NOISE TECHNICAL REPORT

Introduction

This technical report evaluates noise impacts from construction and operation of the proposed Cabrillo Town Center project in the City of Santa Ana. The analysis discusses applicable regulations and compares impacts to appropriate thresholds of significance. Noise measurements, calculation worksheets, and a map of noise receptors and measurement locations are included in the Technical Appendix to this analysis.

Fundamentals of Noise

Characteristics of Sound

Sound can be described in terms of its loudness (amplitude) and frequency (pitch). The standard unit of measurement for sound is the decibel (dB). Because the human ear is not equally sensitive to sound at all frequencies, the A-weighted scale (dBA) is used to reflect the normal hearing sensitivity range. On this scale, the range of human hearing extends from 3 to 140 dBA. Table 1 provides examples of A-weighted noise levels from common sources.

Table 1
A-Weighted Decibel Scale

Typical A-Weighted Sound Levels	Sound Level (dBA L_{eq})
Near Jet Engine	130
Rock and Roll Band	110
Jet flyover at 1,000 feet	100
Power Motor	90
Food Blender	80
Living Room Music	70
Human Voice at 3 feet	60
Residential Air Conditioner at 50 feet	50
Bird Calls	40
Quiet Living Room	30
Average Whisper	20
Rustling Leaves	10
Source: Cowan, James P., Handbook of Environmental Acoustics, 1993. These noise levels are approximations intended for general reference and informational use.	

Noise Definitions. This noise analysis discusses sound levels in terms of equivalent noise level (L_{eq}), maximum noise level (L_{max}) and the Community Noise Equivalent Level (CNEL).

- Equivalent Noise Level (L_{eq}): L_{eq} represents the average noise level on an energy basis for a specific time period. Average noise level is based on the energy content (acoustic energy) of sound. For example, the L_{eq} for one hour is the energy average noise level during that hour. L_{eq} can be thought of as a continuous noise level of a certain period equivalent in energy content to a fluctuating noise level of that same period.

- Maximum Noise Level (L_{max}): L_{max} represents the maximum instantaneous noise level measured during a given time period.

- Community Noise Equivalent Level (CNEL): CNEL is an adjusted noise measurement scale of average sound level during a 24-hour period. Due to increased noise sensitivities during evening and night hours, human reaction to sound between 7:00 P.M. and 10:00 P.M. is as if it were actually 5 dBA higher than had it occurred between 7:00 A.M. and 7:00 P.M. From 10:00 P.M. to 7:00 A.M., humans perceive sound as if it were 10 dBA higher. To account for these sensitivities, CNEL figures are obtained by adding an additional 5 dBA to evening noise levels between 7:00 P.M. and 10:00 P.M. and 10 dBA to nighttime noise levels between 10:00 P.M. and 7:00 A.M. As such, 24-hour CNEL figures are always higher than their corresponding actual 24-hour averages.

Effects of Noise. The degree to which noise can impact an environment ranges from levels that interfere with speech and sleep to levels that can cause adverse health effects. Most human response to noise is subjective. Factors that influence individual responses include the intensity, frequency, and pattern of noise; the amount of background noise present; and the nature of work or human activity exposed to intruding noise. According to the National Institute of Health (NIH), extended or repeated exposure to sounds at or above 85 dB can cause hearing loss. Sounds of 70 dBA or less, even after continuous exposure, are unlikely to cause hearing loss.[1] The World Health Organization (WHO) reports that adults should not be exposed to sudden "impulse" noise events of 140 dB or greater. For children, this limit is 120 dB.[2]

Exposure to elevated nighttime noise levels can disrupt sleep, leading to increased levels of fatigue and decreased work or school performance. For the preservation of healthy sleeping environments, the WHO recommends that continuous interior noise levels not exceed 30 dBA and that individual noise events of 45 dBA or higher be avoided.[3] Assuming a conservative exterior to interior sound reduction of 15 dBA, continuous exterior noise levels should therefore not exceed 45 dBA. Individual exterior events of 60 dBA or higher should also be limited. Some epidemiological studies have shown a weak association between long-term exposure to noise levels of 65 to 70 dBA and cardiovascular effects, including ischemic heart disease and hypertension. However, at this time, the relationship is largely inconclusive.

People with normal hearing sensitivity can recognize small changes in sound levels of approximately 3 dBA. Changes of at least 5 dBA can be readily noticeable while sound level increases of 10 dBA or greater are perceived as a doubling in loudness.[4] However, during daytime, few people are highly annoyed by noise levels below 55 dBA L_{eq}.[5]

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1 National Institute of Health, National Institute on Deafness and Other Communication, www.nidcd.nih.gov/health/noise-induced-hearing-loss.

2 World Health Organization, Guidelines for Community Noise, 1999.

3 Ibid.

4 Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2018.

5 World Health Organization, Guidelines for Community Noise, 1999.

Noise Attenuation. Noise levels decrease as the distance from noise sources to receivers increases. For each doubling of distance, noise from stationary sources can decrease by about 6 dBA over hard surfaces (e.g., reflective surfaces such as parking lots) and 7.5 dBA over soft surfaces (e.g., absorptive surfaces such as soft dirt and grass). For example, if a point source produces a noise level of 89 dBA at a reference distance of 50 feet over an asphalt surface, its noise level would be approximately 83 dBA at a distance of 100 feet, 77 dBA at 200 feet, etc. Noises generated by mobile sources such as roadways decrease by about 3 dBA over hard surfaces and 4.5 dBA over soft surfaces for each doubling of distance. It should be noted that because decibels are logarithmic units, they cannot be added or subtracted. For example, two cars each producing 60 dBA of noise would not produce a combined 120 dBA.

Noise is most audible when traveling by direct line of sight, an unobstructed visual path between noise source and receptor. Barriers that break line of sight between sources and receivers, such as walls and buildings, can greatly reduce source noise levels by allowing noise to reach receivers by diffraction only. As a result, sound barriers can generally reduce noise levels by up to 15 dBA.[6] The effectiveness of barriers can be greatly reduced when they are not high or long enough to completely break line of sight from sources to receivers.

Regulatory Framework

Noise

Federal. No federal noise standards regulate environmental noise associated with short-term construction activities or long-term operations of development projects. As such, temporary and long-term noise impacts produced by the Project would be largely regulated or evaluated by State and City of Santa Ana standards designed to protect public well-being and health.

State. The State's 2017 General Plan Guidelines establish county and city standards for acceptable exterior noise levels based on land use. These standards are incorporated into land use planning processes to prevent or reduce noise and land use incompatibilities. Table 2 illustrates State compatibility considerations between land uses and exterior noise levels.

California Government Code Section 65302 also requires each county and city to prepare and adopt a comprehensive long-range general plan for its physical development. Section 65302(f) requires a noise element to be included in the general plan. This noise element must identify and appraise noise problems in the community, recognize Office of Noise Control guidelines, and analyze and quantify current and projected noise levels.

The State has also established noise insulation standards for new multi-family residential units, hotels, and motels that are subject to relatively high levels of noise from transportation. The noise insulation standards, collectively referred to as the California Noise Insulation Standards (Title 24, California Code of Regulations) set forth an interior standard of 45 dBA CNEL for habitable rooms. The standards require an acoustical analysis which indicates that dwelling units meet this interior

[6] California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013.

standard where such units are proposed in areas subject to exterior noise levels greater than 60 dBA CNEL. Local jurisdictions typically enforce the California Noise Insulation Standards through the building permit application process.

City of Santa Ana General Plan Noise Element. The City's 2022 General Plan includes a Noise Element that includes policies and standards to guide the control of noise to protect residents, workers, and visitors. Its primary goal is to regulate long-term noise impacts to preserve acceptable noise environments for all types of land uses. It includes programs applicable to construction projects that call for protection of noise sensitive uses and use of best practices to minimize short-term noise impacts. It defines sensitive uses as residences, schools, health care centers, libraries, churches, senior homes, and recreational areas. However, the Noise Element contains no quantitative or other thresholds of significance for evaluating a project's noise impacts. Instead, it adopts the State's guidance on noise and land use compatibility, shown in Table 2, to help guide determination of appropriate land use and mitigation measures vis-à-vis existing or anticipated ambient noise levels. It also includes four goals and nine associated policies relevant for the Proposed Project:

Goal N-1 (Land Use Compatibility): Ensure that existing and future land uses are compatible with current and projected local and regional noise conditions.

Policy N-1.1 (Noise Standards): Utilize established Citywide Noise Standards and guidelines to inform land use decisions and guide noise management strategies.

Policy N-1.2 (Sound Design): Encourage functional and attractive designs to mitigate excessive noise levels.

Policy N-1.4 (Sensitive Uses): Protect noise sensitive land uses from excessive, unsafe, or otherwise disruptive noise levels.

Goal N-2 (Noise Generators): Reduce the impact of known sources of noise and vibration.

Policy N-2.1 (Transportation Related Noise): Reduce noise generated from traffic, railroads, transit, and airports to the extent feasible.

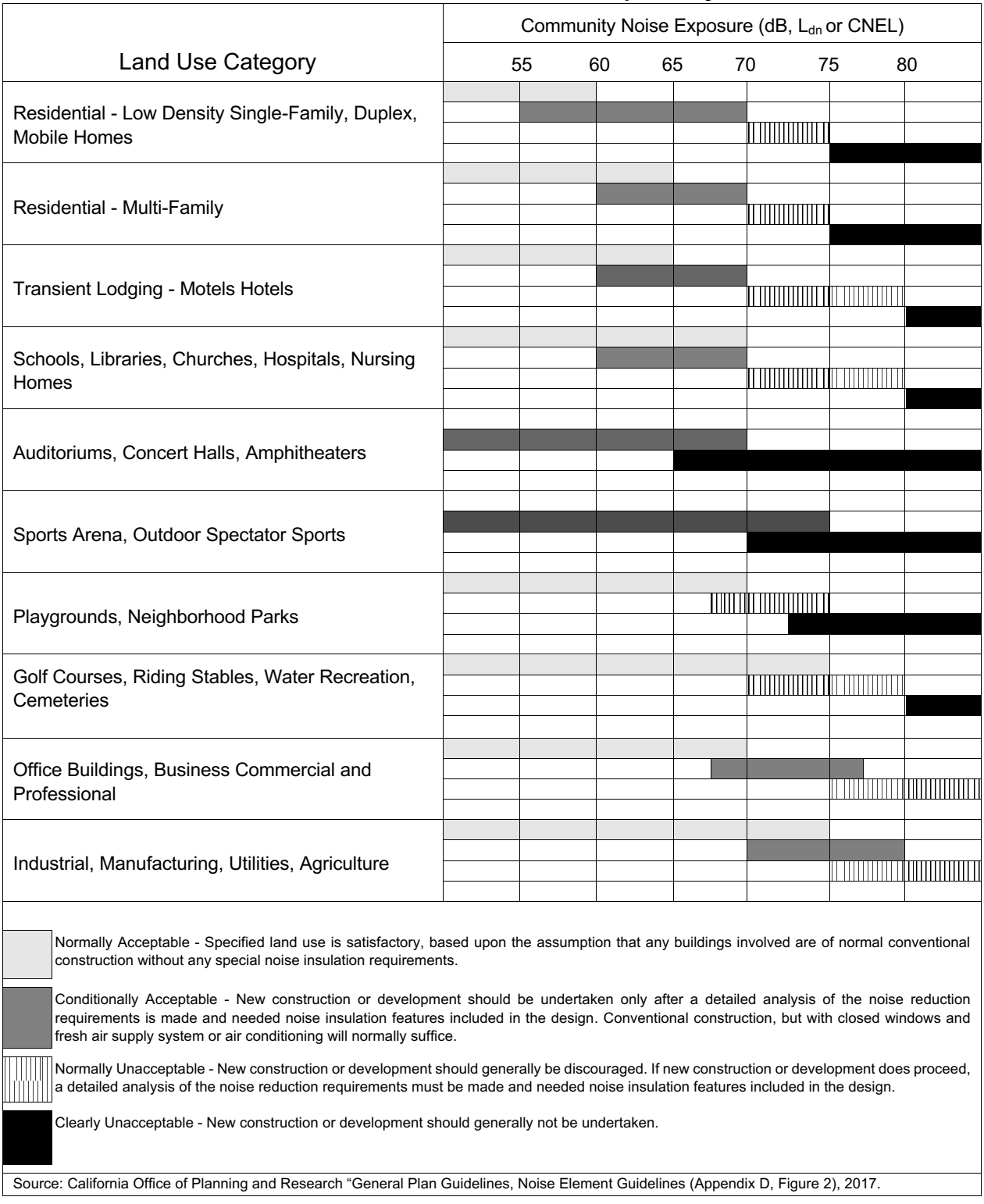
Policy N-2.2 (Stationary Related Noise): Minimize noise impacts from commercial and industrial facilities adjacent to residential uses or zones where residential uses are permitted.

Policy N-2.3 (Temporary and/or Nuisance Noise): Minimize the effects of intermittent, short-term, or other nuisance noise sources.

Goal N-3 (Airport and Land Use Environs): Protect sensitive land uses from airport related noise impacts.

Policy N-3.1 (Residential Development): Residential development within the John Wayne Airport (JWA) 65 dB(A) CNEL Noise Contour or greater is not supported.

Table 2
State of California Noise/Land Use Compatibility Matrix



Source: California Office of Planning and Research "General Plan Guidelines, Noise Element Guidelines (Appendix D, Figure 2), 2017.

Policy N-3.2 (Flight Paths): Advocate that future flight path selection be directed away from existing noise sensitive land uses.

Policy N-3.3 (Residential Mitigation): Require all residential land uses in 60 dB(A) CNEL or 65 dB(A) CNEL Noise Contours to be sufficiently mitigated so as not to exceed an interior standard of 45 dB(A) CNEL.

The City also has adopted guidelines for noise levels by land use (Table 3) that help guide land use decisions.

Table 3
City of Santa Ana Interior and Exterior Noise Standards

Categories	Land Use Categories	Interior[a]	Exterior[b]
Residential	Single-family, duplex, multi-family	45 dB CNEL[c]	65 dB CNEL
Institutional	Hospital, school classroom/playground	45 dB CNEL	65 dB CNEL
	Religious facility, library	45 dB CNEL	--
Open Space	Parks	--	65 dB CNEL

a. Interior areas, to include but not limited to bedrooms, bathrooms, kitchens, living rooms, dining rooms, private offices, and conference rooms.

b. Exterior areas shall mean: private yards of single family homes, park picnic areas, school playgrounds, common areas. Private open space, such as atriums on balconies, shall be excluded from exterior noise requirements provided sufficient common area is included within the project.

c. Interior noise level requirements assume a closed-window condition. Mechanical ventilation system or other means of natural ventilation shall be provided per Chapter 12 of the Uniform Building Code, as necessary.

Source: City of Santa Ana General Plan Noise Element, 2022.

City of Santa Ana Municipal Code. The Santa Ana Municipal Code (SAMC) contains regulations that regulate noise. Article VI governs exterior and interior noise levels and addresses nuisance issues. It includes exterior noise standards, as summarized in Table 4.

Table 4
City of Santa Ana Interior and Exterior Noise Standards

Noise Zone	Noise Level	Time Period
Citywide	55 dB(A)	7:00 A.M.-10:00 P.M.
	50 dB(A)	10:00 P.M.-7:00 A.M.

Source: City of Santa Ana Municipal Code Section 18-312.

Section 18-312(b) also establishes that any noise increases at residential properties are limited to:

- The noise standard for a cumulative period of more than thirty (30) minutes in any hour; or

- The noise standard plus five (5) dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or

- The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or

- The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one minute in any hour; or

- The noise standard plus twenty (20) dB(A) for any period of time.

SAMC Section 18-314(e) notes that noise from construction, repair, remodeling, or grading of any property is exempt from exterior noise standards between 7:00 A.M. and 8:00 P.M., Monday through Saturday. Such activities on Sundays or national holidays are subject to those standards.

Existing Conditions

Noise Sensitive Receptors

The Project Site is located on the Fourth Street corridor, which is populated with a mix of residential, retail, and commercial uses near the Project Site. Noise-sensitive receptors within 0.25 miles of the Project Site include, but are not limited to, the following representative sampling:

- Cabrillo Park, 1820 East Fruit Street; directly north of the Project Site.
- Urgent Care Facility, 2001 East Fourth Street; 60 feet east of the Project Site.
- Residences, 724 North Parkcenter Drive; 80 feet northeast of the Project Site.
- Health Care Facility, 1900 East Fourth Street; 120 feet south of the Project Site.
- Residences, 618 Sherry Lane; 400 feet west of the Project Site.
- Residences, 1901 East First Street; 450 feet south of the Project Site.

Existing Ambient Noise Levels

The Project Site is improved with four commercial buildings totaling 173,025 square feet and 617 surface parking spaces. There is minor operational noise from these facilities, including a number of roof-top units providing heating, ventilation, and air conditioning (HVAC) for the buildings that occasionally generate minor levels of noise (approximately 81.9 dBA at one foot of distance).[7]

There is also intermittent noise from the operation of the parking lot, including tire friction as vehicles navigate to and from parking spaces, minor engine acceleration, doors slamming, and occasional car alarms. Most of these sources are instantaneous (e.g., car alarm chirp, door slam) while others may last a few seconds. There is also infrequent noise from occasional solid waste management and collection activities that are of short duration, as is occasional loading of goods.

[7] City of Pomona, Pomona Ranch Plaza WalMart Expansion Project, Table 4.4-5; August 2014. Source was cluster of mechanical rooftop condensers including two Krack MXE-04 four-fan units and one MXE-02 two-fan unit. Reference noise level based on 30 minutes per hour of activity.

Traffic is the primary source of noise near the Project Site, largely from the operation of vehicles with internal combustion engines and frictional contact with the ground and air.[8] This includes traffic on Fourth Street, which carries about 23,828 daily vehicles between Tustin Avenue and Cabrillo Park Drive.[9] Existing development contributes 1,876 daily vehicle trips onto local roads.[10]

On June 27, 2023, DKA Planning took short-term noise measurements near the Project site to determine ambient noise conditions near sensitive receptors.[11] As shown in Table 5, noise levels along roadways near the Project Site ranged from 56.7 dBA L_{eq},on Sherry Lane to 68.3 dBA L_{eq},on Fourth Street. These measurements are generally consistent with the traffic volumes on the applicable streets. Figure 1 illustrates where ambient noise levels were measured near the Project Site to establish the noise environment and their relationship to the applicable sensitive receptor(s). 24-hour CNEL noise levels are generally considered "Normally Acceptable" and "Conditionally Acceptable" for the types of land uses near the Project Site.

Table 5
Existing Noise Levels

Noise Measurement Locations	Distance from Project Site	Primary Noise Source	Sound Levels		Nearest Sensitive Receptor(s)	Noise/Land Use Compatibility[b]
			dBA (L_{eq})	dBA (CNEL)[a]		
A. Cabrillo Park Dr.	Five feet	Traffic on Cabrillo Park Dr.	59.5	57.5	Cabrillo Park; Residence – 724 N. Parkcenter Dr.[c]	Normally Acceptable
B. 2001 E. 4th St.	Five feet	Traffic on 4th St.	65.8	63.8	Urgent Care – 2001 E. Fourth St.	Conditionally Acceptable
C. SE corner 4th St/ Cabrillo Park Dr.	120 feet	Traffic on 4th St.	68.3	66.3	Health Care Facility – 1900 E. Fourth St.	Conditionally Acceptable
D. 618 Sherry Ln.	370 feet	Traffic on Sherry Ln.	56.7	54.7	Residence – 618 Sherry Ln.	Normally Acceptable

[a] Estimated based on short-term (15-minute) noise measurement using Federal Transit Administration procedures from 2018 Transit Noise and Vibration Impact Assessment Manual, Appendix E, Option 4.
[b] Pursuant to California Office of Planning and Research "General Plan Guidelines, Noise Element Guidelines, 2017. When noise measurements apply to two or more land use categories, the more noise-sensitive land use category is used. See Table 2 above for definition of compatibility designations.

8 World Health Organization, https://www.who.int/docstore/peh/noise/Comnoise-2.pdf.

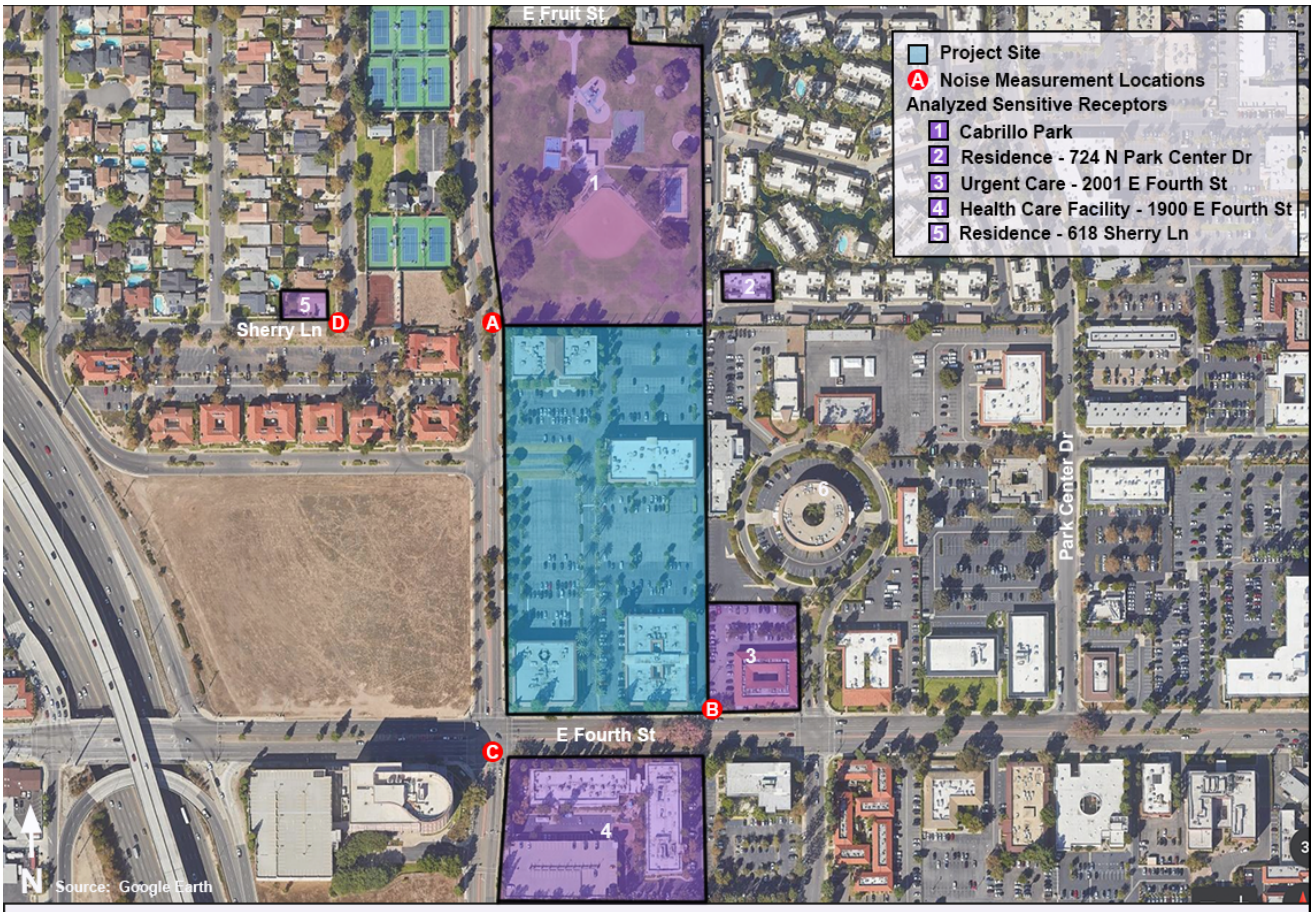
9 City of Santa. Ana GIS Open Data portal, accessed July 26, 2023. 2015 traffic counts adjusted by a one percent adjustment to reflect ambient traffic growth. https://gis-santa-ana.opendata.arcgis.com/datasets/927f0b948fcf400eaf1c13d35239a7b1/explore?location=33.749256%2C-117.838786%2C17.62

10 Linscott Law & Greenspan, Memorandum: Vehicle Miles Traveled Assessment for the Proposed Cabrillo Town Center Mixed-Use Project; June 27, 2023.

11 Noise measurements were taken after 2:42 P.M. using a Quest Technologies Sound Examiner SE-400 Meter. The meter complies with the American National Standards Institute (ANSI) and International Electrotechnical Commission for environmental measurement instrumentation and was equipped with a calibrated omni-directional microphone, and set five feet above the ground. In the absence of a protocol for establishing ambient noise levels for construction analyses, 15-minute measurements were taken during hours when construction is likely to occur. As the major source of ambient noise in the area (traffic) was stable, 15-minute samples were deemed representative of ambient noise levels.

[C] Measurements were deemed applicable to the residence at 724 N. Parkcenter Drive given its similar immediate proximity to Cabrillo Park.

Source: DKA Planning, 2023



Project Impacts

Methodology

On-Site Construction Activities. Construction noise levels at off-site sensitive receptors were modeled employing the ISO 9613-2 sound attenuation methodologies using the SoundPLAN Essential model (version 5.1). This software package considers reference equipment noise levels, noise management techniques, distance to receptors, and any attenuating features to predict noise levels from sources like construction equipment. Construction noise sources were modeled as area sources to reflect the mobile nature of construction equipment. These vehicles would not operate directly where the Project's property line abuts adjacent structures, as they would retain

some setback to preserve maneuverability. This equipment would also occasionally operate at reduced power and intensity to maintain precision at these locations.

Off-Site Construction Noise Activities. The Project's off-site construction noise impact from haul trucks, vendor deliveries, worker commutes, and other vehicles accessing the Project Site was analyzed by considering the Project's anticipated vehicle trip generation with existing traffic and roadway noise levels along local roadways, particularly those likely to be part of any haul route. Because it takes a doubling of traffic volumes on a roadway to generate the increased sound energy it takes to elevate ambient noise levels by 3 dBA,[12] the analysis focused on whether truck and auto traffic would double traffic volumes on key roadways to be used for hauling soils to and/or from the Project Site during construction activities. Because haul trucks generate more noise than traditional passenger vehicles, a 19.1 passenger car equivalency (PCE) was used to convert haul truck trips to a reference level conversion to an equivalent number of passenger vehicles.[13] For vendor deliveries, a 9.55 PCE was used to reflect a blend of medium- and heavy-duty vehicles. It should be noted that because an approved haul route may not be approved as of the preparation of this analysis, assumptions were made about logical routes that would minimize haul truck traffic on local streets in favor of major arterials that can access regional-serving freeways.

On-Site Operational Noise Activities. The Project's potential to result in significant noise impacts from on-site operational noise sources was evaluated by identifying sources of on-site noise sources and considering the impact that they could produce given the nature of the source (i.e., loudness and whether noise would be produced during daytime or more-sensitive nighttime hours), distances to nearby sensitive receptors, ambient noise levels near the Project Site, the presence of similar noise sources in the vicinity, and maximum noise levels permitted by the SAMC.

Off-Site Operational Noise Activities. The Project's off-site noise impact from Project-related traffic was evaluated based its potential to increase traffic volumes on local roadways that serve the Project site. Because it takes a doubling of traffic volumes on a roadway to generate the increased sound energy it takes to elevate ambient noise levels by 3 dBA, the analysis focused on whether auto trips generated by the Proposed Project would double traffic volumes on key roadways that access the Project Site.

Thresholds of Significance

Construction Noise Thresholds. For the purposes of this anlaysis, the on-site construction noise impact would be considered significant if:

- Construction activities would exceed existing ambient exterior noise levels by 5 dBA (hourly L_{eq}) or more at a noise-sensitive use.

[12] Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

[13] Caltrans, Technical Noise Supplement Table 3-3, 2013.

Operational Noise Thresholds. In addition to applicable City standards and guidelines that would regulate or otherwise moderate the Project's operational noise impacts, the following criteria are adopted to assess the impact of the Project's operational noise sources:

- Project operations would elevate noise levels by 5 dBA CNEL or greater if the noise increase would meet or exceed 65 dBA CNEL noise level standard at sensitive land uses including residential uses; or
- Project operations would elevate noise levels by 5 dBA CNEL or greater.

These thresholds of significance are consistent with those in the Metro East Mixed Use Overlay Zone EIR.[14]

Analysis of Project Impacts

a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact.

Construction

On-Site Construction Activities

Construction would generate noise during the construction process that would span 36 months of demolition, site preparation, grading, utilities trenching, building construction, paving, and application of architectural coatings, as shown in Table 6. During all construction phases, noise-generating activities could occur at the Project Site between 7:00 A.M. and 8:00 P.M. Monday through Saturday. As such, construction activities would comply with SAMC Section 18-314(e), which sets permissible hours of activity.

14 City of Santa Ana Metro East mixed Use Overlay Zone EIR, Volume I. Section 4.9.3, page 4.9-14.

Table 6
Construction Schedule Assumptions

Phase	Duration	Notes
Demolition	Months 1-2	Removal of 6,000 tons of demolition debris in 10-cubic yard capacity trucks, hauled up to 20 miles to the Olinda Alpha Landfill.
Site Preparation	Month 3 (one week)	Grubbing and removal of trees, plants, landscaping, weeds over a 64,000 square-foot area
Grading	Months 3-5	Approximately 400 cubic yards of soil hauled 20 miles to Olinda Alpha Landfill in 14-cubic yard capacity trucks.
Trenching	Months 6-8	Trenching for utilities, including gas, water, electricity, and telecommunications.
Paving	Months 9-11	Flatwork, including paving of driveways and walkways
Building Construction	Months 12-36	Footings and foundation work (e.g., pouring concrete pads), framing, welding; installing mechanical, electrical, and plumbing. Floor assembly, cabinetry and carpentry, elevator installations, low voltage systems, trash management.
Architectural Coatings	Months 33-36	Application of interior and exterior coatings and sealants.
Source: DKA Planning, 2023.		

Noise levels would generally peak during the demolition and grading phases, when diesel-fueled heavy-duty equipment like excavators and dozers are used to move large amounts of debris and dirt, respectively. This equipment is mobile in nature and does not always operate at in a steady-state mode full load, but rather powers up and down depending on the duty cycle needed to conduct work. As such, equipment is occasionally idle during which time no noise is generated.

During other phases of construction (e.g., trenching, building construction, paving, architectural coatings), noise impacts are generally lesser because they are less reliant on using heavy equipment with internal combustion engines. Smaller equipment such as forklifts, generators, and various powered hand tools and pneumatic equipment would often be utilized. Off-site secondary noises would be generated by construction worker vehicles, vendor deliveries, and haul trucks. Figure 2 illustrates noise levels from the construction site during the demolition and grading phases.

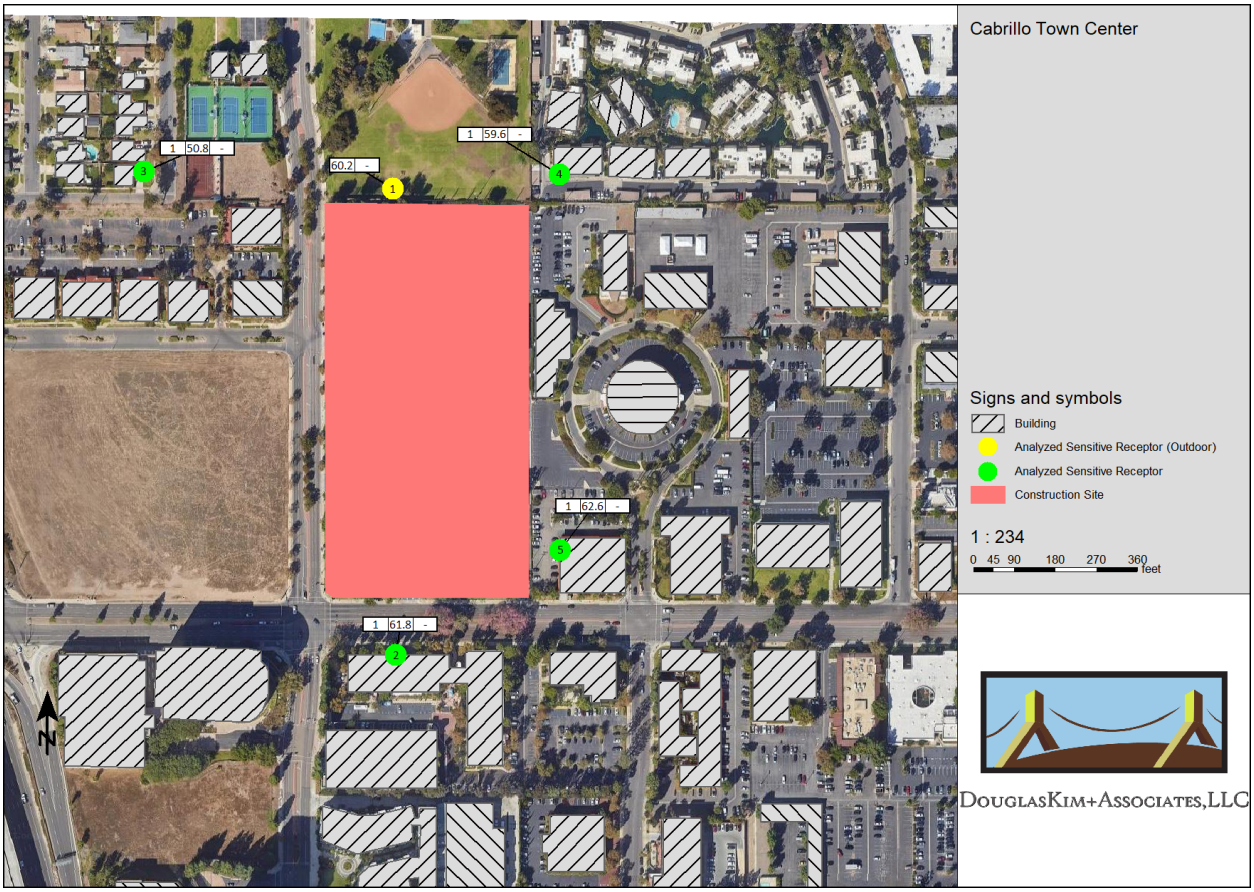


Figure 2
Construction Noise Impacts at Key Sensitive Receptors

The applicable City threshold of significance for the Project's construction noise impacts is an increase of 5 dBA over existing ambient noise levels. As shown in Table 7, when considering ambient noise levels, the use of multiple pieces of powered equipment simultaneously would increase ambient noise negligibly.[15] These construction noise levels would not exceed the City's significance threshold of 5 dBA. Therefore, the Project's on-site construction noise impact would be less than significant.

[15] This assumes the mix of construction equipment assumed in the air quality analysis (see CalEEMod 2022.1.1.14 model runs in Air Quality Technical Appendix). The best practices measures required by mitigation measures MM-OZ 4.9-1 through MM-OZ 4.9-4 of the Metro Overlay Zone EIR were assumed.

Table 7
Construction Noise Impacts at Off-Site Sensitive Receptors

Receptor	Distance from Project Site	Maximum Construction Noise Level (dBA L_{eq})	Existing Ambient Noise Level (dBA L_{eq})	New Ambient Noise Level (dBA L_{eq})	Increase (dBA L_{eq})	Potentially Significant?
1. Cabrillo Park	Five feet	60.2	59.5	62.9	3.4	No
2. Residence – 724 N. Parkcenter Dr.	80 feet	59.6	59.5	62.6	3.1	No
3. Urgent Care – 2001 E. 4th St.	60 feet	62.6	65.8	67.5	1.7	No
4. Health Care Facility – 1900 E. 4th St.	120 feet	61.8	68.3	69.2	0.9	No
5. Residence – 618 Sherry Ln.	400 feet	50.8	56.7	57.7	1.0	No

Source: DKA Planning, 2023.

Off-Site Construction Activities

The Project would also generate noise at off-site locations from haul trucks moving debris and soil from the Project Site during demolition and grading activities, respectively; vendor trips; and worker commute trips. These activities would generate up to an estimated 838 peak hourly PCE vehicle trips, as summarized in Table 8, during the building construction phase.[16] This would represent about 35.2 percent of traffic volumes on Fourth Street, which carries about 2,382 vehicles at Cabrillo Park Drive in the morning peak hour of traffic.[17] Because workers and vendors will likely use more than one route to travel to and from the Project Site, this conservative assessment of traffic volumes overstates the likely traffic volumes from construction activities at this intersection.

Fourth Street would serve as part of the haul route for any soil exported from the Project Site given its direct access to the Santa Ana Freeway. Because the Project's construction-related trips would not cause a doubling in traffic volumes (i.e., 100 percent increase) on Fourth Street, the Project's construction-related traffic would not increase existing noise levels by 3 dBA or more, which is less than the 5 dBA threshold of significance for off-site construction noise activities. Therefore, the Project's noise impacts from construction-related traffic would be less than significant.

16 This is a conservative, worst-case scenario, as it assumes all workers travel to the worksite at the same time and that vendor and haul trips are made in the same early hour, using the same route as haul trucks to travel to and from the Project Site.

17 City of Santa. Ana GIS Open Data portal, accessed July 26, 2023. 2015 traffic counts adjusted by a one percent adjustment to reflect ambient traffic growth. https://gis-santa-ana.opendata.arcgis.com/datasets/927f0b948fcf400eaf1c13d35239a7b1/explore?location=33.749256%2C-117.838786%2C17.62. Assumes ten percent of daily travel is in the A.M. peak hour.

Table 8
Construction Vehicle Trips (Maximum Hourly)

Construction Phase	Worker Trips [a]	Vendor Trips	Haul Trips	Total Trips	Percent of Peak A.M. Hour Trips on 4th St.[f]
Demolition	15	0	149[b]	164	6.9
Site Preparation	18	0	129[c]	147	6.2
Grading	20	0	3[d]	23	0.9
Trenching	3	0	0	3	0.1
Building Construction	521	317[e]	0	838	35.2
Paving	15	0	0	15	0.6
Architectural Coating	104	0	0	104	4.4

[a] Assumes all worker trips occur in the peak hour of construction activity.
[b] The project would generate 2,400 haul trips over a 44-day period with seven-hour work days. Because haul trucks emit more noise than passenger vehicles, a 19.1 passenger car equivalency (PCE) was used to convert haul truck trips to a passenger car equivalent.
[c] This would include 237 haul trips over a five-day period. Assumes a 19.1 PCE.
[d] The project would generate 57 haul trips over a 61-day period with seven-hour work days. Assumes a 19.1 PCE.
[e] This phase would generate about 116 vendor truck trips daily over a seven-hour work day. Assumes a blend of vehicle types and a 9.55 PCE.
[f] Percent of existing traffic volumes on 4th Street at Cabrillo Park Drive.

Source: DKA Planning, 2023

Operation

On-Site Operational Noise

During long-term operations, the Project would produce noise from on-site sources such as mechanical equipment associated with the structures themselves or from activity in outdoor spaces.

Mechanical Equipment

The Project would operate mechanical equipment to control climate for the residences and commercial spaces that would generate noise that would contribute to ambient noise levels. For the retail, shopkeeper, and office spaces and apartments, HVAC equipment in the form of rooftop units suitable for heating and cooling large volumes of a building would be located on rooftops of the five-story development, approximately 58’2” above grade. This could include heat pumps for each commercial space that generate noise during both heating and cooling sessions while air conditioners operate during cooling cycles. Noise from heat and air conditioners is a function of the model, airflow, and pressure flow generated by fans and compressors. Noise would come from sound sources such as compressors, condenser fans, supply fans, return fans, and exhaust

fans that could generate a sound pressure level of up to 81.9 dBA at one foot.[18] In addition, the rooftop could support HVAC equipment for multi-family residences, with each unit distributed across the roof as needed to serve each residence. While each unit would have a sound power of about 76 dBA, the location on the roof would help shield the noise path to nearby sensitive receptors. As blocking the line of sight to a noise source generally results in a 5 decibel reduction, each rooftop unit would generate about 50.3 dBA at ten feet of distance.[19]

Noise impacts from rooftop mechanical equipment on nearby sensitive receptors would be negligible for several reasons. First, most modern heat pumps are relatively quiet, with sound ratings of up to 60 decibels, equivalent to normal human conversation.[20] Second, there would be no line-of-sight from these rooftop units to the sensitive receptors. Because the residences, medical facilities, and urgent facility near the Project Site are one- to three-stories in height, there would be no sound path from the HVAC equipment to receptors that would be 20 to 45 feet lower than the roof of the Proposed Project. Third, the presence of the Project's roof edge creates an effective noise barrier that further reduces noise levels from rooftop HVAC units by 8 dBA or more.[21] A parapet would further shield sensitive receptors near the Project Site. These design elements would be helpful in managing noise, as equipment often operates continuously throughout the day and occasionally during the day, evenings, and weekends. As a result, noise from HVAC units would negligibly elevate ambient noise levels, far less than the 5 dBA CNEL threshold of significance for operational impacts.

For the townhomes, outdoor mechanical equipment for heating and cooling for each residence would likely be located on the ground level of each unit.[22] This could include a ground-mounted heat pump that would generate noise during both heating and cooling sessions while air conditioners operate during cooling cycles.[23] This equipment would include a number of sound sources, including compressors, condenser fans, supply fans, return fans, and exhaust fans. These units could be rated to generate a sound power between 51 and 76 dBA. Any off-site sensitive receptors would not experience elevated noise levels without a direct line-of-sight to these units. Given their location near each residence, any sound path from these units would likely be attenuated by the presence of the townhomes and structures in the Project, as well as the distance to off-site receptors (i.e., Cabrillo Park to the north, Lake Dianne Apartments to the northeast). As a result, noise from HVAC units would negligibly elevate ambient noise levels, far

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18 City of Pomona, Pomona Ranch Plaza WalMart Expansion Project, Table 4.4-5; August 2014. Source was cluster of mechanical rooftop condensers including two Krack MXE-04 four-fan units and one MXE-02 two-fan unit. Reference noise level based on 30 minutes per hour of activity.

19 Washington State Department of Transportation, Noise Walls and Barriers. https://wsdot.wa.gov/construction-planning/protecting-environment/noise-walls-barriers. Assumes the Carrier's rated sound power of 76 dB.

20 Clean British Columbia. Heat Pumps and Noise. https://vancouver.ca/files/cov/heat-pump-noise-guide.pdf

21 Ibid.

22 HVAC equipment located on the roof of townhomes 37'1" above grade would reduce noise exposure for sensitive receptors, as the line of sight would be blocked by the roof parapets and/or roof edge.

23 Given the Project Site's location in Climate Zone 9, Title 24 would also allow a more conventional gas heating system that uses an internal furnace paired with an external air conditioner that would be ground-mounted.

less than the 5 dBA CNEL threshold of significance for operational impacts. Table 9 summarizes the incremental contribution of mechanical equipment to the Project's operational noise levels.

Pad-mounted oil transformers that lower high voltage to standard household voltage used to power electronics, appliances and lighting would be located on the ground level in an unobstructed location. These transformers are housed in a steel cabinet and generally do not involve pumps, though fans may be needed on some units. Switchgear responsible for distributing power through the development could be located externally, though no mechanical processes that generate noise would be necessary.

Otherwise, all other mechanical equipment would be fully enclosed within the structure. This can include mechanical, electrical, and plumbing rooms, a utility fan room, as well as elevator equipment (including hydraulic pump, switches, and controllers) in the subterranean basement. Pumps and other equipment for the pools and spas for the apartment complex and townhome areas would be housed in enclosed equipment that would substantially reduce exposure of off-site receptors to operational noise. Further, the pool and spas for the apartment complex would be located in interior courtyards that would be fully surrounded by the multi-story development, ensuring that any noise is substantially shielded from off-site sensitive receptors. Finally, the ground-level pool and spas for the townhome complex would be located in an interior courtyard and would be fully surrounded by the three-story townhomes, ensuring that any noise is substantially shielded from off-site sensitive receptors.

All these activities would generally occur within the envelope of the development, operational noise would be shielded from off-site noise-sensitive receptors.

Auto-Related Activities

The majority of vehicle-related noise impacts at the Project Site would come from vehicles entering and exiting the mixed-use development from Fourth Street and Cabrillo Park Drive. Vehicles would access the 58 townhomes at the northern portion of the Project Site from Cabrillo Park Drive via an extension of Parkcourt Place onto the Project Site, and would then use an internal driveway to access the garages.[24]

The parking structure at the southern portion of the Project Site serving the retail, office and the 449 apartments would be accessed via two driveways from Cabrillo Park Drive and Fourth Street.

As shown in Table 9, auto-related activities along Fourth Street, Cabrillo Park Drive, Parkcourt Place, and the internal townhome driveway would contribute marginally to noise from the Project Site and would elevate ambient noise levels by less than 0.1 dBA CNEL, well below the 5 dBA threshold of significance for operational sources of noise.

Parking noise would include tire friction as vehicles navigate to and from parking spaces, doors slamming, car alarms, and minor engine acceleration. Most of these sources are instantaneous

[24] Linscott Law & Greenspan, Memorandum: Vehicle Miles Traveled Assessment for the Proposed Cabrillo Town Center Mixed-Use Project; June 27, 2023.

(e.g., car alarm chirp, door slam) while others may last a few seconds. As these activities would be in private garages for the townhomes and in an enclosed parking garage structure for the apartments, retail, and commercial uses, parking noise would be reduced from current activities that occur in the open-air, surface parking lot. As such, the Project's parking garage activities would not have a significant impact on the surrounding noise environment.

Outdoor Uses

While most operations would be conducted inside the development, outdoor activities could generate noise that could impact local sensitive receptors. This would include human conversation, recreational activities, trash collection, landscape maintenance, and commercial loading. These are discussed below:

- Human conversation. While noise associated with everyday residential activities would largely occur internally within the development, there could include passive activities such as human conversation, socializing, and passive recreation in outdoor spaces, which could include:

    - Central courtyards (Apartment Complex). Two internal courtyards (Courtyards 'A" and 'B') with spas and a swimming pool would be located within the apartment development. These would be a shared use space for socializing or passive recreation (e.g., reading, walking), with intermittent use largely during day or evening hours. No powered speakers are proposed that would amplify either speech or music. Both courtyards would be completely surrounded by the multi-story residences and parking garage that would shield off-site sensitive receptors from any line-of-sight to these outdoor areas.

    - External courtyards (Apartment Complex). Two courtyards branded as "The Backyards" (Courtyards 'C' and 'D') along the eastern portion of the apartment complex would be located near Fourth Street. These would be shared use spaces for socializing or passive recreation (e.g., reading, dining), with intermittent use largely during day or evening hours. No powered speakers are proposed that would amplify either speech or music.

    - Central courtyard (Townhome Complex). An internal courtyard with a spa and a swimming pool would be located within the apartment development. This would be a shared use space for socializing or passive recreation (e.g., reading, dining), with intermittent use largely during day or evening hours. No powered speakers are proposed that would amplify either speech or music. The courtyard would be flanked by the three-story residences and the apartment development to the south that would shield off-site sensitive receptors from any line-of-sight to these outdoor areas.

    - Private balconies and ground-level patios on all elevations (Apartment Complex and Townhome Complex). These would be private spaces for residents used for socializing or passive recreation (e.g., reading), with intermittent use largely during day or evening hours. No powered speakers are proposed that would amplify either speech or music.

- Roof terrace (Apartment Complex). This would be a shared use space on top of the central parking garage for socializing or passive recreation (e.g., reading, dining), with intermittent use largely during day or evening hours. No powered speakers are proposed that would amplify either speech or music. There would be no direct line-of-sight to adjacent sensitive receptors, which would be 20 to 45 feet lower in height than the roof deck. Blocking the line of sight to a noise source generally results in a 5 decibel reduction.[25] The presence of the roof edge, parapet, and the 175-foot setback of decks from the front edge of the parking garage would shield any rooftop noise from the sensitive receptors near the Project Site.

- Town Center Plaza. An open air plaza at the southwestern corner of the Project Site, away from sensitive uses, would provide a shared use space for socializing or passive recreation (e.g., reading, dining), with intermittent use largely during day or evening hours. No powered speakers are proposed that would amplify either speech or music.

The primary use of these spaces would be for human conversation, which would produce negligible noise impacts, based on the Lombard effect. This phenomenon recognizes that voice noise levels in face-to-face conversations generally increase proportionally to background ambient noise levels. Specifically, vocal intensity increases about 0.38 dB for every 1.0 dB increase in noise levels above 55 dB.[26] For example, the sound of a human voice at 60 dB would produce a noise level of 39 dB at ten feet, which would not elevate ambient noise levels at any of the analyzed sensitive receptors by more than 0.2 dBA L_{eq}. Moreover, noise levels from human speech would attenuate rapidly with greater distance, resulting in a 33 dB noise level at twenty feet, and 27 dB at 40 feet. Further, the infrequent nature of outdoor use of these spaces and any acoustic noise (e.g., speech) makes it impossible to individually or collectively elevate 24-hour noise levels by 5 dBA CNEL or more at any nearby noise-sensitive receptors. Table 9 summarizes the incremental contribution of these outdoor spaces to the Project's operational noise levels.

- Recreational Activities. The Project would include a swimming pool in the central courtyard for the townhouses and in Courtyard 'A' for the apartment complex. These are outdoor facilities expected to be used primarily during Spring and Summer months during the day and evening hours. Both facilities are surrounded by the multi-story development and would be shielded from any line-of-sight to off-site sensitive receptors. Table 9 summarizes the incremental contribution of these outdoor spaces to the Project's operational noise levels.
- Dog Park. An outdoor facility for dogs would be located along the eastern property line facing the parking lot of the adjacent commercial property. Table 9 summarizes the incremental contribution of the dog park to the Project's operational noise levels.
- Trash collection. On-site trash and recyclable materials for the townhouse residents would be managed refuse trucks that use the internal driveway to collect waste from the rear of each

[25] Washington State Department of Transportation, Noise Walls and Barriers. https://wsdot.wa.gov/construction-planning/protecting-environment/noise-walls-barriers.

[26] Acoustical Society of America, Volume 134; Evidence that the Lombard effect is frequency-specific in humans, Stowe and Golob, July 2013.

townhouse. On-site was collection from the apartment and commercial complex would be done on the ground level of the parking garage and moved to the Trash Staging area at the southeast corner of the development. Dumpsters would be moved to the street manually or with container handler trucks that use hydraulic-powered lifts that use beeping alerts during operation. Haul trucks would access solid waste from either the Paseo (internal circulation road along the eastern portion of the Project Site), or along Fourth Street or Cabrillo Park Drive, where solid waste activities would include use of trash compactors and hydraulics associated with the refuse trucks themselves. Noise levels of approximately 71 dBA L_{eq} and 66 dBA L_{eq} could be generated by collection trucks and trash compactors, respectively, at 50 feet of distance.[27] As these activities would be comparable to trash collection for the existing office park, net impacts would be negligible and be considered less than significant.

- Landscape maintenance. Noise from gas-powered leaf blowers, lawnmowers, and other landscape equipment can generated substantial bursts of noise during regular maintenance. For example, two gas powered leaf blowers with two-stroke engines and a hose vacuum can generate an average of 85.5 dBA L_{eq} and cause nuisance or potential noise impacts for nearby receptors.[28] The landscape plan focuses on a modest palette of accent trees and raised planters on the ground level and roof terrace that will minimize the need for powered landscaping equipment, as some of this can be managed by hand. As these activities would be comparable to landscape maintenance for the existing office park, net impacts would be negligible and be considered less than significant.
- Commercial loading. On-site loading and unloading activities would be managed either on the ground-level of the central parking garage or in temporary unloading spaces at each of the driveways accessing the central parking garage. As these activities would be comparable to commercial loading activities for the existing office park, net impacts would be negligible and be considered less than significant.

As discussed above, the Project would not result in an exposure of persons to or a generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The Project would also not increase surrounding noise levels by more than 5 dBA CNEL, the minimum threshold of significance at the sensitive receptors near the Project Site. As a result, the Project's on-site operational noise impacts would be considered less than significant.

These intermittent sources of noise (i.e., traffic, mechanical equipment, use of outdoor spaces) could would generate marginal levels of noise during daytime, evening, and nighttime hours. Because noise impacts are logarithmic, it takes more than the intermittent low noise produced from the Project's operational sources to elevate existing noise levels. As illustrated in Table 9, these noise sources would not elevate daily noise levels. The Project would therefore not increase surrounding noise levels by more than 5 dBA CNEL, the minimum threshold of significance bat the sensitive receptors near the Project Site. As such, the Project would not result in an exposure of persons to or a generation of noise levels in excess of standards established in the local general

[27] RK Engineering Group, Inc. Wal-Mart/Sam's Club reference noise level, 2003.

[28] Erica Walker et al, Harvard School of Public Health; Characteristics of Lawn and Garden Equipment Sound; 2017. These equipment generated a range of 74.0-88.5 dBA Leq at 50 feet.

plan or noise ordinance, or applicable standards of other agencies. The Project's on-site operational noise impacts would be considered less than significant.

Table 9
Composite Operations Noise Impacts

Receptor	Existing Ambient Noise Level (dBA CNEL)	Calculated Project-Related Noise Sources (dBA CNEL)					Project Composite Noise Levels (dBA CNEL)	Ambient + Project Noise Levels (dBA CNEL)
		Apartment Courtyards	Townhome Courtyard	HVAC Equipment	Roof Terrace	Vehicle Travel		
Cabrillo Park	57.5	10.7	11.6	22.6	12.5	24.9	27.3	57.5
Residence – 724 N. Parkcenter Dr.	57.5	12.9	8.2	33.1	26.0	17.2	34.0	57.5
Urgent Care – 2001 E. 4th St.	63.8	23.8	0.3	33.1	20.3	26.8	34.6	63.8
Health Care Facility – 1900 E. 4th St.	66.3	13.5	-2.6	38.1	19.2	36.7	40.5	66.3
Residences – 618 Sherry Ln.	54.7	12.4	4.7	33.6	24.3	20.6	34.3	54.7
Source: DKA Planning, 2023.								

Off-Site Operational Noise

The majority of the Project's operational noise impacts would be off-site from vehicles traveling to and from the development. The Project could add up to 875 net vehicle trips to the local roadway network on a peak weekday at the start of operations. However, given the shift from commercial office uses to a mixed-use residential and commercial development, the Project would result in a general improvement to on-street traffic during peak hours. Specifically, the Project would reduce 50 vehicle trips from local roadways during the A.M. peak hour. During the peak P.M. hour, the Project would generate the same number of vehicle trips as the existing development, resulting in no net increase in vehicle trips in the P.M. peak hour of traffic.[29] This would represent a less than significant impact on local operational noise from project traffic.[30]

Because it takes a doubling of traffic volumes (i.e., 100 percent) to increase ambient noise levels by just 3 dBA L_{eq}, the Project, which results in no increase in existing vehicle trips, would not increase ambient noise levels 5 dBA or more. Twenty-four hour CNEL impacts would similarly be minimal, far below criterion for significant operational noise impacts. As such, this impact would be considered less than significant.

Consistency with City General Plan Noise Element

While the City's Noise Element focuses on a number of measures for Citywide implementation by municipal government, there are some objectives, policies, and programs that are applicable to development projects. Table 10 summarizes the Proposed Project's consistency with these.

29 Linscott Law & Greenspan, Memorandum: Vehicle Miles Traveled Assessment for the Proposed Cabrillo Town Center Mixed-Use Project; June 27, 2023.

30 Ibid.

Table 10
Project Consistency with City of Santa Ana General Plan Noise Element

Objective/Policy/Program	Project Consistency
Policy N-1.1 (Noise Standards): Utilize established Citywide Noise Standards and guidelines to inform land use decisions and guide noise management strategies.	**Consistent.** The Project's compliance and consistency with Citywide Noise Standards will be evaluated in this CEQA analysis and will help inform the evaluation of entitlement requests.
Policy N-1.2 (Sound Design): Encourage functional and attractive designs to mitigate excessive noise levels.	**Consistent.** The site plan for the Proposed Project locates noise-sensitive residences away from traffic on 4th Street and the Santa Ana Freeway by clustering them to the northern and eastern portions of the Project Site. This increases the buffer between residences and traffic noise while also allowing the proposed commercial uses along 4th Street and Cabrillo Park Drive to help shield noise from residences.
Policy N-1.4 (Sensitive Uses): Protect noise sensitive land uses from excessive, unsafe, or otherwise disruptive noise levels.	**Consistent.** The site plan for the Proposed Project locates noise-sensitive residences away from traffic on 4th Street and the Santa Ana Freeway by clustering them to the northern and eastern portions of the Project Site. This increases the buffer between residences and traffic noise while also allowing the proposed commercial uses along 4th Street and Cabrillo Park Drive to help shield noise from residences.
Policy N-2.1 (Transportation Related Noise): Reduce noise generated from traffic, railroads, transit, and airports to the extent feasible.	**Consistent.** While this measure calls on the City to reduce noise generation and exposure from traffic and other transportation sources, the Project's sign design helps reduce exposure to transportation-related noise by locating noise-sensitive residences away from traffic on 4th Street and the Santa Ana Freeway by clustering them to the northern and eastern portions of the Project Site. This increases the buffer between residences and traffic noise while also allowing the proposed commercial uses along 4th Street and Cabrillo Park Drive to help shield noise from residences.
Policy N-2.2 (Stationary Related Noise): Minimize noise impacts from commercial and industrial facilities adjacent to residential uses or zones where residential uses are permitted.	**Consistent.** The Project would eliminate noise impacts from existing commercial uses that are adjacent to residential neighborhoods to the northeast.
Policy N-2.3 (Temporary and/or Nuisance Noise): Minimize the effects of intermittent, short-term, or other nuisance noise sources.	**Consistent.** The Project's construction noise analysis in this CEQA document will help minimize short-term impacts and ensure that they are not considered significant.
Policy N-3.1 (Residential Development): Residential development within the John Wayne Airport (JWA) 65 dB(A) CNEL Noise Contour or greater is not supported.	**Consistent.** The Project Site is nearly three miles northwest of the 65 dBA CNEL Noise Contour.

Table 10
Project Consistency with City of Santa Ana General Plan Noise Element

Objective/Policy/Program	Project Consistency
Policy N-3.2 (Flight Paths): Advocate that future flight path selection be directed away from existing noise sensitive land uses.	**Consistent.** While this Policy calls on the City and other stakeholders to work with the County of Orange to direct future flight path selection away from. Existing noise sensitive land uses, the Project Site is nearly three miles northwest of the 65 dBA CNEL Noise Contour and 1.3 miles northwest of the 60 dBA CNEL Noise Contour.
Policy N-3.3 (Residential Mitigation): Require all residential land uses in 60 dB(A) CNEL or 65 dB(A) CNEL Noise Contours to be sufficiently mitigated so as not to exceed an interior standard of 45 dB(A) CNEL.	**Consistent.** The Project Site is nearly three miles northwest of the 65 dBA CNEL Noise Contour. As such, no noise mitigation is needed to ensure interior noise levels of 45 dBA CNEL.
Source: DKA Planning, 2023.	

b. 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?

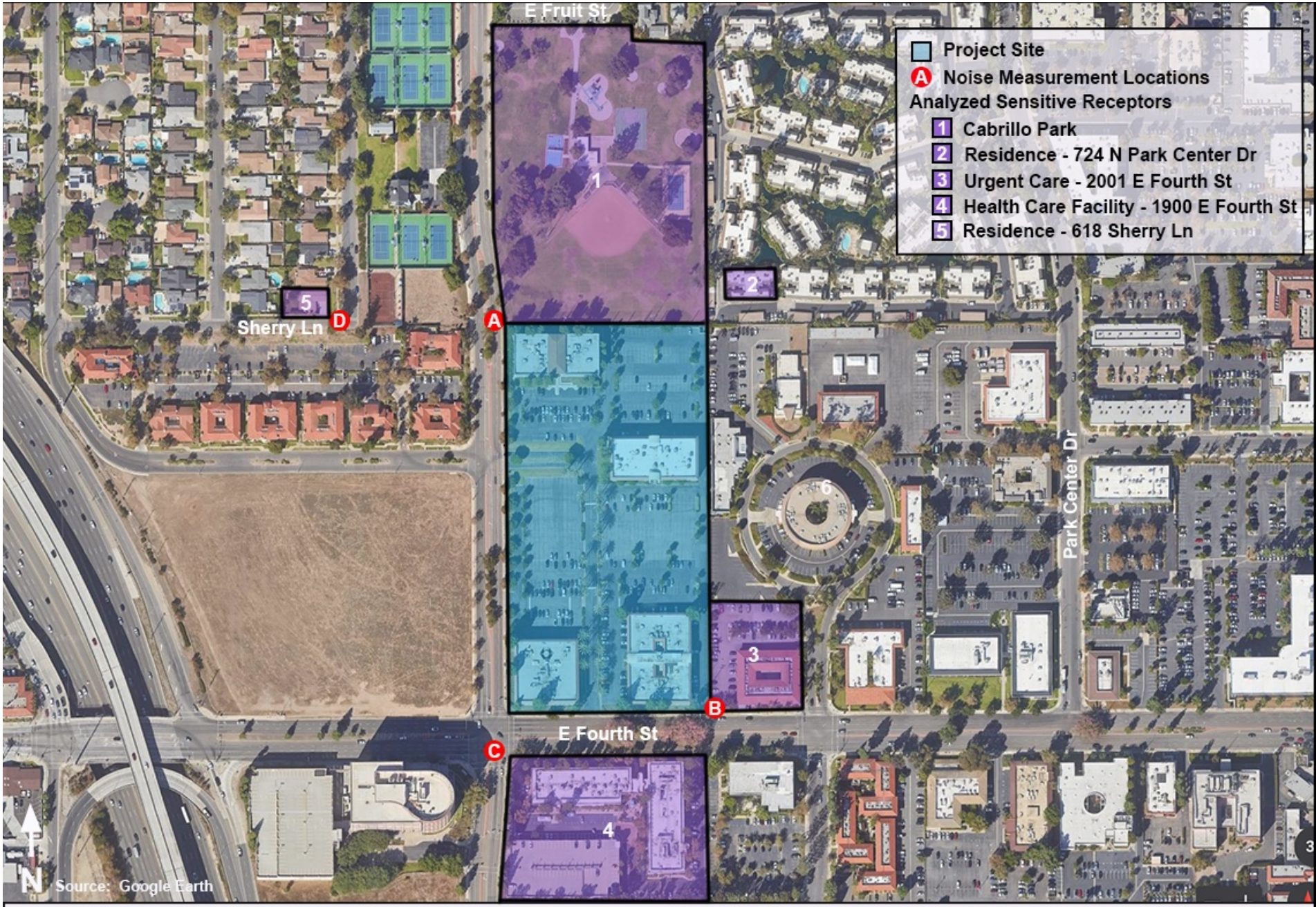
Less Than Significant Impact.

The Project Site is located about 4.6 miles north of John Wayne Airport. Because the Proposed Project would not be located within the vicinity of a private airstrip or within two miles of a public airport, the Project would not expose local workers or residents in the area to excessive noise levels. This would be considered a less than significant impact.

TECHNICAL APPENDIX

DouglasKim+Associates,LLC

AMBIENT NOISE MEASUREMENTS



DouglasKim+Associates,LLC

Figure 1
Noise Measurement Locations

Session Report

6/27/2023

Information Panel

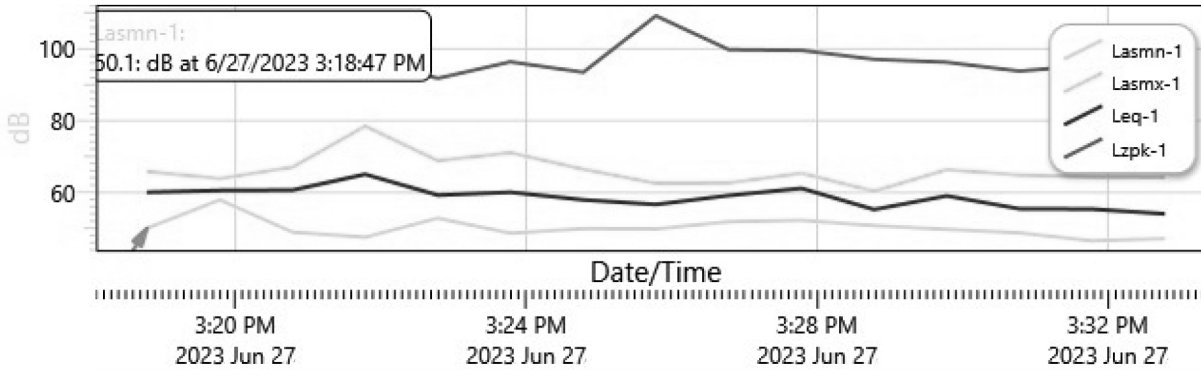
Name	Cabrillo Park
Comments	
Start Time	6/27/2023 3:17:47 PM
Stop Time	6/27/2023 3:33:18 PM
Run Time	00:15:31
Serial Number	SE40213991
Device Name	SE40213991
Model Type	Sound Examiner
Device Firmware Rev	R.11C
Company Name	
Description	
Location	
User Name	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	59.5 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Logged Data Chart

Cabrillo Park: Logged Data Chart



Logged Data Table

Date/Time	Lzpk-1	Lasmn-1	Lasmx-1	Leq-1
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3:19:47 PM	102.3	58	63.9	60.6
3:20:47 PM	93	49	67.1	60.7
3:21:47 PM	97.1	47.6	78.5	65.1
3:22:47 PM	91.8	52.9	68.9	59.3
3:23:47 PM	96.4	48.7	71.1	60.1
3:24:47 PM	93.5	50	66.5	58
3:25:47 PM	109.2	49.9	62.6	56.7
3:26:47 PM	99.8	51.9	62.7	59.2
3:27:47 PM	99.6	52.3	65.4	61.2
3:28:47 PM	97.1	50.8	60.4	55.3
3:29:47 PM	96.3	49.8	66.4	59.1
3:30:47 PM	93.8	48.8	64.9	55.5
3:31:47 PM	95.5	46.6	64.3	55.4
3:32:47 PM	94.1	47.2	64.2	54.1

Session Report

6/27/2023

Information Panel

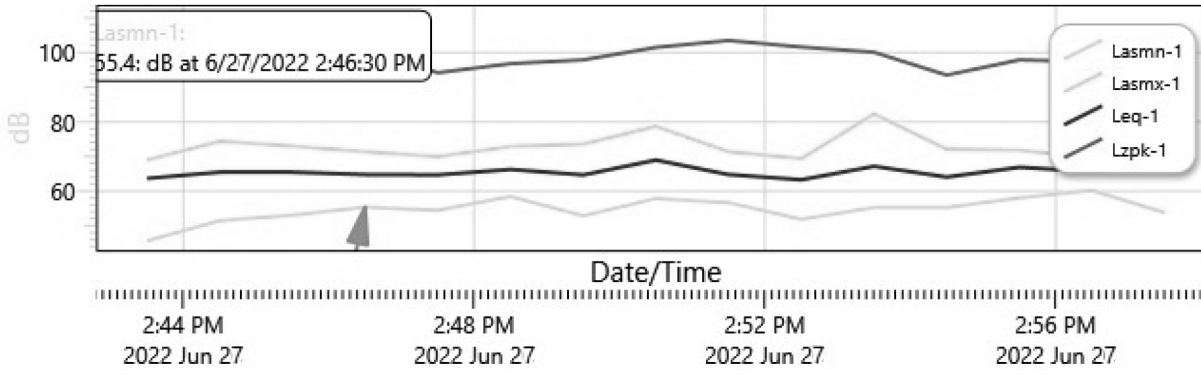
Name	Urgent Care
Comments	
Start Time	6/27/2023 2:42:30 PM
Stop Time	6/27/2023 2:57:41 PM
Run Time	00:15:11
Serial Number	SE40213991
Device Name	SE40213991
Model Type	Sound Examiner
Device Firmware Rev	R.11C
Company Name	
Description	
Location	
User Name	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	65.8 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Logged Data Chart

Urgent Care: Logged Data Chart



Logged Data Table

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2:45:30 PM	97.6	53.1	73	65.5
2:46:30 PM	100.3	55.4	71.4	64.8
2:47:30 PM	94.2	54.5	70	64.7
2:48:30 PM	96.8	58.5	72.9	66.3
2:49:30 PM	97.9	52.9	73.6	64.7
2:50:30 PM	101.5	57.9	78.7	69
2:51:30 PM	103.5	56.7	71.4	64.8
2:52:30 PM	101.6	51.9	69.4	63.3
2:53:30 PM	100.1	55.3	82.3	67.2
2:54:30 PM	93.5	55.3	72.1	64.1
2:55:30 PM	97.9	58.1	71.8	66.9
2:56:30 PM	97.4	60.2	69.7	65.7
2:57:30 PM	102.7	53.8	76	67.4

Session Report

6/27/2023

Information Panel

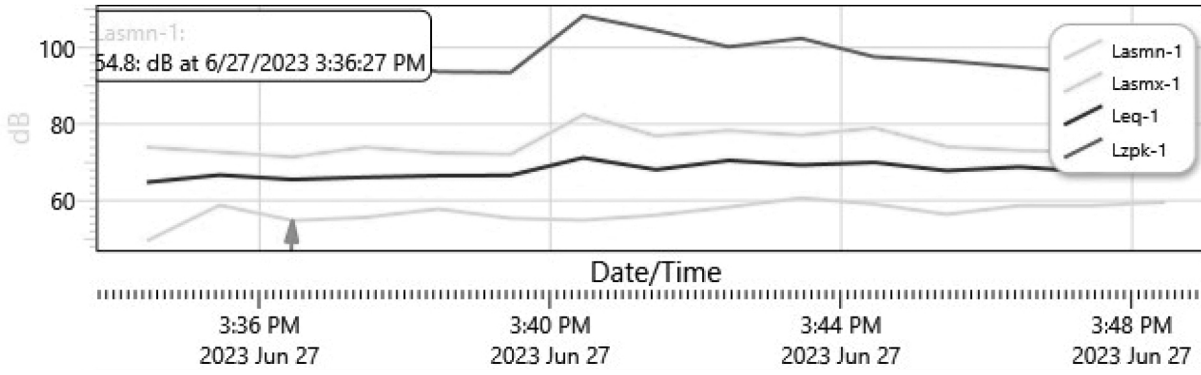
Name	SE Corner Cabrillo Park and 4th St.
Comments	
Start Time	6/27/2023 3:33:27 PM
Stop Time	6/27/2023 3:48:40 PM
Run Time	00:15:13
Serial Number	SE40213991
Device Name	SE40213991
Model Type	Sound Examiner
Device Firmware Rev	R.11C
Company Name	
Description	
Location	
User Name	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	68.3 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Logged Data Chart

SE Corner Cabrillo Park and 4th St.: Logged Data Chart



Logged Data Table

Date/Time	Lzpk-1	Lasmn-1	Lasmx-1	Leq-1
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3:36:27 PM	93.1	54.8	71.4	65.5
3:37:27 PM	97.6	55.6	74	66.1
3:38:27 PM	93.7	57.8	72.5	66.5
3:39:27 PM	93.5	55.4	72.1	66.6
3:40:27 PM	108.3	54.9	82.4	71.2
3:41:27 PM	104.5	56.2	76.9	68.1
3:42:27 PM	100.2	58.3	78.3	70.5
3:43:27 PM	102.4	60.7	77.1	69.3
3:44:27 PM	97.6	59.1	79	70
3:45:27 PM	96.5	56.4	74.1	67.8
3:46:27 PM	94.9	58.7	73.1	68.8
3:47:27 PM	93.1	58.7	72.7	67.5
3:48:27 PM	95.9	59.6	76.8	69.8

Session Report

6/27/2023

Information Panel

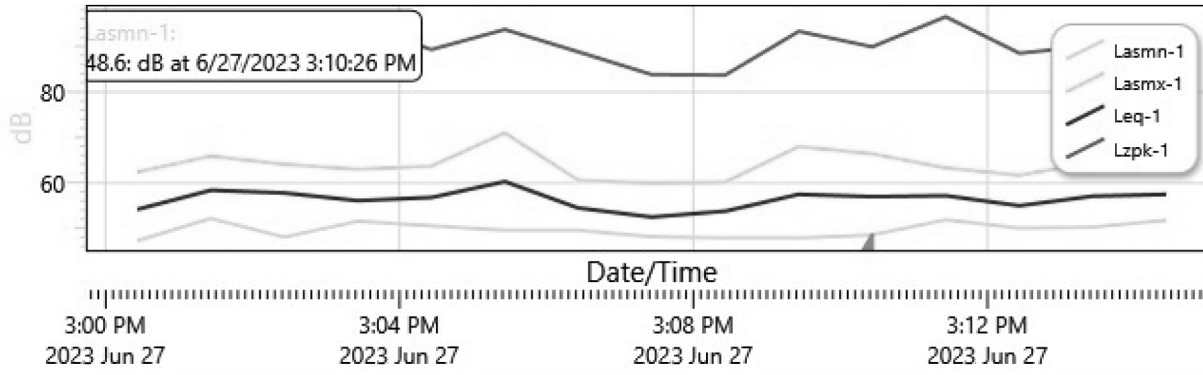
Name	Sherry Lane
Comments	
Start Time	6/27/2023 2:59:26 PM
Stop Time	6/27/2023 3:15:00 PM
Run Time	00:15:34
Serial Number	SE40213991
Device Name	SE40213991
Model Type	Sound Examiner
Device Firmware Rev	R.11C
Company Name	
Description	
Location	
User Name	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	56.7 dB			
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW	Bandwidth	1	OFF

Logged Data Chart

Sherry Lane: Logged Data Chart



Logged Data Table

Date/Time	Lzpk-1	Lasmn-1	Lasmx-1	Leq-1
6/27/2023 3:00:26 PM	96.7	47.3	62.4	54.2
3:01:26 PM	90.8	52.2	65.9	58.4
3:02:26 PM	90.1	48.1	64.1	57.8
3:03:26 PM	94.8	51.6	63	56.1
3:04:26 PM	89.3	50.6	63.7	56.8
3:05:26 PM	93.7	49.6	71	60.3
3:06:26 PM	88.8	49.6	60.6	54.5
3:07:26 PM	83.8	48.2	60	52.5
3:08:26 PM	83.7	47.9	60.2	53.8
3:09:26 PM	93.3	47.9	68	57.5
3:10:26 PM	89.9	48.6	66.4	57
3:11:26 PM	96.5	51.9	63.3	57.2
3:12:26 PM	88.5	50.1	61.7	55
3:13:26 PM	90.1	50.3	64.5	57.1
3:14:26 PM	88.7	51.8	66.6	57.5

DouglasKim+Associates,LLC

CONSTRUCTION NOISE CALCULATIONS

Noise emissions of industry sources

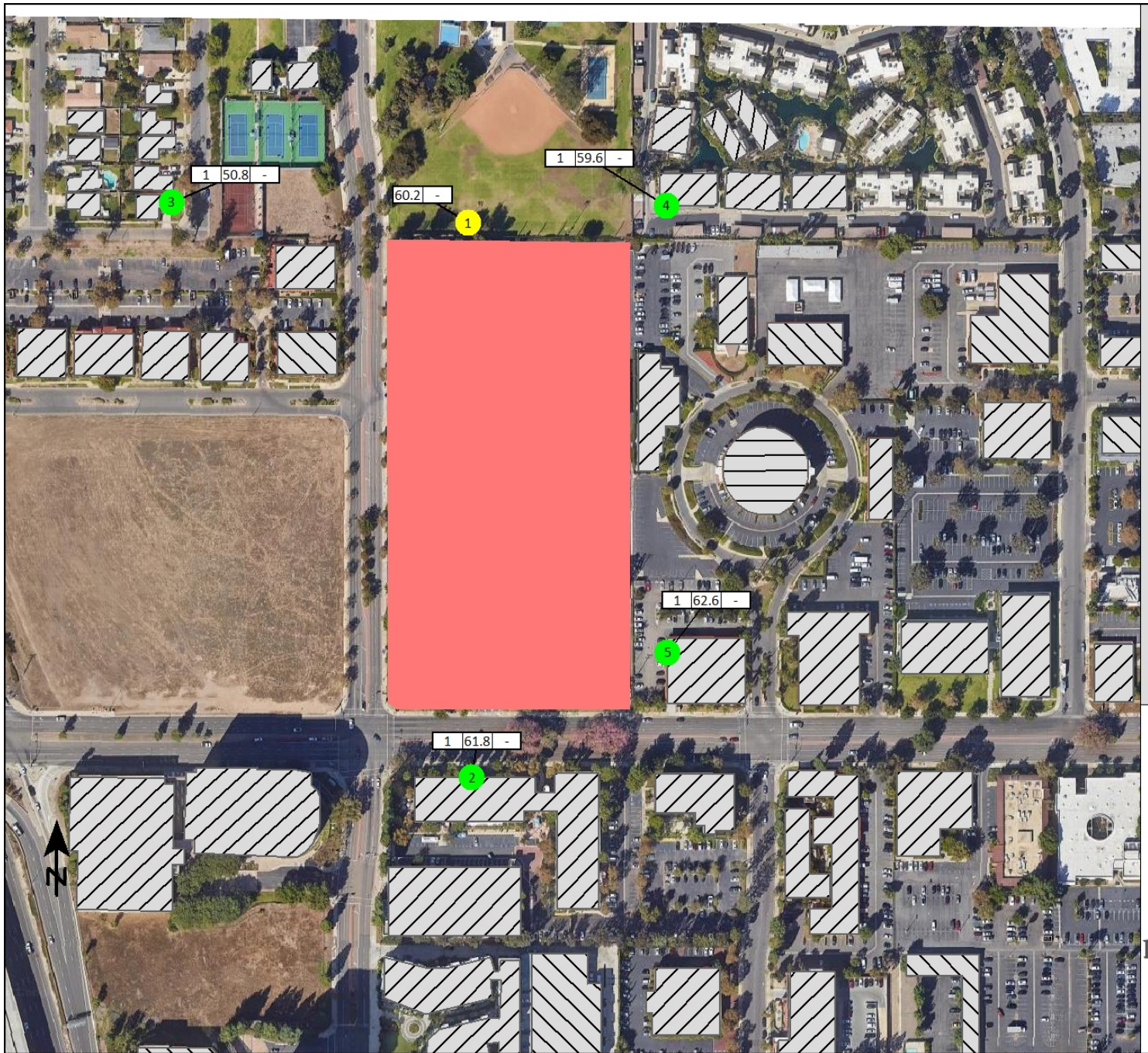
Source name	Size m/m²	Reference	Level Day dB(A)	Level Night dB(A)	Corrections Cwall dB	Corrections CI dB	Corrections CT dB
Construction Site	35814 m²	Lw/unit	115.7	-	-	-	-

Receiver list

No.	Receiver name	Coordinates X in meter	Coordinates Y in meter	Building side	Floor	Height abv.grd. m	Limit Day dB(A)	Limit Night dB(A)	Level Day dB(A)	Level Night dB(A)	Conflict Day dB	Conflict Night dB
1	Cabrillo Park	11422201.4	3734838.32	-	GF	46.36	-	-	60.2	0.0	-	-
2	Health Care Facility - 1900 E.	11422203.4	3734527.48	North	GF	45.04	-	-	61.8	0.0	-	-
3	Residence - 618 Sherry Ln.	11422035.0	3734849.97	East	GF	47.55	-	-	50.8	0.0	-	-
4	Residence - 724 North Parkce	11422312.6	3734848.12	South	GF	48.67	-	-	59.6	0.0	-	-
5	Urgent Care Facility - 2001 E.	11422313.3	3734597.64	West	GF	45.89	-	-	62.6	0.0	-	-

Contribution levels of the receivers

Source name		Traffic lane	Level Day	Night
			dB(A)	
Cabrillo Park	GF		60.2	0.0
Construction Site		-	60.2	-
Health Care Facility - 1900 E. 4th St.	GF		61.8	0.0
Construction Site		-	61.8	-
Residence - 618 Sherry Ln.	GF		50.8	0.0
Construction Site		-	50.8	-
Residence - 724 North Parkcener Dr.	GF		59.6	0.0
Construction Site		-	59.6	-
Urgent Care Facility - 2001 E. 4th St.	GF		62.6	0.0
Construction Site		-	62.6	-



Cabrillo Town Center

Signs and symbols

- Building
- Analyzed Sensitive Receptor (Outdoor)
- Analyzed Sensitive Receptor
- Construction Site

1 : 234

0 45 90 180 270 360 feet

DouglasKim+Associates,LLC

Construction Noise Impacts

Sound Power Level (Lw)	115.6	dB

Receptor	Existing Leq	Noise	New Leq	Difference Leq	Significant?
Cabrillo Park	59.5	60.2	62.9	3.4	**No**
Residence - 724 N. Parkcenter Dr.	59.5	59.6	62.6	3.1	**No**
Urgent Care - 2001 E. 4th St.	65.8	62.6	67.5	1.7	**No**
Health Care Facility - 1900 E. 4th St.	68.3	61.8	69.2	0.9	**No**
Residence - 618 Sherry Ln.	56.7	50.8	57.7	1.0	**No**

OFF-SITE CONSTRUCTION-RELATED TRAVEL VOLUMES

Construction Phase	Worker Trips	Vendor Trips	Haul Trips	Total	% of Traffic Volumes
Demolition	15	0	148.8	164	6.9%
Site Preparation	17.5	0	129.3	147	6.2%
Grading	20	0	2.6	23	0.9%
Trenching	2.5	0		3	0.1%
Building Construction	521	316.5		838	35.2%
Paving	15	0.0		15	0.6%
Architectural Coatings	104	0		104	4.4%
Haul trips represent heavy-duty truck trips with a 19.1 Passenger Car Equivalent applied; Vendor trips are a blend of vehicle types with a 9.5					

2,382 Traffic Volumes on Fourth Street at Cabrillo Park Drive in the peak A.M. hour

DouglasKim+Associates,LLC

OPERATIONS NOISE CALCULATIONS

Noise emissions of road traffic

Statio km	ADT Veh/24	Vehicles type	Vehicle name	Traffic values day Veh/h	evening Veh/h	night Veh/h	Speed km/h	Contr devic	Cons Spee km/h	Affec veh. %	Road surface	Gradie Min / M %
Townhouse Travel (EB 4th St)			Traffic direction: in entry direction									
0+00	220	Total	-	12	15	2	-	none	-	-	Average (of DGAC a	-1.7 / 4
		Automobiles	-	12	15	2	32					
		Medium trucks	-	-	-	-	-					
		Heavy trucks	-	-	-	-	-					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
Townhouse Travel (WB 4th St.)			Traffic direction: in entry direction									
0+00	220	Total	-	12	15	2	-	none	-	-	Average (of DGAC a	-1.7 / 2
		Automobiles	-	12	15	2	32					
		Medium trucks	-	-	-	-	-					
		Heavy trucks	-	-	-	-	-					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
Apartment/Commercial Travel (Cabrillo Park Dr. D			Traffic direction: in entry direction									
0+00	1252	Total	-	75	70	9	-	none	-	-	Average (of DGAC a	-0.3
		Automobiles	-	75	70	9	20					
		Medium trucks	-	-	-	-	-					
		Heavy trucks	-	-	-	-	-					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
Apartment/Commercial Travel (4th St. Driveway)			Traffic direction: in entry direction									
0+00	1268	Total	-	75	72	10	-	none	-	-	Average (of DGAC a	-3.2
		Automobiles	-	75	72	10	20					
		Medium trucks	-	-	-	-	-					
		Heavy trucks	-	-	-	-	-					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					

Noise emissions of road traffic

Statio km	ADT Veh/24	Vehicles type	Vehicle name	Traffic values day Veh/h	evening Veh/h	night Veh/h	Speed km/h	Contr devic	Cons Spee km/h	Affec veh. %	Road surface	Gradie Min / M %
Townhouse Travel (EB 4th St)			Traffic direction: in entry direction									
0+00	220	Total	-	12	15	2	-	none	-	-	Average (of DGAC a	-1.7 / 4
		Automobiles	-	12	15	2	32					
		Medium trucks	-	-	-	-	-					
		Heavy trucks	-	-	-	-	-					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
Townhouse Travel (WB 4th St.)			Traffic direction: in entry direction									
0+00	220	Total	-	12	15	2	-	none	-	-	Average (of DGAC a	-1.7 / 2
		Automobiles	-	12	15	2	32					
		Medium trucks	-	-	-	-	-					
		Heavy trucks	-	-	-	-	-					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
Apartment/Commercial Travel (Cabrillo Park Dr. D			Traffic direction: in entry direction									
0+00	1252	Total	-	75	70	9	-	none	-	-	Average (of DGAC a	-0.3
		Automobiles	-	75	70	9	20					
		Medium trucks	-	-	-	-	-					
		Heavy trucks	-	-	-	-	-					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					
Apartment/Commercial Travel (4th St. Driveway)			Traffic direction: in entry direction									
0+00	1268	Total	-	75	72	10	-	none	-	-	Average (of DGAC a	-3.2
		Automobiles	-	75	72	10	20					
		Medium trucks	-	-	-	-	-					
		Heavy trucks	-	-	-	-	-					
		Buses	-	-	-	-	-					
		Motorcycles	-	-	-	-	-					
		Auxiliary vehicle	-	-	-	-	-					

Receiver list

No.	Receiver name	Coordinates X Y in meter	Buildir side	Floor	Height abv.gr m	Limit Day	Limit Evenir	Limit Night	Limit Lden	Level Day	Level Evenir	Level Night	Level Lden	Conflict Day	Conflict Evenir	Conflict Night	Conflict Lden
						dB(A)				dB(A)				dB			
1	Cabrillo Park	11422203734838	-	GF	46.36	-	-	-	-	25.9	26.3	14.5	27.1	-	-	-	-
2	Health Care Facility -	11422203734527	North	GF	45.04	-	-	-	-	40.1	40.3	26.5	40.9	-	-	-	-
3	Residence - 618 She	11422033734849	East	GF	47.55	-	-	-	-	34.2	34.2	9.8	34.4	-	-	-	-
4	Residence - 724 Nort	11422313734848	South	GF	48.67	-	-	-	-	34.1	34.1	5.5	34.2	-	-	-	-
5	Urgent Care Facility -	11422313734597	West	GF	45.89	-	-	-	-	35.6	35.7	16.5	36.0	-	-	-	-

Contribution levels of the receivers

Source name	Traffic lane	Level Day	Evening	Night	Lden
		dB(A)			
Cabrillo Park GF		25.9	26.3	14.5	27.1
Apartment Courtyard 'A'	-	2.5	2.5	-	2.6
Apartment Courtyard 'B'	-	2.1	2.1	-	2.3
Apartment Courtyard 'C'	-	-10.2	-10.2	-	-10.1
Apartment Courtyard 'D'	-	-11.7	-11.7	-	-11.6
Apartment/Commercial Travel (4th St. Driveway)	-	-23.1	-23.2	-31.8	-21.5
Apartment/Commercial Travel (Cabrillo Park Dr. Driveway)	-	-19.0	-19.3	-28.3	-17.6
Apartments HVAC Front	-	10.0	10.0	-	10.1
Apartments HVAC Rear	-	19.8	19.8	-	19.9
HVAC	-	7.4	7.4	-73.6	7.5
HVAC1	-	6.9	6.9	-74.1	7.0
HVAC3	-	8.5	8.5	-72.5	8.6
HVAC4	-	8.0	8.0	-73.0	8.1
HVAC5	-	7.6	7.6	-73.4	7.8
HVAC6	-	9.1	9.1	-71.9	9.2
HVAC7	-	9.2	9.2	-71.8	9.3
HVAC8	-	4.9	4.9	-76.1	5.0
HVAC9	-	5.3	5.3	-75.7	5.4
HVAC10	-	4.6	4.6	-76.4	4.7
HVAC11	-	4.1	4.1	-76.9	4.2
HVAC12	-	3.6	3.6	-77.4	3.7
HVAC13	-	3.3	3.3	-77.7	3.4
HVAC14	-	3.3	3.3	-77.7	3.4
HVAC15	-	3.3	3.3	-77.7	3.4
HVAC16	-	3.2	3.2	-77.8	3.3
HVAC17	-	3.2	3.2	-77.8	3.3
HVAC18	-	3.2	3.2	-77.8	3.3
HVAC19	-	3.1	3.1	-77.9	3.2
HVAC20	-	3.1	3.1	-77.9	3.2
Roof Terrace	-	12.4	12.4	-	12.5
Townhomes Courtyard	-	11.5	11.5	-	11.6
Townhouse Travel (EB 4th St)	-	19.5	20.4	11.7	21.8
Townhouse Travel (WB 4th St.)	-	19.1	20.1	11.4	21.5
Health Care Facility - 1900 E. 4th St. GF		40.1	40.3	26.5	40.9
Apartment Courtyard 'A'	-	1.7	1.7	-	1.8
Apartment Courtyard 'B'	-	1.3	1.3	-	1.4
Apartment Courtyard 'C'	-	-7.3	-7.3	-	-7.1
Apartment Courtyard 'D'	-	5.4	5.4	-	5.5
Apartment/Commercial Travel (4th St. Driveway)	-	28.1	27.9	19.4	29.7
Apartment/Commercial Travel (Cabrillo Park Dr. Driveway)	-	2.8	2.5	-6.4	4.2
Apartments HVAC Front	-	25.3	25.3	-	25.4
Apartments HVAC Rear	-	16.9	16.9	-	17.0
HVAC	-	13.9	13.9	-67.1	14.1
HVAC1	-	14.6	14.6	-66.4	14.7
HVAC3	-	12.9	12.9	-68.1	13.0
HVAC4	-	13.3	13.3	-67.7	13.4
HVAC5	-	13.7	13.7	-67.3	13.8
HVAC6	-	12.4	12.4	-68.6	12.5
HVAC7	-	11.8	11.8	-69.2	11.9
HVAC8	-	18.6	18.6	-62.4	18.7
HVAC9	-	17.5	17.5	-63.5	17.6
HVAC10	-	19.8	19.8	-61.2	19.9
HVAC11	-	22.1	22.1	-58.9	22.2
HVAC12	-	25.5	25.5	-55.5	25.6
HVAC13	-	30.5	30.5	-50.5	30.6
HVAC14	-	29.6	29.6	-51.4	29.7
HVAC15	-	29.0	29.0	-52.0	29.1
HVAC16	-	29.5	29.5	-51.5	29.6
HVAC17	-	28.6	28.6	-52.4	28.7
HVAC18	-	27.9	27.9	-53.1	28.0
HVAC19	-	27.3	27.3	-53.7	27.4
HVAC20	-	26.3	26.3	-54.7	26.5
Roof Terrace	-	19.1	19.1	-	19.2

Contribution levels of the receivers

Source name	Traffic lane	Level Day	Evening	Night	Lden
		dB(A)			
Townhomes Courtyard	-	-2.7	-2.7	-	-2.6
Townhouse Travel (EB 4th St)	-	32.9	33.9	25.2	35.3
Townhouse Travel (WB 4th St.)	-	22.8	23.8	15.0	25.2
Residence - 618 Sherry Ln. GF		34.2	34.2	9.8	34.4
Apartment Courtyard 'A'	-	-1.1	-1.1	-	-1.0
Apartment Courtyard 'B'	-	-2.6	-2.6	-	-2.5
Apartment Courtyard 'C'	-	-14.6	-14.6	-	-14.5
Apartment Courtyard 'D'	-	-15.3	-15.3	-	-15.2
Apartment/Commercial Travel (4th St. Driveway)	-	-20.7	-20.9	-29.5	-19.1
Apartment/Commercial Travel (Cabrillo Park Dr. Driveway)	-	6.2	5.9	-3.0	7.6
Apartments HVAC Front	-	23.0	23.0	-	23.1
Apartments HVAC Rear	-	24.9	24.9	-	25.0
HVAC	-	21.1	21.1	-59.9	21.2
HVAC1	-	20.9	20.9	-60.1	21.0
HVAC3	-	21.8	21.8	-59.2	22.0
HVAC4	-	21.6	21.6	-59.4	21.7
HVAC5	-	21.3	21.3	-59.7	21.5
HVAC6	-	22.1	22.1	-58.9	22.2
HVAC7	-	21.9	21.9	-59.1	22.0
HVAC8	-	19.5	19.5	-61.5	19.6
HVAC9	-	19.7	19.7	-61.3	19.8
HVAC10	-	18.9	18.9	-62.1	19.0
HVAC11	-	18.5	18.5	-62.5	18.6
HVAC12	-	18.2	18.2	-62.8	18.3
HVAC13	-	17.9	17.9	-63.1	18.0
HVAC14	-	17.5	17.5	-63.5	17.7
HVAC15	-	17.2	17.2	-63.8	17.4
HVAC16	-	17.1	17.1	-63.9	17.2
HVAC17	-	16.8	16.8	-64.2	16.9
HVAC18	-	16.6	16.6	-64.4	16.8
HVAC19	-	16.2	16.2	-64.8	16.3
HVAC20	-	15.9	15.9	-65.1	16.1
Roof Terrace	-	24.2	24.2	-	24.3
Townhomes Courtyard	-	4.5	4.5	-	4.7
Townhouse Travel (EB 4th St)	-	14.3	15.3	6.5	16.6
Townhouse Travel (WB 4th St.)	-	14.5	15.4	6.7	16.8
Residence - 724 North Parkcener Dr. GF		34.1	34.1	5.5	34.2
Apartment Courtyard 'A'	-	0.3	0.3	-	0.4
Apartment Courtyard 'B'	-	2.5	2.5	-	2.6
Apartment Courtyard 'C'	-	-5.7	-5.7	-	-5.5
Apartment Courtyard 'D'	-	-8.0	-8.0	-	-7.9
Apartment/Commercial Travel (4th St. Driveway)	-	-15.3	-15.5	-24.1	-13.7
Apartment/Commercial Travel (Cabrillo Park Dr. Driveway)	-	-15.4	-15.7	-24.6	-14.0
Apartments HVAC Front	-	25.5	25.5	-	25.7
Apartments HVAC Rear	-	28.2	28.2	-	28.4
HVAC	-	14.6	14.6	-66.4	14.7
HVAC1	-	14.4	14.4	-66.6	14.5
HVAC3	-	14.8	14.8	-66.2	14.9
HVAC4	-	14.7	14.7	-66.3	14.8
HVAC5	-	14.6	14.6	-66.4	14.7
HVAC6	-	14.9	14.9	-66.1	15.0
HVAC7	-	14.0	14.0	-67.0	14.1
HVAC8	-	13.6	13.6	-67.4	13.7
HVAC9	-	14.5	14.5	-66.5	14.6
HVAC10	-	14.1	14.1	-66.9	14.2
HVAC11	-	18.1	18.1	-62.9	18.2
HVAC12	-	17.7	17.7	-63.3	17.9
HVAC13	-	17.5	17.5	-63.5	17.7
HVAC14	-	19.6	19.6	-61.4	19.7
HVAC15	-	19.8	19.8	-61.2	20.0
HVAC16	-	19.9	19.9	-61.1	20.0
HVAC17	-	20.1	20.1	-60.9	20.2
HVAC18	-	20.2	20.2	-60.8	20.4

Contribution levels of the receivers

Source name	Traffic lane	Level Day	Evening	Night	Lden
		dB(A)			
HVAC19	-	18.7	18.7	-62.3	18.8
HVAC20	-	19.3	19.3	-61.7	19.4
Roof Terrace	-	25.9	25.9	-	26.0
Townhomes Courtyard	-	8.0	8.0	-	8.2
Townhouse Travel (EB 4th St)	-	10.4	11.4	2.6	12.7
Townhouse Travel (WB 4th St.)	-	10.0	11.0	2.3	12.4
Urgent Care Facility - 2001 E. 4th St. GF		35.6	35.7	16.5	36.0
Apartment Courtyard 'A'	-	2.9	2.9	-	3.0
Apartment Courtyard 'B'	-	5.3	5.3	-	5.4
Apartment Courtyard 'C'	-	13.8	13.8	-	13.9
Apartment Courtyard 'D'	-	22.8	22.8	-	22.9
Apartment/Commercial Travel (4th St. Driveway)	-	12.8	12.6	4.0	14.4
Apartment/Commercial Travel (Cabrillo Park Dr. Driveway)	-	-16.6	-16.9	-25.8	-15.2
Apartments HVAC Front	-	28.6	28.6	-	28.7
Apartments HVAC Rear	-	23.3	23.3	-	23.4
HVAC	-	12.9	12.9	-68.1	13.0
HVAC1	-	13.7	13.7	-67.3	13.8
HVAC3	-	11.4	11.4	-69.6	11.5
HVAC4	-	12.0	12.0	-69.0	12.1
HVAC5	-	12.5	12.5	-68.5	12.6
HVAC6	-	10.8	10.8	-70.2	10.9
HVAC7	-	10.3	10.3	-70.7	10.4
HVAC8	-	10.5	10.5	-70.5	10.7
HVAC9	-	15.7	15.7	-65.3	15.8
HVAC10	-	11.7	11.7	-69.3	11.8
HVAC11	-	12.2	12.2	-68.8	12.3
HVAC12	-	12.3	12.3	-68.7	12.4
HVAC13	-	17.0	17.0	-64.0	17.1
HVAC14	-	19.0	19.0	-62.0	19.1
HVAC15	-	20.6	20.6	-60.4	20.7
HVAC16	-	21.7	21.7	-59.3	21.8
HVAC17	-	24.7	24.7	-56.3	24.9
HVAC18	-	21.6	21.6	-59.4	21.7
HVAC19	-	24.0	24.0	-57.0	24.2
HVAC20	-	29.2	29.2	-51.8	29.3
Roof Terrace	-	20.2	20.2	-	20.3
Townhomes Courtyard	-	0.2	0.2	-	0.3
Townhouse Travel (EB 4th St)	-	24.0	25.0	16.2	26.3
Townhouse Travel (WB 4th St.)	-	3.9	4.9	-3.9	6.2

DouglasKim+Associates,LLC

COMPOSITE NOISE MODELING OF PARKING GARAGE, HVAC AND MECHANICAL EQUIPMENT, AND OUTDOOR LOUNGES AND DECKS

DouglasKim+Associates,LLC

Operational Noise Impacts

Composite Noise Impact Summary

Sensitive Receptor	Existing CNEL	Apartment Courtyards	Townhome Courtyard	HVAC	Roof Terrace	Vehicle Travel	Project Composite	Existing + Project	Increase	Threshold of Significance	Significant?
Cabrillo Park	57.5	10.7	11.6	22.6	12.5	24.9	27.3	57.5	0.0	62.5	No
Residence - 724 N. Parkcenter Dr.	57.5	12.9	8.2	33.1	26.0	17.2	34.0	57.5	0.0	62.5	No
Urgent Care - 2001 E. 4th St.	63.8	23.8	0.3	33.1	20.3	26.8	34.6	63.8	0.0	68.8	No
Health Care Facility - 1900 E. 4th S	66.3	13.5	-2.6	38.1	19.2	36.7	40.5	66.3	0.0	71.3	No
Residences - 618 Sherry Ln.	54.7	12.4	4.7	33.6	24.3	20.6	34.3	54.7	0.0	59.7	No

Sensitive Receptor **Cabrillo Park**

Source	Sound Pressu	10^(x/10)
Apartment Courtyards	10.7	12
Townhome Courtyard	11.6	14
HVAC	22.6	182
Roof Terrace	12.5	18
Vehicle Travel	24.9	309
		1
		1
Total	27.3	541.9857965

=IF(D17<0,"n/a =sum(D5:D16)

Sensitive Receptor **Residence - 724 N. Parkcenter Dr.**

Source	Sound Pressu	10^(x/10)
Apartment Courtyards	12.9	19
Townhome Courtyard	8.2	7
HVAC	33.1	2042
Roof Terrace	26.0	398
Vehicle Travel	17.2	52
		1
		1
Total	34.0	2525.431242

=IF(D17<0,"n/a =sum(D5:D16)

Sensitive Receptor **Urgent Care - 2001 E. 4th St.**

Source	Sound Pressu	10^(x/10)
Apartment Courtyards	23.8	240
Townhome Courtyard	0.3	1
HVAC	33.1	2042
Roof Terrace	20.3	107
Vehicle Travel	26.8	479
		1
		1
Total	34.6	2875.474779

=IF(D17<0,"n/a =sum(D5:D16)

Sensitive Receptor **Health Care Facility - 1900 E. 4th St.**

Source	Sound Pressu	10^(x/10)
Apartment Courtyards	13.5	22
Townhome Courtyard	-2.6	1
HVAC	38.1	6457
Roof Terrace	19.2	83
Vehicle Travel	36.7	4677
		1
		1
Total	40.5	11247.00683

=IF(D17<0,"n/a =sum(D5:D16)

Sensitive Receptor **Residences - 618 Sherry Ln.**

Source		10^(x/10)
Apartment Courtyards	12.4	17
Townhome Courtyard	4.7	3
HVAC	33.6	2291
Roof Terrace	24.3	269
Vehicle Travel	20.6	115
		1
		1
Total	34.3	2702.165713

=IF(D17<0,"n/a =sum(D5:D16)