

### 5.13. Noise

NOISE	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>Would the project result in:</b>				
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

#### 5.13.1. Setting

##### Existing Conditions

**Community Noise.** To describe environmental noise and to assess project impacts on areas that are sensitive to community noise, a measurement scale that simulates human perception is used. The A weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that can be used to conveniently compare wide ranges of sound intensities.

Community noise levels can be highly variable from day to day as well as between day and night. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq, or equivalent sound level, is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The L50 is the median noise level that is exceeded fifty percent of the time during any measuring interval. The Ldn, or day-night average sound level, is equal to the 24 hour A-weighted equivalent sound level with a 10 decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m. Community Noise Equivalent Level (CNEL) is another metric that is the average equivalent A-weighted sound level during a 24 hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels in the night from 10:00 p.m. to 7:00 a.m. To easily estimate the day-night level caused by any noise source emitting steadily and continuously over 24 hours, the Ldn is 6.4 dBA higher than the source’s Leq. For example, if the expected continuous noise level from equipment is 50.0 dBA Leq for every hour, the day-night noise level would be 56.4 dBA Ldn.

Community noise levels are usually closely related to the intensity of human activity. Noise levels are generally considered low when below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. At 70 dBA, sleep interference effects become considerable (U.S. EPA, 1974).

**Noise Environment in the Project Area.** As described in the Noise Assessment Report (see Appendix L), conducted by ERM on January 22, 2025, ERM characterized the existing noise environment in the area through an ambient noise measurement program carried out from March 27 to March 28, 2024. The program involved continuous measurement of the existing Leq sound levels over a 24-hour period at the most proximate noise-sensitive areas (NSAs), which includes the Mariposa at Ellwood elder care facility immediately southeast of the site, and short-term measurements during the day and at night at other locations to obtain ambient data representative of surrounding NSAs. Short-term measurements were conducted for a 1-hour duration at each location during the day, and for a 30-minute duration at night at each location. Ambient measurement locations were selected in order to obtain data representative of existing conditions for an area (i.e., some measurement locations are not at the discrete NSA locations used in the modeling assessment).

The ambient noise measurement locations, the discrete NSA locations used for the modeling assessment, and the identification of which ambient data correspond to each NSA modeling location are provided in Table 5.13-1 and depicted in Figure A-1 in Appendix L, Noise Assessment Report.

**Table 5.13-1. Ambient Noise Measurement and Noise Sensitive Area (NSA) Locations**

Ambient Noise Measurement Location	NSA Location <sup>(1)</sup>	Ambient Noise Level (Ldn)
Mariposa at Ellwood Shores (Continuous Location)	NSA 1 – Mariposa at Ellwood Shores	60.3
Calle Del Sur	NSA 2 – Calle Del Sur	61.4
Ellwood Mesa Open Space Lot	NSA 3 – Elderberry Drive	59.5
Tech Park at Hollister Driveway	NSA 4 – Pebble Beach Drive	53.7
Mariposa at Ellwood Shores (Continuous Location)	NSA 5 – Sanderling Lane	60.3
Mariposa at Ellwood Shores (Continuous Location)	NSA 6 – Ellwood School	60.3

(1) Ambient noise level measurements were conducted at locations near to the actual NSA. The locations in this column are for where the ambient data are considered representative of the NSA. These NSAs are included in the noise model.

(2) Distance to nearest school building.

Discussions regarding equipment used for noise measurements and measurement methodologies considered are included in Appendix L, Noise Assessment Report (ERM, 2025).

Source: ERM, 2025

**Noise Sensitive Areas.** The nearest noise-sensitive areas to the Project site include a single-family residential neighborhood to the west, the elementary school to the east, and the elder care facility to the southeast. More specifically, The Ellwood Elementary School is located approximately 350 feet east of the Project site, beyond the parking lot that borders the site's eastern boundary; The Hideaway is a single-family residential neighborhood located approximately 320 feet east of the site, just beyond the Project-adjacent SCE substation, that borders the Project's eastern boundary, and Las Armas Road; and the Mariposa at Ellwood Shores elder care facility is located approximately 260 feet southeast of the center of the Project site, beyond the access road of the parking lot adjacent to and west of the site.

### **Corona Noise**

Corona is one of the phenomena associated with all energized electrical devices, including high voltage transmission lines. The localized electric field near a conductor can be sufficiently concentrated to ionize air close to the conductors. This can result in a partial discharge of electrical energy called a corona discharge, or corona. The corona effect is the physical manifestation of discharged electrical energy into very small amounts of sound, radio noise, heat, and chemical reactions with air components. It is a phenomenon associated with all energized electrical devices but is especially common with high-voltage power lines.

The amount of corona produced by a power line is a function of several factors, including line voltage, conductor diameter, conductor locations in relation to each other, condition of conductors and hardware, and local weather conditions including power line elevation above sea level. Corona typically becomes a design concern for 230 kV and higher power lines that are overhead (i.e., transmission lines on poles or towers). It is less noticeable for lines that are operated at lower voltages (i.e., subtransmission and distribution-sized lines).

The Proposed Project includes a new 66 kV line, and the distribution lines that are a part of the BESS facility would be low and medium voltage (such as 4, 12, 15, or 34 kV). The electric field gradient is greatest at the conductor surface. Larger-diameter conductors have lower electric field gradients at the conductor surface and, therefore, lower corona noise than smaller-diameter conductors. The corona effect would not be a design concern for the 200-foot-long underground interconnection line from the BESS to the SCE substation, or for the underground electrical collection and communications lines within the BESS facility, regardless of voltage level, because the energized conductors are fully enclosed in a semi-conducting layer within insulated cables that serve to equalize the electrical gradient at the surface of the components.

Common concerns are regarding electrical interference with existing and future development in the area. The CEQA Guidelines do not provide significance criteria for evaluating impacts from corona or induced current effects. Corona and induced current from high voltage power lines can cause environmental impacts through:

- Audible noise
- Radio and television interference
- Computer interference
- Disturbance of cardiac pacemakers
- Ignition of flammable materials
- Corrosion of buried metallic objects

The proposed Project involves installation of a 200-foot-long underground 66 kV interconnection line to the existing SCE substation located within the EGS switchyard. The SCE substation is interconnected with the existing SCE 66 kV electrical subtransmission line along Las Armas Road. The Project would not change the operating voltages of the existing SCE substation, and circuits operating at 60 kV typically cause noise at levels comparable to the ambient baseline noise levels. At levels comparable to the ambient baseline, the impact of audible noise from the corona effect would be less than significant.

#### **5.13.2. Regulatory Background**

Regulating environmental noise is generally the responsibility of local governments. However, in the absence of local numerical thresholds, this analysis adopts those thresholds promulgated by the National Institute for Occupational Safety and Health (NIOSH). The Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* establishes guidelines on recommended maximum vibration levels to protect public health and welfare (FTA, 2018), and the State of California maintains

recommendations for local jurisdictions in the General Plan Guidelines published by the Governor’s Office of Planning and Research (OPR, 2017). The following summarizes the federal and local requirements:

**National Institute for Occupational Safety and Health.** The *Criteria for a Recommended Standard: Occupational Noise Exposure*, prepared in 1998 by NIOSH, establishes the following noise level thresholds for construction activities:

**Table 5.13-2. NIOSH Recommended Noise Exposure Level for Construction Activity**

Noise Exposure Level (dBA)	Duration of Exposure
82	16 hours
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes

Source: NIOSH, 2025

**Federal Transit Administration.** The FTA’s *Transit Noise and Vibration Impact Assessment Manual* (2018) provides the following vibration thresholds for damage caused from construction activity:

**Table 5.13-3. FTA Construction Vibration Damage Criteria**

Building Category/Structural Category	PPV, in/sec	Approximate Lv (VdB re 1 $\mu$ in/sec rms)
I. Reinforced concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA, 2018

**Table 5.13-4. FTA Indoor Ground-Borne Vibration Impact Criteria for General Vibration Assessment**

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 $\mu$ in/sec rms)		
	Frequent Events <sup>a)</sup>	Occasional Events <sup>b)</sup>	Infrequent Events <sup>c)</sup>
Category 1: Buildings where vibration would interfere with interior operations	65 VdB <sup>d)</sup>	65 VdB <sup>d)</sup>	65 VdB <sup>d)</sup>
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB

Source: FTA, 2018

a) More than 70 events per day

b) 30-70 events per day

c) Fewer than 30 events per day

d) From FTA, 2018: “This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes.”

**City of Goleta General Plan.** The City of Goleta General Plan contains a noise element in Chapter 9.0 of the Plan. The noise element defines sensitive noise receptors as uses including, but not limited to, residential neighborhoods, schools, libraries, hospitals, and rest homes. The noise element establishes

noise compatibility standards for various land use types. Provided in Figure 1 of Appendix L, Noise Assessment Report, is a reproduction of Table 9-2 from the noise element that summarizes the noise and land use compatibility criteria (City of Goleta, 2006). The following Goleta General Plan Noise Element policies are applicable to the proposed Project:

**NE 1.3 Noise Buffers. [GP]** When feasible, the City should require an open space or other noise buffer between new projects that are a source of noise and nearby sensitive receptors. The nature and extent of the noise buffer shall be determined based upon site-specific conditions.

**NE 1.5 Acceptable Noise Levels. [GP]** New construction and substantial alterations of existing construction shall include appropriate noise insulation measures (such as insulation, glazing, and other sound attenuation measures) so that such construction or renovations comply with state and building code standards for allowable interior noise levels. The intent of this policy is to require improved soundproofing for both noise receivers and sources.

**NE 6.4 Restrictions on Construction Hours. [GP]** The City shall require, as a condition of approval for any land use permit or other planning permit, restrictions on construction hours. Noise-generating construction activities for projects near or adjacent to residential buildings and neighborhoods or other sensitive receptors shall be limited to Monday through Friday, 8:00 a.m. to 5:00 p.m. Construction in non-residential areas away from sensitive receivers shall be limited to Monday through Friday, 7:00 a.m. to 4:00 p.m. Construction shall generally not be allowed on weekends and state holidays. Exceptions to these restrictions may be made in extenuating circumstances (in the event of an emergency, for example) on a case-by-case basis at the discretion of the Director of Planning and Environmental Services. All construction sites subject to such restrictions shall post the allowed hours of operation near the entrance to the site, so that workers on site are aware of this limitation. City staff shall closely monitor compliance with restrictions on construction hours and shall promptly investigate and respond to all noncompliance complaints.

**City of Goleta Municipal Code.** The City of Goleta has a noise ordinance in Section 9.09.040 (Specific Noise Restrictions) of the City's municipal code. The ordinance states that construction shall only be conducted pursuant to the hours specified in GMC Section 17.39.070(G), which limits construction activities within 1,600 feet of sensitive receptors are limited to Monday through Friday, 8:00 a.m. to 5:00 p.m. Furthermore, as set forth in GMC Section 17.39.070(F), the provisions do not apply to capital improvement projects, maintenance and repair or excavation by a public utility which is subject to the jurisdiction of the Public Utilities Commission and where such work is necessary for the immediate preservation of the public health, safety, or welfare and where such necessity makes it necessary to construct, repair or excavate during the prohibited hours (City of Goleta, 2025).

**County of Santa Barbara Environmental Thresholds and Guidelines Manual.** Chapter 12 (Noise Thresholds) of the County's 2002 *Environmental Thresholds and Guidelines Manual* establishes noise threshold criteria adopted by the City of Goleta. The document specifies that a Community Noise Equivalent Level (CNEL) of 65 dBA is the maximum exterior noise exposure level that is compatible with noise sensitive uses, unless noise mitigation features are incorporated into the design of the noise sensitive use. Additionally, the City guidelines specify that a project will have a significant effect on the environment if it substantially increases the ambient noise level for noise sensitive uses adjoining areas. A significant effect may also occur if ambient noise levels are significantly increased even if they remain below 65 dBA CNEL. The document does not provide a numerical definition of a substantial increase (County of Santa Barbara, 2002).

### 5.13.3. Environmental Impacts and Mitigation Measures

#### Thresholds of Significance

Based on the County of Santa Barbara's Environmental Thresholds and Guidelines Manual (2021), which has been adopted by the City of Goleta (adopted by Resolution 08-40), the following thresholds are used to determine whether significant noise impacts would occur:

**Threshold NOI-1.** A development that would generate noise levels in excess of 65 dBA CNEL and could affect sensitive receptors would generally be presumed to have a significant impact.

**Threshold NOI-2.** Outdoor living areas of noise sensitive uses that are subject to noise levels in excess of 65 dBA CNEL would generally be presumed to be significantly impacted by ambient noise. A significant impact would also generally occur where interior noise levels cannot be reduced to 45 dBA CNEL or less.

**Threshold NOI-3.** A project would generally have a significant effect on the environment if it would increase substantially the ambient noise levels for noise sensitive receptors in adjoining areas. Per Threshold 1 above, this may generally be presumed to occur when ambient noise levels affecting sensitive receptors are increased to 65 dBA CNEL or more. However, a significant affect may also occur when ambient noise levels affecting sensitive receptors increase substantially but remain less than 65 dBA CNEL, as determined on a case-by-case level.

**Threshold NOI-4.** Noise from grading and construction activity proposed within 1,600 feet of sensitive receptors, including schools, residential development, commercial lodging facilities, hospitals or care facilities, would generally result in a potentially significant impact. According to the US EPA guidelines, the average construction noise is 95 dBA at a 50-foot distance from the source. A 6 dB drop occurs with a doubling of the distance from the source. Therefore, locations within 1,600 feet of the construction site would be affected by noise levels over 65 dBA. Construction within 1,600 feet of sensitive receptors on weekdays outside of the hours of 8:00AM to 5:00PM and on weekends would generally be presumed to have a significant effect. Noise attenuation barriers and muffling of grading equipment may also be required. Construction equipment generating noise levels above 95 dBA may require additional mitigation.

With regard to Threshold 3, the term "substantial increase" is not defined within the Thresholds Manual. The limits of sound perception by humans in a laboratory environment is around 1.5 dB. Under ambient conditions, people generally do not perceive that noise has clearly changed until there is a 3 dB difference. A threshold of 3 dB is commonly used to define "substantial increase." Therefore, for purposes of this analysis, an increase of 3 dBA CNEL would be a significant impact. Increases of 3.0 dB require a doubling sound energy. For example, for impacts related to traffic noise, existing traffic volumes along a roadway would need to be doubled. Projects usually do not, by themselves, cause traffic volumes to double. Therefore, traffic noise impacts are generally a cumulative impact rather than a project-specific impact.

#### Impact Analysis

Thresholds NOI-1, NOI-2, NOI-3, and NOI-4 are addressed in Checklist Item (a).

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

**DURING CONSTRUCTION - LESS THAN SIGNIFICANT IMPACT.** The proposed Project would require an 8-month duration of construction activities that include mobilizing construction equipment, crews, and materials, grading, excavating, installing concrete foundations, paving, and installing BESS equipment. The construction activities would require use of vehicles and heavy-duty equipment capable of generating noise within and around the Project site and along the roads used to access the site. Along with on-highway vehicles including trucks, the following types of construction equipment could be used at the site: auger, backhoe

or loader, crane, compactor, generator, tractor, water and dump trucks, concrete mixer, drill rig, lifts, skid steer, and possibly a pile driver during the construction of the foundation pads. As mentioned in Section 4.10.3 of the Project Description, specifically Table 4-4, pending detailed design, selected BESS equipment foundations may be installed on piles, as opposed to slab on grade. This phase would represent the highest potential for construction noise impacts on nearby NSAs. Outside of the site, traffic noise would be caused by vehicles transporting equipment and materials to the site, trucks removing construction-related debris, and workers commuting to and from the work site.

When estimating construction noise levels that may occur at the nearest noise-sensitive receptors and in order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using worst-case conditions and modeled using the Federal Highway Administration's Roadway Construction Noise Model (RCNM), see Appendix M, Noise and Vibration Modeling. As mentioned above, neither the City's *2002 Environmental Thresholds and Guidelines Manual*, the City's Municipal Code, nor the General Plan set thresholds for construction noise. In the absence of these thresholds, the results of the modeling are compared against the construction-related noise level threshold established in the *Criteria for a Recommended Standard: Occupational Noise Exposure* prepared in 1998 by NIOSH. The NIOSH construction-related noise level threshold starts at a time-weighted average (TWA) of 85 dBA over 8 hours per day; for every 3 dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of TWA 88 dBA over 4 hours per day, TWA of 92 dBA over 1 hour per day, TWA 96 dBA over 30 minutes per day, and up to a TWA of 100 dBA over 15 minutes per day. For the purposes of this analysis, the more conservative threshold of 85 dBA Leq is used as an acceptable threshold for construction noise potentially experienced at the nearby sensitive receptors (NIOSH, 2025).

The Project acknowledges that construction equipment is not typically positioned at any one location during the duration of construction activities, but rather dispersed throughout the site and at various distances from sensitive receptors. Therefore, the FTA guidance for calculating construction noise, which recommends modeling construction noise produced by all construction equipment from the center of the Project site, will be employed for the purposes of the proposed Project (FTA 2018). The center of the Project site would be approximately 260 feet from the nearest sensitive receptor (Mariposa at Ellwood elder care facility). The anticipated short-term construction noise levels generated for the necessary proposed Project construction equipment is presented in Table 5.13-5.

**Table 5.13-5. Average Construction-Generated Noise Levels (dBA) Experienced at Nearest Residence**

Phase	Combined Equipment Noise Level (dBA at 260 ft)	Construction Noise Threshold (NIOSH Standard in dBA Leq)	Exceedance of Threshold?
Site Clearing	69.3	85	No
Site Preparation/Rough Grading	71.4	85	No
Fine/Pad Grading, Excavation for Underground Conduit/Utilities, and Stormwater LID Areas	72.0	85	No
Construction of Foundation Pads	79.7	85	No
BESS Container and Conduit Installation	71.3	85	No
Project Substation/Switchyard Gen-Tie Installation	72.0	85	No
Paving for Drive Aisles	64.5	85	No
Landscaping, Lighting, Architectural Finishes	68.9	85	No

Source: Roadway Construction Noise Model Analysis. See Appendix M for modeled data outputs (FHWA, 2006).

As shown in Table 5.13-5, Project on-site construction activities would not exceed the NIOSH threshold of 85 dBA Leq at the nearest noise-sensitive receptors. While no noise standard would be exceeded by construction of the proposed Project, the Project is located within close proximity to noise-sensitive land uses, including the elder care facility to the southeast, the residential neighborhood west of the site, and the elementary school to the east. As described above, the city noise ordinance states that construction activity is prohibited during certain times of the day, notably outside of the hours of 8:00 a.m. to 5:00 p.m. Monday through Friday. It is expected that the short duration of construction activities would be audible during daytime hours in the vicinity of the nearest residences west, east, and southeast of the site. The proposed Project's general construction activities would be limited to a 9-hour timeframe (8:00 a.m. to 5:00 p.m.) on weekdays, due to the City's noise ordinance, and the recommended condition of approval N1, which is a standard City requirement that establishes day and time limits on proposed construction operations. Thus, this impact would be less than significant.

During decommissioning, activities would be similar to construction, except materials would be removed and exported from the site, rather than imported, and therefore impacts during decommissioning would be similar.

**DURING OPERATIONS AND MAINTENANCE - LESS THAN SIGNIFICANT IMPACT.** ERM conducted operational noise modeling for the Project using the CadnaA software by DataKustik, which incorporates ISO 9613 standards to account for noise propagation factors such as ground absorption, topography, atmospheric effects, and source reflections. A conservative ground absorption value of 0.5 was used, with no credit taken for offsite structures, vegetation, or foliage. Primary noise sources include 36 Tesla 4-hour 2 XL Megapack battery units and 18 onsite transformers, with fan noise being the most significant contributor. Noise emissions data for the Megapacks were based on Tesla data from the Goleta Energy Storage project, which analyzes the noise emissions for the same type of Megapack batteries (Tesla Megapack 2XL), assuming all fans operate concurrently at 40 percent capacity during high-temperature conditions. Transformer noise levels were estimated using Edison Electric Institute methodology. Receptors were modeled at ground level and second-story elevations, and noise contours were developed to illustrate impacts across the broader area (see Figures 5.13-1 and 5.13-2. Equipment details and modeling inputs are provided in Appendix L, Noise Assessment Report (ERM, 2025).

Upon completion of construction, the occasional and infrequent nature of maintenance activities associated with the proposed Project would not result in noise levels exceeding the standards established in the local General Plan, Noise Ordinance, or the City's *2002 Environmental Thresholds and Guidelines Manual*. The Project involves construction and operation of a BESS facility and a 66 kV interconnection line. Currently, there are no noise-generating sources on the site. Project components that may generate operational noise include HVAC units and power transformers. An 8-foot-high ornamental metal no-climb fence will be installed around the perimeter access road for site security, along with vegetative screening or other visual buffers, consistent with General Plan Policy NE 1.5. The center of the Project site is located approximately 260 feet from the northwest corner of the property line of the Mariposa at Ellwood elder care facility, situated southeast of the site. As shown in Table 6 of Appendix L, Noise Assessment Report, the highest modeled increase in noise would be 0.7 dBA Ldn at the elder care facility (NSA 1). As a significant impact would require noise levels reaching 65 dBA CNEL at nearby NSAs, the Project's operational noise would result in a less than significant impact.

Although it is not anticipated that noise would be a nuisance to nearby residents, a recommended condition of approval, N2 Noise Complaints, is included, to address verified noise complaints received by the City. This would ensure that impacts are less than significant by requiring a noise survey, and if nuisance noise is detected, implementing noise reduction measures as outlined in the condition of approval N2.

Figure 5.13-1. Operational Noise First Floor Map



Figure 5.13-1  
Operational Noise First Floor Map

Source: ERM, May 2024.

Figure 5.13-2. Operational Noise Second Floor Map



Figure 5.13-2  
Operational Noise Second Floor Map

Source: ERM, May 2024.

**(b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?**

LESS THAN SIGNIFICANT IMPACT. Groundborne vibration is a result of vibrating objects coming into contact with the ground, and that vibration radiating through the ground to nearby buildings. Architectural and structural damage and perceptibility thresholds for residential and historic structures in proximity to the types of construction activities have the potential to occur during construction. Architectural damage includes cosmetic damage, such as cracked plaster, etc. Architectural damage is not considered potentially dangerous.

As shown in Table 5.13-6, pile driving has the greatest potential to result in architectural damage to most building types. Most other construction activities require very small (i.e., less than 25 feet) distances between the structure and the construction equipment or the presence of highly fragile buildings for impacts to occur. The City of Goleta does not currently have specific numeric vibration thresholds outlined in its General Plan or Municipal Code. However, the City’s Noise Ordinance (Goleta Municipal Code Chapter 9.09) addresses “unwarranted noises, sounds, and vibrations” to preserve public peace and comfort (City of Goleta, 2025). While explicit vibration limits are not detailed, the City emphasizes minimizing noise and vibration impacts, especially near sensitive receptors. For example, the General Plan Policy NE 6.4 restricts construction hours near residential areas to mitigate potential disturbances.

**Table 5.13-6. Typical Construction Equipment Vibration Source Levels at 25 Feet**

<b>Equipment Type</b>	<b>Approximate PPV at 25 Feet</b>	<b>Approximate Lv<sup>1</sup> at 25 feet</b>
Pile Driver (impact)	1.518	104
Vibratory roller	0.210	94
Large bulldozer	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79

1 RMS (root-mean-square) velocity in decibels, VdB re 1 micro-in/sec (FTA, 2018)

In the absence of specific local vibration standards, this analysis adopts the FTA vibration impact criteria (Table 5.13-3 above), which suggests that a peak particle velocity (PPV) of 0.2 inches per second is the threshold for potential damage to fragile buildings, while 0.5 inches per second is considered for more robust structures (FTA, 2018).

Human response to vibration can range from annoyance at lower levels to difficulties concentrating or reading at higher levels. Measuring annoyance often uses the ground vibration velocity level in decibel scale, referenced to 10<sup>-6</sup> inches per second, or vibration decibels (VdB). For infrequent pile driving events (less than 30 drives per day), the FTA impact criteria (Table 5.13-4) for Category 2 (residences and buildings where people normally sleep) land uses is 80 VdB. Typical construction equipment is listed in Table 5.13-6, with vibration levels experienced at 25 feet from the source and expressed in peak particle velocity (PPV) and VdB (vibration decibels).

The activities that would be most likely to cause groundborne vibration would be pile driving activities associated with the Construction of Foundation Pads phase. Impact pile drivers have a typical vibration level of 1.518 PPV and 104 VdB at 25 feet (FTA, 2018). The impact from construction-related vibrations would be confined to the Project site and immediate surroundings, around construction activities and would cease upon completion of the Project. The center of the Project site would be approximately 260 feet from the nearest sensitive receptor (Mariposa at Ellwood elder care facility). The closest battery unit would be approximately 160 feet from the elder care facility’s northwest boundary, at the cul-de-sac driveway entrance. As noise from vibration reduces with distance, any effects of groundborne vibration or noise levels would be less than the FTA threshold for damage to buildings. As indicated in Appendix M, Noise and Vibration Modeling, the property line of the elder care facility would experience a 79.8 VdB, which is just below the threshold of annoyance (80 VdB). Furthermore, residents inside the facility would be much further from the pile driving activity and would experience vibrations at a lesser intensity and as

the pile driving activities occur further and further from the southeast corner of the Project site, the vibrational decibel levels would diminish with each new foundation pad. Therefore, there would be a less than significant impact under this criterion.

**(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?**

NO IMPACT. The nearest public airport is located approximately 2.2 miles east of the proposed Project site in the city of Santa Barbara. As stated above in part (a), the temporary and permanent noise levels from the Project would be well within the applicable noise level thresholds and would not impact this or any other airports or airstrips. No excessive noise would result from Project construction or operations that could impact people residing or working near the airstrip. As such, there would be no impact under this criterion.

### **5.13.3.1. Impact Conclusions and Mitigation Measures**

The proposed Project would not result in significant impacts to noise and thus, no mitigation measures are recommended. The following are the recommended conditions of approval for the Project.

**N1. Recommended Condition of Approval: Construction Timing.** Construction activity and equipment maintenance is limited to the hours between 8 AM and 5 PM Monday through Friday. Exceptions to these restrictions may be made for onsite work for good cause at the sole discretion of the Planning and Environmental Review Director. Exceptions to these restrictions for work in the City Right-of-Way may be made for good cause at the sole discretion of the Public Works Director or designee. Any subsequent amendment to the General Plan noise standard upon which these construction hours are based shall supersede the hours stated herein. No construction can occur on State holidays (e.g., Thanksgiving, Labor Day). Non-noise generating construction activities such as interior plumbing, electrical, drywall and painting (depending on compressor noise levels), are not subject to these restrictions.

Timing: At least one sign near each project site entrance stating these restrictions must be posted on the site. Signs must be a minimum size of 24" x 48." Signs must be in place before the beginning of and throughout grading and construction activities. Violations may result in suspension of permits.

Monitoring/Reporting Party(ies): The Planning and Environmental Review Director must monitor compliance with restrictions on construction hours and must promptly investigate and respond to all complaints.

**N2. Recommended Condition of Approval: Noise Complaints.** Upon receipt of a verified noise complaint regarding nuisance noise from the project site, the City will require the following:

- (a) The project operator shall conduct a noise survey of the project site conducted by a City-approved noise consultant.
- (b) The project operator shall have a report prepared by a City-approved noise consultant that describes the primary noise sources identified during the survey.
- (c) The noise report shall evaluate the broadband noise level and octave band data obtained by the survey; and determine if there is an audible tone or set of tones or an exceedance of the noise requirements of Zoning Ordinance Section 17.39.070.
- (d) If an exceedance or audible tones are identified, additional noise measurements shall be required to identify the noise source of concern and develop measures to reduce noise levels generated by the fans.
- (e) Noise reduction measures may include, but are not limited to: the use of alternate fan settings, fan speeds, fan blade angle, or even passive barriers. Barriers can be located at ground level and surround the site, or be located along a property line. If specific equipment is the primary source, then the barriers can be located adjacent to the equipment, or placed on the equipment, such as on

top of the MegaPack. At minimum, the noise attenuation barriers must have a weight of two pounds per square foot or greater. This can include, but is not limited to 18-gauge steel sheet, 5/32 glass panels, and 5/8-inch-thick plywood. In addition, the barrier must be solid with no holes, gaps, or perforations and well-sealed to the surface to which it is attached.

Monitoring/Reporting Party(ies): The Planning and Environmental Review Director must promptly respond to all project-related nuisance noise complaints, require the project operator to implement the required noise surveys described above, and monitor compliance with noise complaint resolution measures.