# Rorimer & La Seda Residential Project Focused Noise Analysis

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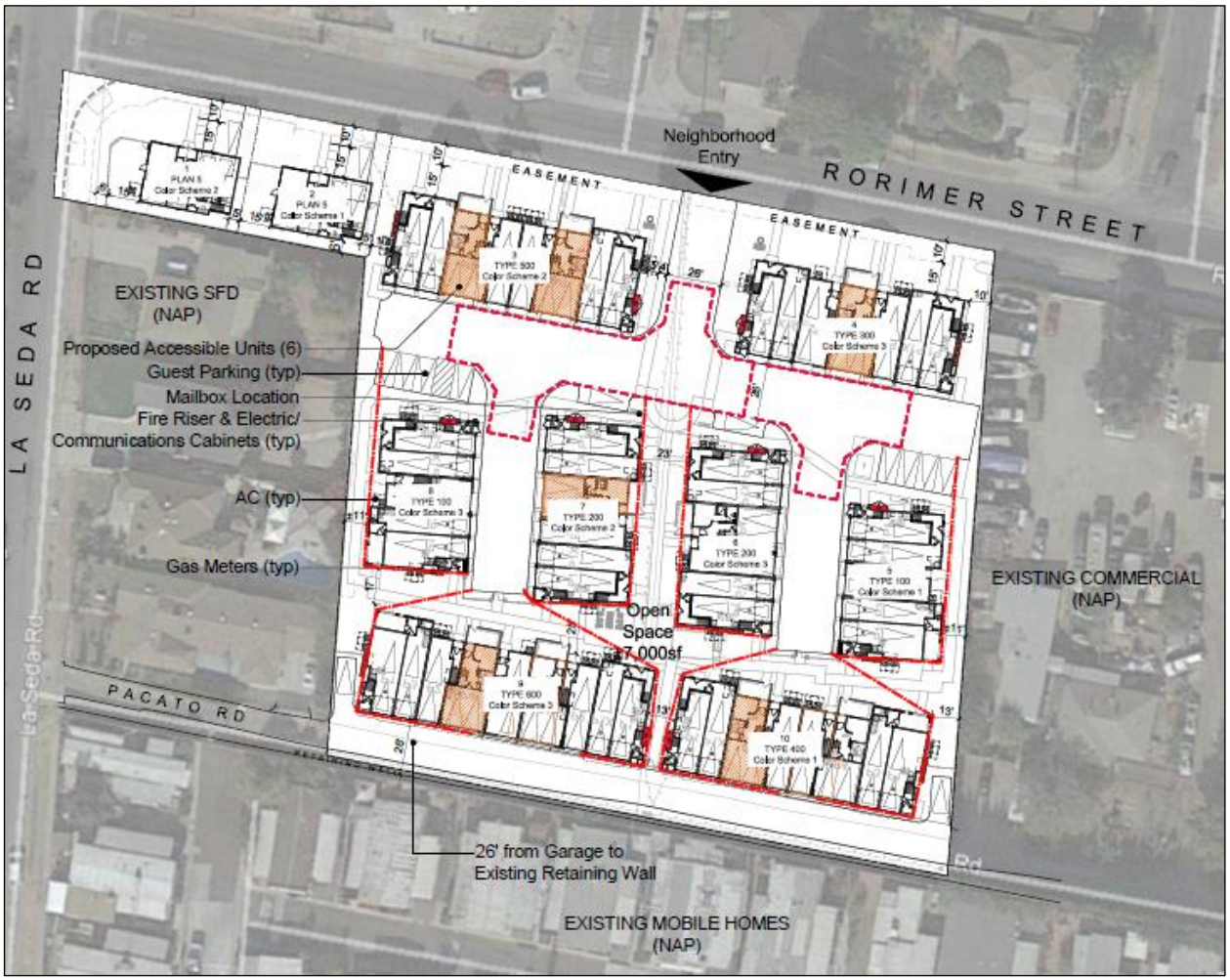
## Table of Contents

## *1.0 Methodology*

This noise study was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to determine if significant impacts are likely to occur in conjunction with the type and scale of development associated with the proposed Rorimer & La Seda residential development project proposed by The Olson Company. The project is to be located in unincorporated Los Angeles County and includes the removal of existing land uses and subsequent development of 56 semi-attached condominium units on approximately 2.18 acres of land. The project is to be sited along the east side of La Seda Road Avenue south of Rorimer Street. The SR-60 (Pomona) Freeway lies over 4,000 feet to the south.

The project site includes the Hanaro Community Church, located at 18616 Rorimer. The structures are estimated at approximately 12,646 for the community church with an additional 4,774 square feet, previously used for a private school, and would be removed at project implementation. The conceptual project is depicted in Figure 1.

***Figure 1***
***CONCEPTUAL SITE PLAN***




The following analysis provides a discussion on the fundamentals of sound, examines Federal, State, and County noise guidelines and policies, reviews noise levels at the site and existing receptor locations, and evaluates potential noise impacts associated with the proposed project. Traffic-based noise levels are based upon modeling prepared for the County of Los Angeles General Plan Noise Element, methodology for determining existing Average Daily Traffic (ADT) volumes at the project site, and trip generation values provided by RK Engineering Group, Inc. (RK). The evaluation of noise impacts associated with a proposed project includes:

- Reviewing existing ambient noise levels, including traffic-noise, in the project area,
- Determining the noise impacts associated with site development, and
- Determining the long-term noise impacts from project-related traffic.

The generation of noise associated with the implementation of the proposed project would occur in the short-term with demolition and construction activities, and over the long-term from the on-site operation of transportation-related noise sources associated with the proposed development. This noise assessment addresses noise impacts by discussing the current noise environment, analyzing impacts associated with proposed land use including mobile-source noise, and evaluating construction equipment noise.

## *2.0 Existing Conditions*

### *2.1 Noise Definitions*

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Typical human hearing can detect changes in sound levels of approximately 3 dBA under normal conditions. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions, and changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is discernable to most people in an exterior environment while a change of 10 dBA is perceived as a doubling (or halving) of the noise.

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise is defined as unwanted sound, and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

### *2.2 Noise Measurement Scales*

Several rating scales (or noise "metrics") exist to analyze adverse effects of noise, including traffic-generated noise, on a community. These scales include the equivalent noise level (Leq), the community noise equivalent level (CNEL), and the day-night noise level (Ldn). Leq is a measurement of the sound energy level averaged over a specified time period (usually 1 hour). Leq represents the amount of variable sound energy received by a receptor over a time interval in a single numerical value. For example, a 1-hour Leq noise level measurement represents the average amount of acoustic energy that occurred in that hour.

Unlike the Leq metric, the CNEL noise metric is based on 24 hours of measurement. CNEL also differs from Leq in that it applies a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when quiet time and sleep disturbance is of particular concern). Noise occurring during the daytime period (7:00 a.m. to 7:00 p.m.) receives no penalty. Noise produced during the evening time period (7:00 p.m. to 10:00 p.m.) is penalized by 5 dBA, while nighttime noise (10:00 p.m. to 7:00 a.m.) is penalized by 10 dBA.

The Ldn noise metric is similar to the CNEL metric except that the period from 7:00 p.m. to 10:00 p.m. receives no penalty. Both the CNEL and Ldn metrics yield approximately the same 24-hour value (within about 0.5 dBA) with the CNEL being the more restrictive (i.e., its calculation results in the higher value of the two).

### *2.3 Vibration Fundamentals*

Vibration is a trembling, quivering, or oscillating motion of the earth. Like noise, vibration is transmitted in waves, but in this case through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard.

Vibration can be either natural as in the form of earthquakes, volcanic eruptions, sea waves, landslides, etc., or man-made as from explosions, the action of heavy machinery or heavy vehicles such as trucks or trains. Both natural and man-made vibration may be continuous such as from operating machinery, or transient as from an explosion.

As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized in three ways including displacement, velocity, and acceleration. Particle displacement is a measure of the distance that a vibrated particle travels from its original position and for the purposes of soil displacement is typically measured in inches or millimeters. Particle velocity is the rate of speed at which soil particles move in inches per second or millimeters per second. Particle acceleration is the rate of change in velocity with respect to time and is measured in inches per second per second or millimeters per second per second. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. Table 1 presents the human reaction and effects on buildings exposed to various levels of *continuous* vibration.

Vibrations also vary in frequency and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies. However, due to their suspension systems, city buses often generate frequencies around 3 Hz at high vehicle speeds. It is more uncommon, but possible, to measure traffic frequencies above 30 Hz.

The way in which vibration is transmitted through the earth is called propagation. Propagation of earth borne vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

***Table 1***
***HUMAN REACTION TO TYPICAL VIBRATION LEVELS***

| ***Vibration Level Peak Particle Velocity (inches/second)*** | ***Human Reaction*** | ***Effect on Buildings*** |
|---|---|---|
| 0.006 - 0.019 | Threshold of perception, possibility of intrusion | Vibrations unlikely to cause damage of any type |
| 0.08 | Vibrations readily perceptible | Recommended upper level of vibration to which ruins and ancient monuments should be subjected |
| 0.10 | Level at which continuous vibration begins to annoy people. | Virtually no risk of "architectural" damage to normal buildings |
| 0.20 | Vibrations annoying to people in buildings. | Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings |
| 0.4 – 0.6 | Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking by bridges | Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage |

Source: Caltrans 2002.

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely

proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

### *2.4 Regulatory Environment*

To limit population exposure to physically and/or psychologically damaging, as well as intrusive noise levels, the federal government, the State of California, various County governments, and most municipalities in the State have established standards and ordinances to control noise.

#### *Federal Government*

##### *Occupational Health and Safety*

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the USEPA. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan. The construction of the project will be subject to these OSHA limitations and all workers would receive appropriate training, hearing protection, and breaks, accordingly, ensuring that they are not exposed to harmful noise levels. Adherence to these OSHA requisites would ensure that these impacts remain less than significant and noise in the workplace will not be addressed further in this study.

##### *Housing and Urban Development*

The US Department of Housing and Urban Development (HUD) has set a goal of 45 dBA Ldn as a desirable maximum interior standard for residential units developed under HUD funding. (This level is also generally accepted within the State of California.) While HUD does not specify acceptable exterior noise levels, standard construction of residential dwellings constructed under Title 24 standards typically provides 20 dBA, or more, of attenuation with the windows closed. Based on this premise, the exterior Ldn should not exceed 65 dBA.

#### *State of California Standards*

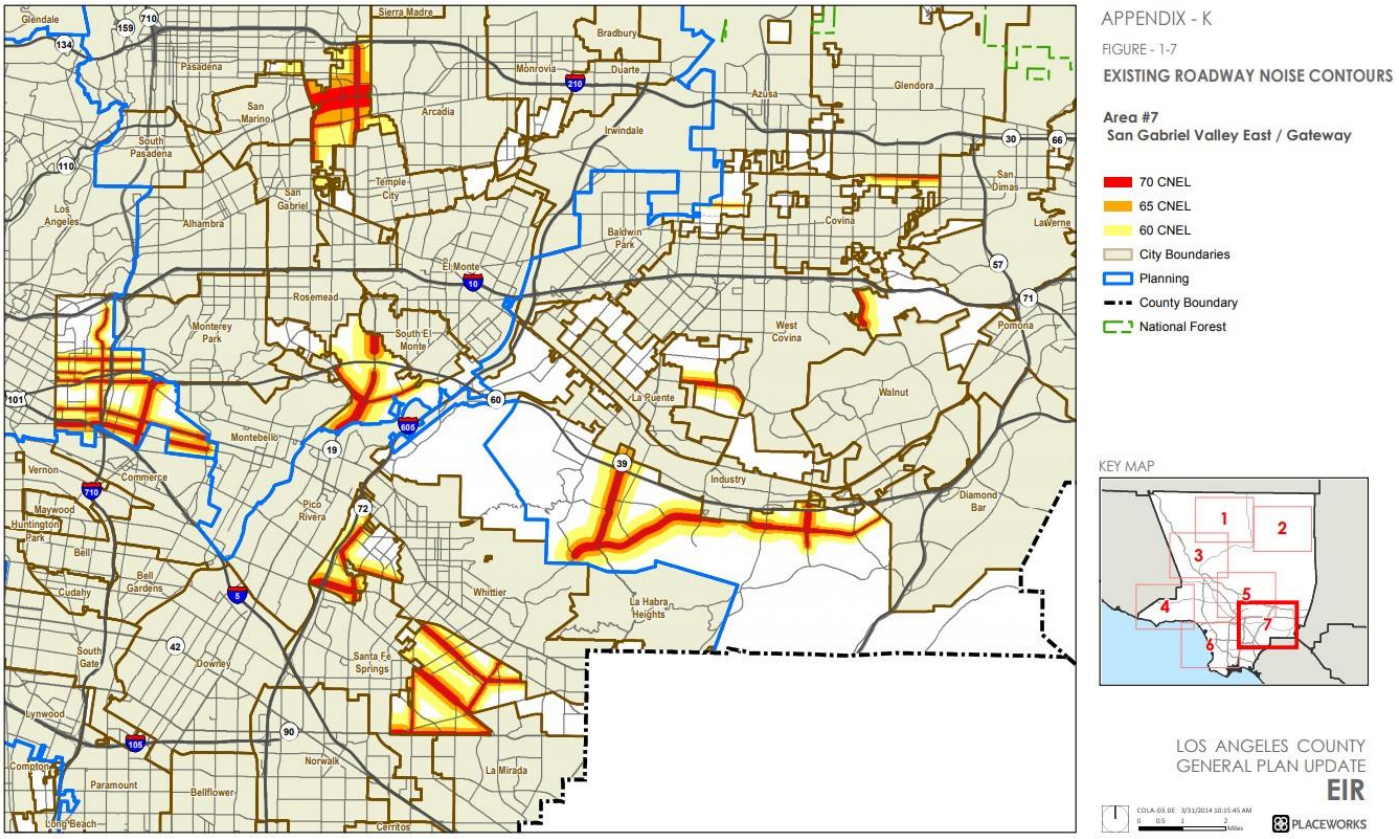
The California Office of Noise Control has set acceptable noise limits for sensitive uses. Sensitive-type land uses, such as homes, are "normally acceptable" in exterior noise environments up to 65 dBA CNEL and "conditionally acceptable" in areas up to 70 dBA CNEL. A "conditionally acceptable" designation implies that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use type is made and needed noise insulation features are incorporated in the design. By comparison, a "normally acceptable" designation indicates that standard construction can occur with no special noise reduction requirements.

#### *County of Los Angeles*

The project lies in an unincorporated portion of the County of Los Angeles. The County of Los Angeles General Plan Noise Element does not explicitly set noise limitations for sensitive receptors. The Element does cite the State Commissions of Housing and Community Development's adopted standards that "interior community noise equivalent levels (CNEL) attributable to external sources shall not exceed an annual CNEL of 45 dB in any habitable room." Also, the standards specify that residential structures located within CNEL contours of 60 dB adjacent to an existing or adopted freeway, expressway, parkway, major street, thoroughfare, railroad, or rapid transit line shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an annual CNEL of 45 dB.

A map of the existing noise contours included in the Noise Element of the General Plan is included in Figure 2. The project would appear to be north of the 60 dBA CNEL contour with the primary sources of noise being the SR-60 Freeway and railroad lines to the south of Valley Boulevard, neither of which was discernable during the field study.

***Figure 2***
***COUNTY OF LOS ANGELES NOISE ELEMENT EXISTING NOISE CONTOURS***




Standards protecting sensitive land uses from noise intrusion are established in the County of Los Angeles Noise Ordinance (Section No. 12.08). Section 12.08.390, Exterior noise standards, sets an exterior noise level of 50 dBA between the hours of 7:00 a.m. and 10:00 p.m. and 45 dBA between the hours of 10:00 p.m. and 7:00 a.m. Commercial properties raise these levels to 60 and 55 dBA, respectively, while industrial properties carry a standard of 70 dBA anytime of the day or night.

These standards are not to be exceeded for a cumulative period of more than 30 minutes in any hour (i.e., $L_{50}$). Similarly, the standards are not to be exceeded by 5 dBA for a period of 15 minutes in any hour, 10 dBA for a period of 5 minutes, and 15 dBA for 1 minute. The standard is not to be exceeded by 20 dBA for any time period. In the event that the ambient level exceeds these standards, the ambient levels become the standards. Note that these standards do not apply to pre-empted sources of noise (e.g., motor vehicles when operated on public roads) beyond County control.

Section No. 12.08.440 of the County Noise Ordinance pertains to construction operations. The ordinance prohibits construction operations between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound there from creates a noise disturbance across a residential or commercial real-property line, except for emergency work of public service utilities or by variance issued by the health officer is prohibited. The ordinance also discusses noise restrictions at affected structures and states that the contractor shall conduct construction activities in such a manner that the maximum noise levels at the affected buildings will not exceed those listed in Table 2.

***Table 2***
***COUNTY OF LOS ANGELES ALLOWABLE CONSTRUCTION NOISE LEVELS***

| Time | Single-family Residential | Multi-family Residential | Semi-residential/Commercial |
|---|---|---|---|
| Mobile Equipment[1] | | | |
| Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m. | 75 dBA | 80 dBA | 85 dBA |
| Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays | 60 dBA | 64 dBA | 70 dBA |
| Stationary Equipment[2] | | | |
| Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m. | 60 dBA | 65 dBA | 70 dBA |
| Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays | 50 dBA | 55 dBA | 60 dBA |

[1] Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment.
[2] Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment.

Section 12.08.570 H, "Activities Exempt from Chapter Restrictions" includes those sources of noise exempt for local control. Those related to the project are included below:

- Construction when performed in accordance with Part 4 of the ordinance (discussed above).

Section 12.12.030 also regulates construction noise. The section notes: "Except as otherwise provided in this chapter, a person, on any Sunday, or at any other time between the hours of 8:00 p.m. and 6:30 a.m. the following day, shall not perform any construction or repair work of any kind upon any building or structure, or perform any earth excavating, filling or moving, where any of the foregoing entails the use of any air compressors; jackhammers; power-driven drill; riveting machine; excavator, diesel-powered truck, tractor or other earth moving equipment; hand hammers on steel or iron, or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in a dwelling, apartment, hotel, mobile home, or other place of residence."

The County Noise Ordinance also addresses the effects of vibration and sets a threshold for this disturbance. Section 12.08.560, Vibration, prohibits operating or permitting the operation of any device that creates vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet (46 meters) from the source if on a public space or public right-of-way. The perception threshold is to be a motion velocity of 0.01 in/sec over the range of 1 to 100 Hertz.

### *2.5 Existing Noise Environment*

#### *Field Measurements*

The project is to be located in unincorporated Los Angeles County and includes the removal of existing land uses and subsequent development of 56 semi-attached condominium units on approximately 2.18 acres of land. The project is to be sited along the east side of La Seda Road Avenue south of Rorimer Street. The SR-60 (Pomona) Freeway lies over 4,000 feet to the south. Railroad lines, including the Union Pacific and Metrolink, are also located south of Valley Boulevard and north of the SR-60 Freeway.

The project includes residential land uses and is to be considered as sensitive in nature. Other sensitive land uses, including single-family residential units, are located proximate to the project both to the north across Rorimer Street and to the west along and across Le Seda Road. A mobile home park lies to the south across Pacato Road. The Rorimer Elementary School located to the east beyond the storage lot.

A field survey was conducted on Wednesday, June 10, 2020 to determine ambient noise levels at the site and proximate area. The study included four noise readings, all taken on-site. During the study, noise monitoring was conducted using a Quest Technologies Model 2900 Type 2 Integrating/logging Sound Level Meter. The unit meets the American National Standards Institute Standard S1.4-1983 for Type 2, International Electrotechnical Commission Standard 651-1979 for Type 2, and International Electro-technical Commission Standard 651-1979 for Type 2 sound level meters. The unit was field-calibrated using a Quest Technologies QC-10 calibrator at 10:20 a.m. immediately prior to the first set of readings. The calibration unit meets the requirements of the American National Standards Institute Standard S1.4-1984 and the International Electrotechnical Commission Standard 942: 1988 for Class 1 equipment. The calibration of the meter was rechecked at 12:00 noon after the final reading and no meter "drift" was noted. The results of the field study are summarized below. Monitoring locations are included in Figure 3. All obtained noise level measurements are included in Table 3.

***Figure 3***
***NOISE LEVEL MONITORING LOCATIONS***

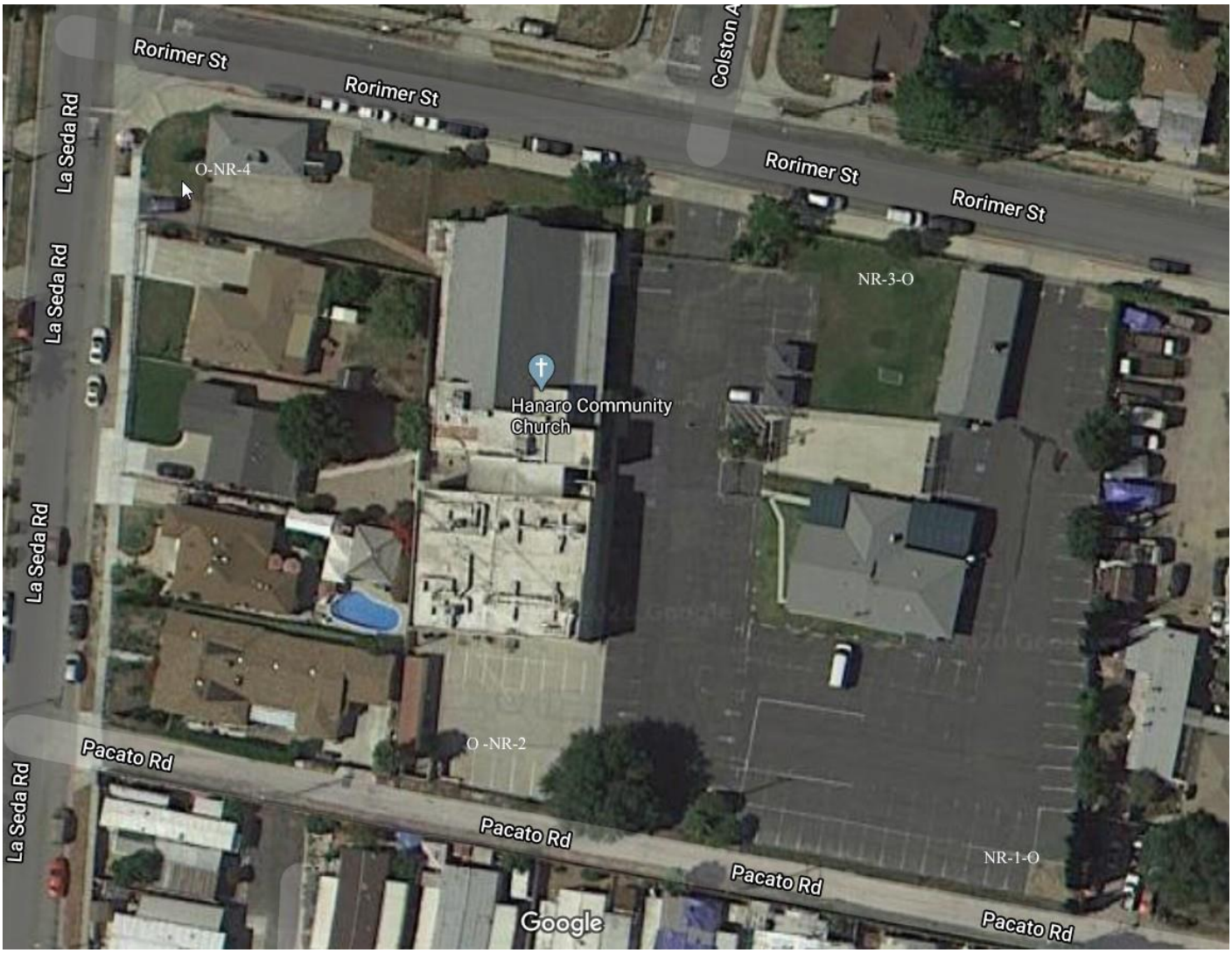


***Table 3***
***NOISE LEVEL MEASUREMENTS[1]***

| *Monitoring Location* | *Leq (dBA)* | *$L_{02}$ (dBA)* | *$L_{08}$ (dBA)* | *$L_{25}$ (dBA)* | *$L_{50}$ (dBA)* | *Lmin (dBA)* | *Lmax (dBA)* |
|---|---|---|---|---|---|---|---|
| NR-1 | 50.3 | 61.8 | 54.2 | 45.4 | 41.3 | 34.1 | 66.1 |
| NR-2 | 43.4 | 50.0 | 46.7 | 43.5 | 41.9 | 37.1 | 53.3 |
| NR-3 | 52.2 | 62.2 | 57.8 | 48.6 | 42.5 | 35.6 | 67.5 |
| NR-4 | 54.3 | 61.3 | 56.7 | 52.6 | 47.8 | 35.9 | 75.4 |

[1] The Leq represents the equivalent sound level and is the numeric value of a constant level that over the given period of time transmits the same amount of acoustic energy as the actual time-varying sound level. The $L_{02}$, $L_{08}$, $L_{25}$, and $L_{50}$ are the levels that are exceeded 2, 8, 25, and 50 percent of the time, respectively. Alternatively, these values represent the noise level that would be exceeded for 1, 5, 15, and 30 minutes during a 1-hour period if the readings were extrapolated out to an hour's duration. The Lmin and Lmax represent the minimum and maximum root-mean-square noise levels obtained over a period of 1 second during the measurement.

**NR-1**

This reading was taken on-site toward the southeast corner. The meter was placed at a distance of 20 feet north of the southern fence line, and 20 feet west of the eastern fence line. The 15-minute reading was taken from 10:15 a.m. Noise sources included a vehicle idling immediately to the east then passing the site along Pacato Road, a rooster crowing in the next yard, aircraft, birds, barking dogs, and background traffic. Note that the passing vehicle created the Lmax value substantially raising the Leq. Ambient noise in the trailer park immediately to the south along Pacato Road would be similar to that measured. Pacato Road has a width varying from about 12 to 17 feet and is more of an "alley" than a through street.

**NR-2**

This reading was taken on-site toward the southwest corner. The meter was placed at a distance of 20 feet north of the southern fence line, and 20 feet east of the short wall used to shield the trash receptacles. The 15-minute reading began at 10:15 a.m. Noise sources included assorted air conditioning units, birds, background traffic, and aircraft. Again, ambient noise in the trailer park immediately to the south along Pacato Road would be similar to that measured.

**NR-3**

This reading was taken in the grassy area along Rorimer Street. The meter was placed 50 feet south of the centerline of the road and 34 feet west of the existing classroom structure. The road has a width of approximately 36 feet and is unlined. The 15-minute reading began at 11:15 a.m. Traffic along Rorimer Street included 13 eastbound and 11 westbound automobiles. Other sources of noise included air conditioning units, a shop vacuum in use across the street, roosters crowing and aircraft. Similar noise levels would occur at the residential units located across Rorimer Street.

**NR-4**

This reading was taken in along La Seda Road in the grassy area to the southwest of the structure. The meter was placed 50 feet east of the centerline of the near (northbound) lane and 60 feet south of the centerline of Rorimer Street, to the north. La Seda also has a width of approximately 36 feet in this location. The 15-minute reading began at 11:43 a.m. Traffic along La Seda included 31 autos proceeding north and 18 autos headed south. Additionally, traffic along Rorimer Street included 18 autos traveling eastbound and eight cars headed westbound. The Lmax for this reading was created by a passing car with a loud muffler and stereo system "blasting." Other sources of noise included aircraft, birds, and dogs barking. Similar noise levels would be experienced at those homes along La Seda, with noise increasing with proximity to Valley Boulevard.

### *2.6 Sensitive Receptors*

Some land uses are considered more sensitive to noise than others due to the types of population groups or activities involved. Sensitive receptors include residential areas and other sensitive land uses including any private or public school, hospital, residential care facility for the elderly, and religious institutions.

The project is residential and is sensitive to the ambient noise in the area. The nearest sensitive land uses are the residential units that lie immediately west of the project site. Proximate residential uses are also located to the south across Sausalito Street.

### *3.0 Thresholds of Significance*

The County of Los Angeles General Plan Noise Element does not explicitly set noise limitations for sensitive receptors. The Element does cite the State Commissions of Housing and Community Development's adopted standards that "interior community noise equivalent levels (CNEL) attributable to external sources shall not exceed an annual CNEL of 45 dB in any habitable room." Also, the standards specify that residential structures located within CNEL contours of 60 dB adjacent to an existing or adopted freeway, expressway, parkway, major street, thoroughfare, railroad, or rapid transit line shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an annual CNEL of 45 dB.

With respect to projected increases, noise impacts can be broken down into three categories. The first is "audible" impacts, which refers to increases in noise level that are perceptible to humans. Audible increases in noise levels generally refer to a change of 3 dBA or more since this level has been found to be barely perceptible in exterior environments. The second category, "potentially audible," refers to a change in noise level between 1 and 3 dBA. This range of noise levels was found to be noticeable to sensitive people in laboratory environments. The last category includes changes in noise level of less than 1 dBA that are typically "inaudible" to the human ear except under quiet conditions in controlled environments. Only "audible" changes in noise levels at sensitive receptor locations are considered potentially significant.

For stationary sources, the applicable noise standards include criteria established by local as well as any State regulations applicable to the proposed project. Mobile-source noise (i.e., vehicle noise) is preempted from local regulation but is still subject to CEQA review using threshold values for the level of increase for a significant noise impact.

### *3.1 State CEQA Guidelines*

In order to assist in determining whether a project will have a significant effect on the environment, the CEQA Guidelines identify criteria that may be deemed to constitute a substantial or potentially substantial adverse change in physical conditions. According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on noise if the following apply:

- Would the project result in the 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?
- Would the project be consistent with standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (See XI, Land Use Planning, b) Cause a significant environmental impact due to a conflict of any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.)
- Would the project result in the generation of excessive ground borne vibration or ground borne noise levels
- 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?

### *4.0 Environmental Impacts and Mitigation Measures*

The project involves the demolition of an existing church and school and the construction and subsequent use of new residential units. Existing on-site noise levels are based on data included in the County of Los Angeles General Plan Noise Element supported by data obtained during the field study. Noise associated with site construction is based on construction noise values provided by the USEPA for use in noise assessments.

Noise associated with site occupancy is primarily from mobile sources and most notably traffic traveling along Rorimer Street and La Seda Road. This is because these streets have relatively low existing traffic volumes, and the project could potentially route all of its traffic along these two routes. Once this traffic merges onto Valley Boulevard, its addition to

the system of roadways would be too small to measure. Project-generated ADT volumes are as provided by RK.

The primary addition from the project to the ambient noise would be due to the addition of vehicles to the local roadways. Based on the *ITE Trip Generation Manual, 10th Edition* the proposed project would generate 410 Average Daily Trips (ADT) on a weekday, 456 ADT on a Saturday, and 352 ADT on a Sunday.

However, the removal of the existing church, and when operational, the school, would remove their trips. For the church, the ITE Manual puts the weekday ADT at 6.95 trips per thousand square feet for a weekday, 5.99 trips per day per thousand square feet on a Saturday, and 27.63 trips per day per thousand square feet on a Sunday. Based on the estimated 12,646 square feet for the existing use, the weekday ADT is estimated at 88 trips, the Saturday ADT at 76 trips, and Sundays at 349 trips. The existing school, estimated at 4,774 square feet would produce an additional 93 ADT on a weekday, when operational. As such, the actual addition to the roadways would be 322 ADT for a weekday excluding the school (i.e., 410 ADT – 88 ADT), and 229 ADT (i.e., 410 ADT – 88 ADT -93 ADT), if the school is included. With the removal of the church, the ADT would also be reduced from 456 to 380 on a Saturday (i.e., 456 ADT – 76 ADT). Sundays would see an increase of just 3 ADT (i.e., 352 ADT – 349 ADT).

The calculated noise associated with this traffic is then are compared to the thresholds of significance noted in Section 3.0, above. For ease of the reader, the included analysis follows the outline of the CEQA Checklist.

### *4.1 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*

*Temporary Noise, Less than Significant Impact with Mitigation Incorporated*

Noise levels associated with construction activities would be higher than the ambient noise levels in the project area today, but would subside once construction of the project is completed. Two types of noise impacts could occur during the construction phase. First, the transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. Even though there could be a relatively high single event noise exposure potential with passing trucks (a maximum noise level of 86 dBA at 50 feet), the increase in noise would be less than 1 dBA when averaged over a 24-hour period, and would therefore have a less than significant impact on noise receptors along the truck routes.

The second type of impact is related to noise generated by on-site construction operations and local residents would be subject to elevated noise levels due to the operation of this equipment. Construction activities are carried out in discrete steps, each of which has its own mix of equipment, and consequently its own noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase. Table 4 lists typical construction equipment noise levels recommended for noise impact assessment at a distance of 50 feet.

Noise ranges have been found to be similar during all phases of construction, although the actual construction of the structures is typically reduced from the grading efforts. The grading and site preparation phase tends to create the highest noise levels because the noisiest construction equipment is found in the earthmoving equipment category. This category includes excavating machinery (backfillers, bulldozers, draglines, front loaders, etc.) and earthmoving and compacting equipment (compactors, scrapers, graders, etc.). Typical operating cycles may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels at 50 feet from earthmoving equipment range from 73 to 96 dBA while Leq noise levels range up to about 88 dBA and 89 dBA for residential and commercial development, respectively. The later construction of structure is somewhat reduced from this value and the physical presence of the structure may break up line-of-sight noise propagation.

***Table 4***
***NOISE LEVELS GENERATED BY TYPICAL CONSTRUCTION EQUIPMENT***

| *Type of Equipment* | *Range of Sound Levels Measured (dBA at 50 feet)* | *Suggested Sound Levels for Analysis (dBA at 50 feet)* |
|---|---|---|
| Pile Drivers, 12,000 to 18,000 ft-lb/blow | 81 to 96 | 93 |
| Rock Drills | 83 to 99 | 96 |
| Jack Hammers | 75 to 85 | 82 |
| Pneumatic Tools | 78 to 88 | 85 |
| Pumps | 68 to 80 | 77 |
| Dozers | 85 to 90 | 88 |
| Tractor | 77 to 82 | 80 |
| Front-End Loaders | 86 to 90 | 88 |
| Hydraulic Backhoe | 81 to 90 | 86 |
| Hydraulic Excavators | 81 to 90 | 86 |
| Graders | 79 to 89 | 86 |
| Air Compressors | 76 to 86 | 86 |
| Trucks | 81 to 87 | 86 |
| Source: Noise Control for Buildings and Manufacturing Plants, BBN 1987. | | |

The most proximate residential structures include the existing single-family homes located to the north across Rorimer Street, to the west across Le Seda Road and in the mobile home park to the south. The nearest of these homes to the north could be on the order of 50 feet from on-site construction activities with Leq noise levels projected to be as high as 89 dBA. Interior levels at off-site residents could be reduced by over 20 dBA (with windows closed) from these values.

During the vast majority of the construction period, however, both exterior and interior noise levels would be 20 to 30 dBA lower, due to lower power settings and sound attenuation provided by longer distances and partial blocking both from the structures under construction and off-site structures. Ambient noise levels in the project vicinity would increase during construction phase, but would drop considerably after construction of the proposed uses is completed.

All construction would be subject to the requirements set forth in the County of Los Angeles Municipal Code. The County recognizes that control of construction noise is limited and therefore places special provisions on this noise. As noted, Section 22.28.120 of the Development Code exempts noise sources associated with construction provided mobile source activities associated with the construction of the physical structures does not exceed 75 dBA, as measured at any single-family residential units, between the hours of 7:00 a.m. and 8:00 p.m. or 60 dBA between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday. Stationary source activities associated with the construction of the physical structures shall not exceed 60 dBA, as measured at any single-family residential units, between the hours of 7:00 a.m. and 8:00 p.m. or 50 dBA between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday. Mobile source noise associated with site clearing, grading, etc. may not exceed 85 dBA at any receptor locations.

*Mitigation*

In addition to adherence to the County regulations noted above, the contractor shall apply the following measures to ensure that these levels are met.

- In accordance with the Municipal Code, construction shall be restricted to between the hours of 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. No construction shall occur at any time on Sundays or on federal holidays. These days and hours shall also apply any servicing of equipment and to the delivery of materials to or from the site.
- All construction equipment shall be properly maintained and tuned to minimize noise emissions.
- All equipment shall be fitted with properly operating mufflers, air intake silencers, and engine shrouds no less effective than originally equipped.

- The contractor shall specify the use of electric stationary equipment (e.g., compressors) that can operate off of the power grid where feasible. Where infeasible, stationary noise sources (e.g., generators and compressors) shall be located as far from residential receptor locations as is feasible.
- The construction contractor shall provide details of the construction schedule, as well as an on-site name and telephone number of a contact person for local residents.

Implementation of these commitments would ensure that any impacts remain less than significant.

*Permanent Noise, Less than Significant Impact*

The primary addition from the project to the ambient noise would be due to the addition of vehicles to the local roadways. Because the increase in noise is in proportion to the addition of vehicles to the existing volumes, the greatest impacts are expected where the project adds the greatest number of trips to roadways that include the lowest existing volumes. These would be Rorimer Street and La Seda Road. In this case, an impact would be considered if it raises the ambient noise level by 3 dB, a level considered to be barely discernable to the human ear.

No 24-hour vehicle counts were obtained along these two routes. Furthermore, the Los Angeles County General Plan Mobility Element provides no guidance as to traffic volumes for these "lessor" roads. Still, existing ADT traffic volumes can be reasonably inferred using the following methodology:

- The nighttime traffic volume (i.e., 10:00 p.m. – 6:00 a.m.) includes 15 percent of the ADT
- On average, "rush hour" includes 6 hours of the day (i.e., 6:00 – 9:00 a.m. and 4:00 – 7:00 p.m.)
- On average, every hour of "rush hour" is equivalent to 2 hours of "off-hour" (i.e., not nighttime or rush hour) traffic.

The counts along Rorimer Street obtained during NR-3 included 24 vehicles over a 15-minute period. Counts obtained during reading NR-4 included 26 vehicles, also over a 15-minute period. Therefore, 50 vehicles were counted over a 30 minute span during "off-hour" traffic conditions. This would then equate to 100 vehicles over an hour's duration. So each hour of "off-hour" traffic would include 100 vehicles.

10 hr x 100 veh/hr = 1,000 veh

6 hr x 100 veh/hr x 2 = 1,200 veh

(1000 veh + 1,200 veh) / 0.85 = 2,588 ADT

Thus, Rorimer would be projected to have an existing ADT of about 2,588 vehicles.

Similarly for La Seda, counts obtained during noise reading NR-4 showed 49 vehicles over a 15-minute period. This would then equate to 196 vehicles over an hour's duration. So each hour of off-hour traffic would include 196 vehicles.

10 hr x 196 veh/hr = 1,960 veh

6 hr x 196 veh/hr x 2 = 2,352 veh

(1960 veh + 2,352 veh) / 0.85 = 5,073 ADT

Based on the *ITE Trip Generation Manual, 10th Edition* the proposed project would generate 410 ADT on a weekday, 456 ADT on a Saturday, and 352 ADT on a Sunday.

However, the removal of the existing church, and when operational, the school, would remove their trips. For the church, the ITE Manual puts the weekday ADT at 6.95 trips per thousand square feet for a weekday, 5.99 trips per day per thousand square feet on a Saturday, and 27.63 trips per day per thousand square feet on a Sunday. Based on the estimated 12,646 square feet for the existing use, the weekday ADT is estimated at 88 trips, the Saturday ADT at 76 trips, and Sundays at 349 trips. The existing school, estimated at 4,774 square feet, would produce an additional 93 ADT on a weekday, when operational. As such, the actual addition to the roadways would be 322 ADT for a weekday excluding the school (i.e., 410 ADT – 88 ADT), and 229 ADT (i.e., 410 ADT – 88 ADT -93 ADT), if the school is included. The ADT would also be reduced from 456 to 380 on a Saturday. Sundays would see an increase of just 3 ADT (i.e., 352 ADT – 349 ADT).

When considering the addition of traffic, the increase in noise is calculated using the equation:

Resultant Noise Increase = 10 x log((Existing Volume + Projected Volume) / Existing Volume)

So for Rorimer Street:

Resultant Noise Increase = 10 x log((2,588 + 322) / 2,588) = 0.5dB

As such, the increase in the weekday noise generated along Rorimer Street is projected at just 0.5 dBA. This increase is too small to be audible and is less than significant. Furthermore, even if the entirety of the 456 ADT projected for a Saturday is added to the existing ADT:

Resultant Noise Increase = 10 x log((2,588 + 456) / 2,588) = 0.7dB.

When considering La Seda Road,

Resultant Noise Increase = 10 x log((5,073 + 456) / 5,073) = 0.4dB.

Again, these increases are too small to be audible and are less than significant.

***4.1A Project consistency with standards established in the local general plan or noise ordinance, or applicable standards of other agencies (See XI, Land Use Planning, b) Cause a significant environmental impact due to a conflict of any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.)***

*Less than Significant Impact*

The County of Los Angeles General Plan Noise Element does not explicitly set noise limitations for sensitive receptors. The Element does cite the State Commissions of Housing and Community Development's adopted standards that "interior community noise equivalent levels (CNEL) attributable to external sources shall not exceed an annual CNEL of 45 dB in any habitable room." Also, the standards specify that residential structures located within CNEL contours of 60 dB adjacent to an existing or adopted freeway, expressway, parkway, major street, thoroughfare, railroad, or rapid transit line shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an annual CNEL of 45 dB.

Contours presented in the General Plan Noise Element indicate that the project is outside of the 60 dBA CNEL noise contours. Additionally, on-site noise measurements confirm that noise at the project site would not exceed 60 dBA CNEL. The CNEL is typically about 5 dB louder than "off-hour" noise levels. The field study noted onsite noise levels ranging from 43.4 to 54.3 dBA Leq. Even with the addition of 5 dBA, these levels would not exceed 60 dBA CNEL. The project would be consistent with the goals of the General Plan and does not present a significant impact.

***4.2 Generation of excessive ground borne vibration or ground borne noise levels***

*Less than Significant Impact*

The proposed project would involve the demolition of on-site structures and the construction and occupancy of new and residential structures. Caltrans notes that ground borne vibration is typically associated with blasting operations, the use of pile drivers, and large-scale demolition activities, none of which are anticipated for the construction or operation of the project. As such, no excessive ground borne vibrations would be created by the proposed project and any potential impacts are less than significant.

***4.3 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 Bracket Field Airport is located in the City of La Verne approximately 7.7 miles to the northeast of the project site. The airport's runway is aligned in roughly an east/west orientation and the project site is not in the prevailing flight path.

The project site is well beyond the airport's 65-dBA CNEL noise contour and the resultant aircraft noise levels are well below any regulatory standards. No significant impacts would result from the implementation of the proposed project.

## *5.0 References*


Bolt, Beranek, and Newman, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, December 31.1971

California Department of Transportation, *Transportation Related Earthborne Vibrations*, February 20, 2002

County of Los Angeles, *County of Los Angeles General Plan, 2035*, October 6, 2015

County of Los Angeles, *County of Los Angeles Municipal Code*, 1978

RK Engineering Group, *Rorimer & La Seda Residential Development Focused Traffic Analysis, County of Los Angeles*, March 12, 2020

U.S. Department of Housing and Urban Development, *A Guide to HUD Environmental Criteria and Standards Contained in 24 CFR Part 51*, August 1984