Appendix J

Noise and Vibration Analysis Memorandum

Kimley»Horn

TECHNICAL MEMORANDUM

To:	Bryan Marsh, CEO, SDCF Monterey Park, LLC
From:	Noemi Wyss AICP, Kimley-Horn and Associates, Inc. Tanay Pradhan, Kimley-Horn and Associates, Inc.
Date:	September 3, 2024
Subject:	1977 Saturn Data Center Project – Noise and Vibration Analysis

1.0 Purpose

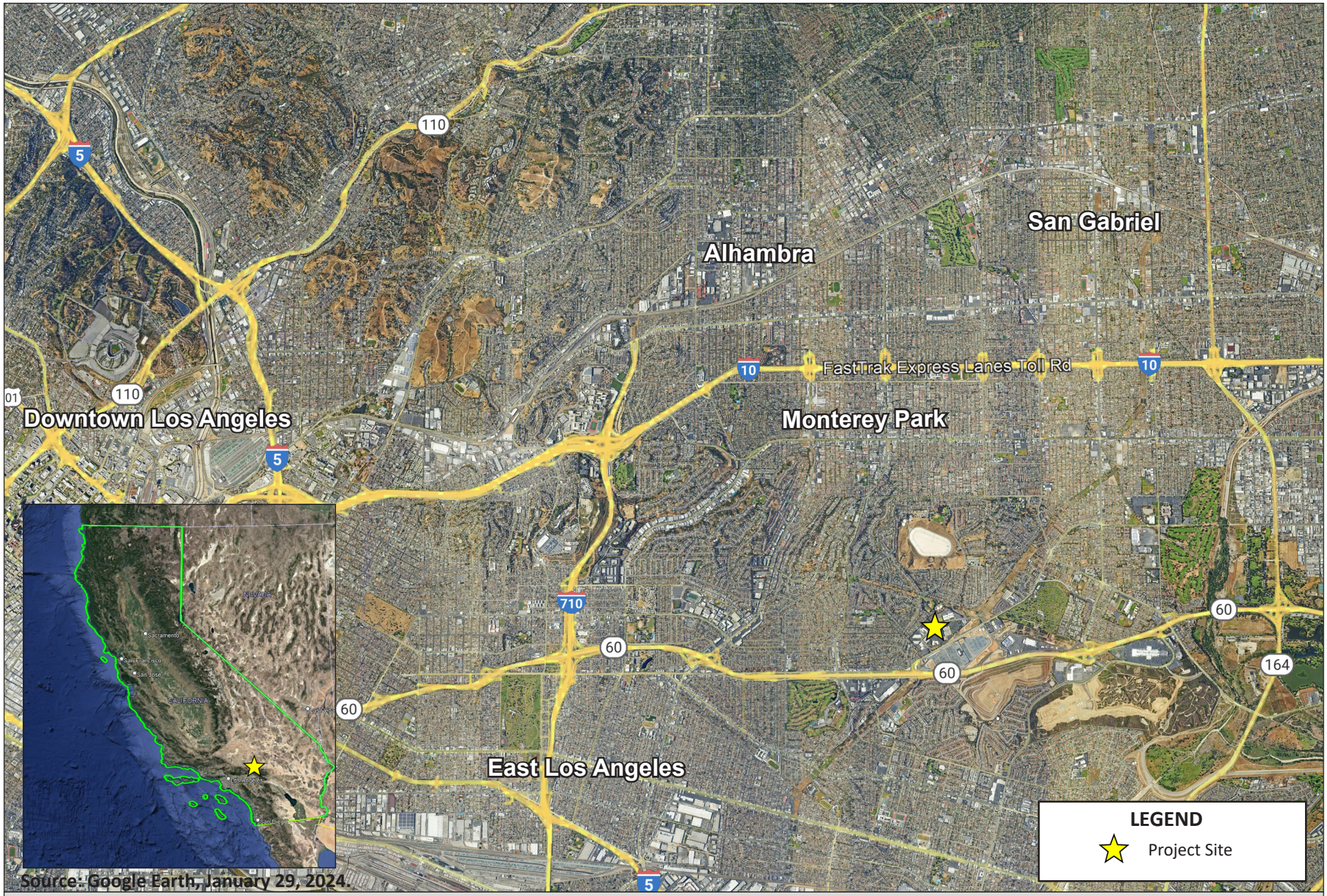
The purpose of this memorandum is to assess potential impacts due to noise and vibration associated with construction and operation of the 1977 Saturn Data Center Project (Project), proposed to be located in the City of Monterey Park (City), California.

2.0 Project Location and Description

The Project would be located on an approximately 15.8-acre site (Project Site) at 1977 Saturn Street; see **Figure 1: Regional Vicinity Map**. The Project Site is bound by residences, a park, a commercial nursery, and water towers to the north, open space to the east, office uses to the south, and office uses and single-family residences to the west; see **Figure 2: Local Vicinity Map**. The Project Site is currently improved with a two-story commercial office building that is currently vacant, and an ancillary one-story building.

The Project would demolish and remove the existing improvements and construct a state of the art data center including approximately 218,400 square feet that would include approximately 109,970 square feet of data hall space and approximately 91,889 square feet of support space, which would consist of offices and meeting rooms, employee amenities (such as restrooms, break room, etc.), truck loading and unloading areas, storage areas, mechanical/electrical/fiber entry rooms, and other ancillary uses. See **Figure 3: Conceptual Site Plan.**

A total of sixty-eight (68) parking spaces would be provided adjacent to the eastern side of the proposed data center buildings, including three handicapped accessible spaces and three spaces for electrical vehicles (EV). The Project would also include two loading dock areas to accommodate deliveries and loading activities for the proposed data center. Vehicular access to the Project Site would be provided via two new gated driveways located along Saturn Street: one along the western perimeter of the Project Site and the other along the eastern perimeter of the Project Site.



Source: Google Earth, January 29, 2024.

FIGURE 1: REGIONAL VICINITY MAP

1977 Saturn Data Center Project

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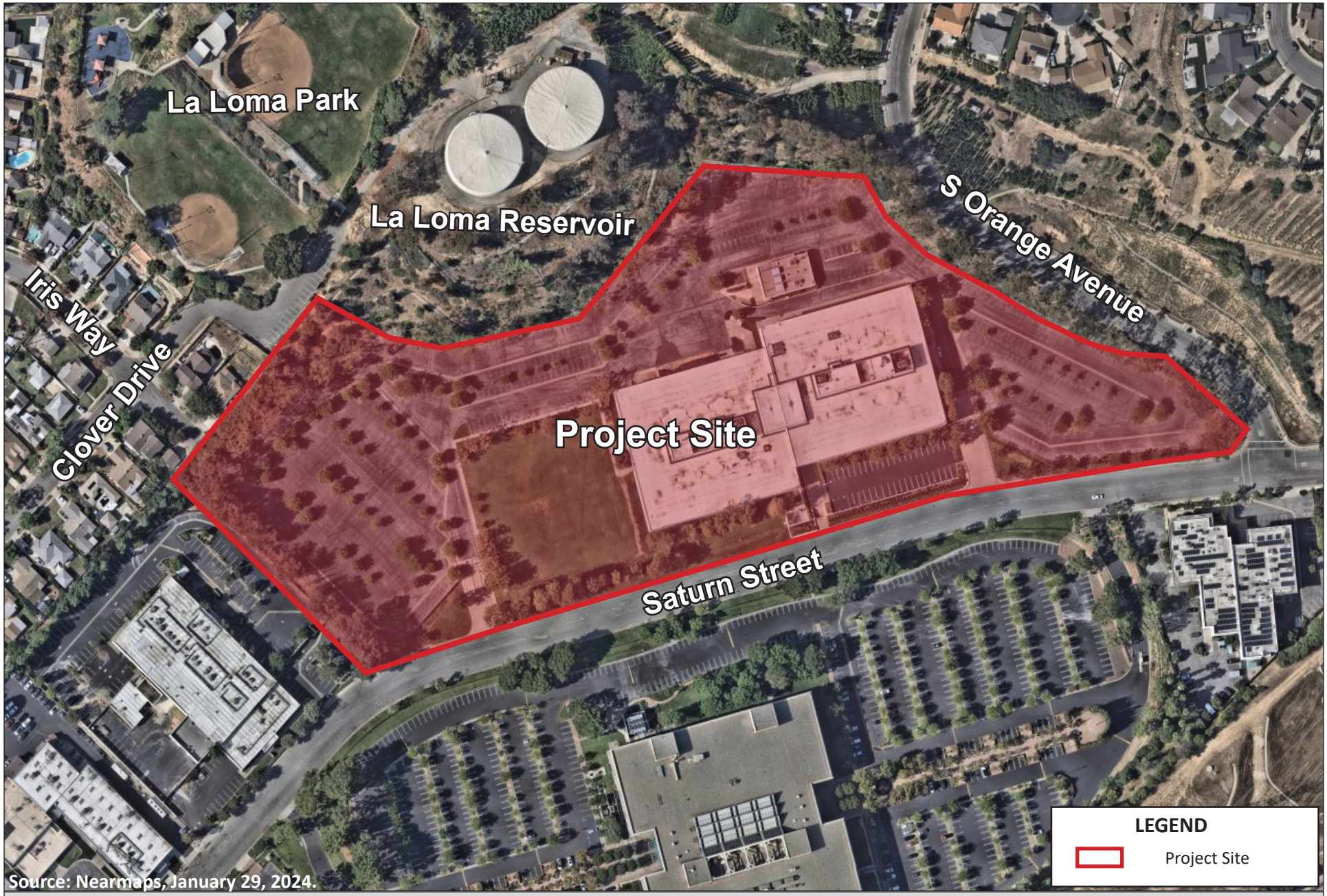

FIGURE 2: LOCAL VICINITY MAP
1977 Saturn Data Center Project

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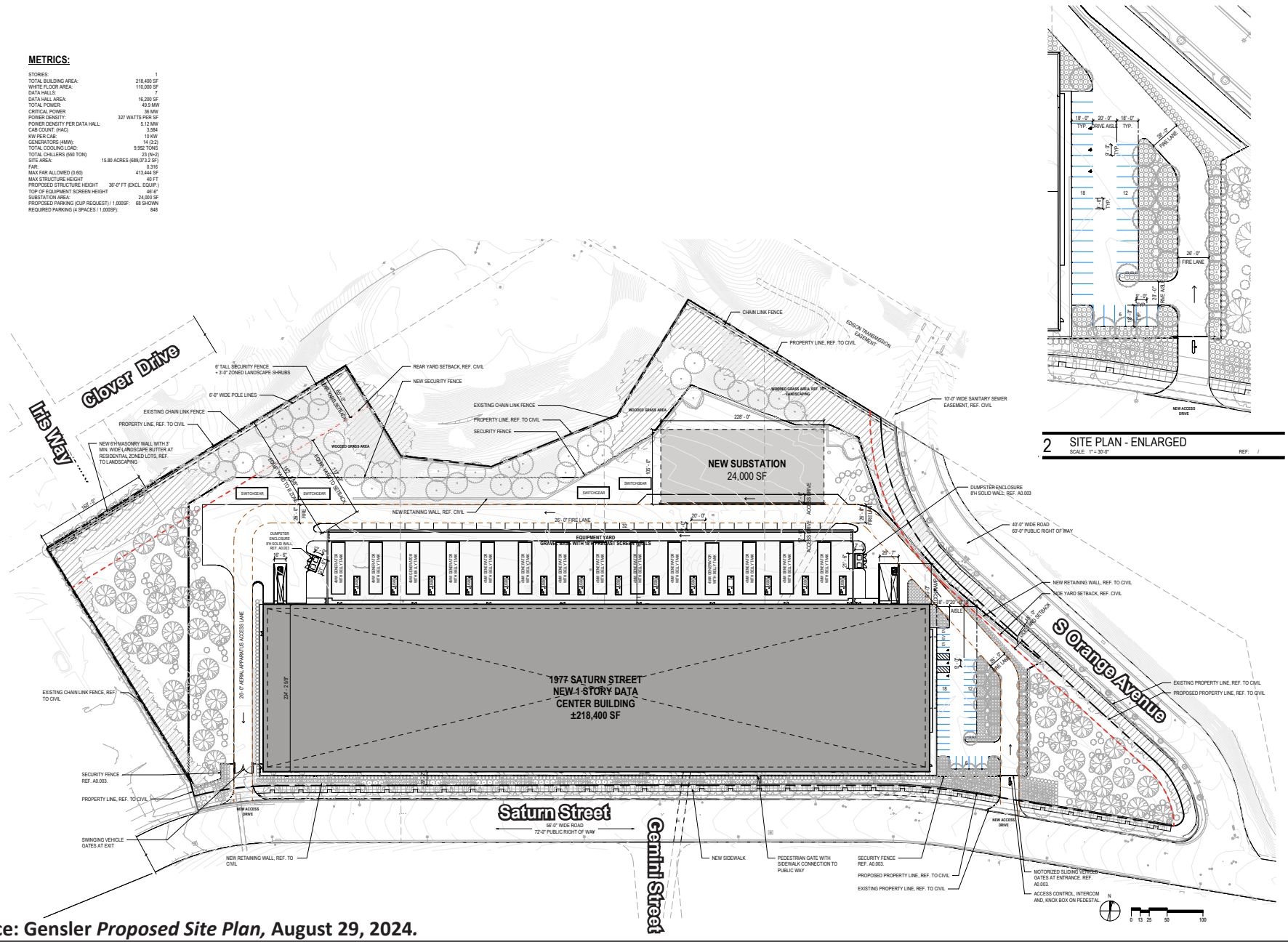

Source: Gensler *Proposed Site Plan,* August 29, 2024.

FIGURE 3: CONCEPTUAL SITE PLAN

1977 Saturn Data Center Project
Initial Study/Mitigated Negative Declaration

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Project construction is anticipated to occur as two phases, lasting approximately two years, beginning as early as September 2025 and ending as early as August 2027. For purposes of this environmental analysis, opening year is assumed to be 2027. Grading for the proposed improvements would require cut and fill to create building pads. Project construction is estimated to require the export of approximately 65,000 cubic yards (cy) of soil material.

3.0 Noise Background

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Since the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Noise, on the other hand, is typically defined as unwanted sound. A typical noise environment consists of a base of steady ambient noise that is the sum of various distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from traffic on a major highway.

Several rating scales have been developed to analyze the adverse effect of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise as well as the time of day when the noise occurs. For example, the equivalent continuous sound level (L_{eq}) is the total acoustic energy content of noise for a stated period of time; thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. The Day-Night Sound Level (L_{dn}) is a 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the nighttime. The Community Noise Equivalent Level (CNEL) is a 24-hour average L_{eq} with a 10 dBA weighting added to noise during the hours of 10:00 P.M. to 7:00 A.M. and an additional 5 dBA weighting during the hours of 7:00 P.M. to 10:00 P.M. to account for noise sensitivity in the evening and nighttime.

4.0 Regulatory Setting

Federal Noise and Vibration Standards

There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the Project. Under the Occupational Safety and Health Act of 1970 (29 United States Code [U.S.C.] Section 1919 et seq.), the Occupational Safety and Health Administration

(OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, ensuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

State of California Noise Standards

The State of California does not have standards for environmental noise, but the Governor's Office of Planning and Research (OPR) has established general plan guidelines for evaluating the compatibility of various land uses as a function of community noise exposure.[1] The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise compatibility by different land use types is categorized into four general levels: "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable."

For instance, a noise environment ranging from 50 dBA CNEL to 60 dBA CNEL is considered to be "normally acceptable" for single-family residential uses, while a noise environment of 75 dBA CNEL or above for single-family residential uses is considered to be "clearly unacceptable. In addition, California Government Code Section 65302(f) requires each county and city in the State to prepare and adopt a comprehensive long-range general plan for its physical development, with California Government Code Section 65302(f) requiring a noise element to be included in the general plan. The noise element must: (1) identify and appraise noise problems in the community; (2) recognize Office of Noise Control guidelines; and (3) analyze and quantify current and projected noise levels.

Groundborne Vibration

The California Department of Transportation' (Caltrans') *Transportation and Construction Vibration Manual* provides thresholds of vibration for building damage and human annoyance. Based on the Caltrans criteria, construction vibration impacts would be significant if vibration levels exceed 0.5 inches per second (in/sec) peak particle velocity (PPV) at older residential structures, which is the limit for potential building damage at these structures.[2] For human annoyance, construction vibration impacts would be significant if vibration levels exceed 0.25 in/sec PPV at the nearest structure.[3]

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[1] State of California Governor's Office of Planning and Research, *General Plan Guidelines, Appendix D: Noise Element Guidelines*, 2017.

[2] Caltrans, *Transportation and Construction Vibration Guidance Manual*, 2020.

[3] Ibid.

City of Monterey Park General Plan

The City of Monterey Park Noise Standards are developed from those of several federal and State agencies including the Federal Highway Administration (FHWA), the United States Environmental Protection Agency (U.S. EPA), the Department of Housing and Urban Development (HUD), the American National Standards Institute (ANSI), and the State of California Department of Health Services. These standards set limits on the noise exposure level for various land uses. As with the California Noise Standards described above, these General Plan standards are related to the siting of land uses and are not typically used as thresholds of significance for determining noise impacts associated with construction and operation of the Project. However, the standards do provide a means for judging whether an existing noise environment would be compatible with development of a new noise-sensitive land use or whether a new use would create an incompatible noise environment for existing noise-sensitive uses. The General Plan does not have a Noise Element; however, the Safety Element provides specific objectives to ensure that City residents will be protected from excessive noise. The other elements of the 2022 General Plan do not have policies related to noise or vibration. The following policies from the Safety Element are applicable to the Project:

Safety Element

Goal 12: Minimize the impact of point-source noises and ambient noise levels throughout the community.

Policy 12.1: Continue to enforce the noise regulations within the Monterey Park Municipal Code (MPMC) to control point-source noise.

Policy 12.2: Incorporate noise impact considerations into the development review process**,** particularly the relationship of parking and ingress/egress, loading, and refuse collection areas to surrounding residential and other noise-sensitive land uses.

Policy 12.4: Enforce and revise as necessary City regulations regulating hours for construction activity.

City of Monterey Park Municipal Code

MPMC Title 21, Chapter 14.150 requires that mechanical equipment located on the roof and outside of the exterior walls of the any building zoned in an office-professional zone shall be installed with permanent sound-proofing measures and shall comply with the noise standards set forth in Chapter

4.50 Regulation of Noise and Other Disturbances.[4] MPMC Chapter 4.50 has established noise standards for residential, commercial, and industrial uses. Section 4.50.080 states that ambient noise levels must not exceed the measured median ambient noise levels or the following presumed ambient noise levels identified in Table 1: Established Sound Level Limits below, whichever is greater:

Table 1: Established Sound Level Limits

Land Use	Time Period	Level
Residential	Nighttime	50 dBA
	Daytime	55 dBA
Neighborhood Commercial	Anytime	60 dBA
Other Commercial	Anytime	65 dBA
Industrial	Anytime	70 dBA

Source: City of Monterey Park Municipal Code Chapter 4.50 Regulation of Noise and other Disturbances.

MPMC Title 4, Chapter 4.50, Regulation of Noise and Other Disturbances provides specific noise restrictions and exceptions for noise sources within the City. MPMC Section 4.50.100 states that construction activities between 7:00 A.M. and 7:00 P.M. Monday through Friday, and between 9:00 A.M. and 6:00 P.M. on Saturdays, Sundays, and Holidays are not subject to the noise level limits established in the MPMC.

5.0 Existing Environmental Setting

Mobile noise sources, especially cars, trucks, motorcycles, and aircraft, are the City's most common and substantial noise sources. The existing mobile noise sources in the Project area are the motor vehicles traveling on Saturn Street, South Orange Avenue, and Potrero Grande Drive. The primary stationary noise sources in the Project vicinity are those associated with the surrounding industrial, commercial, and residential uses. Such stationary noise sources include mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment and substation equipment), parking lot noise, moving vehicles, music playing, dogs barking, and people talking. The noise associated with these sources may represent a single-event noise occurrence or short-term noise.

Noise Measurements

The Project Site is currently improved with an existing two-story commercial office building and associated surface parking lot. To quantify existing ambient noise levels in the Project area, Veneklasen Associates conducted three short-term noise measurements and two long-term measurements on January 31, 2024 (see Attachment B). The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project

[4] MPMC Title 21, Chapter 14.150 requires equipment to comply with standards set in MPMC Chapter 9.53. However, MPMC Chapter 9.53 was repealed, and Chapter 4.50 was added to regulate noise in the City during the Monterey Park City Council Meeting held on March 3, 2021.

Site. The measurements are summarized in Table 2: Existing Noise Measurements, below. The sources of noise measured at each location are shown on Exhibit 1: Noise Measurement Locations.

Table 2: Existing Noise Measurements

Site	Location	Average Level (dBA)	Daytime Level (dBA)	Nighttime Level (dBA)
ST-1	Southwest corner of the existing building on-site	64	-	-
ST-2	Northwest corner of the existing Project Site	64	-	-
ST-3	Southeast corner of the Project Site	65	-	-
LT-1	West edge of the Project Site by the residences along Iris Way	55	56	54
LT-2	Northeast corner of the Project Site by Orange Avenue	60	61	56

Source: Noise measurements taken by Veneklasen Associates, January 31, 2024.

Receptor Locations

Noise exposure standards and guidelines for various types of land uses reflect varying noise sensitivities associated with uses. As stated in the General Plan Safety Element, land uses considered sensitive receptors include residences, hospitals, schools, childcare facilities, and places of assembly.[5] As shown in Table 3: Sensitive Receptor Locations, sensitive land uses surrounding the Project consist of mostly residential communities to the north, east, west of the Project Site. To quantify noise exposure levels near the Project Site, the long-term noise measurement locations (see **Figure 4: Noise Measurement Locations**) were chosen for noise measurements surrounding the Project Site closest to sensitive receptors including:

Table 3: Sensitive Receptor Locations

Sensitive Receptor	Distance and Direction[1]
Single-Family Residences	65 feet west
Single-Family Residences	165 feet northeast

1. Distances are from edge of the Project Site to the sensitive receptor property line.
Source: Nearmap 2024.

[5] City of Monterey Park, *General Plan: Safety Element*, 2022.

FIGURE 4: NOISE MEASUREMENT LOCATIONS MAP

1977 Saturn Data Center Project

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6.0 Impact Analysis

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

Construction Noise

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction. Noise generated by construction equipment can reach high levels. During construction, exterior noise levels could affect the noise-sensitive receptors near the construction site. Construction activities would include demolition, site preparation, grading, building construction, paving, and architectural coating. Such activities may require excavators, dozers, and concrete saws during demolition; tractors and dozers during site preparation; cranes, forklifts, generator sets, tractors, and welders during building construction; pavers, paving equipment, and rollers during paving; and forklifts, generator sets, welders, and air compressors during interior building construction. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Noise generated by construction equipment, including dozers, excavators, loaders, forklifts, and air compressors, can reach high levels. L_{max} is the maximum level of a noise source environment and is often used as a threshold value for typical noise levels of construction activities. Typical noise levels associated with individual construction equipment are listed in Table 4: Typical Construction Noise Levels.

Table 4: Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA L_{max}) at 50 feet from Source
Air Compressor	80
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Mobile	83
Dozer	85
Generator	82
Grader	85

Table 4: Typical Construction Noise Levels	
Equipment	**Typical Noise Level (dBA L_{max}) at 50 feet from Source**
Jack Hammer	88
Loader	80
Paver	85
Pneumatic Tool	85
Pump	77
Roller	85
Saw	76
Shovel	82
Truck	84
1. Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1+20Log(d_1/d_2)$ 2. Where: dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance.	
Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.	

Daytime construction noise is not typically a concern for human health and is a common occurrence within the urban environment. Construction activity between the hours of 7:00 A.M. and 7:00 P.M. Monday through Friday, and between 9:00 A.M. and 6:00 P.M. on Saturdays, Sundays, and Holidays are exempt from the MPMC noise standards. Although construction is not expected to occur outside of these times, a construction noise impact analysis, estimating the potential temporary increase in ambient noise, is performed in accordance with the Federal Transit Administration (FTA) thresholds.

The Project's existing surroundings include both residential and commercial uses. Following the FTA methodology for quantitative construction noise assessments, FHWA's Roadway Construction Noise Model (RCNM) was used to predict construction noise. All construction equipment is assumed to operate at the main construction area of the Project Site.[6] During construction, equipment would be operating throughout the Project Site and not all equipment would be operating at the point closest to the sensitive receptors. The main construction activity area for the Project would occur mainly around the center of the Project Site due to the building location and orientation. Therefore, the distance used in the model was approximately 530 feet from the center of the Project Site to the nearest sensitive receptor (adjacent to the Project Site to the west) and 380 feet to the nearest commercial receptor to the south; refer to Attachment A for construction noise modeling results.

[6] For the purposes of this analysis, the main construction activity areas are defined as the anticipated building construction area. Although some construction activities may occur at distances closer than 380 feet from the nearest properties, construction equipment would be dispersed throughout the Project Site during various construction activities. Therefore, main construction activity areas represent the most appropriate distance based on the sporadic nature of construction activities.

The MPMC does not establish quantitative construction noise standards, and Section 4.50.100(a) of the MPMC provides that construction activities are not subject to the noise level limits established in the MPMC. Nonetheless, for informational purposes only, this analysis uses the FTA's criteria of 80 dBA L_{eq} for residential uses and 85 dBA L_{eq} for commercial uses to evaluate construction noise impacts.[7]

Table 5: Construction Noise Level shows the maximum noise levels for each individual construction phase, assuming simultaneous use of equipment assumed for each phase. The highest exterior noise level at the residential use located to the west of the Project Site is estimated to be 67.1 dBA L_{eq}, which would not exceed the FTA's criteria of 80 dBA L_{eq} for residential uses. At the nearest commercial use approximately 380 feet south, the highest noise level would be 70.0 dBA L_{eq}, which would not exceed the FTA's criteria of 85 dBA L_{eq} for commercial uses.

Table 5: Construction Noise Levels

Construction Phase	Receptor Location			Modeled Exterior Noise Level (dBA L_{eq}) [2,3]	Noise Threshold (dBA L_{eq}) [4]	Exceeded?
	Land Use	Direction	Distance (feet) [1]			
Phase 1 Demolition	Commercial	South	380	68.8	85	No
Phase 1 Demolition	SFR	West	530	65.9	80	No
Phase 1 Demolition	SFR	Northeast	680	63.8	80	No
Phase 1 Site Prep	Commercial	South	380	70.0	85	No
Phase 1 Site Prep	SFR	West	530	67.1	80	No
Phase 1 Site Prep	SFR	Northeast	680	65.0	80	No
Phase 1 Grading	Commercial	South	380	69.7	85	No
Phase 1 Grading	SFR	West	530	66.8	80	No
Phase 1 Grading	SFR	Northeast	680	64.6	80	No
Phase 1 BC	Commercial	South	380	68.5	85	No
Phase 1 BC	SFR	West	530	65.6	80	No
Phase 1 BC	SFR	Northeast	680	63.4	80	No
Phase 1 Paving	Commercial	South	380	68.9	85	No
Phase 1 Paving	SFR	West	530	66.0	80	No
Phase 1 Paving	SFR	Northeast	680	63.9	80	No

[7] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Table 7-3, page 179, September 2018.

Table 5: Construction Noise Levels

Construction Phase	Receptor Location			Modeled Exterior Noise Level (dBA L_{eq}) [2,3]	Noise Threshold (dBA L_{eq}) [4]	Exceeded?
	Land Use	Direction	Distance (feet) [1]			
Phase 2 IC	Commercial	South	380	62.7	85	No
Phase 2 IC	SFR	West	530	59.9	80	No
Phase 2 IC	SFR	Northeast	680	57.7	80	No
Phase 2 Arch. Coating	Commercial	South	380	56.1	85	No
Phase 2 Arch. Coating	SFR	West	530	53.2	80	No
Phase 2 Arch. Coating	SFR	Northeast	680	51.1	80	No

1. Distance is from the nearest receptor to the main construction activity area on the Project Site. Not all equipment would operate at the closest distance to the receptor.
2. Modeled noise levels conservatively assume the simultaneous operation of all pieces of equipment.
3. The FTA Noise and Vibration Manual establishes construction noise standards of 80 dBA $L_{eq(8\text{-}hour)}$ for residential uses.

Abbreviations: SFR – Single-Family Residence, BC – Building Construction, IC – Interior Construction

Source: Federal Highway Administration, *Roadway Construction Noise Model,* 2006. Refer to Attachment A for noise modeling results.

Although the noise generated by Project construction would be higher than ambient noise levels, construction would be temporary and cease once Project construction is completed. Construction activities would comply with General Plan Policy 12.4 and MPMC Section 4.50.100 and limit construction between the hours of 7:00 A.M. and 7:00 P.M. Monday through Friday, and between 9:00 A.M. and 6:00 P.M. on Saturdays, Sundays, and Holidays are exempt from the MPMC noise standards. While construction may cause short-term annoyance to adjacent uses, it would be temporary and restricted to the hours permitted by the City's noise ordinance. In any case, the MPMC exempts noise from construction activities from the noise level limits established in the MPMC. Therefore, construction noise impacts would be less than significant.

Operational Noise

Project implementation would introduce new noise sources in the Project vicinity. The Project's primary noise sources that could potentially impact nearby noise-sensitive land uses include, mechanical equipment (e.g., cooling equipment, generators, etc.), parking lot (daily arrival and departure of cars), and loading dock/truck noise. The Project's mechanical equipment noise modeling was analyzed in the *Exterior Noise and Exterior Façade Acoustical Analysis* (2024) provided by Veneklasen Associates.

As indicated above, the MPMC Title 21 Chapter 14.150 limits noise levels generated by mechanical equipment to the measured median ambient noise level or the presumed ambient noise levels listed in Table 1, whichever is greater, per Chapter 4.50 of the MPMC.[8] As shown in Table 2, the ambient noise level at the nearest residences would be above the presumed ambient noise levels and therefore should be used as the ambient noise requirement for the site. The ambient noise requirement would be 56 dBA L_{eq} during the daytime and 54 dBA L_{eq} during the nighttime for the single-family residences to the west, and 61 dBA L_{eq} during the daytime and 56 dBA L_{eq} during the nighttime for the single-family residences to the northeast. At the nearest commercial receptor, the presumed median ambient noise requirement would be 65 dBA L_{eq}.

Mechanical Equipment

Potential stationary noise sources related to long-term Project operations include mechanical equipment (e.g., chillers and generators). The modeling utilized the 2023 SoftNoise Predictor computer program to calculate noise due to the chillers and generators at the nearest receptors. Chiller units would be surrounded by a 16-foot absorptive barrier on the rooftop on the proposed Project building. The chiller units were conservatively modeled to operate for 24-hours at 100 percent capacity. The generators would be located outside along the north face of the building surrounded by a 20-foot precast screen wall. Generator noise would occur during generator testing (a monthly process by which each generator is started and run for short durations, typically 15-30 minutes, with only one generator being tested at a time; monthly testing would occur during daytime hours only) or during emergency situations (typically defined as the interruption of grid provided power during which up to 12 of the generators, depending on the demand of the data center, would provide electricity until grid power is restored). Section 4.50.050 of the MPMC states that generators used during an emergency situation are exempt from the noise standards. Therefore, the noise levels generated for generators running during emergency situations were not evaluated.

As indicated in Table 6: Mechanical Equipment Noise Levels, noise levels from the different mechanical equipment operating scenarios would be below the ambient noise levels and would not exceed the City's standards. Therefore, the Project would result in less than significant impacts concerning mechanical equipment noise levels.

[8] As described above, Chapter 9.53 was repealed, and Chapter 4.50 was added during a Monterey Park City Council Meeting on May 3rd, 2021.

Table 6. Mechanical Equipment Noise Levels						
Receptor	**Project Operational Noise Level - Daytime (dBA L_{eq})[1]**	**Ambient Noise Level - Daytime (dBA L_{eq})[2]**	**Exceed?**	**Project Operational Noise Level - Nighttime (dBA L_{eq})**	**Ambient Noise Level - Nighttime (dBA L_{eq})[2]**	**Exceed?**
Single Family Residences (West)	50	56	No	50	54	No
Single Family Residences (Northeast)	56	61	No	56	56	No
Commercial Use (Northeast)	55	65	No	55	65	No

1. Ambient daytime noise levels include the operations of the two generators closest to sensitive receptors for generator testing.
2. Per MPMC Section 4.50.080, the generated noise levels must not exceed the median ambient noise level at the receptors or the measured ambient noise level, whichever is greater.

Source: Veneklasen Associates, *Exterior Noise and Exterior Façade Acoustical Analysis*, 2024.

Loading Dock and Trash/Recycling Truck Pickups

During loading activities and trash and recycling pickups, noise would be generated by the trucks' diesel engines, exhaust systems, and brakes during low gear shifting' braking activities; opening and closing of the trash/recycling bins. The Project would have two loading docks and trash enclosures located in the northwest and northeast corner of the proposed Project building. The typical loading dock/trash pick-up noise level is approximately 64 dBA L_{eq} at 50 feet. Truck loading and trash pickup would be infrequent during the day and would only generate noise for a short period of time. Therefore, on-site loading dock noise and trash/recycling pickup noise would not materially contribute to increases in daytime ambient noise. When weighted over a 12-hour period, truck loading/trash pickup noise would be 54 dBA L_{eq} at 50 feet. At the nearest sensitive receptor to the west and northeast, the noise level would be approximately 42 dBA L_{eq} and 38 dBA L_{eq} respectively without accounting for any surrounding attenuation features. The hours of deliveries and trash/recycling pickup activity would be dependent on the MPMC and the service provider. Therefore, the Project's truck loading/trash pickup noise level would not significantly impact the Project's contribution to the daytime ambient noise levels at the surrounding receptors and would result in less than significant impacts.

Mobile Traffic Noise

The Project is anticipated to generate 52 daily trips, with up to 36 trips during the day and up to 16 trips during the night.[9] In general, a 3-dBA increase in traffic noise is barely perceptible to people while a 5-dBA increase is readily noticeable. Traffic volumes on Project area roadways would have to approximately double for the resulting traffic noise levels to generate a barely perceptible 3-dBA increase.[10] Saturn Street is classified in the City General Plan Circulation Element as a Minor Arterial that supports up to 40,000 vehicles per day. According to Replica Traffic Data, Saturn Street currently carries 889 vehicles per day.[11] As noted above, the Project would result in approximately 52 daily trips, which would not result in a doubling of existing traffic volumes on Saturn Street, or nearby through streets. The Project would not generate enough traffic to result in a noticeable 3-dBA increase in ambient noise levels. Therefore, the Project would result in a less than significant impact from Project-related traffic noise.

Parking

Parking stalls would be located along the east of the proposed Project building. As explained above, the Project would not generate a substantial amount of trips and parking activities would be minimal on-site. Parking activities would anticipate a maximum of 18 vehicles during the day and 8 vehicles during the night.[12] Therefore, noise levels generated by Project parking would be at a 1-hour maximum of 39 dBA L_{eq} at 50 feet during the day and 35 dBA L_{eq} during the night. Due to the variability in parking throughout the day and night, when weighted over the daytime and nighttime periods, noise generated by parking would be even lower. Thus, vehicle access would not significantly impact the Project's contribution to ambient noise levels at the nearby receptors and parking noise impacts would be less than significant.

Composite Noise

Exterior noise levels associated with mechanical equipment, truck loading/trash pickup, and the parking lot would contribute to Project's impact on the surrounding ambient noise levels. However, as described above, noise generated from truck loading/trash pickup and parking lot noise would not reach high levels when weighted over the daytime and nighttime periods. When combined with the Project's mechanical equipment contribution remains unchanged from those shown in Table 6. Therefore, the composite noise levels from the Project (HVAC, rooftop chillers, truck loading,

[9] Kimley-Horn and Associates, *Transportation Analysis and Vehicle Miles Traveled Screening*, 2024.

[10] According to the Caltrans, Technical Noise Supplement to Traffic Noise Analysis Protocol (September 2013), it takes a doubling of traffic to create a noticeable (i.e., 3 dBA) noise increase.

[11] Replica, *Annual Average Daily Traffic*, 2022.

[12] The Project anticipates a total of 26 employees with 18 employees available during the day and 8 employees during the night. Thus, the greatest amount of parking activity during the day or night would be 18 vehicles.

parking lot, and mobile noise) would be below the thresholds and the Project would comply with Chapter 4.50 of the MPMC. Thus, composite noise impacts associated with the operations of the Project would be less than significant.

Threshold (b) Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction Vibration

Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Project construction could result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Construction activities could occur as close as 65 feet from the nearest residential buildings. Table 7: Typical Construction Equipment Vibration Levels identifies vibration velocity levels at 25 feet and 65 feet for various types of equipment likely to operate at the Project Site during construction.

Table 7: Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity at 25 feet (in/sec)	Peak Particle Velocity at 65 feet (in/sec)
Vibratory compactor/roller	0.210	0.050
Large Bulldozer	0.089	0.021
Loaded Trucks	0.076	0.018
Small Bulldozer	0.003	0.001

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

The City has not adopted specific standards for vibration impacts during construction. Therefore, the Caltrans *Transportation and Construction Vibration Guidance* Manual (2020) is used to evaluate construction vibration impacts related to potential building damage. Based on the Caltrans criteria, construction vibration impacts would be significant if vibration levels exceed 0.25 in/sec PPV at the nearby structures, which is the distinctly perceptible threshold for humans and is below the limit for potential building damage at older structures. As shown in Table 7, the vibration velocities at 65 feet from construction equipment could be up to 0.050 in/sec PPV at the nearest structure. Therefore, construction vibration would not exceed the 0.25 in/sec PPV threshold of perception and would be below the structural damage threshold for older structures. Thus, vibration impacts during Project construction would be less than significant.

Operational Vibration

The Project would not generate groundborne vibration during operations that could be felt at surrounding uses. Project operations would not involve railroads or substantial heavy truck

operations, and therefore would not result in vibration impacts at surrounding uses. As a result, impacts from vibration associated with Project operation would be less than significant.

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

The nearest airport to the Project Site is the San Gabriel Valley Airport located approximately 5.1 miles northeast of the Project Site. The Project is not within 2 miles of the nearest airport and would not be impacted by airport noise. Additionally, there are no private airstrips located within the Project vicinity Therefore, the Project would not expose people residing or working in the Project area to excessive airport- or airstrip-related noise levels and no mitigation is required.

7.0 Conclusion

The Project's construction and operational noise and vibration levels would not exceed applicable standards. The Project would result in less than significant construction and operational noise and vibration impacts, and no mitigation is required.

8.0 References

1. California Department of Transportation, *Technical Noise Supplement to Traffic Noise Analysis Protocol*, 2013.
2. California Department of Transportation, *Transportation and Construction Vibration Manual,* 2020.
3. City of Monterey Park, *General Plan Circulation Element*, 2022.
4. City of Monterey Park, *General Plan Safety Element*, 2022.
5. City of Monterey Park, *Municipal Code Chapter 4.50 Regulation of Noise and Other Disturbances*, 2021.
6. Federal Highway Administration, *Roadway Construction Noise Model*, 2006.
7. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.
8. Kimley-Horn and Associates, *Transportation Analysis and Vehicle Miles Traveled Screening*, 2024.
9. Replica, *Annual Average Daily Traffic*, 2022.
10. State of California Governor's Office of Planning and Research, *General Plan Guidelines, Appendix D: Noise Element Guidelines*, 2017.
11. Veneklasen Associates, *Exterior Noise and Exterior Façade Acoustical Analysis*, 2024.

Attachment A

Noise Data

Project: Saturn Data Center

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	Daytime hours (7 am to 7 pm)	8
	Evening hours (7 pm to 10 pm)	0
	Nighttime hours (10 pm to 7 am)	0
Leq to L10 factor		3

	Receptor (Land Use)	Average Distance (feet)	Distance to Property Line (feet)	Shielding	Direction
1	Single Family Residence	530	65	0	W
2	Single Family Residence	680	160	0	NE
3	Commercial	380	60	0	S

					RECEPTOR 1		RECEPTOR 2		RECEPTOR 3	
Construction Phase	**Equipment Type**	**No. of Equip.**	**Acoustical Usage Factor**	**Reference Noise Level at 50ft per Unit, Lmax**	**Noise Level at Receptor 1, Lmax**	**Noise Level at Receptor 1, Leq**	**Noise Level at Receptor 2, Lmax**	**Noise Level at Receptor 2, Leq**	**Noise Level at Receptor 3, Lmax**	**Noise Level at Receptor 3, Leq**
Phase 1 Demolition										
	Concrete Saw	1	20%	90	69.1	62.1	66.9	59.9	72.0	65.0
	Dozer	2	40%	82	64.2	60.2	62.0	58.1	67.1	63.1
	Excavator	3	40%	81	65.0	61.0	62.8	58.8	67.9	63.9
Combined LEQ						**65.9**		**63.8**		**68.8**
Phase 1 Site Preparation										
	Tractor	4	40%	84	69.5	65.5	67.3	63.4	72.4	68.4
	Dozer	3	40%	82	66.0	62.0	63.8	59.8	68.9	64.9
Combined LEQ						**67.1**		**65.0**		**70.0**

Phase 1 Building Construction										
	Tractor	3	40%	84	68.3	64.3	66.1	62.1	71.2	67.2
	Crane	1	16%	81	60.1	52.1	57.9	50.0	63.0	55.0
	Man Lift	3	20%	75	59.0	52.0	56.8	49.8	61.9	54.9
	Generator	1	50%	81	60.1	57.1	57.9	54.9	63.0	60.0
	Welder/Torch	1	40%	74	53.5	49.5	51.3	47.3	56.4	52.4
Combined LEQ						**65.6**		**63.4**		**68.5**
Phase 1 Paving										
	Paver	2	50%	77	59.7	56.7	57.5	54.5	62.6	59.6
	Roller	2	20%	80	62.5	55.5	60.3	53.3	65.4	58.4
	Pavement Scarafier	2	20%	90	72.0	65.0	69.8	62.8	74.9	67.9
Combined LEQ						**66.0**		**63.9**		**68.9**
Phase 2 Interior Construction										
	Man Lift	3	20%	75	59.0	52.0	56.8	49.8	61.9	54.9
	Generator	1	50%	81	60.1	57.1	57.9	54.9	63.0	60.0
	Welder/Torch	1	40%	74	53.5	49.5	51.3	47.3	56.4	52.4
	Compressor (air)	1	40%	78	57.2	53.2	55.0	51.0	60.1	56.1
Combined LEQ						**59.9**		**57.7**		**62.7**
Phase 2 Architectural Coating										
	Compressor (air)	1	40%	78	57.2	53.2	55.0	51.0	60.1	56.1
Combined LEQ						**53.2**		**51.1**		**56.1**
Phase 1 Grading										
	Grader	1	40%	85	64.5	60.5	62.3	58.3	67.4	63.4
	Excavator	1	40%	81	60.2	56.2	58.0	54.0	63.1	59.1
	Tractor	3	40%	84	68.3	64.3	66.1	62.1	71.2	67.2
	Dozer	1	40%	82	61.2	57.2	59.0	55.0	64.1	60.1
Combined LEQ						**66.8**		**64.6**		**69.7**

Source for Ref. Noise Levels: RCNM, 2005

* Loudest piece of equipment measured from the construction boundary nearest to the receptor.

Parking Lot Noise

Number of Vehicles Per Hour:	18
Hourly L_{eq} at 50 feet:	39.0

$L_{eq(h)} = SEL_{ref} + 10\log(NA/1{,}000) - 35.6$

Where:

$L_{eq(h)}$	=	39.0	hourly L_{eq} noise level at 50 feet
SEL_{ref}	=	92	reference noise level for stationary noise source represented in sound exposure level (SEL) at 50 feet
NA	=	18	number of automobiles per hour
35.6	=	35.6	Constant, calculated as 10 times the logarithm of the number of seconds in an hour

FTA's reference noise level is 92 dBA SEL at 50 feet from the noise source for a parking lot

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual* , September 2018.

Parking Lot Noise

Number of Vehicles Per Hour:	8
Hourly L_{eq} at 50 feet:	35.4

$L_{eq(h)} = SEL_{ref} + 10\log(NA/1{,}000) - 35.6$

Where:

$L_{eq(h)}$	=	35.4	hourly L_{eq} noise level at 50 feet
SEL_{ref}	=	92	reference noise level for stationary noise source represented in sound exposure level (SEL) at 50 feet
NA	=	8	number of automobiles per hour
35.6	=	35.6	Constant, calculated as 10 times the logarithm of the number of seconds in an hour

FTA's reference noise level is 92 dBA SEL at 50 feet from the noise source for a parking lot

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual* , September 2018.

Attachment B

Exterior Noise and Exterior Façade Acoustical Analysis by Veneklasen Associates

Veneklasen Associates
Consultants in Acoustics | Noise | Vibration | AV | IT

April 24, 2024

Gensler
5005 Greeneville
Dallas, Texas 75206

Attention: Chris Sanders, AIA | Associate

Subject: **StratCap 1977 Saturn Street**
Monterey Park, California
Exterior Noise and Exterior Façade Acoustical Analysis
Veneklasen Project No. 1267-263

Dear Chris:

Veneklasen Associates, Inc. (Veneklasen) has completed the environmental noise analysis for the StratCap 1977 Saturn Street project located in Monterey Park, California. This report predicts the exterior noise level at the site using provided sound data and computer modeling. Using this information, the noise level is determined whether compliant or not with Code requirements. If not compliant, mitigation measures are introduced. This report discusses the results of this analysis.

1.0 INTRODUCTION

This study was conducted to determine the impact of HVAC equipment at the StratCap 1977 Saturn Street project on the exterior noise level of neighboring residential areas in Monterey Park, California. Veneklasen's scope of work included measuring the existing background exterior noise level, calculating the increase in the level as a result of this project's HVAC equipment, and determining the method, if any, required to reduce these exterior sound levels to meet the applicable code requirements of the City of Monterey Park.

The project consists of a single story 200,000 square foot data center with 23 rooftop chillers for the data center, 2 RTUs for admin spaces, and 14 emergency generators. The project is bounded by residential neighborhoods on the northeast and northwest property lines. The northwest residential areas are uphill of the site which will make satisfying the noise ordinance there challenging.

2.0 NOISE CRITERIA

The City of Monterey Park Noise Ordinance states that ambient noise level of residential areas will either be the measured ambient noise level or the presumed ambient levels listed in section 4.50.080, whichever is greater. Any noise that exceeds this level is a code violation.

- Section 4.50.080 lists presumed ambient levels of 50 dBA at night (between 10:00 pm and 7:00 am).
- Section 4.50.080 lists presumed ambient levels of 55 dBA during the day (7:00 am to 10:00 pm).

Additionally, when any disturbing noise has an audible tonal quality, the applicable noise limit will be reduced by 5 dB when determining whether or not a violation exists.

Lastly, section 4.50.050 states that "emergency generators or equipment used during a power outage or other emergency" are exempt from being classified as noise disturbances.

3.0 EXTERIOR NOISE ENVIRONMENT

3.1 Noise Measurements

Veneklasen visited the site on Wednesday, January 31, 2024 and placed two sound level meters at the northwest and northeast property line to capture the hourly sound levels on the site for a 24-hour period.

Veneklasen also completed three short-term noise measurements. Table 1 and Figure 1 show the location and summary of the noise measurements. Since these values are higher than the presumed ambient levels listed in Section 4.50.080 of the noise ordinance, these measured levels will be used as the ambient noise requirements for this project.

Table 1 – Measured Sound Levels

Location	Measured Level (dB)	Nighttime Level (dB)	Daytime Level (dB)
L1	55	54	56
L2	60	56	61
S1	64	---	---
S2	64	---	---
S3	65	---	---

Figure 1 – Aerial View of Project Site Showing Measurement Locations

Therefore, the sound level that cannot be exceeded at nighttime from the operation of the equipment is 56 dBA at L2 and 54 dBA at L1.

4.0 COMPUTER MODELING

Veneklasen utilized the 2023 version of the SoftNoise Predictor computer modeling program to calculate the exterior noise levels due to chiller and generator noise using drawings dated April 19, 2024. The model was then used to generate color coded noise contours (noise heat maps) that show the dBA noise levels around the site at a height of 6 feet above grade.

4.1 Equipment Sound Levels

The current design consists of a 16 ft. acoustic screen with absorption around the rooftop chillers and a 20 ft. precast screen wall around the generators. Chiller sound data was provided on February 29, 2024 and RTU sound data was provided on March 21, 2024 with operational information provided April 2024.

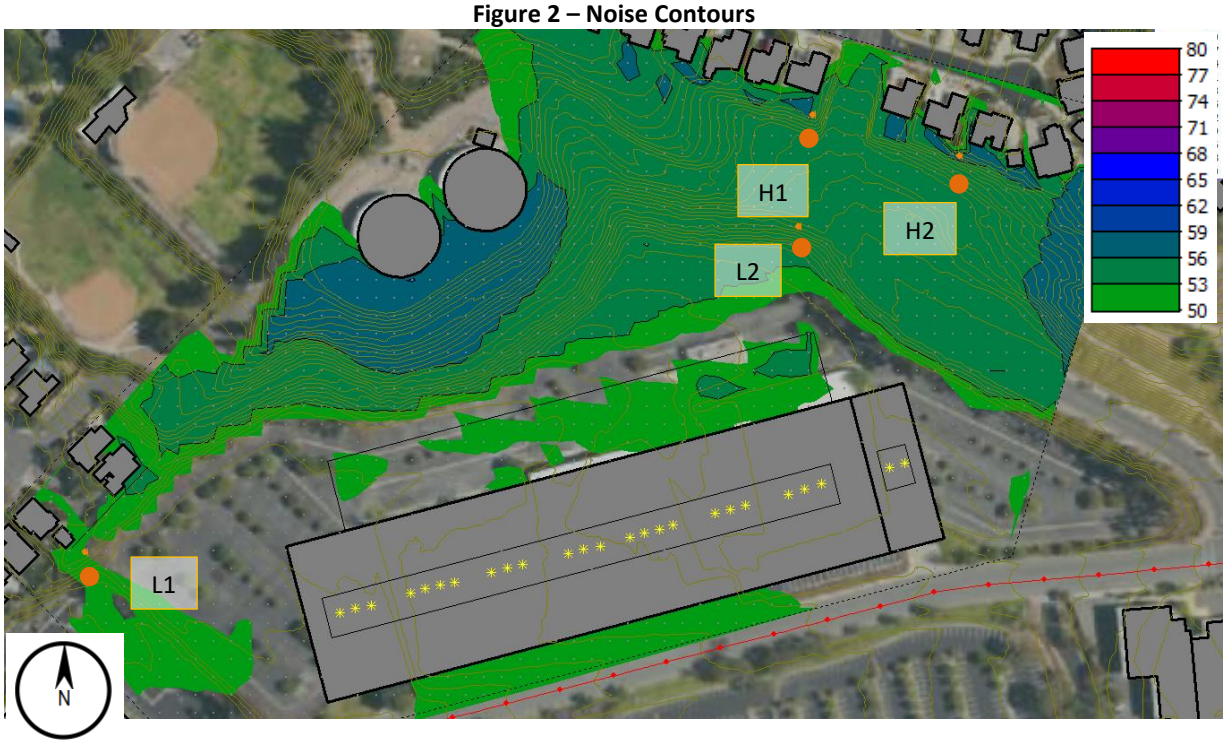
Chiller sound data within the acoustic models shown includes equipment operating at 100% capacity, which is the worst-case scenario. With this sound data, Veneklasen calculated the noise levels associated with the operation of the chillers. This information in. Additionally, noise levels were calculated at two nearby houses (H1 and H2) northwest of the property. Since Section 4.50.050 of the noise ordinance states that emergency generators used during a power outage are exempt, Figure 2 does not include the operation of the emergency generator.

Veneklasen calculated the noise level from the operation of chillers. The chillers are designated in the center of the building with 16 ft. absorptive barrier (shown in Figure 2). The resulting calculated noise levels were calculated as follows:

- 50 dBA at L1
- 55 dBA at L2.
- 56 dBA at H1 and
- 56 dBA at H2

None of these levels exceed the ambient measured level of 56 dBA meaning that the Monterey Park Municipal Code is satsified.

Figure 2 – Noise Contours



5.0 CONCLUSIONS

The calculated noise levels with the 16 ft. absorptive barrier height and chiller locations along with their acceptability can be seen in Table 2, below. Since the chillers/RTUs do not exceed the measured ambient noise levels at both the property line and the neighboring houses, the Monterey Park noise ordinance is satsified.

Table 2 – Calculated level vs. measured ambient levels.

Location	Measured Nighttime Level (dB)	Calculated Nighttime Level with Chillers @100% Load and 16 ft. Abs Barrier (dB)	Satisfies the Monterey Park Noise Ordinance
L1	54	50	Yes
L2	56	55	Yes
H1	---	56	Yes
H2	---	56	Yes

If you have any questions or comments regarding this report, please do not hesitate to contact the undersigned.

Sincerely,
Veneklasen Associates, Inc.

Ryan Edwards
Associate

APPENDIX I – GLOSSARY OF ACOUSTICAL TERMS

Term	Definition
Absorption	A property of material referring to how much sound it absorbs (as opposed to reflecting). In the context of this report, absorption refers to the total quantity of absorption within the receiving space. Absorption is measured in sabins.
A-weighting	The sound pressure level in decibels as measured in an A-weighting filter network. The A-weighting de-emphasizes the low frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
CNEL (Community Noise Equivalent Level)	The energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to evening and nighttime noise by weighting noise levels at evening and night. Noise between 7 pm and 10 pm is weighted (penalized) by adding 5 dB, and noise between 10 pm and 7 am is weighted by adding 10 dB to consider the greater annoyance of evening and nighttime noises. For practical purposes, the CNEL and DNL are usually interchangeable.
Decibel (dB)	A unit describing the amplitude of sound equivalent to 20 times the logarithm, to the base 10, of the ratio of the pressure of the sound to the reference pressure of 20 μPa. Used to quantify sound pressure levels.
DNL (Day-Night Average Sound Level)	The energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night. Noise between 10 pm and 7 am is weighted (penalized) by adding 10 dB to consider the greater annoyance of nighttime noises. This noise descriptor is referred to by different agencies and references as either DNL or Ldn. The two notations refer to the same noise descriptor.
Equivalent Sound Level (Leq)	Used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The Leq is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).
Lmax	The instantaneous maximum noise level measured during the measurement period of interest.
L*n*	The sound level that is equaled or exceeded *n* percent of a specified time period. The L50 represents the median sound level.
Sabin	A unit used to describe absorption within a space. One sabin is equal to the absorption of a one-square-foot open window.

Term	Definition
Sound Pressure Level (SPL)	The amplitude of sound when compared to the reference sound pressure level of 20 μPa. SPL is measured in dB with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Because sound pressure can vary greatly within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level.
Sound Transmission Class (STC)	A single-number metric used to describe the transmission loss performance of a material or assembly across the frequency spectrum. It is intended for use primarily when speech is the noise source.
Transmission Loss (TL)	A measure of the reduction in sound level as a sound wave passes through a material. The higher the transmission loss, the better the material's sound insulating properties.

APPENDIX II – ACOUSTICAL CALCULATION METHODS

Decibel Addition

Decibels are based on a logarithmic scale; defined as the logarithmic ratio between a measured sound pressure level and a reference sound pressure level. When decibels are added, they are not combined arithmetically, but logarithmically. Decibels are added according to the following equation.

$$SPL_{tot} = 10log\left(10^{\left(SPL_1/10\right)}\right) + 10log\left(10^{\left(SPL_2/10\right)}\right)$$

Where:
SPL_{tot} = Total Sound Pressure Level (dB or dB)
SPL_1, SPL_2 = Sound Pressure Level 1, 2 (dB or dB)

A-Weighting

A-weighting a spectrum is completed by applying standardized weighting factors to a frequency spectrum, either in octave bands or third-octave bands. These resultant A-weighted levels are summed using decibel addition to generate the overall A-weighted level, noted as dB. In a report, spectral data is typically presented un-weighted, and the overall level is presented with A-weighting.

The octave band A-weighting correction factors are shown in the table below:

	Octave Band Center Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
A-weighting Correction Factor (dB)	-26	-16	-9	-3	0	+1	+1	-1

Acoustical Shielding

The presence of adjacent buildings or façades, changes in terrain, parapets, and other similar barriers provide acoustical shielding, reducing the sound level incident on the exterior façades. Common locations where acoustical shielding occurs include, but are not limited to, the roof, the back, and sides of the building that are not directly facing the noise source.

Acoustical shielding due to building geometry can be separated into two categories: reduction due to reduced area of exposure (side of a building), and shielding from barriers (such as a parapet or sound wall).

Reduction as a result of reduced area of exposure is calculated according to the following equation:

$$\Delta SPL = 10\log_{10}\left(\frac{\theta_{exp}}{180}\right)$$

Where:
ΔSPL = Change in Sound Pressure Level (dB)
θ_{exp} = Angle of exposure (degrees)

Acoustical Attenuation due to Distance

Sound pressure level reduction due to distance is calculated according to the following equation:

$$SPL_2 = SPL_1 + C_S \log\left(\frac{r_1}{r_2}\right)$$

Where:
SPL_1 = Sound Pressure Level at Location 1 (dB or dB)
SPL_2 = Sound Pressure Level at Location 2 (dB or dB)
C_S = Source Coefficient; 20 for point source, 10 for a line source
r_1 = Location 1 distance from source (ft.)
r_2 = Location 2 distance from source (ft.)

In some situations, the C_S value is between 10 and 20; selection of this number is an engineering judgment based on the relationship between the source and receiver as well as the type of source.

Interior Noise Calculation

The interior noise calculation takes into account the exterior noise level, the transmission loss of the glazing (including glass, frame, and seals), wall, and roof/ceiling systems, the finishes within the space, and noise exposure due to building geometry and acoustic shielding. The interior sound level is calculated using the equation:

$$SPL_I = SPL_E + 10\,log_{10}(A) - 10log_{10}(R) - TL + 6$$

Where:
SPL_I = the Interior Sound Pressure Level (dB or dB)
SPL_E = Exterior Sound Pressure Level (dB or dB)
A = Surface Area exposed to Exterior Noise (sq.ft.)
R = Room Absorption Coefficient (sabins)
TL = Sound Transmission Loss of Exterior Façade Assembly (dB)

This calculation is performed for each exposed façade individually. The total interior sound level is found by using decibel addition to sum the sound level from all exposed façades.