CORE5 RIDER BUSINESS CENTER

NOISE IMPACT ANALYSIS

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1 INTRODUCTION

This Noise Impact Analysis evaluates the potential noise and vibration related impacts that would be generated by the proposed Core5 Rider Business Center project (proposed project). The project site is located at the southwest corner of the intersection of Rider Street and Wilson Avenue in the City of Perris. The project would consist of demolishing three existing single-family residences and the construction of a new 248,483 square foot industrial building with approximately 5,000 square feet designated for supporting office uses. The project site would be accessed by two points of ingress and egress, one along Rider Street and one along Wilson Avenue. It is assumed the easterly most driveway off Wilson Avenue will be used for truck access and circulation around the site. Truck loading docks and trailer parking will be easterly facing oriented along Wilson Avenue. A retaining wall is proposed along Wilson Avenue to adequately screen on-site trailers from the public's view. The regional location and site plan can be found in Figure 1 and Figure 2, respectively.

1.1 Purpose of the Report

To support the CEQA document for the proposed project, this Noise Impact Analysis has been prepared in order to determine the potential offsite and onsite noise and vibration impacts that could be generated from construction and operation of the proposed Wilson-Rider project. The following is provided in this report:

- A description of the study area and the proposed project.
- Information regarding the fundamentals of noise.
- Information regarding the fundamentals of vibration.
- A description of the local noise guidelines and standards.
- An evaluation of the current noise environment.
- An analysis of the potential short-term construction-related noise and vibration impacts from the proposed project.
- An analysis of long-term operations-related noise and vibration impacts from the proposed project.

1.2 Conclusions

The conclusions for the noise and vibration analysis are as follows:

Construction Noise:

Modeled construction noise levels reached up to 67.1 dBA L_{eq} and 71.8 dBA L_{max} at the façade of the nearest residential receptor located approximately 110 feet west of the western project boundary, up to 63.8 dBA L_{eq} and 68.6 dBA L_{max} at the façade of the nearest residential receptor located approximately 345 feet to the south of the southern project boundary, up to 56.9 dBA L_{eq} and 61.6 dBA L_{max} at the façade of the nearest residential receptor located approximately 0.26 miles from the eastern project boundary, and up to 56.4 dBA L_{eq} and 61.2 dBA L_{max} at the façade of the nearest residential receptors located approximately 0.26 miles from the northeastern project boundary.

Furthermore, modeled unmitigated construction noise levels when combined with existing measured noise levels reached up to 71.4 dBA L_{eq} at the façade of the nearest residential receptor located to the west of the project site, up to 74.2 dBA L_{eq} at the façade of the nearest residential receptor located to the south of the project site, up to 58.3 dBA L_{eq} at the façade of the nearest residential receptor to the east of the project site, and up to 72.1 dBA L_{eq} at the façade of the nearest residential receptors to the northeast of the project site.

This would not exceed the City of Perris residential construction noise threshold of 80 dBA L_{max}. In addition, construction activities would be consistent with the City's Municipal Code Section 7.34.060 which prohibits construction activities other than between the hours of 7:00 AM and 7:00 PM or at any time on a legal holiday, with the exception of Columbus Day and Washington's Birthday, or on Sundays. Overall, construction noise would be less than significant.

Vibration Impacts: Construction activities can produce vibration that may be felt by adjacent uses. As the nearest existing structures are located approximately 26 feet from the western property line and 40 feet from the southern property line any location within the project boundary where vibratory equipment may be utilized would not exceed the Caltrans architectural damage criterion for continuous vibrations at residential structures of 0.3 inch-per-second PPV.

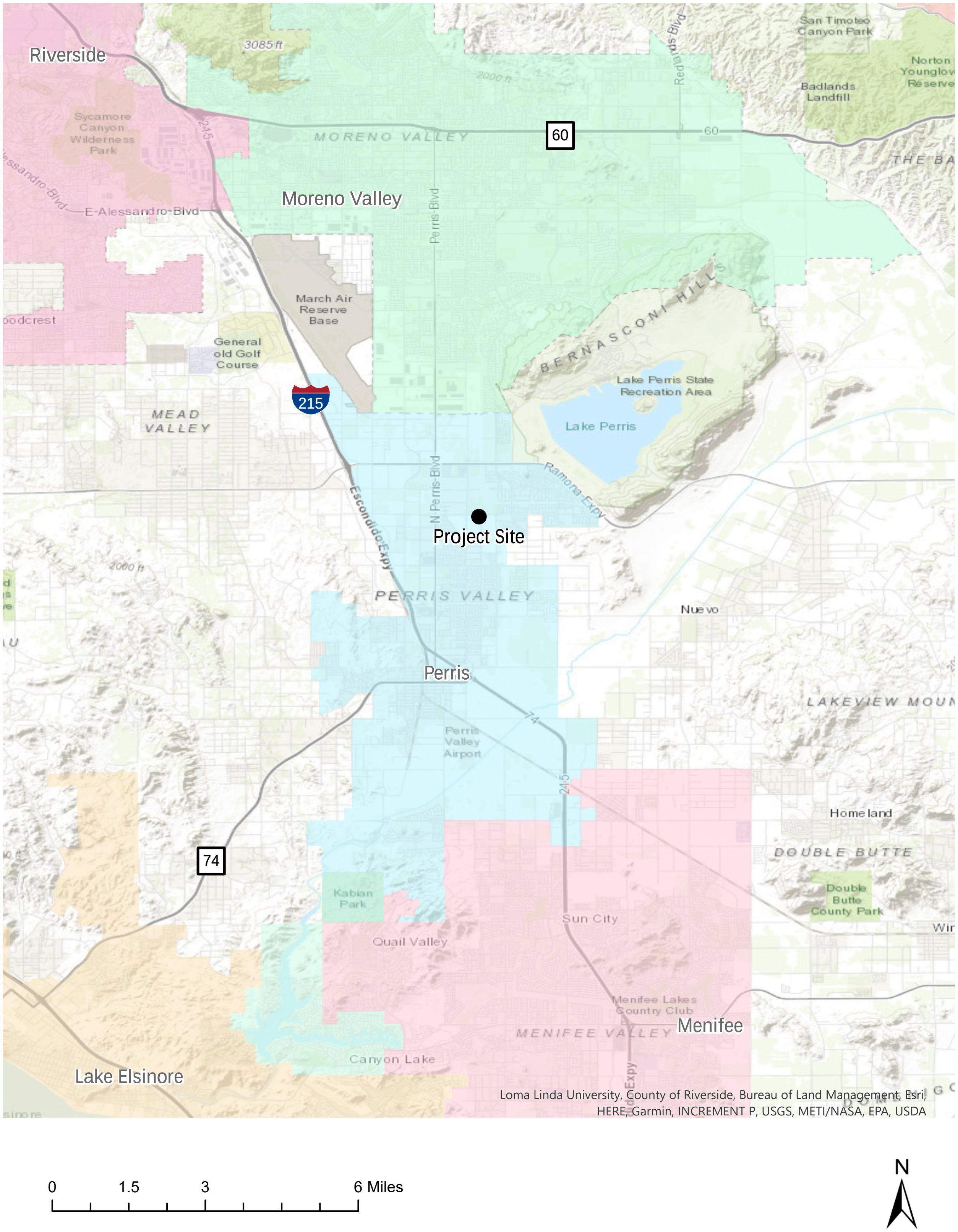
Operation related truck vibration is not expected to be perceptible at sensitive receptors or exceed thresholds related to potential structural damage. At the nearest residential structures to the west (approximately 435 feet away) the vibration from on-site truck activity within the loading dock area will be approximately 0.001 inches per second PPV, which would not exceed the 0.3 inch-per-second PPV threshold for potential structural damage or the 0.4 inch-per-second PPV threshold for human annoyance. In addition, truck traffic related vibration levels at the nearest residential structures (approximately 30 feet from the edge of the roadway) from off-site truck trips would be approximately 0.058 inches per second PPV or 0.041 inch per second RMS, which would not be perceptible or exceed the 0.3 inch-per-second PPV threshold for potential structural damage. This impact would be less than significant.

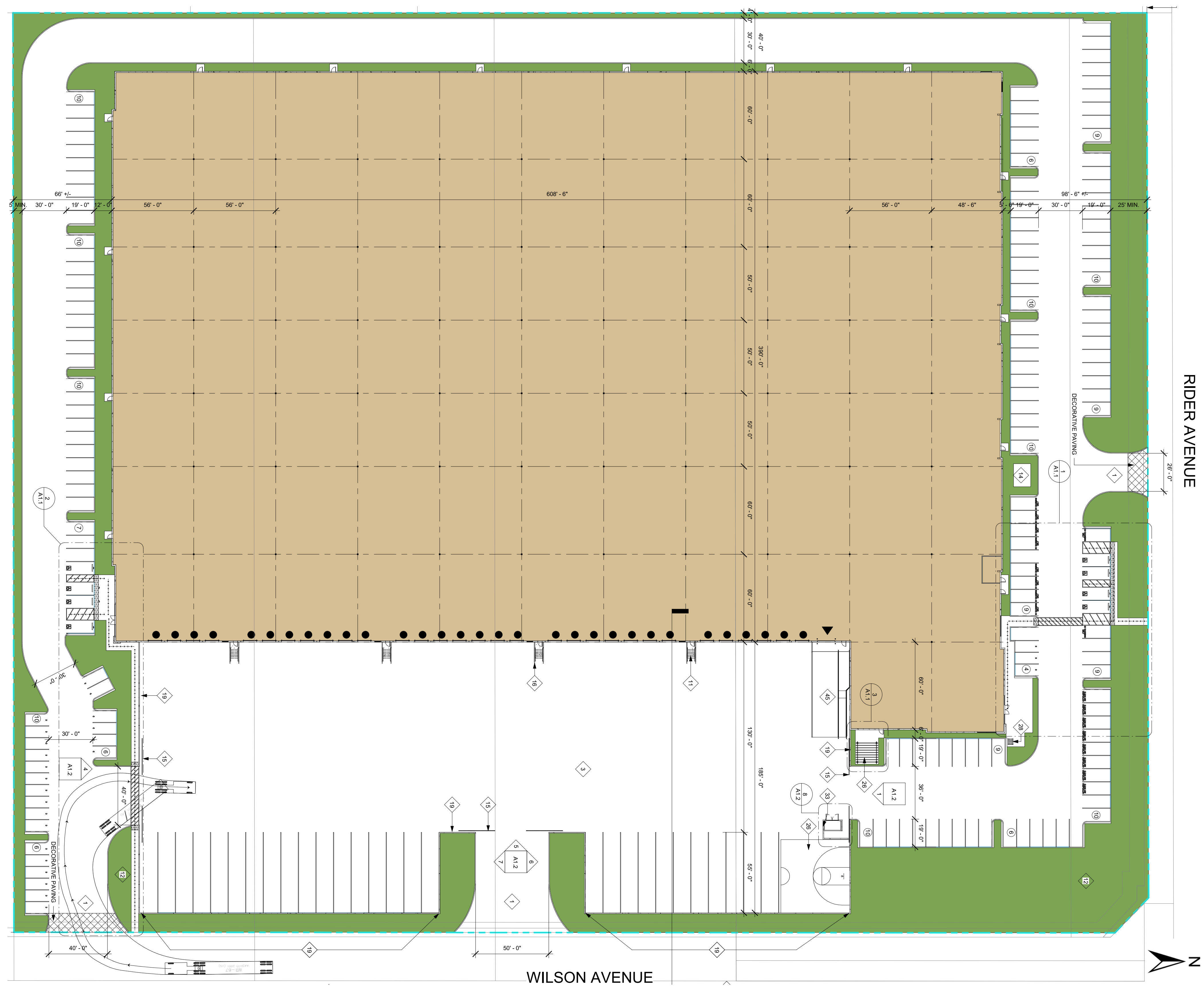
Off-Site Vehicular Noise: The proposed project would not result in a perceptible increase in noise due to the increase of project-related traffic on roadways in the project vicinity. The calculated noise levels show that the project would contribute a maximum of 0.1 dBA to existing noise levels. As the project-related increase in traffic noise does not exceed 3 dBA, the project would not contribute to a substantial permanent increase in ambient noise levels in the project vicinity. Impacts are considered less than significant.

On-Site Operational Noise: The noise levels generated by onsite activities such as loading and unloading and operation of HVAC would be anticipated to reach up to approximately 59.6 dBA L_{max} at nearby sensitive receptors. The project generated operational noise would not result in substantially greater noise levels than currently exist at the project site nor would they be anticipated to exceed the City of Perris' 80 dBA L_{max} daytime or 60 dBA L_{max} nighttime maximum noise level standards. Therefore, no significant onsite noise impacts from the on-going operations of the proposed project would occur at the closest sensitive receptor.

Airport Noise: The nearest airport is March Air Reserve Base/Inland Port Airport (March ARB/IPA), located approximately 2.88 miles northwest of the project site. A portion of the project site falls within the 60 dBA noise contour. However, 60 dBA noise from aircraft operations would not exceed the City's Municipal Code noise level requirements; and therefore, would not expose people residing or working in the project area to excessive noise levels from airports. Impacts are considered to be less than significant.

Regional Location




RIDER AVENUE
WILSON AVENUE
DECORATIVE PAVING
608' - 6"
N

2 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit, which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear.

2.1 Noise Descriptors

Noise equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in dBA. The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The peak traffic hour L_{eq} is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Sound Level (L_{dn}) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 PM and 7 AM While the Community Noise Equivalent Level (CNEL) is similar to the L_{dn}, except that it has another addition of 4.77 dB to sound levels during the evening hours between 7 PM and 10 PM These additions are made to the sound levels at these times because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason the sound is perceived to be louder in the evening and nighttime hours and is weighted accordingly. Many cities rely on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

Another noise descriptor that is used primarily for the assessment of aircraft noise impacts is the Sound Exposure Level, which is also called the Single Event Level (SEL). The SEL descriptor represents the acoustic energy of a single event (i.e., an aircraft overflight) normalized to one-second event duration. This is useful for comparing the acoustical energy of different events involving different durations of the noise sources. The SEL is based on an integration of the noise during the period when the noise first rises within 10 dBA of its maximum value and last falls below 10 dBA of its maximum value. The SEL is often 10 dBA greater, or more, than the L_{MAX} since the SEL logarithmetically adds the L_{eq} for each second of the duration of the noise.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown the humans are more perceptible to changes in noise levels of a pure tone (Caltrans 1998). For a noise source to contain a “pure tone,” there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to “stand out” against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contagious one-third octave bands by: 5 dB for center frequencies of 500 Hertz (Hz) and above; by 8 dB for center frequencies between 160 and 400 Hz; and by 15 dB for center frequencies of 125 Hz or less (Department of Health Services 1977).

2.3 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. To be conservative, hard-site conditions were used in this analysis.

2.4 Traffic Noise Prediction

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of traffic noise levels, a doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of 3 dBA. Based on the FHWA community noise assessment criteria, this change is “barely perceptible,” for reference a doubling of perceived noise levels would require an increase of approximately 10 dBA. However, the 1992 findings of Federal Interagency Committee on Noise (FICON), which assessed changes in ambient noise levels resulting from aircraft operations, found that noise increases as low as 1.5 dB can cause annoyance, when the existing noise levels are already greater than 65 dB. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

2.5 Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. For a noise barrier to work, it must be high enough and long enough to block the view of a road. A noise barrier is most effective when placed close to the noise source or receiver. A noise barrier can achieve a 5-dBA noise level reduction when it is tall enough to break the line-of-sight. When the noise barrier is a berm instead of a wall, the noise attenuation can be increased by another 3 dBA.

3 GROUNDBORNE VIBRATION FUNDAMENTALS

Groundborne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of groundborne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although groundborne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Groundborne noise is an effect of groundborne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 Vibration Descriptors

Several different methods are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (RMS) amplitude of the vibration velocity. Because of the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as L_V and is based on the RMS velocity amplitude. A commonly used abbreviation is VdB, which in this text, is when vibration level (L_V) is based on the reference quantity of 1 microinch per second.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Offsite sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible groundborne noise or vibration.

3.3 Vibration Propagation

The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform median, while groundborne vibrations travel through the earth, which may contain significant geological differences. 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.

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

3.4 Construction-Related Vibration Level Prediction

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table 1 gives approximate vibration levels for particular construction activities. The data in Table 1 provides a reasonable estimate for a wide range of soil conditions.

Table 1. Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level (Lv) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 (upper range)	105
	0.170 (typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 in soil	66
	0.017 in rock	75
Vibratory roller	0.210	94
Hoe ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

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

4 REGULATORY SETTING

The proposed project is located in the City of Perris and noise regulations are addressed through various federal, State, and local government regulations as discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency limits noise exposure of workers to 90 dB L_{eq} or less for 8 continuous hours or 105 dB L_{eq} or less for 1 continuous hour. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA). Transit noise is regulated by the federal Urban Mass Transit Administration (UMTA), while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

4.2 State Regulations

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor’s Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it any special acoustical is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project. The City of Perris has adopted their own version of the State Land Use Compatibility Guidelines for land use planning and to assess potential transportation noise impacts to proposed land uses (see Table 2).

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

4.3 Local Regulations

The City of Perris General Plan and Municipal Code establish the following applicable goals policies related to noise and vibration.

City of Perris General Plan

The City of Perris General Plan Noise Element was adopted August 30, 2005 (amended August 30, 2016) and includes modified version of the State of California Noise Land Use Compatibility Matrix (see Table 2). This Matrix establishes standards for outdoor noise levels that are normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable for a variety of land uses. For example, noise levels of up to 60 dBA CNEL are "normally acceptable" and levels up to 65 dBA CNEL are "conditionally acceptable" for both single-family and multi-family residential uses and noise levels of up to 65 dBA CNEL are "normally acceptable" and levels up to 75 dBA CNEL are "conditionally acceptable" for business commercial uses. Additional City of Perris General Plan Noise Element goals and policies which apply to the proposed project are presented below.

Goal-I: Land Use Siting: Future land uses compatible with projected noise environments.

Policy I.A: The State of California Noise/Land Use Compatibility Criteria shall be used in determining land use compatibility for new development.

Implementation Measures

I.A.1 All new development proposals will be evaluated with respect to the State Noise/ Land Use Compatibility Criteria. Placement of noise sensitive uses will be discouraged within any area exposed to exterior noise levels that fall into the "Normally Unacceptable" range and prohibited within areas exposed to "Clearly Unacceptable" noise ranges.

I.A.2 Site plans for new residential development near roadway and train noise sources shall incorporate increased building setbacks and/or provide for sufficient noise barriers for useable exterior yard areas so that noise exposure in those areas does not exceed the levels considered "Normally Acceptable" in the State of California Noise/Land Use Compatibility Criteria.

I.A.3 Acoustical studies shall be prepared for all new development proposals involving noise sensitive land uses, as defined in Section 16.22.020J of the Perris Municipal Code, where such projects are adjacent to roadways and within existing or projected roadway CNEL levels of 60 dBA or greater.

I.A.4 As part of any approvals of noise sensitive projects where reduction of exterior noise to 65 dBA is not reasonably feasible, the City will require the developer to issue disclosure statements to be identified on all real estate transfers associated with the affected property that identifies regular exposure to roadway noise.

I.A.5 No new residential dwellings shall be placed in areas with mitigated or unmitigated exterior noise levels that exceed 70 dBA CNEL.

Goal-V: Stationary Noise Sources: Future non-residential land uses compatible with noise sensitive land uses.

Policy V.A: New large scale commercial or industrial facilities located within 160 feet of sensitive land uses shall mitigate noise impacts to attain an acceptable level as required by the State of California Noise/Land Use Compatibility Criteria.

Implementation Measures

V.A.1 An acoustical impact analysis shall be prepared for new industrial and large scale commercial facilities to be constructed within 160 feet of the property line of any existing noise sensitive land use. This analysis shall document the nature of the commercial or industrial facility as well as all interior or exterior facility operations that would generate exterior noise. The analysis shall document the placement of any existing or proposed noise-sensitive land uses situated within the 160-foot distance. The analysis shall determine the potential noise levels that could be received at these sensitive land uses and specify specific measures to be employed by the large scale commercial or industrial facility to ensure that these levels do not exceed 60 dBA CNEL at the property line of the adjoining sensitive land use. No development permits or approval of land use applications shall be issued until the acoustic analysis is received and approved by the City of Perris Staff.

City of Perris Municipal Code

In addition to any measures to reduce noise levels recommended in this report, project operations will be subject to the following City ordinances.

Section 7.34.040 Sound Amplification

No person shall amplify sound using sound amplifying equipment contrary to any of the following:

1. The only amplified sound permitted shall be either music or the human voice, or both.
2. The volume of amplified sound shall not exceed the noise levels set forth in this subsection when measured outdoors at or beyond the property line of the property from which the sound emanates.

Time Period	Maximum Noise Level
10:01 PM – 7:00 AM	60 dBA Lmax
7:01 AM – 10:00 PM	80 dBA Lmax

Section 7.34.050 General Prohibition

It unlawful for any person to willfully make, cause or suffer, or permit to be made or caused, any loud excessive or offensive noises or sounds which unreasonably disturb the peace and quiet of any residential neighborhood or which are physically annoying to persons of ordinary sensitivity or which are so harsh, prolonged or unnatural or unusual in their use, time or place as to occasion physical discomfort to the inhabitants of the city, or any section thereof. The standards for dBA noise level in section 7.34.040 shall apply to this section. To the extent that the noise created causes the noise level at the property line to exceed the ambient noise level by more than 1.0 decibels, it shall be presumed that the noise being created also is in violation of this section.

Section 7.34.060 Hours of Construction

It is unlawful for any person between the hours of 7:00 PM of any day and 7:00 AM of the following day, or on a legal holiday, with the exception of Columbus Day and Washington's birthday, or on Sundays to erect, construct, demolish, excavate, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. Construction activity shall not exceed 80 dBA L_{max} in residential zones in the City.

Section 7.34.070 Refuse Vehicles and Parking Lot Sweepers

No person shall operate or permit to be operated a refuse compacting, processing or collection vehicle or parking lot sweeper between the hours of 7:00 PM to 7:00 AM in any residential area unless a permit has been applied for and granted by the City of Perris.

Section 7.34.080 Disturbing, Excessive, Offensive Noises; Declaration of Certain acts Constituting

The following activities, among others, are declared to cause loud, disturbing, excessive or offensive noises in violation of this section and are unlawful, namely:

(1) *Horns, signaling devices etc.* Unnecessary use or operation of hons, signaling devices or other similar devices on automobiles, motorcycles or any other vehicle.

(7) Leaf Blowers

a. The term "leaf blower" means any portable, hand-held or backpack, engine-powered device with a nozzle that creates a direct able airstream which is capable of and intended for moving leaves and light materials.
b. No person shall operate a leaf blower in any residential zoned area between the hours of 7:00 PM and 8:00 AM on weekdays and 5:00 PM and 9:00 AM on weekends or on legal holidays.
c. No person may operate any leaf blower at a sound level in excess of 80 decibels measured at a distance of 50 feet or greater from the point of noise origin.
d. Leaf blowers shall be equipped with functional mufflers and an approved sound limiting device required to ensure that the leaf blower is not capable of generating a sound level exceeding any limit prescribed in this section.

Table 2. City of Perris Noise Compatibility Guidelines

Land Use Category	Exterior Noise Level (CNEL)							
	55	60	65	70	75	80	85	
Low Density Single Family, Duplex, Mobile Homes								
Multi-Family								
Hotels/Motels, Transient Lodging								
Schools, Libraries, Churches, Hospitals, Nursing Homes								
Auditoriums, Concert Halls, Amphitheaters, Meeting Halls								
Sports Arena, Outdoor Spectator Sports								
Playgrounds, Neighborhood Parks								
Golf Courses, Riding Stables, Water Recreation, Cemeteries								
Office Buildings, Business Commercial and Professional, and Mixed-Use Developments								
Industrial, Manufacturing Utilities, Agriculture								

Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise reduction features included in the design.

Unacceptable: New construction or development should generally not be undertaken.

5 EXISTING NOISE CONIDTIONS

To determine the existing noise level environment, short-term noise measurements were taken at four locations in the project study area between October 15, 2020 to October 16, 2020. The field survey noted that noise within the proposed project area is generally characterized by traffic noise. The nearest airport is March Air Reserve Base/Inland Port Airport (March ARB/IPA), which is located approximately 2.88 miles northwest of the project site. A portion of the project site falls within the 60 dBA noise contour, while the remainder is outside the noise contours for the airport. Therefore, it is not considered as a source that contributes to the ambient noise levels on the project site. The following describes the measurement procedures, measurement locations, and the noise measurement results.

5.1 Noise Measurement Procedure and Criteria

Noise Measurement Equipment

Noise monitoring was performed using American National Standards Institute (ANSI Section SI4 1979, Type 1) NTI Audio and Piccolo 2 sound level meters. The sound level meter was programmed in “slow” mode to record the sound pressure level at one second and one minute intervals for in A-weighted form. The sound level meter and microphone was mounted approximately five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before monitoring. The noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Locations

The noise monitoring locations were selected in order to obtain noise measurements of the current noise sources impacting the vicinity of the project site and to provide a baseline for any potential noise impacts that may be created by development of the proposed project. The sites are shown in Figure 3 on the following page. Appendix A includes a photographic index of the study area and noise measurement data.

Noise Measurement Timing and Climate

The short-term (15 minute) noise measurements were recorded between 1:37 PM and 2:56 PM on October 15, 2020. At the start of the noise monitoring, the sky was relatively clear with calm wind conditions (~5 mph).

The long-term (24-hour) noise measurement was recorded between 3:00 PM on October 15, 2020 to 3:00 PM on October 16, 2020. At the start of the noise monitoring, the sky was relatively clear and calm wind conditions (~2-5 mph).

Noise Measurement Locations

5.2 Noise Measurement and Analysis Results

The short-term noise measurements were taken for a duration of 15 minutes each at three locations at the project site. The results of the short-term noise level measurements are provided below in Table 3. The dominant noise source in the area is traffic from Rider Street and Wilson Avenue.

Table 3. Short-Term Noise Measurement Summary (dBA)[1,2]

Daytime								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
STNM1	1:37 PM	69.4	80.7	43.6	76.8	72.9	70.2	67.3
STNM2	2:21 PM	52.7	68.1	41.4	62.8	54.8	51.5	49.9
STNM3	2:41 PM	73.8	99.0	50.3	76.4	68.2	63.5	58.1

[1] See Figure 3 for noise measurement locations. Each noise measurement was performed over a 15-minute duration.
[2] Noise measurements performed on October 15, 2020.

The results of the long-term, 24-hour, noise measurement are provided below in Table 4. The dominant noise source in the area was traffic from Rider Street.

Table 4. Long-Term Noise Measurement Summary (LT1) (dBA) [1,2]

24-Hour Ambient Noise								
LTNM1								
Hourly Measurements	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
1	3:00 PM	66.5	81.7	43.3	69.1	68.6	68.0	66.2
2	4:00 PM	66.8	81.6	42.4	69.1	69.0	68.1	66.5
3	5:00 PM	67.2	83.7	44.7	70.4	69.9	68.8	67.1
4	6:00 PM	66.8	74.5	69.3	70.1	69.8	68.1	66.2
5	7:00 PM	68.4	95.1	46.6	76.1	69.3	68.2	66.1
6	8:00 PM	66.9	83.5	47.7	69.4	68.9	68.4	66.3
7	9:00 PM	66.0	90.5	46.6	72.5	68.6	67.3	64.8
8	10:00 PM	63.6	81.7	43.6	67.7	67.2	66.5	62.8
9	11:00 PM	62.2	75.9	41.4	66.3	65.9	65.1	61.7
10	12:00 AM	61.0	86.8	39.0	66.4	64.4	63.4	59.1
11	1:00 AM	59.2	80.0	37.5	66.0	65.0	63.9	55.5
12	2:00 AM	64.2	95.3	41.3	66.7	65.5	64.2	57.4
13	3:00 AM	61.5	78.1	41.7	65.8	64.7	64.3	61.2
14	4:00 AM	64.6	80.3	49.4	67.7	67.3	67.1	64.3
15	5:00 AM	64.5	82.4	51.9	68.1	67.6	66.7	64.1
16	6:00 AM	67.0	91.8	51.2	71.1	69.0	68.9	65.8
17	7:00 AM	66.3	85.6	51.3	69.1	68.2	67.9	65.9
18	8:00 AM	65.5	82.0	49.4	69.4	68.2	67.7	64.8
19	9:00 AM	64.9	83.7	41.4	68.0	67.4	66.8	64.7
20	10:00 AM	65.6	86.9	37.1	69.7	69.1	67.5	64.6
21	11:00 AM	65.5	89.9	37.5	69.4	68.0	66.6	64.6
22	12:00 PM	65.8	87.0	38.0	72.2	68.4	67.5	64.6
23	1:00 PM	65.9	86.1	38.1	72.1	68.2	67.9	65.1
24	2:00 PM	65.8	81.5	39.4	68.3	68.0	67.4	65.7

[1] See Figure 3 for noise measurement locations. Noise measurements were performed over a 24-hour duration.

[2] Noise measurements performed from October 15, 2020 to October 16, 2020.

5.3 Existing Traffic Noise

Existing noise impacts related to vehicular traffic were modeled using a version of the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108), as modified for CNEL and the "Calveno" energy curves. Site-specific information is entered, such as roadway traffic volumes, roadway active width, source-to-receiver distances, travel speed, noise source and receiver heights, and the percentages of automobiles, medium trucks, and heavy trucks that the traffic is made up of throughout the day, amongst other variables.

The FHWA Traffic Noise Prediction Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the REMEL to account for: total average daily traffic volumes, roadway classification, width, speed and truck mix, roadway grade and site conditions (hard or soft ground surface). All modeled roadways were assumed to have a "hard site" to predict worst-case, conservative noise levels. A hard site, such as pavement, is highly reflective and does not attenuate noise as quickly as grass or other soft sites. Any reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis.

Existing daily traffic (ADT) were calculated and provided by the Trip Generation and Vehicle Mile Traveled Screening Analysis for the Rider North Assemblage Project (Trip Generation Analysis) (EPD August 5, 2020).

The calculated noise levels in Table 5 show that the existing traffic noise in the area is as high as 69.5 dBA at a distance of 50 feet from the centerline.

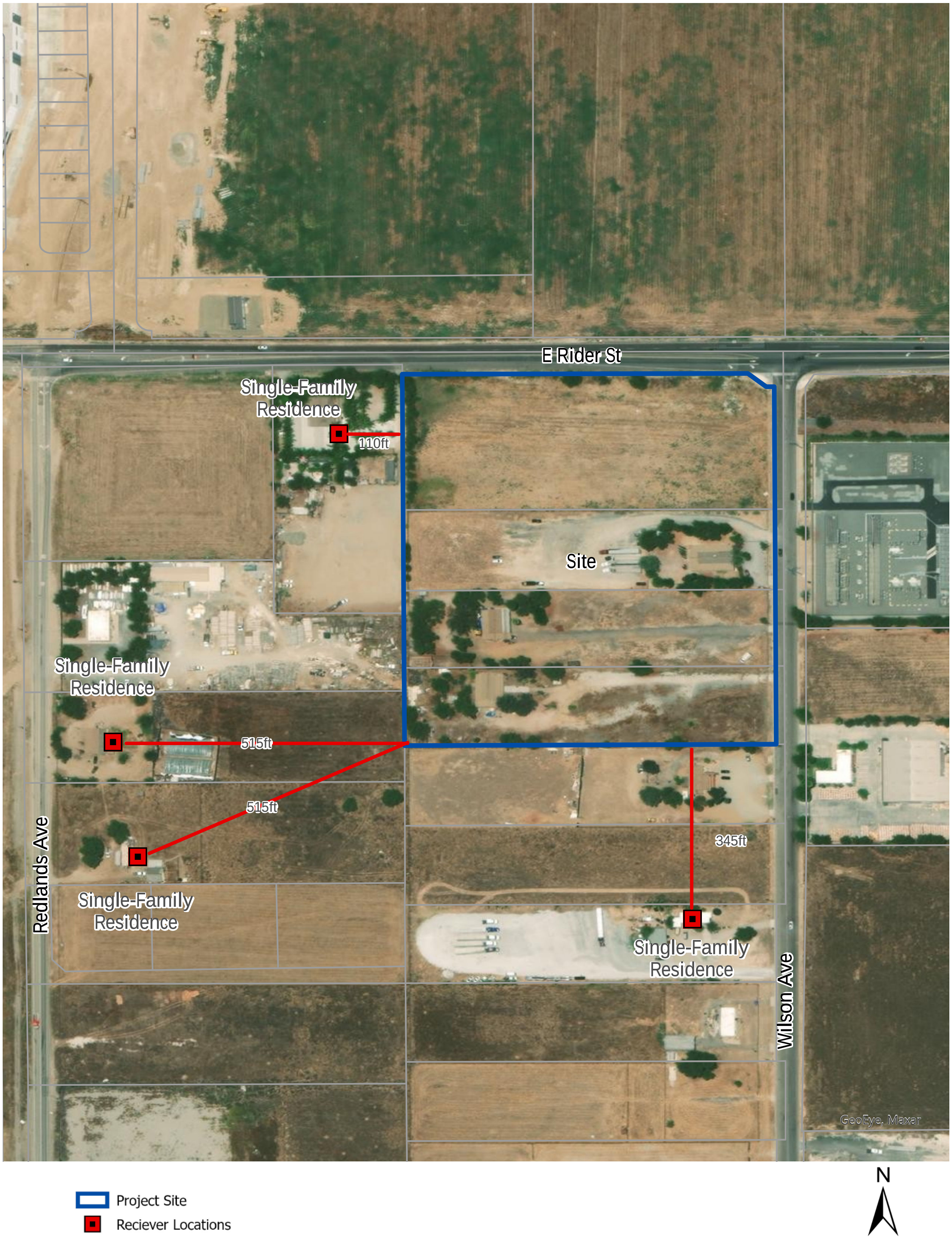
Table 5. Existing Traffic Noise Levels

Road Segments	Existing ADT	dB CNEL
Wilson Avenue		
s/o Rider Street	4,738	64.5
Rider Street		
e/o Redlands Avenue	11,629	68.4
w/o Wilson Avenue	11,351	68.3
e/o Wilson Avenue	15,244	69.5

5.4 Existing Sensitive Receptors

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. The closest receptors to the project site include: the single-family residential uses located adjacent to the west (with associated structures located as close as approximately 26 feet and residential dwelling units located approximately 110 feet and 515 feet from the western property line) , approximately 330 feet to the south (with the residential dwelling unit being located as close as approximately 345 feet from the southern property line) and approximately 0.26 miles to the east and northeast of the project site.

Sensitive Receptors



Sensitive Receptor Distances from Loading Dock

6 NOISE AND VIBRATION THRESHOLDS

Consistent with the California Environmental Quality Act (CEQA) and the CEQA Guidelines, a significant impact related to noise or vibration would occur if a proposed project is determined to result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.
- Exposure of persons residing or working in the project area to excessive noise levels from aircraft.

7 Noise and Vibration Impacts

This impact discussion analyzes the potential for project construction and operational noise to cause an exposure of persons to or generation of noise levels in excess of established City of Perris noise standards listed previously.

Construction Noise

Project Construction Noise: Construction activities would be consistent with Section 7.34.060 of the City's Municipal Code which prohibits construction activities other than between the hours of 7:00 AM and 7:00 PM. Construction activities are not permitted on a legal holiday, with the exception of Columbus Day and Washington's Birthday, or on Sundays. Section 7.34.060 also prohibits construction activity from exceeding 80 dBA L_{max} in residential zones within the City. Construction related noise would occur from the transport of workers and movement of construction materials to and from the project site, and from the noise generated onsite during ground clearing/excavation, grading, building, and paving activities.

Construction noise levels will vary significantly based upon the size and topographical features of the active construction zone, duration of the workday, and types of equipment employed. A typical construction day with an eight-hour duration will generate 84 dBA CNEL at a distance of 50 feet from the noise source. However, typical operating cycles for construction equipment involves one or two minutes of full power operation followed by three to four minutes at lower power settings. A summary of noise level data for a variety of construction equipment is presented in Table 6.

Table 6. Construction Equipment Noise Emissions and Acoustical Usage Factor

Equipment Description	Impact Device?	Acoustical use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Compressor (air)	No	40	80	78	18
Concrete Mixer Truck	No	40	85	79	40
Concrete Saw	No	20	90	89.6	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Excavator	No	40	85	81	170
Forklift[1,2]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Grader	No	40	85	-N/A-	0
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	20	90	-N/A-	9
Roller	No	20	85	80	16
Scraper	No	40	85	84	12
Tractor/Loader/Backhoe	No	25	80	-N/A-	0
Welder/Torch	No	40	73	74	5

Source: FHWA RCNM User's Guide, 2006

[1] Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 http://www.noisetesting.info/blog/carl-stautins/page-3/

[2] Data provided Leq as measured at the operator. Sound Level at 50 feet is estimated.

Construction noise associated with the project was calculated utilizing methodology from FTA Transit Noise and Vibration Impact Assessment Manual (2018) together with several key construction parameters including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site (see Appendix C for details). The equipment used to calculate the construction noise levels for each phase were based on the assumptions provided in the CalEEMod Emission Summary prepared for the proposed project (October 2020). Distances to receptors were based on the acoustical center of the proposed construction activity. Therefore, the distance to each receptor used in the modeling was the estimated distance from the acoustical center of the project site to the receptor. Construction noise levels were calculated for each phase. To be conservative, the noise generated by each piece of equipment was added together for each phase of construction; however, it is unlikely (and unrealistic) that every piece of equipment will be used at the same time, at the same distance from the receptor, for each phase of construction.

Construction noise levels are compared to the existing noise levels in Table 7 of this report. As shown in Table 7, modeled construction noise levels could reach up to 67.1 dBA L_{eq} and 71.8 dBA L_{max} at the façade of the nearest residential receptor located approximately 110 feet west of the western project boundary, up to 63.8 dBA L_{eq} and 68.6 dBA L_{max} at the façade of the nearest residential receptor located approximately 345 feet to the south of the southern project boundary, up to 56.9 dBA L_{eq} and 61.6 dBA L_{max} at the façade of the nearest residential receptor located approximately 0.26 miles from the eastern project boundary, and up to 56.4 dBA L_{eq} and 61.2 dBA L_{max} at the façade of the nearest residential receptors located approximately 0.26 miles from the northeastern project boundary.

Furthermore, as shown in Table 7, modeled unmitigated construction noise levels when combined with existing measured noise levels reached up to 71.4 dBA L_{eq} at the façade of the nearest residential receptor located to the west of the project site, up to 74.2 dBA L_{eq} at the façade of the nearest residential receptor located to the south of the project site, up to 58.3 dBA L_{eq} at the façade of the nearest residential receptor to the east of the project site, and up to 72.1 dBA L_{eq} at the façade of the nearest residential receptors to the northeast of the project site.

Table 7. Estimated Construction Noise Levels at Sensitive Receptors

Construction Phase	Receptor Location	Existing Ambient Noise Levels (dBA Leq)[1]	Construction Noise Levels at Receptor Locations (dBA Leq)[2]	Combined Noise Levels (Leq)	Increase Over Ambient (dBA)	Construction Noise Levels at Receptor Locations (dBA Lmax)[2]
Demolition	West (STNM1)	69.4	66.4	71.2	1.8	71.8
	South (STNM3)	73.8	63.1	74.2	0.4	68.6
	East (STNM2)	52.7	56.2	57.8	5.1	61.6
	Northeast (LTNM1)	69.4	55.7	69.6	0.2	61.2
Site Preparation	West (STNM1)	69.4	65.2	70.8	1.4	69.2
	South (STNM3)	73.8	61.9	74.1	0.3	65.9
	East (STNM3)	52.7	55.0	57.0	4.3	58.9
	Northeast (LTNM1)	69.4	54.5	69.5	0.1	58.5
Grading	West (STNM1)	69.4	67.1	71.4	2.0	71.2
	South (STNM3)	73.8	63.8	74.2	0.4	68.0
	East (STNM3)	52.7	56.9	58.3	5.6	61.1
	Northeast (LTNM1)	69.4	56.4	69.6	0.2	60.6
Building Construction	West (STNM1)	69.4	61.7	70.1	0.7	67.4
	South (STNM3)	73.8	58.4	73.9	0.1	64.1
	East (STNM3)	52.7	51.5	55.1	2.4	57.2
	Northeast (LTNM1)	69.4	51.1	69.5	0.1	56.7
Paving	West (STNM1)	69.4	63.1	70.3	0.9	69.5
	South (STNM3)	73.8	59.8	74.0	0.2	66.2
	East (STNM3)	52.7	52.9	55.8	3.1	59.2
	Northeast (LTNM1)	69.4	52.5	69.5	0.1	58.8
Architectural Coating	West (STNM1)	69.4	53.8	69.5	0.1	57.7
	South (STNM3)	73.8	50.5	73.8	0.0	54.5
	East (STNM3)	52.7	43.5	53.2	0.5	47.5
	Northeast (LTNM1)	72.1	43.1	72.1	0.0	47.1

[1] Noise measurement locations are shown on Figure 3.

[2] Construction noise calculations available in Appendix C.

Therefore, project construction is not anticipated to exceed the City of Perris construction noise threshold of 80 dBA L_{max} in residential zones. In addition, construction activities would be consistent with the City's Municipal Code Section 7.34.060 that prohibits construction activities other than between the hours of 7:00 AM and 7:00 PM or at any time on Sundays or holidays. Therefore, impacts related to construction would be less than significant.

7.1 Groundborne Vibration

This impact discussion analyzes the potential for construction and operational activities of the proposed project to generate excessive groundborne vibration or groundborne noise levels.

The California Department of Transportation (Caltrans) Transportation and Construction Vibration Manual identifies various vibration damage criteria for different building classes. As shown in Table 8, this evaluation uses the Caltrans architectural damage criterion for continuous vibrations at older residential structures of 0.3 inch-per-second PPV. Further, as the nearest sensitive receptors to project construction are residents, the criterion for severe human annoyance of 0.4 inch-per-second PPV is utilized (Tables 8 and 9).

Table 8. Guideline Vibration Damage Potential Threshold Criteria

Structure Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 19, April 2020.
[1] Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 9. Guideline Vibration Annoyance Potential Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 20, April 2020.

[1] Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Construction Vibration

The types of construction vibration impact include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural.

Construction of the proposed project would not require the use of equipment such as pile drivers, which are known to generate substantial construction vibration levels. The highest degree of groundborne vibration would be generated during the paving construction phase due to the operation of a vibratory roller. Based on the Federal Transit Administration (FTA) data, vibration velocities from vibratory roller operations are estimated to be approximately 0.1980 inch-per-second PPV at 26 feet from the source of activity. As such, structures located farther than 26 feet from vibratory roller operations would not experience groundborne vibration above the Caltrans significance thresholds (i.e. 0.3 inch-per-second PPV for potential structural damage and 0.4 inch-per-second PPV for severe human annoyance).

The nearest existing structures are the residential sheds/structures (associated with the single-family residential dwelling unit to the west) located approximately 26 feet from the western property line and the commercial uses located approximately 40 feet from the southern property line of the project site. As the nearest existing structures are located approximately 26 feet from the western property line and 40 feet from the southern property line any location within the project boundary where a vibratory roller may be used would not exceed the Caltrans significance thresholds. Therefore, impacts would be less than significant in this regard. See Appendix D for Vibration Worksheets.

Operational Vibration

The proposed project would receive as many as 94 truck trips per day. On-site, within the loading dock area, these additional truck trips would operate at least 435 feet from existing residential structures located to the south and 455 feet from the existing residential structures located to the west of the project site. Furthermore, along off-site travel routes these additional truck trips would operate at least 30 feet from existing residential uses along Rider Street. Using data provided in Table 1: Vibration Source Levels for Construction Equipment, a loaded truck would typically produce a vibration level of 0.076 inch per second PPV at 25 feet or 0.054 inch per second RMS at 25 feet.

It is anticipated that at the nearest residential structure (approximately 435 feet away) the vibration levels caused by a loaded truck operating on-site within the loading dock area will be around 0.001 inches per second PPV, which would not exceed the 0.3 inch-per-second PPV threshold for potential structural damage or the 0.4 inch-per-second PPV threshold for human annoyance.

In addition, truck traffic vibration levels at the nearest residential structures (approximately 30 feet from the edge of the roadway) from off-site truck trips would be approximately 0.058 inches per second PPV, which would also not exceed the 0.3 inch-per-second PPV threshold for potential structural damage or the 0.4 inch-per-second PPV threshold for human annoyance. Therefore, truck vibration is not expected to be perceptible or exceed thresholds for potential damage at sensitive receptors near the project site or along road segments that would be used by project generated traffic. This impact would be less than significant. See Appendix D for Vibration Worksheets.

7.2 Operational Noise

Potential noise impacts associated with the operations of the proposed project are a result of project-generated vehicular traffic on the project vicinity roadways and from stationary noise sources associated with the proposed project. The following section provides an analysis of potential long-term offsite and onsite noise impacts associated with the ongoing operations of the proposed project.

Potential Off-Site Vehicular Noise Impacts

The Existing Plus Project, Opening Year (2022) without Project and Opening Year (2022) with Project average daily traffic (ADT) were calculated from the Trip Generation and Vehicle Miles Traveled Screening Analysis Technical Memorandum (Trip Generation Memo) (EPD, 2020).

Noise impacts related to vehicular traffic were modeled using a version of the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-108), as modified for CNEL and the "Calveno" energy curves. Roadway parameters utilized to model future traffic noise levels to the project include location, traffic volume, speed and vehicle mix (autos, medium trucks, and heavy trucks). The various scenarios that are described above were modeled to determine project-specific increases in noise levels at an arbitrary distance of 50 feet from roadway centerline. The uniform distance allows for direct comparisons of potential increases or decreases in noise levels based upon various traffic scenarios; however, at this distance, no specific noise standard necessarily applies. Therefore, the change in a noise level between scenarios is the focus of this portion of the analysis, rather than the resulting independent noise level for any one segment. FHWA calculation spreadsheets are included in Appendix B.

The calculated noise levels in Table 10 show that the project would contribute a maximum of 0.1 dBA to existing noise levels along Wilson Avenue and Rider Street. Table 10 also shows that at project buildout, in 2022, there would be a marginal increase in noise due to the increase of project-related traffic on roadways in the project vicinity. The project-related increase in traffic noise does not exceed the 3 dBA threshold. Therefore, the project would not contribute to a substantial permanent increase in ambient noise levels in the project vicinity.

Table 10. Project Traffic Noise Contributions to Existing and Opening Year (2022) Scenarios

Road Segments	Existing		Existing Plus Project			Is the Increase Significant ?	Opening Year (2022) without Project		Opening Year (2022) with Project			Is the Increase Significant ?
	ADT	dB CNEL	ADT	Total	Project Increase		ADT	dB CNEL	ADT	Total	Project Increase	
Wilson Avenue												
s/o Rider Street	4,738	64.5	4,869	64.6	0.1	**No**	5,264	64.9	5,426	65.0	0.1	**No**
Rider												

Street											
e/o Redlands Avenue	11,629	68.4	11,897	68.5	0.1	**No**	16,286	69.8	16,523	69.9	0.1	**No**
w/o Wilson Avenue	11,351	68.3	11,619	68.4	0.1	**No**	16,332	69.8	16,569	69.9	0.1	**No**
e/o Wilson Avenue	15,244	69.5	15,374	69.6	0.1	**No**	20,382	70.8	20,512	70.8	0.0	**No**

Potential On-Site Noise Impacts

The proposed project would generate onsite noise from stationary sources such as the rooftop mechanical equipment, truck loading and parking areas, and automobile parking lot areas. In order for onsite noise impacts created by the proposed project's operations to be considered significant, per the City of Perris Municipal Code Section 7.34.050 the standards for sound amplification apply to the exterior noise level criteria for residential properties affected by operational noise sources. Therefore, per Section 7.34.040 of the Municipal Code, maximum permissible noise levels shall not exceed 60 dBA L_{max} during the hours of 10:01PM to 7:00 AM and 80 dBA L_{max} between the hours of 7:01AM to 10:00 PM at the property lines of the noise source. The closest receptors to the project site include: the residential uses located adjacent to the west (with associated structures located as close as approximately 26 feet and the residential dwelling units located approximately 110 and 515 feet from the western property line), approximately 330 feet to the south (with the residential dwelling unit located as close as approximately 345 feet from the southern property line), and approximately 0.26 miles to the east and northeast of the project site.

Parking Lot Areas

Sources of noise from parking lot areas are primarily from engine and tire noise, slamming of doors, and pedestrians. Instantaneous maximum sound levels generated by a car door slamming, engine starting up and car passbys may be an annoyance to adjacent noise-sensitive receptors. Noise levels associated with parking lots typically range from approximately 60 to 70 dBA L_{max} at a distance of 50 feet.[1] It should be noted that parking lot noise are instantaneous noise levels compared to noise standards in the CNEL scale, which are averaged over time. As a result, actual noise levels over time resulting from parking lot activities would be far lower. Parking lot noise would also be partially masked by background noise from Rider Street.

The ambient noise levels in the project area were measured between 52.7 and 73.8 dBA L_{eq} and 68.1 to 99 dBA L_{max} (shown in Table 3: Short-Term Noise Measurement Summary). Therefore, the proposed parking lot would not result in greater noise levels than currently exist at the project site. In addition, noise associated with parking lot activities would not exceed City standards of 80 dBA L_{max} daytime or 60 dBA L_{max} nighttime maximum noise level standards.

[1] FirstCarbon Solutions, Noise Impact Analysis Report Walnut Avenue and Indian Avenue Industrial Project, City of Perris. Updated September 23, 2020.

Loading Areas

In order to determine the noise created by the loading docks, a reference noise measurement of 71.2 dBA L_{max} at approximately 50 feet was utilized.[2] The reference noise measurement included employees unloading a docked truck container, squeaking of the truck's shocks when weight was removed from the truck, employees playing music over a radio, as well as a forklift horn and backup alarm or beeper.

All loading areas on the project site would be located at least 415 feet from the property line of the nearest adjacent sensitive use to the south and at least 435 feet from the property line of the nearest adjacent sensitive uses to the west.

At a distance of 415 feet the loading area noise levels generated by the proposed project would be approximately 52.8 dBA L_{max} and at a distance of 435 feet the noise level would be approximately 52.4 dBA L_{max} (see Table 11). Additionally, the proposed building would be in between the adjacent uses to the west and the loading area and a concrete screening wall is to surround the loading docks. The proposed building and screening wall would break the line of sight between the loading dock and the nearest adjacent uses, reducing noise levels experienced at these adjacent uses even further. Therefore, the noise levels generated by the onsite loading areas would comply with the City's 80 dBA L_{max} daytime or 60 dBA L_{max} nighttime maximum noise level standards at receiver property boundaries.

Table 11. Operational Noise: Loading and Unloading Activities

Receptor	Distance Modeled (feet)[1]	Noise Level (dBA Lmax)	Exceeds City Noise Thresholds?
Single-Family Residential (South)	415	52.8	No
Single-Family Residential (West)	435	52.4	No

[1] Distance estimated from nearest portion of loading dock to property line of the affected sensitive receptor.

[2] Per the City of Perris General Plan, noise levels shall not exceed 80 dBA Lmax daytime or 60 dBA Lmax nighttime at the property line of a sensitive land use.

Rooftop Mechanical Equipment

In order to determine the noise created by a rooftop heating, ventilation, and air conditioning (HVAC) unit, a reference noise measurement of 77.7 dBA L_{eq} at 5 feet was utilized. [3] The reference noise measurement was collected from a Lennox SCA120 series 10-ton model packaged air conditioning unit.. All rooftop HVAC units in operation on the project site would be located at least 40 feet or more from the property line of the residential uses located adjacent to the west of the project site and approximately 395 feet or more from the property line of the residential use located to the south of the project site.

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[2] Urban Crossroads, IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project Noise Impact Analysis City of Perris, August 31, 2020.
[3] Urban Crossroads, IDI Rider 2 and 4 High Cube Warehouses and Perris Valley Storm Drain Channel Improvement Project Noise Impact Analysis City of Perris, August 31, 2020.

At approximately 40 feet, noise levels generated by the HVAC unit would decrease to 59.6 dBA L_{max} and at 395 feet noise level would be 39.8 dBA L_{max} (See Table 12). As such, the noise levels generated by operation of rooftop HVAC units would comply with the standards set forth by the City of Perris.

Table 12. Operational Noise: HVAC Equipment

Receptor	Distance Modeled (feet)[1]	Noise Level (dBA Lmax)	Exceeds City Noise Thresholds?
Single-Family Residential (South)	395	39.8	No
Single-Family Residential (West)	40	59.6	No

[1] Distance estimated from nearest portion of the proposed building to the property line of the affected sensitive receptor.

[2] Per the City of Perris General Plan, noise levels shall not exceed 80 dBA Lmax daytime or 60 dBA Lmax nighttime at the property line of a sensitive land use.

As shown in Table 3: Short-Term Noise Measurement Summary, the existing noise levels within the project vicinity range between 68.1 dBA L_{MAX} to 99 dBA L_{MAX} and 52.7 dBA L_{eq} to 73.8 dBA L_{eq}. The noise levels generated by onsite activities such as loading and unloading and operation of HVAC would reach up to approximately 59.6 dBA L_{max} at nearby sensitive receptors. Furthermore, noise from parking lot activities would not exceed existing noise levels. Therefore, project generated operational noise would not result in substantially greater noise levels than currently exist at the project site nor would they exceed the City of Perris' 80 dBA L_{max} daytime or 60 dBA L_{max} nighttime maximum noise level standards. Therefore, no significant noise impacts operations of the proposed project would occur.

7.3 Airport Noise

This impact discussion analyzes the potential for nearby airports or private airstrips to expose people residing or working in the project area to excessive noise levels.

The nearest airport is March Air Reserve Base/Inland Port Airport (March ARB/IPA), located approximately 2.88 miles northwest of the project site. A portion of the project site falls within the 60 dBA noise contour, while the remainder of the site is outside of the 60 dBA noise contour for this airport.[4] However, 60 dBA noise from aircraft operations would not exceed the City's Municipal Code noise level requirements. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels from airports. Impacts are considered to be less than significant.

[4] Source: City of Perris General Plan Safety Element, Exhibit S-17 March ARB/IPA Noise Contours, 2005.

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APPENDIX A – FIELD NOISE MEASUREMENT PRINT-OUTS

APPENDIX B – FHWA MODEL ANALYSIS CALCULATIONS

APPENDIX C – CONSTRUCTION NOISE WORKSHEETS

APPENDIX D – VIBRATION WORKSHEETS