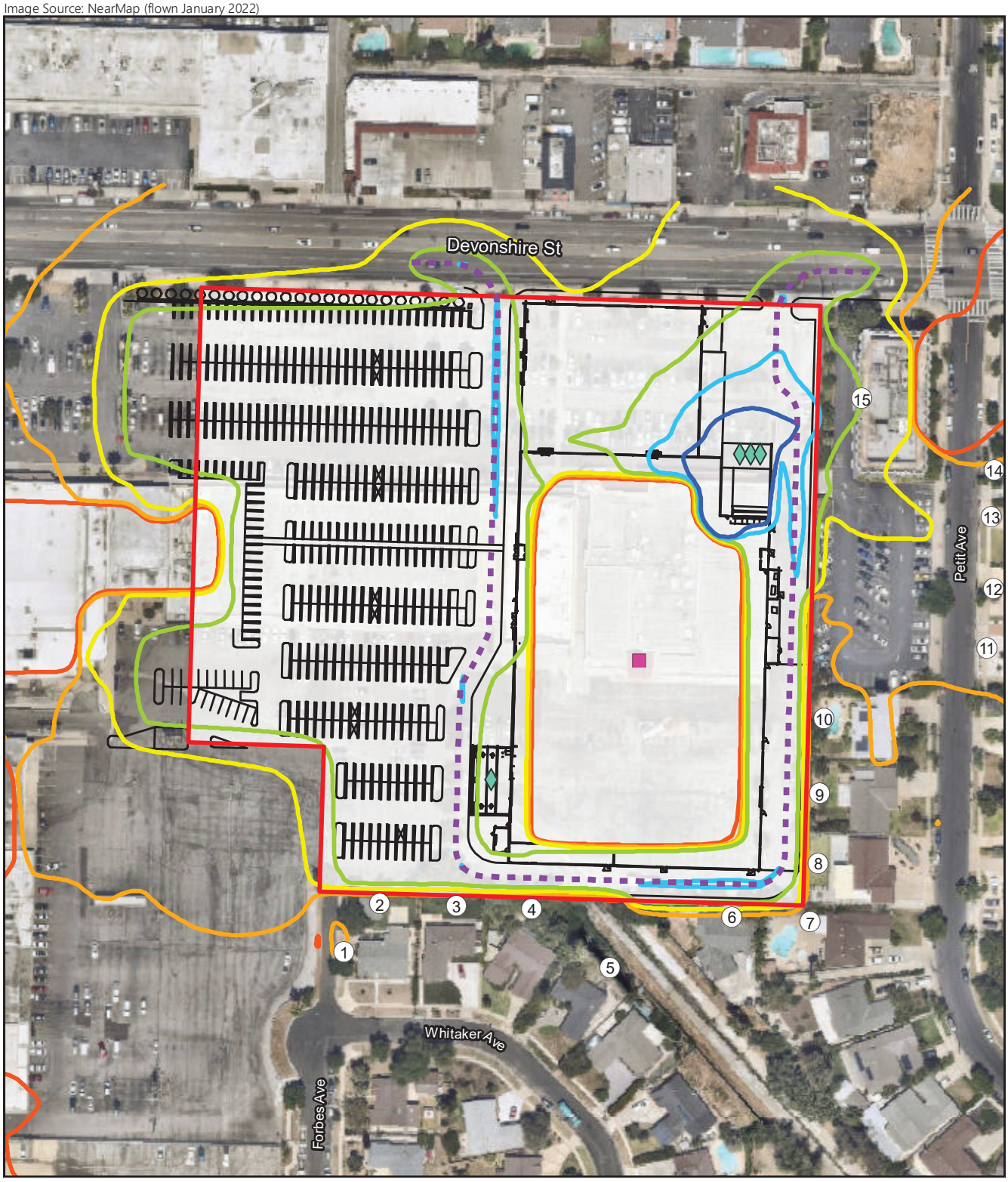
Image Source: NearMap (flown January 2022)



Project Boundary
Receivers
Loading Dock
HVAC
Trucks

Operational Noise

30 dB(A) L_{eq}
35 dB(A) L_{eq}
40 dB(A) L_{eq}
45 dB(A) L_{eq}
50 dB(A) L_{eq}
55 dB(A) L_{eq}

0 Feet 150

FIGURE 6c
Operational Noise Contours - 11 p.m. to 6 a.m.

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Trip generation rates for the existing and proposed land uses are based on the ITE Trip Generation Manual, 11th Edition, for Home Improvement Store (ITE Land Use Code 862), Shopping Center (ITE Land Use Code 860), and Movie Theater (ITE Land Use Code 444). Weekday trip generation for the existing and proposed uses area summarized in Table 9.

Table 9
Project Trip Generation

Land Use	Land Use Code	Size	Daily Trip Rate	Daily Trips
Proposed Land Use				
Home Depot	862: Home Improvement Superstore	107,560 sf	30.74 per 1,000 sf	3,306
Less 20% Pass-by				-661
Shopping Center (Portion to Remain)	820: Shopping Center	10,000 sf	37.75 per 1,000 sf	378
Less 50% Pass-by				-189
Proposed Land Use Total Trips				**2,834**
Existing Land Use				
Movie Theater	444: Movie Theater	2,400 seats	1.76 per seat	4,224
Less 10% Pass-by				-422
Shopping Center (Portion to be Demolished)	820: Shopping Center	55,600 sf	37.75 per 1,000 sf	2,099
Less 50% Pass-by				-1,049
Existing Land Use to be Demolished Total Trips				**4,852**
SOURCE: Linscott, Law & Greenspan Engineers 2022.				

As shown, as a result in the change of retail use and size, the project would result in a net decrease of 2,018 daily trips. Therefore, the project would result in a decrease of vehicle traffic on area roadways when compared to the existing condition. Thus, operational roadway noise would not generate a substantial permanent increase in ambient noise levels for off-site noise sensitive land uses, and impacts would be less than significant.

5.4 Vibration

Human reaction to vibration is dependent on the environment the receiver is in, as well as individual sensitivity. For example, vibration outdoors is rarely noticeable and generally not considered annoying. Typically, humans must be inside a structure for vibrations to become noticeable and/or annoying. As discussed in Section 2.2.3, this evaluation is based on the Caltrans criterion for vibration levels to cause structural damage for older residential structures, which is 0.3 PPV in/sec and the Caltrans criterion for vibration levels to cause structural damage for modern industrial/commercial buildings, which is 0.5 PPV in/sec.

Construction activities produce varying degrees of ground vibration, depending on the equipment and methods employed. While ground vibrations from typical construction activities very rarely reach levels high enough to cause damage to structures, special consideration must be made when sensitive or historic land uses are near the construction site. The construction activities that typically generate the highest levels of vibration are blasting and impact pile driving and the use of a vibratory

roller. However, the project would not require blasting, pile driving, or vibratory rollers. The largest piece of vibration-generating equipment that could be used for project construction is a large loaded truck. Loaded trucks generate a vibration level of 0.076 in/sec PPV at 25 feet. The nearest receptors are the residential uses located as close as 15 feet from the project boundary. A vibration level of 0.076 in/sec PPV at 25 feet would be 0.113 in/sec PPV at 15 feet. Vibration levels would not exceed the threshold of 0.3 PPV in/sec for older residential structures. Additionally, construction equipment would move throughout the entire site and would only be located near the project boundaries for short periods of time. Thus, vibration levels at the receptors located near the project boundaries would be less than these maximum levels for a majority of the construction period. Although vibration levels may be perceptible for short periods of time, maximum vibration levels would not exceed Caltrans criterion. Therefore, project construction would not generate excessive ground borne vibration or ground borne noise levels, and impacts would be less than significant. Once operational, the project would not be a source of ground borne vibration or ground borne noise. On-road delivery trucks associated with operation would not generate significant levels of vibration.

6.0 Conclusions

6.1 Construction Noise

The project site fronts on Devonshire Street to the north and is bounded by commercial buildings and associated parking lots to the west, by single-family residential properties and a commercial building to the east, and single-family residential properties to the south. Pursuant to Municipal Code Section 112.05, construction equipment noise levels are restricted to 75 dB(A) at 50 feet from the source unless compliance is "technically infeasible" despite the use of mufflers, shields, sound barriers and/or other noise reduction devices or techniques during the operation of the equipment. As shown in Table 6, maximum construction equipment noise levels are not projected to exceed 75 dB(A) with incorporation of the existing barrier located between the project site and the adjacent residences. Therefore, the project would comply with Municipal Code Section 112.05.

Additionally, the hourly average noise levels generated by the simultaneous use of construction equipment would be less than the maximum construction noise levels as construction equipment pieces do not constantly operate at full power during typical construction activities. As shown in Table 7, average hourly noise levels generated by project-related construction activities are projected to range from 60 to 66 dB(A) L_{eq} at the adjacent land uses. Although the adjacent residences would be exposed to construction noise levels that could be heard above ambient conditions, the exposure would be temporary. Construction activities would only occur during the hours allowed by Section 41.40 of the Municipal Code. Therefore, on-site construction activities would not generate a substantial temporary increase in ambient noise levels, and impacts would be less than significant.

6.2 On-site Generated Noise

On-site noise sources on the project site after completion of construction would include parking lot activities, rooftop HVAC equipment, loading docks, and delivery trucks. As specified in Municipal Code Section 111.02, on-site noise sources may not increase the ambient level by more than 5 dB

above ambient levels. The presumed ambient noise levels specified in Section 111.03 were used in this analysis. As shown in Table 8, project-generated noise levels are projected to range from 33 to 40 dB(A) L_{eq} at the adjacent residential uses and would be 45 dB(A) L_{eq} at the adjacent commercial use. The total ambient noise level plus project-generated noise levels would not result in any change in the daytime presumed ambient noise level at the adjacent residential and commercial uses, and would result in less than a 5 dB increase in the nighttime presumed ambient noise level at the adjacent residential and commercial uses. Therefore, operational HVAC noise would not generate a substantial permanent increase in ambient noise levels in excess of limits established in the Municipal Code, and impacts would be less than significant.

6.3 Vehicle Traffic Noise

The project would result in a change in traffic volumes on local roadways. The project would not substantially alter the vehicle classifications mix on local or regional roadways, nor would the project alter the speed on an existing roadway or create a new roadway. Thus, the primary factor affecting off-site noise levels would be the change in traffic volumes. As shown in Table 9, as a result in the change of retail use and size, the project would result in a net decrease of 2,018 daily trips. Therefore, the project would result in a decrease of vehicle traffic on area roadways when compared to the existing condition. Thus, operational roadway noise would not generate a substantial permanent increase in ambient noise levels for off-site noise sensitive land uses, and impacts would be less than significant.

6.4 Vibration

The vibration evaluation is based on the Caltrans criterion for vibration levels to cause structural damage for older residential structures, which is 0.3 PPV in/sec and the Caltrans criterion for vibration levels to cause structural damage for modern industrial/commercial buildings, which is 0.5 PPV in/sec. The nearest receptors are the residential uses located approximately as close as 15 feet from the project boundary. The largest piece of vibration-generating equipment that could be used for project construction is a large loaded trucks. Vibration levels from a loaded truck would be 0.113 in/sec PPV at 15 feet. Vibration levels would not exceed the threshold of 0.3 PPV in/sec for older residential structures. Additionally, construction equipment would move throughout the entire site and would only be located near the project boundaries for short periods of time. Thus, vibration levels at the receptors located near the project boundaries would be less than these maximum levels for a majority of the construction period. Although vibration levels may be perceptible for short periods of time, maximum vibration levels would not exceed Caltrans criterion. Therefore, project construction would not generate excessive ground borne vibration or ground borne noise levels, and impacts would be less than significant. Once operational, the project would not be a source of ground borne vibration or ground borne noise. On-road delivery trucks associated with operation would not generate significant levels of vibration.

7.0 References Cited

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Linscott, Law & Greenspan Engineers
2022 Transportation Assessment Report for the Home Depot Granada Hills Project. Prepared for Lars Andersen & Associates, Inc. LLG Ref 1-21-4433-1. March 31, 2022.

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Navcon Engineering, Inc.
2018 SoundPLAN Essential version 4.1.

ATTACHMENTS

ATTACHMENT 1

Noise Measurement Data

10064 Granada Hills Home Depot
Noise Measurement Data

Summary

File Name on Meter	LxT_Data.201.s
File Name on PC	LxT_0003896-20220613 130255-LxT_Data.201.ldbin
Serial Number	0003896
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	Measurement 1
Job Description	10064 Granada Hills Home Depot
Note	

Measurement

Description	
Start	2022-06-13 13:02:55
Stop	2022-06-13 13:18:42
Duration	00:15:46.8
Run Time	00:15:01.5
Pause	00:00:45.3
Pre-Calibration	2022-06-13 12:52:47
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
Overload	144.4 dB

	A	C	Z
Under Range Peak	**100.4**	97.4	102.4 dB
Under Range Limit	**37.6**	37.3	44.3 dB
Noise Floor	28.5	28.1	35.2 dB

Results

LAeq	56.8	
LAE	86.4	
EA	48.351 µPa²h	
EA8	1.545 mPa²h	
EA40	7.723 mPa²h	
LApeak (max)	2022-06-13 13:05:31	87.8 dB
LASmax	2022-06-13 13:11:38	69.6 dB
LASmin	2022-06-13 13:05:51	46.5 dB
SEA	-99.9 dB	
LAS > 60.0 dB (Exceedance Counts / Duration)	7	100.8 s
LAS > 70.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	64.6 dB	
LAeq	56.8 dB	
LCeq - LAeq	7.7 dB	
LAleq	59.8 dB	
LAeq	56.8 dB	
LAleq - LAeq	2.9 dB	

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	56.8		64.6			
LS(max)	69.6	2022/06/13 13:11:38				
LS(min)	46.5	2022/06/13 13:05:51				
LPeak(max)	87.8	2022/06/13 13:05:31				

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	41.8	41.8 dB

Statistics

LA5.00	64.8 dB
LA10.00	60.0 dB
LA33.30	52.4 dB
LA50.00	51.0 dB
LA66.60	49.5 dB
LA90.00	48.0 dB

Summary

File Name on Meter	LxT_Data.202.s
File Name on PC	LxT_0003896-20220613 142755-LxT_Data.202.ldbin
Serial Number	0003896
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	Measurement 2
Job Description	10064 Granada Hills Home Depot
Note	

Measurement

Description	
Start	2022-06-13 14:27:55
Stop	2022-06-13 14:43:50
Duration	00:15:54.9
Run Time	00:15:00.5
Pause	00:00:54.4
Pre-Calibration	2022-06-13 12:52:47
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	A Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Linear
Overload	144.4 dB

	A	C	Z
Under Range Peak	100.4	97.4	102.4 dB
Under Range Limit	37.6	37.3	44.3 dB
Noise Floor	28.5	28.1	35.2 dB

Results

LAeq	55.8	
LAE	85.3	
EA	37.877 µPa²h	
EA8	1.211 mPa²h	
EA40	6.057 mPa²h	
LApeak (max)	2022-06-13 14:28:00	95.1 dB
LASmax	2022-06-13 14:36:18	71.1 dB
LASmin	2022-06-13 14:38:58	43.1 dB
SEA	-99.9 dB	
LAS > 60.0 dB (Exceedance Counts / Duration)	8	66.2 s
LAS > 70.0 dB (Exceedance Counts / Duration)	2	7.2 s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	65.6 dB	
LAeq	55.8 dB	
LCeq - LAeq	9.9 dB	
LAleq	58.7 dB	
LAeq	55.8 dB	
LAleq - LAeq	3.0 dB	

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	55.8		65.6			
LS(max)	71.1	2022/06/13 14:36:18				
LS(min)	43.1	2022/06/13 14:38:58				
LPeak(max)	95.1	2022/06/13 14:28:00				

Overload Count	0	
Overload Duration	0.0	s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	40.7	40.7	dB

Statistics

LA5.00	62.7 dB
LA10.00	56.0 dB
LA33.30	49.2 dB
LA50.00	47.9 dB
LA66.60	47.2 dB
LA90.00	45.9 dB

Summary

File Name on Meter	LxT_Data.203.s
File Name on PC	LxT_0003896-20220613 145756-LxT_Data.203.ldbin
Serial Number	0003896
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	Measurement 3
Job Description	10064 Granada Hills Home Depot
Note	

Measurement

Description	
Start	2022-06-13 14:57:56
Stop	2022-06-13 15:14:19
Duration	00:16:22.8
Run Time	00:15:00.8
Pause	00:01:22.0
Pre-Calibration	2022-06-13 12:52:47
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1		
Microphone Correction	Off		
Integration Method	Linear		
Overload	144.4 dB		
	A	C	Z
Under Range Peak	**100.4**	97.4	102.4 dB
Under Range Limit	**37.6**	37.3	44.3 dB
Noise Floor	28.5	28.1	35.2 dB

Results

LAeq	65.2	
LAE	94.8	
EA	334.456 µPa²h	
EA8	10.693 mPa²h	
EA40	53.465 mPa²h	
LApeak (max)	2022-06-13 14:58:33	101.7 dB
LASmax	2022-06-13 14:58:33	84.9 dB
LASmin	2022-06-13 15:05:18	51.4 dB
SEA	-99.9 dB	
LAS > 60.0 dB (Exceedance Counts / Duration)	18	828.9 s
LAS > 70.0 dB (Exceedance Counts / Duration)	4	20.2 s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s
LCeq	74.9 dB	
LAeq	65.2 dB	
LCeq - LAeq	9.7 dB	
LAleq	67.2 dB	
LAeq	65.2 dB	
LAleq - LAeq	2.0 dB	

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	65.2		74.9			
LS(max)	84.9	2022/06/13 14:58:33				
LS(min)	51.4	2022/06/13 15:05:18				
LPeak(max)	101.7	2022/06/13 14:58:33				

Overload Count	0	
Overload Duration	0.0 s	

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	0.00 %
Projected Dose	-99.94	0.14 %
TWA (Projected)	-99.9	42.7 dB
TWA (t)	-99.9	17.7 dB
Lep (t)	50.2	50.2 dB

Statistics

LA5.00	67.5 dB
LA10.00	66.2 dB
LA33.30	64.0 dB
LA50.00	62.6 dB
LA66.60	61.3 dB
LA90.00	59.0 dB

ATTACHMENT 2

HVAC Specifications

Fan Performance

Table 6. Standard motor & low static drive accessory sheave/fan speed (rpm)

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
5	WSC060ED	AK44x3/4"	N/A	720	791	861	931	1002	1072
6	WSC072ED	AK56x1"	N/A	558	612	665	718	772	825
7½	WSC090ED	AK57x1"	N/A	688	737	787	837	887	N/A
10	WSC120ED	AK105X1"	N/A	724	776	828	880	932	984

Note: Factory set at 3 turns open.

Table 7. Standard motor & high static drive accessory sheave/fan speed (rpm)

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
6	WSC072ED	AK56x1"	N/A	968	1018	1068	1118	1169	1219
7½	WSC090ED	AK57x1"	1053	1091	1129	1166	1204	1242	N/A
10	WSC120ED	AK105X1"	1110	1159	1209	1258	1308	1357	N/A

Note: Factory set at 3 turns open.

Table 8. Oversized motor & high static drive accessory sheave/fan speed (rpm)

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
7½	WSC090ED	AK85x1"	1186	1249	1311	1373	1436	N/A	N/A

Note: Factory set at 3 turns open.

Table 9. Outdoor sound power level—dB (ref. 10—2 W)

Tons	Unit Model Number	Octave Center Frequency								Overall dBA
		63	125	250	500	1000	2000	4000	8000	
5	T/YSC060ED	84	91	79	77	74	71	68	63	80
6	T/YSC072ED	83	90	86	82	79	75	70	63	85
7½	T/YSC090ED	83	90	86	83	80	75	71	64	85
8.5	T/YSC102ED	83	89	84	81	77	72	69	62	83
10	T/YSC120ED	83	86	80	77	73	69	66	60	79

Note: Tests follow ARI270-95.

Table 10. Outdoor sound power level—dB (ref. 10—12 W)

Tons	Unit Model Number	Octave Center Frequency								Overall dBA
		63	125	250	500	1000	2000	4000	8000	
5	WSC060ED	84	91	79	77	74	71	68	63	80
6	WSC072ED	83	90	86	82	79	75	70	63	85
7½	WSC090ED	83	90	86	83	80	75	71	64	85
10	WSC120ED	83	86	80	77	73	69	66	60	79

Note: Tests follow ARI270-95.

ATTACHMENT 3

SoundPLAN Data – Construction Noise

10064 Granada Hills Home Depot

SoundPLAN Data - Construction

Source name	Reference	Level	Corrections		
		Leq	Cwall	CI	CT
		dB(A)	dB(A)	dB(A)	dB(A)
Construction	Lw/unit	115.9	-	-	-

10064 Granada Hills Home Depot

SoundPLAN Data - Construction

No.	Coordinates X	Y	Noise Level Leq
	(meters)		dB(A)
1	361883.28	3791503.14	62.6
2	361894.39	3791518.22	65.6
3	361918.60	3791517.82	66.1
4	361942.41	3791517.03	66.1
5	361967.02	3791498.77	63.2
6	362005.52	3791515.04	65.0
7	362030.12	3791513.45	62.9
8	362032.51	3791532.11	64.3
9	362032.90	3791553.94	65.3
10	362034.09	3791577.75	65.5
11	362085.29	3791600.37	60.4
12	362087.27	3791619.02	60.2
13	362086.48	3791641.65	60.4
14	362087.27	3791656.33	60.2
15	362045.21	3791678.56	65.3

ATTACHMENT 4

SoundPLAN Data – Operational Noise

10064 Granada Hills Home Depot

SoundPLAN Data - Operation

Source name	Reference	Noise Level 7 a.m. - 10 p.m. dB(A) Leq	Noise Level 6 - 7 a.m., 10 - 11 p.m. dB(A) Leq	Noise Level 11 p.m. - 6 a.m. dB(A) Leq	Corrections Cwall dB(A)	Corrections CI dB(A)	Corrections CT dB(A)
HVAC	Lw/unit	93.3	93.3	90.3	-	-	-
Lumber Loading	Lw/unit	81.3	81.3	-	-	-	-
Loading Dock 1	Lw/unit	81.3	81.3	81.3	-	-	-
Loading Dock 2	Lw/unit	81.3	81.3	81.3	-	-	-
Loading Dock 3	Lw/unit	81.3	81.3	81.3	-	-	-
Trucks	Lw/unit	82.1	82.1	82.1	-	-	-
Home Depot Parking Lot	Lw/unit	89.4	86.4	83.4	-	-	-

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SoundPLAN Data - Operation

No.	Coordinates X	Coordinates Y	Noise Level 7 a.m. - 10 p.m.	Noise Level 6 - 7 a.m., 10 - 11 p.m.	Noise Level 11 p.m. - 6 a.m.
	(meters)			dB(A) Leq	
1	361883.28	3791503.14	39.4	38.4	34.7
2	361894.39	3791518.22	37.7	36.4	32.5
3	361918.60	3791517.82	37.9	37.0	33.1
4	361942.41	3791517.03	35.8	35.2	33.5
5	361967.02	3791498.77	37.0	36.8	34.2
6	362005.52	3791515.04	34.7	34.5	33.0
7	362030.12	3791513.45	34.9	34.8	33.1
8	362032.51	3791532.11	35.3	35.3	33.6
9	362032.90	3791553.94	36.1	36.0	34.4
10	362034.09	3791577.75	37.8	37.7	35.7
11	362085.29	3791600.37	38.1	38.0	36.6
12	362087.27	3791619.02	38.6	38.6	37.4
13	362086.48	3791641.65	40.2	40.2	38.6
14	362087.27	3791656.33	38.4	38.3	36.6
15	362045.21	3791678.56	45.4	45.4	45.0

Source name					Noise Level 7 a.m. - 10 p.m.	6 - 7 a.m., 10 - 11 p.m.	11 p.m. - 6 a.m.
					dB(A) Leq		
1	1.Fl	39.4	38.4	34.7			
Home Depot Parking Lot					35.2	32.2	29.2
HVAC					35.0	35.0	32.0
Loading Dock 1					3.4	3.4	3.4
Loading Dock 2					4.8	4.8	4.8
Loading Dock 3					5.6	5.6	5.6
Lumber Loading					32.0	32.0	-
Trucks					27.3	27.3	27.3
2	1.Fl	37.7	36.4	32.5			
Home Depot Parking Lot					34.9	31.9	28.9
HVAC					29.5	29.5	26.5
Loading Dock 1					3.6	3.6	3.6
Loading Dock 2					4.7	4.7	4.7
Loading Dock 3					5.4	5.4	5.4
Lumber Loading					31.3	31.3	-
Trucks					27.5	27.5	27.5
3	1.Fl	37.9	37.0	33.1			
Home Depot Parking Lot					33.8	30.8	27.8
HVAC					29.9	29.9	26.9
Loading Dock 1					4.2	4.2	4.2
Loading Dock 2					5.1	5.1	5.1
Loading Dock 3					5.5	5.5	5.5
Lumber Loading					32.7	32.7	-
Trucks					29.7	29.7	29.7
4	1.Fl	35.8	35.2	33.5			
Home Depot Parking Lot					30.0	27.0	24.0
HVAC					31.9	31.9	28.9
Loading Dock 1					4.3	4.3	4.3
Loading Dock 2					4.9	4.9	4.9
Loading Dock 3					4.9	4.9	4.9
Lumber Loading					16.1	16.1	-
Trucks					30.8	30.8	30.8
5	1.Fl	37.0	36.8	34.2			
Home Depot Parking Lot					28.2	25.2	22.2
HVAC					35.8	35.8	32.8
Loading Dock 1					6.0	6.0	6.0
Loading Dock 2					6.0	6.0	6.0
Loading Dock 3					6.0	6.0	6.0
Lumber Loading					11.3	11.3	-
Trucks					27.6	27.6	27.6
6	1.Fl	34.7	34.5	33.0			
Home Depot Parking Lot					21.4	18.4	15.4
HVAC					32.0	32.0	29.0
Loading Dock 1					5.4	5.4	5.4
Loading Dock 2					5.4	5.4	5.4
Loading Dock 3					5.4	5.4	5.4
Lumber Loading					9.4	9.4	-
Trucks					30.7	30.7	30.7
7	1.Fl	34.9	34.8	33.1			
Home Depot Parking Lot					20.5	17.5	14.5
HVAC					32.9	32.9	29.9
Loading Dock 1					8.2	8.2	8.2
Loading Dock 2					8.4	8.4	8.4
Loading Dock 3					8.5	8.5	8.5
Lumber Loading					7.3	7.3	-
Trucks					30.1	30.1	30.1
8	1.Fl	35.3	35.3	33.6			
Home Depot Parking Lot					13.9	10.9	7.9
HVAC					33.4	33.4	30.4
Loading Dock 1					12.0	12.0	12.0

Loading Dock 2					10.2	10.2	10.2
Loading Dock 3					14.2	14.2	14.2
Lumber Loading					7.6	7.6	-
Trucks					30.6	30.6	30.6
9	1.Fl	36.1	36.0	34.4			
Home Depot Parking Lot					14.1	11.1	8.1
HVAC					34.0	34.0	31.0
Loading Dock 1					13.4	13.4	13.4
Loading Dock 2					12.1	12.1	12.1
Loading Dock 3					22.7	22.7	22.7
Lumber Loading					7.8	7.8	-
Trucks					31.1	31.1	31.1
10	1.Fl	37.8	37.7	35.7			
Home Depot Parking Lot					14.4	11.4	8.4
HVAC					36.5	36.5	33.5
Loading Dock 1					16.4	16.4	16.4
Loading Dock 2					14.9	14.9	14.9
Loading Dock 3					22.6	22.6	22.6
Lumber Loading					7.6	7.6	-
Trucks					30.9	30.9	30.9
11	1.Fl	38.1	38.0	36.6			
Home Depot Parking Lot					16.3	13.3	10.3
HVAC					35.4	35.4	32.4
Loading Dock 1					29.6	29.6	29.6
Loading Dock 2					29.3	29.3	29.3
Loading Dock 3					28.9	28.9	28.9
Lumber Loading					3.9	3.9	-
Trucks					25.0	25.0	25.0
12	1.Fl	38.6	38.6	37.4			
Home Depot Parking Lot					17.6	14.6	11.6
HVAC					35.3	35.3	32.3
Loading Dock 1					30.9	30.9	30.9
Loading Dock 2					30.7	30.7	30.7
Loading Dock 3					30.2	30.2	30.2
Lumber Loading					3.5	3.5	-
Trucks					25.2	25.2	25.2
13	1.Fl	40.2	40.2	38.6			
Home Depot Parking Lot					22.9	19.9	16.9
HVAC					38.0	38.0	35.0
Loading Dock 1					28.5	28.5	28.5
Loading Dock 2					32.1	32.1	32.1
Loading Dock 3					31.6	31.6	31.6
Lumber Loading					5.2	5.2	-
Trucks					25.7	25.7	25.7
14	1.Fl	38.4	38.3	36.6			
Home Depot Parking Lot					22.4	19.4	16.4
HVAC					36.4	36.4	33.4
Loading Dock 1					28.9	28.9	28.9
Loading Dock 2					28.4	28.4	28.4
Loading Dock 3					27.3	27.3	27.3
Lumber Loading					2.7	2.7	-
Trucks					25.0	25.0	25.0
15	1.Fl	45.4	45.4	45.0			
Home Depot Parking Lot					31.6	28.6	25.6
HVAC					37.1	37.1	34.1
Loading Dock 1					39.3	39.3	39.3
Loading Dock 2					40.1	40.1	40.1
Loading Dock 3					37.5	37.5	37.5
Lumber Loading					6.1	6.1	-
Trucks					35.9	35.9	35.9

10064 Granada Hills Home Depot
SoundPLAN Data - Operation

	Ambient Noise Level			Operation Noise Level			Ambient + Operation Noise Level			Difference		
No.	7 a.m. - 10 p.m.	6 - 7 a.m., 10 - 11 p.m.	11 p.m. - 6 a.m.	7 a.m. - 10 p.m.	6 - 7 a.m., 10 - 11 p.m.	11 p.m. - 6 a.m.	7 a.m. - 10 p.m.	6 - 7 a.m., 10 - 11 p.m.	11 p.m. - 6 a.m.	7 a.m. - 10 p.m.	6 - 7 a.m., 10 - 11 p.m.	11 p.m. - 6 a.m.
		dB(A) Leq			dB(A) Leq			dB(A) Leq			dB(A) Leq	
1	50.0	40.0	40.0	39.4	38.4	34.7	50.4	42.3	41.1	0.4	2.3	1.1
2	50.0	40.0	40.0	37.7	36.4	32.5	50.2	41.6	40.7	0.2	1.6	0.7
3	50.0	40.0	40.0	37.9	37.0	33.1	50.3	41.8	40.8	0.3	1.8	0.8
4	50.0	40.0	40.0	35.8	35.2	33.5	50.2	41.2	40.9	0.2	1.2	0.9
5	50.0	40.0	40.0	37.0	36.8	34.2	50.2	41.7	41.0	0.2	1.7	1.0
6	50.0	40.0	40.0	34.7	34.5	33.0	50.1	41.1	40.8	0.1	1.1	0.8
7	50.0	40.0	40.0	34.9	34.8	33.1	50.1	41.1	40.8	0.1	1.1	0.8
8	50.0	40.0	40.0	35.3	35.3	33.6	50.1	41.3	40.9	0.1	1.3	0.9
9	50.0	40.0	40.0	36.1	36.0	34.4	50.2	41.5	41.1	0.2	1.5	1.1
10	50.0	40.0	40.0	37.8	37.7	35.7	50.3	42.0	41.4	0.3	2.0	1.4
11	50.0	40.0	40.0	38.1	38.0	36.6	50.3	42.1	41.6	0.3	2.1	1.6
12	50.0	40.0	40.0	38.6	38.6	37.4	50.3	42.4	41.9	0.3	2.4	1.9
13	50.0	40.0	40.0	40.2	40.2	38.6	50.4	43.1	42.4	0.4	3.1	2.4
14	50.0	40.0	40.0	38.4	38.3	36.6	50.3	42.2	41.6	0.3	2.2	1.6
15	60.0	55.0	55.0	45.4	45.4	45.0	60.1	55.5	55.4	0.1	0.5	0.4