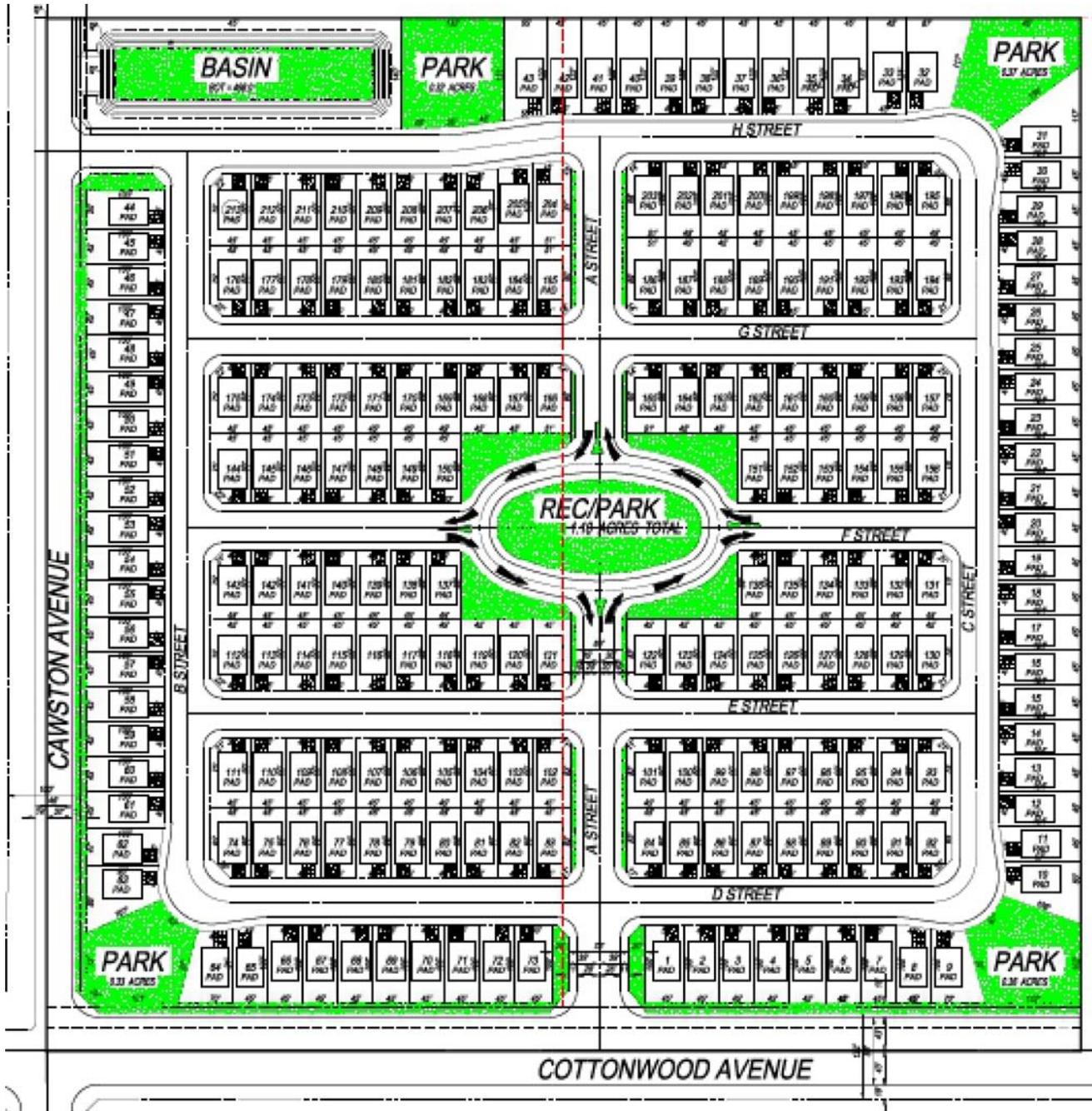


RANCHO DE ALAMO TTM 37881 NOISE IMPACT STUDY City of San Jacinto, California



**RANCHO DE ALAMO TTM 37881
NOISE IMPACT STUDY
City of San Jacinto, California**

Prepared for:

Loren Huweiler
WEST COAST INLAND PARTNERS IV, LLC
43980 Mahlon Vail Road #104
Temecula, CA 92592

Prepared by:

RK ENGINEERING GROUP, INC.
4000 Westerly Place, Suite 280
Newport Beach, CA 92660

**Bryan Estrada, AICP
Darshan Shivaiah, M.S.**

November 3, 2020

Table of Contents

Section		Page
1.0	Introduction.....	1-1
1.1	Purpose of Analysis and Study Objectives	1-1
1.2	Site Location	1-1
1.3	Project Description	1-1
1.4	Summary of Findings	1-2
1.5	Recommendations	1-2
2.0	Fundamentals of Noise.....	2-1
2.1	Sound, Noise and Acoustics	2-1
2.2	Frequency and Hertz	2-1
2.3	Sound Pressure Levels and Decibels	2-1
2.4	Addition of Decibels	2-1
2.5	Human Responses to Changes in Noise Levels	2-2
2.6	Noise Descriptors	2-2
2.7	Sound Propagation	2-5
3.0	Regulatory Setting.....	3-1
3.1	State of California Noise Regulations	3-1
3.2	City of San Jacinto Noise Regulations	3-2
4.0	Study Method and Procedures.....	4-1
4.1	Traffic Noise Modeling	4-1
4.2	Interior Noise Modeling	4-2
5.0	Noise Analysis.....	5-1
5.1	Traffic Noise	5-1
5.2	Interior Noise	5-1
5.3	SR-79	5-2
5.4	Hemet-Ryan Airport	5-2
5.5	Recommendations	5-3

List of Attachments

Exhibits

Location Map	A
Site Plan	B

Tables

Noise/Land Use Compatibility Guidelines	1
City of San Jacinto Residential Noise Standards.....	2
Roadway Parameters.....	3
Vehicle Distribution (Truck Mix) for Arterial Roadways	4
Future Exterior Noise Levels	6
Future Interior Noise Levels	7

Appendices

City of San Jacinto Noise Standards.....	A
Roadway Noise Calculation (CNEL)	B

1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

The purpose of this report is to review the noise/land use compatibility for the proposed Rancho De Alamo TTM 37881 residential development (project) and provide preliminary recommendations for building design and floor/wall/ceiling assemblies to meet the State of California and City of San Jacinto exterior and interior noise standards.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- Identification of the regulatory setting and applicable noise standards
- Analysis of the existing and future noise environment
- Summary of preliminary recommendations and project design features to reduce interior noise impacts.

1.2 Site Location

The project site is located northeast corner of Cawston Avenue and Cottonwood Avenue, in the City of San Jacinto. The project site is currently vacant and is located approximately 1,502 feet above sea level. The topography is relatively flat.

The project site is bounded by vacant uses to the north and east, Cawston Avenue to the west and Cottonwood Avenue to the south.

The project site location map is provided in Exhibit A.

1.3 Project Description

The proposed project consists of 213 single family residential dwelling units on 37.1 acres site. The project site is zoned for Medium Density Residential (MDR) in the City of San Jacinto Zoning Map and General Plan Land Use Map.

The project is expected to provide a six (6) foot high concrete masonry unit (CMU) block walls along the exterior property lines of the tract.

The site plan used for this analysis, provided by MAYERS & ASSOCIATES CIVIL ENGINEERING, INC., is illustrated in Exhibit B.

1.4 Summary of Findings

The following summary provides a brief overview of the findings of this report. Please refer to Sections 5 for more details.

1. RK analyzed the future traffic based on the City of San Jacinto General Plan 2050 buildout traffic volumes.
2. Existing outdoor noise levels at the project site are expected to fall within the “Normally Acceptable to Normally Unacceptable” range for Residential-Single Family uses, per the City of San Jacinto Noise/Land Use Compatibility standards.
3. With adequate building design and insulation, interior noise levels can be reduced to meet the State/City requirement of 45 dBA CNEL.
4. The project site is located within 1,000 feet of the proposed future alignment of the SR-79 Freeway.

1.5 Recommendations

The following recommendations are provided to help ensure the proposed project meets the City of San Jacinto and State of California requirements for residential exterior and interior noise exposure:

1. Provide a six (6) foot high concrete masonry unit (CMU) block wall along the backyard property lines of the track for units fronting along Cottonwood Avenue and the future alignment of Cawston Avenue.

The designed noise screening will only be accomplished if the barrier’s weight is at least 3.5 pounds per square foot of face area without decorative cutouts or line-of-site openings between the shielded areas and the project site. All gaps (except for weep holes) should be filled with grout or caulking to avoid flanking.

2. The project should incorporate building construction techniques and insulation that is consistent with California Title 24 Building Standards to achieve the minimum interior noise standard of 45 dBA CNEL for all residential units.

3. A "windows closed" condition is expected to be required for all residential units within the project site to meet the interior noise standard. To accommodate a windows closed conditions, all units shall be equipped with adequate fresh air ventilation, per the requirements of the California Uniform Building Code (UBC).
4. Upgraded windows and sliding glass doors are expected to be required, as shown in Table 6 of this report.
5. Prior to issuance of building permits, the project proponent should demonstrate to the City building department that the proposed building shell and window assemblies will achieve exterior to interior noise exposure of 45 dBA CNEL or less.
6. For proper acoustical performance, all exterior windows, doors, and sliding glass doors should have a positive seal and leaks/cracks must be kept to a minimum.
7. In order to comply with City of San Jacinto Municipal Code requirements, all construction activities should take place Monday through Saturday, between the hours of 7 AM to 7 PM. No construction should occur on Sundays or federal holidays.

2.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used in the report.

2.1 Sound, Noise, and Acoustics

The sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. The sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

2.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases, as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter (N/m²), also called micro-Pascal (μ Pa). One μ Pa is approximately one hundred billionths (0.0000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels and abbreviated as dB.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two (2) sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL.

In other words, sound energy must be doubled to produce a 3dB increase. If two (2) sounds differ by approximately 10 dB the higher sound level is the predominant sound.

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, (A-weighted scale) and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighing is typically reported in terms of A-weighted decibel (dBA). Typically, the human ear can barely perceive the change in the noise level of 3 d B. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway), would result in a barely perceptible change in sound level.

2.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, others are random. Some noise levels are constant, while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels. Following are the most commonly used noise descriptors along with brief definitions.

A-Weighted Sound Level

The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level

The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL)

The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB)

A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A)

A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ)

The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sample period.

Habitable Room

Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms, and similar spaces.

L(n)

The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly, L50, L90, and L99, etc.

Noise

Any unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "excessive undesirable sound".

Outdoor Living Area

Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Sound Level (Noise Level)

The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

Sound Level Meter

An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL)

The dBA level which, if it lasted for one (1) second, would produce the same A-weighted sound energy as the actual event.

2.7 Sound Propagation

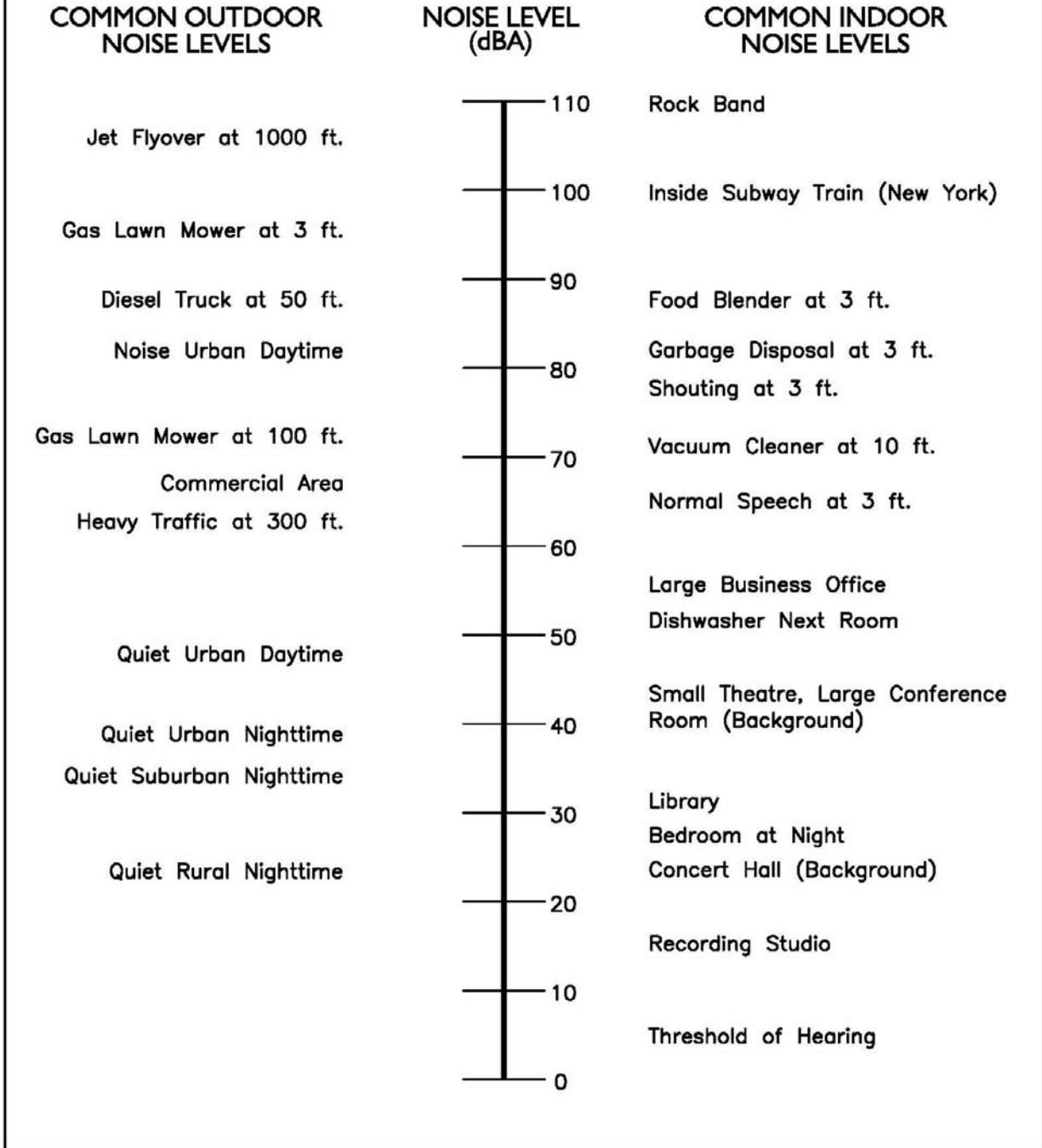
As sound propagates from a source it spreads geometrically. The sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use the hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt or landscaping attenuate noise at an additional rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 6.0 dB per doubling of distance for a point source.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet from a noise source. Wind, temperature, air humidity, and turbulence can further impact how far sound can travel.

Figure 1 shows typical sound levels from indoor and outdoor noise sources.

Figure 1
TYPICAL SOUND LEVELS FROM
INDOOR AND OUTDOOR NOISE SOURCES



3.0 Regulatory Setting

The proposed project is located in the City of San Jacinto and noise regulations are imposed by state and local government agencies. The applicable noise regulations are discussed below.

3.1 State of California Noise Regulations

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix.” The matrix allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 and the Uniform Building Code (UBC) which in some cases requires acoustical analyses to outline exterior noise levels and to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city adopt a noise element as a part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

Noise insulation design standards for residences have been established by the State of California Uniform Building Code (UBC) Chapter 12, Division II and by the Title 24 noise insulation standards of the California Administrative Code. The City is required by the State Housing Law to adopt these State codes as minimum performance standards. The City may enact stricter noise standards throughout the city or on a case-by-case basis if deemed necessary. In brief, the Title 24 noise standards require the following for allowable interior noise levels:

1. Interior noise levels due to exterior sources must not exceed a community noise equivalent level (CNEL) or a day-night level (LDN) of 45 dBA, in any habitable room.
2. Party wall and floor-ceiling assembly designs must provide a minimum STC of 50, based on lab tests. Field tested assemblies must provide a minimum noise isolation class (NIC) of 45.

3. Floor-ceiling assembly designs must provide for a minimum impact insulation class (IIC) of 50, based on lab tests. Field tested assemblies must provide a minimum FIIC of 45.

3.2 City of San Jacinto Noise Regulations

The City of San Jacinto outlines their noise regulations and standards within the General Plan Noise Element and the Municipal Code, Chapter 8.40, Noise Control.

For purposes of this analysis, the City of San Jacinto’s noise element is used to evaluate the project’s noise/land use compatibility and ensure the project is consistent with the established plans, policies and programs for noise control within the City. The Municipal Code establishes the residential noise standards for code enforcement purposes during construction and operation.

The San Jacinto General Plan Noise Element and Municipal Code Noise Control are provided in Appendix A.

Noise/Land Use Compatibility

The City of San Jacinto Noise Element establishes planning criteria for determining a development’s noise/land use compatibility based on the community noise equivalent level (CNEL). Table 1 summarizes the City’s Noise/Land Use Compatibility guidelines for land uses applicable to this project:

**Table 1
Noise/Land Use Compatibility Guidelines**

Land Use	Noise Limit (dBA CNEL)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential- Single Family, Multifamily, Duplex	<60	60-70	70-75	>75

The City of San Jacinto defines the noise compatibility categories as follows:

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

Conditionally Acceptable: New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, 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 noise reduction requirements must be made and needed noise insulation features included in the design.

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

Municipal Code Noise Standards

Table 2 shows the City of San Jacinto’s Residential Noise Standards, as established in the Municipal Code, Chapter 8.40, Noise Control. The noise standards shown in Table 2 shall apply to residential properties, unless otherwise specifically identified by the Municipal Code.

**Table 2
City of San Jacinto Residential Noise Standards**

Location	Time Period	Noise Standard
Exterior	Daytime (7am - 10pm)	65 dBA
	Nighttime (10pm – 7am)	45 dBA
Interior	Daytime (7am - 10pm)	45 dBA
	Nighttime (10pm – 7am)	40 dBA

Construction

The City of San Jacinto Municipal Code Chapter 8.40.090 - Noise Control, Construction Activity Noise Regulations exempts the noise associated with construction and demolition activity noise:

- A. Weekdays and Saturdays. No person shall engage in construction, remodeling, digging, grading, demolition or any other related building activity, nor shall operate

any tool, equipment or machine, on any weekday or Saturday except between the hours of seven a.m. and seven p.m.

- B. Sundays and Holidays. No person shall engage in construction, remodeling, grading, demolition or other related building activity, nor shall operate any tool, equipment or machine, on any Sunday or any federal holiday.

4.0 Study Method and Procedures

The following section describes the noise modeling procedures and assumptions used in the noise analysis.

4.1 Traffic Noise Modeling

Traffic noise from vehicular traffic was projected using a version of the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). The FHWA model arrives at the predicted noise level through a series of adjustments to the key input parameters. The following outlines the key adjustments made to the computer model for the roadway inputs:

- Roadway classification – (e.g. freeway, major arterial, arterial, secondary, collector, etc),
- Roadway Active Width – (distance between the center of the outer most travel lanes on each side of the roadway)
- Average Daily Traffic (ADT) Volumes, Travel Speeds, Percentages of automobiles, medium trucks, and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g. soft vs. hard)
- Percentage of total ADT which flows each hour throughout a 24-hour period

The following outlines key adjustments to the computer model for the project site parameter inputs:

- Vertical and horizontal distances (Sensitive receptor distance from noise source)
- Noise barrier vertical and horizontal distances (Noise barrier distance from sound source and receptor).
- Traffic noise source spectra
- Topography

RK projected traffic noise levels to the nearest building façades on the project site. Traffic noise levels were projected to all habitable exterior areas.

Table 3 indicates the roadway parameters utilized for this study.

**Table 3
Roadway Parameters**

Roadway	Classification ¹	Lanes	Capacity (ADT) ¹	Speed (MPH)	Site Conditions
Cottonwood Avenue	Arterial	4	35,900	45	Hard
Cawston Avenue	Secondary	4	25,900	25	Hard

¹ Source: City of San Jacinto General Plan – Circulation Element, May 2006.

Table 4 indicates the vehicle distribution and truck mix utilized for all roadways in this study area.

**Table 4
Vehicle Distribution (Truck Mix) for Arterial and Secondary Roadways¹**

Motor-Vehicle Type	Daytime % (7 AM - 7 PM)	Evening % (7 PM - 10 PM)	Night % (10 PM - 7 AM)	Total % of Traffic Flow
Automobiles	69.5	12.9	9.6	92.00
Medium Trucks	1.44	0.06	1.5	3.00
Heavy Trucks	2.4	0.1	2.5	5.00

¹ Vehicle percentages are based on the Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures, Riverside County Department of Environmental Health, April 15, 2015.

4.2 Interior Noise Modeling

The interior noise level is the difference between the projected exterior noise level at the structure’s façade and the noise reduction provided by the structure itself. Typical building construction will provide a conservative 12 dBA noise level reduction with a “windows open” condition and a very conservative 20 dBA noise level reduction with “windows closed”. RK estimated the interior noise level by subtracting the building shell design from the estimated exterior noise level.

The interior noise analysis is based on industry standards for building noise reduction established by the Federal Highway Administration (FHWA), the 2013 Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (TeNS), the California Office of Noise Control Catalog of STC and IIC Ratings for Wall and Floor/Ceiling Assemblies, and the California Building Standards Code, Title 24.

The TeNS manual shows that the noise reduction due to building exteriors with ordinary sash windows (windows closed) is at least 20 decibels. By providing upgraded STC rated windows, the project design is considered adequate to meet interior noise standards. The building's exterior walls will be constructed per the latest building code insulation requirements and provide occupants with the most protection from exterior noise. Insulated exterior walls, designed per the latest California Building Standards, would provide a minimum of STC 35-40. Windows, on the other hand, are one of the acoustically weakest parts of the structure. Therefore, for a conservative estimate of preliminary interior noise, the building's noise reduction potential is limited to the STC of the windows.

5.0 Noise Analysis

A noise analysis has been performed to determine whether the proposed project can meet the City of San Jacinto and State of California requirements for residential exterior and interior noise exposure. The State of California requires that interior noise levels due to exterior sources must not exceed a community noise equivalent level (CNEL) or a day-night level (LDN) of 45 dBA, in any habitable room.

5.1 Traffic Noise

Traffic noise impacts from Cottonwood Avenue and Cawston Avenue are analyzed at the proposed project site and the results are compared to the City's Noise Standards. Traffic noise is expected to be the main sources of noise impacting the project site and the surrounding area.

Table 5 indicates the noise level projections to the backyard habitable areas and facades of the residential units nearest the subject roadways. Based on the City of San Jacinto General Plan Noise/Land Use Compatibility Guidelines, exterior noise levels on the project site would fall within the Normally Acceptable to Normally Unacceptable. The roadway calculation sheets are provided in Appendix B.

Table 5
Future Exterior Noise Levels (dBA CNEL)¹

Roadway	Receptor Location	Exterior Façade Study Locations	Noise Level at Façade	Noise/Land Use Compatibility
Cottonwood Avenue	Residential Dwelling Units (1-9 & 64-73)	Backyard/Patio	62.8	Conditionally Acceptable
		1st Floor Façade	62.3	Conditionally Acceptable
		2nd Floor Façade	70.9	Normally Unacceptable
Cawston Avenue	Residential Dwelling Units (44-63)	Backyard/Patio	56.3	Normally Acceptable
		1st Floor Façade	55.6	Normally Acceptable
		2nd Floor Façade	64.0	Normally Acceptable

¹ Exterior noise levels calculated 5-feet above pad elevation, perpendicular to subject roadway.

In order to reduce traffic noise impacts at the exterior habitable outdoor areas of the project site, a 6-foot noise barrier wall is required along Cottonwood Avenue and Cawston Avenue. With the installation of a 6-foot wall, exterior first floor (backyard) noise levels fall within the conditionally acceptable (60-70 dBA CNEL) land use compatibility limits for the first row of houses along Cottonwood Avenue and Cawston Avenue.

5.2 Interior Noise

A preliminary interior noise analysis has been performed for the first row of habitable dwellings facing adjacent roadways using a typical "windows open" and "windows closed" condition. A "windows open" condition assumes 12 dBA of noise attenuation from the exterior noise level. A "windows closed" condition" assumes 20 dBA of noise attenuation from the exterior noise level.

Table 6 indicates the future interior noise levels along the adjacent roadways. In order to meet the 45 dBA CNEL interior noise level requirements, upgraded STC rated windows will be required for homes located along Cottonwood Avenue and Cawston Avenue. See Table 6 for preliminary window STC ratings.

Table 6
Future Interior Noise Levels (dBA CNEL)

Roadway	Receptor Location	Projected Exterior Noise Level at Facade	Interior Noise Reduction Required	Interior Noise Level w/Standard Windows (STC ~ 25)		STC Required to Meet Interior Noise Level
				"Windows Open" ¹	"Windows Closed" ²	
Cottonwood Avenue	1st Floor Façade Single Family Residential (1-9 & 64-73)	62.3	17.3	50.3	42.3	25
	2nd Floor Façade Single Family Residential (1-9 & 64-73)	70.9	25.9	58.9	50.9	26
Cawston Avenue	1st Floor Façade Single Family Residential (44 - 63)	55.6	10.6	43.6	35.6	25
	2nd Floor Façade Single Family Residential (44 - 63)	64.0	19.0	52.0	44.0	25

¹ A minimum of 12 dBA noise reduction is assumed with the "windows open" condition.

² A minimum of 20 dBA noise reduction is assumed with the "windows closed" condition.

5.3 SR-79 Freeway

The project site is located within 1,000 feet of the potential future alignment of the SR-79 Freeway. However, at the time of this analysis, the final Freeway alignment has not been determined and the construction of the Freeway is still in the long-range planning phase. Therefore, for purposes of this study, future freeway noise impacts have not been quantified and assessed due to the lack of detailed information available on the future Freeway.

The City of San Jacinto General Plan Traffic Study estimates that the SR-79 Freeway may experience traffic volume of up to 99,800 vehicles per day in the vicinity of the project site. With this much future traffic and high vehicle speeds within a relatively close distance to the project site, the SR-79 Freeway will likely have significant noise impacts to the site. As a result, a detailed Environmental Impact Report will need to be prepared which fully discloses and mitigates any future impacts from the Freeway.

5.4 Hemet-Ryan Airport

The Riverside County Airport Land Use Commission governs 16 airports in Riverside County, including the Hemet-Ryan Airport, in the City of Hemet. In November 2004, the ALUC adopted the Riverside County Airport Land Use Compatibility Plan (ALUCP) Policy Document, which establishes land use, noise and safety policies in the vicinity of airports throughout Riverside County, including compatibility criteria and maps for the influence areas of individual airports. The ALUCP also establishes procedural requirements for compatibility review of development proposals related to the Hemet-Ryan Airport Influence Area.

The Hemet-Ryan Airport is located approximately 3.5 miles to the southeast of the project site. A noise/land use compatibility assessment has been performed based on the project's location to the Hemet-Ryan Airport. The noise contour maps for the Hemet-Ryan Airport are provided in Exhibit C.

The project is located outside of the 60 dB Ldn noise contour limit; therefore, the exterior noise impact from the airport would be within normally acceptable limits for residential land uses. Standard building shell design would provide adequate attenuation to meet interior noise standards with a window closed condition. Noise from airport operations are not expected to cause significant impacts to the project site.

5.5 Recommendations

The following recommendations are provided to help ensure the proposed project meets the City of San Jacinto and State of California requirements for residential exterior and interior noise exposure:

1. Provide a six (6) foot high concrete masonry unit (CMU) block wall along the backyard property lines of the track for units fronting along Cottonwood Avenue and the future alignment of Cawston Avenue.

The designed noise screening will only be accomplished if the barrier's weight is at least 3.5 pounds per square foot of face area without decorative cutouts or line-of-site openings between the shielded areas and the project site. All gaps (except for weep holes) should be filled with grout or caulking to avoid flanking.

2. The project should incorporate building construction techniques and insulation that is consistent with California Title 24 Building Standards to achieve the minimum interior noise standard of 45 dBA CNEL for all residential units.
3. A "windows closed" condition is expected to be required for all residential units within the project site to meet the interior noise standard. To accommodate a windows closed conditions, all units shall be equipped with adequate fresh air ventilation, per the requirements of the California Uniform Building Code (UBC).
4. Upgraded windows and sliding glass doors are expected to be required, as shown in Table 6 of this report.
5. Prior to issuance of building permits, the project proponent should demonstrate to the City building department that the proposed building shell and window assemblies will achieve exterior to interior noise exposure of 45 dBA CNEL or less.
6. For proper acoustical performance, all exterior windows, doors, and sliding glass doors should have a positive seal and leaks/cracks must be kept to a minimum.
7. In order to comply with City of San Jacinto Municipal Code requirements, all construction activities should take place Monday through Saturday, between the hours of 7 AM to 7 PM. No construction should occur on Sundays or federal holidays.

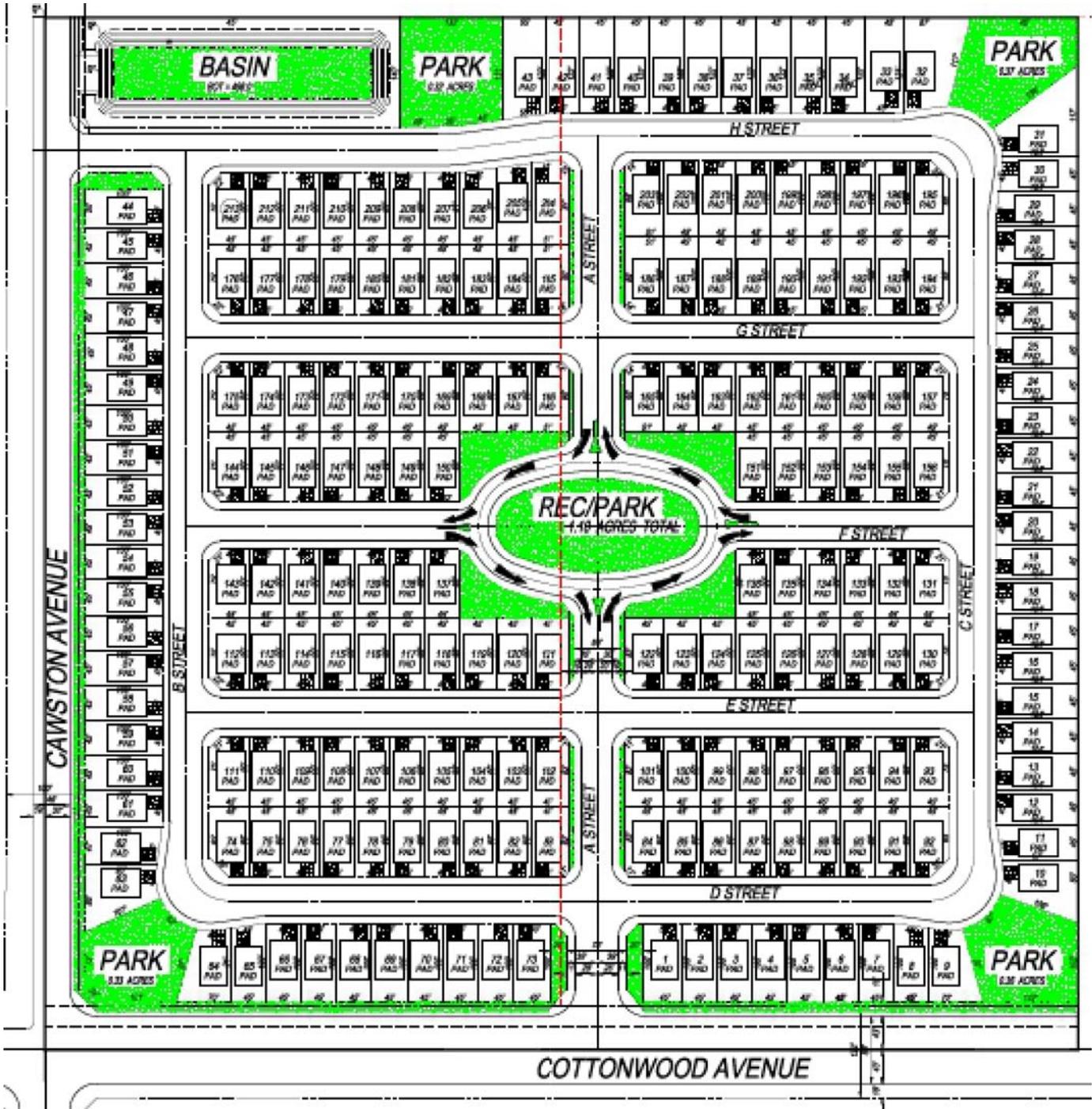
Exhibits



Legend:

 = Project Site Boundary





Appendices

Appendix A

City of San Jacinto Noise Standards

Chapter 8.40 NOISE CONTROL

Sections:

- 8.40.010** Declaration of findings and policy.
- 8.40.020** Definitions.
- 8.40.030** Designated noise zones.
- 8.40.040** Exterior noise standards.
- 8.40.050** Interior noise standards.
- 8.40.060** Exemptions.
- 8.40.070** Loud and disturbing noise.
- 8.40.080** Real property maintenance noise regulations.
- 8.40.090** Construction activity noise regulations.
- 8.40.100** Other public agency exceptions.
- 8.40.110** Schools, day care centers, churches, libraries, museums, health-care institutions—Special provisions.
- 8.40.120** Sound-amplifying equipment.
- 8.40.130** Amplified sound.
- 8.40.140** Heating, venting, pool/spa and air conditioning—Special provisions.
- 8.40.150** Motor vehicles.
- 8.40.160** Noise level measurement.
- 8.40.170** Prima facie violation.
- 8.40.180** Penalty.
- 8.40.190** Enforcement and administration.
- 8.40.200** City manager waiver.
- 8.40.210** Noise abatement program.

8.40.010 Declaration of findings and policy.

It is hereby found and declared that:

- A. The making and creation of excessive, unnecessary or unusually loud noises within the limits of the city of San Jacinto is a condition that has existed for some time; however, the extent and volume of such noises is increasing; and
- B. The making, creation or maintenance of such excessive, unnecessary, unnatural or unusually loud noises that are prolonged, unusual and unnatural in their time, place and use affect and are a detriment to public health, comfort, convenience, safety, welfare and prosperity of the residents of the city of San Jacinto; and
- C. The necessity in the public interest for the provisions and prohibitions hereinafter contained and enacted is declared as a matter of legislative determination and public policy, and it is further declared that the provisions and prohibitions hereinafter contained and enacted are in pursuance of and for the purpose of securing and promoting the public health, comfort, convenience, safety, welfare and prosperity and the peace and quiet of the residents of the city of San Jacinto. (Ord. 07-17 § 2 (part))

8.40.020 Definitions.

As used in this chapter, specific words and phrases are defined as follows:

“A-weighted sound level” shall mean the sound pressure level in decibels (dBAs) as measured with a sound level meter using the A-weighted filter network (scale) at slow response and at a pressure of twenty (20) micropascals. The A-weighted filter de-emphasizes the very low and a very high frequency component of sound in a manner similar to the response of the human ear, and is a numerical method of rating human judgment of loudness.

“Ambient noise level” shall mean the all-encompassing noise level associated with a given environment and is a composite of sounds from all sources, excluding the alleged offensive noise or excessive sound, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

“Applicable (noise) zone” shall mean the noise zone category based on the actual use of the property; provided, that the actual use is a legal use in the city of San Jacinto.

“Decibel (dBA)” shall mean a unit for measuring the amplitude of a sound, equal to twenty (20) times the logarithm to the base ten (10) of the ratio of pressure of the sound measured to the reference pressure of twenty (20) micropascals.

“Equivalent sound or noise level (L_{eq})” shall mean the International Electrotechnical Commission (IEC) 60804 Standard for measurement, or the most recent revision thereof, for the sound level corresponding to a steady state noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level or the energy average noise level during the sample period. The measurement period for the purposes of this chapter is fifteen (15) minutes.

“Impulsive noise” shall mean a noise of short duration usually less than one second and of high intensity, with an abrupt onset and rapid decay. Such objectionable noises may also be repetitive.

“Intrusive noise” shall mean that noise that intrudes over and above the ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence and tonal information content, as well as the prevailing ambient noise level.

“Maintenance” shall mean the upkeep, repair or preservation of existing property or structures.

“Noise” shall mean any unwanted sound or sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing or is otherwise annoying.

“Noise level (sound level)” shall mean the weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum. For purposes of this chapter, all noise levels (sound levels) shall be A-weighted sound pressure level.

“Noise (sound) level meter” shall mean an instrument, including a microphone, an amplifier, an output meter and frequency weighting networks for the measurement and determination of noise and sound levels. For the purposes of this chapter, the sound level meter must meet the International Electrotechnical Commission (IEC) 60651 and 60804 Standards, or the most recent revisions thereof, for Type 1 sound level meters or an instrument and the associated recording and analyzing equipment that will provide equivalent data. (Ord. 07-17 § 2 (part))

8.40.030 Designated noise zones.

The properties hereinafter described shall be assigned to the following noise zones:

Noise Zone I:	All single-family residential properties;
Noise Zone II:	All multifamily residential properties and mobile home parks;
Noise Zone III:	All commercial property;
Noise Zone IV:	The residential portion of mixed use properties;
Noise Zone V:	All manufacturing or industrial properties and all other uses.

The actual use of the property, and not necessarily its zoning designation, shall be the determining factor in establishing whether a property is in Noise Zone I, II, III, IV or V; provided, that the actual use is a legal use within the applicable zone. (Ord. 07-17 § 2 (part))

8.40.040 Exterior noise standards.

A. The following exterior noise standards, unless otherwise specifically indicated, shall apply to all properties within a designated noise zone:

Allowable Exterior Noise Level ⁽¹⁾			
Noise Zone	Type of Land Use	Allowed Equivalent Noise Level, L _{eq} ⁽²⁾	
		7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
I	Single-Family Residential	65 dBA	45 dBA

Allowable Exterior Noise Level ⁽¹⁾			
		Allowed Equivalent Noise Level, L_{eq}. ⁽²⁾	
Noise Zone	Type of Land Use	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
II	Multifamily Residential, Mobile Home Parks	65 dBA	50 dBA
III	Commercial Property	65 dBA	60 dBA
IV	Residential Portion of Mixed Use	70 dBA	70 dBA
V	Manufacturing and Industrial, Other Uses	70 dBA	70 dBA

(1) If the ambient noise level exceeds the resulting standard, the ambient noise level shall be the standard.

(2) Measurements for compliance are made on the affected property pursuant to Section [8.40.160](#).

B. It is unlawful for any person at any location within the incorporated area of the city to create noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which noise causes the noise level, when measured at any location on any other property, to exceed either of the following:

1. The noise standard for the applicable zone for any fifteen (15) minute period;
2. A maximum instantaneous (single instance) noise level equal to the value of the noise standard plus twenty (20) dBA for any period of time (measured using A-weighted slow response).

C. In the event the ambient noise level exceeds the noise standard, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.

D. The Noise Zone IV standard shall apply to that portion of residential property falling within one hundred (100) feet of a commercial property or use, if the noise originates from that commercial property or use.

E. If the measurement location is on a boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply. (Ord. 07-17 § 2 (part))

8.40.050 Interior noise standards.

A. The following interior noise standards, unless otherwise specifically indicated, shall apply to all properties within a designated noise zone:

Allowable Interior Noise Level ⁽¹⁾
--

	Allowable Interior Noise Level	Allowed Equivalent Noise Level	
		Noise Level, L_{eq} ⁽²⁾	
Noise Zone	Type of Land Use	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
Noise Zone	Type of Land Use	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
I	Single-Family Residential	45 dBA	40 dBA
II	Multifamily Residential, Mobile Home Parks	45 dBA	40 dBA
IV	Residential Portion of Mixed Use	45 dBA	40 dBA

(1) If the ambient noise level exceeds the resulting standard, the ambient noise level shall be the standard.

(2) Measurements for compliance are made on the affected property pursuant to Section [8.40.160](#).

B. It is unlawful for any person at any location within the incorporated area of the city to create noise, or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which noise causes the noise level, when measured at any location on any other property, to exceed either of the following:

1. The noise standard for the applicable zone for any fifteen (15) minute period;
2. A maximum instantaneous (single instance) noise level equal to the value of the noise standard plus twenty (20) dBA for any period of time (measured using A-weighted slow response).

C. In the event the ambient noise level exceeds the noise standard, the maximum allowable noise level under such category shall be increased to reflect the maximum ambient noise level.

D. The Noise Zone IV standard shall apply to that portion of residential property falling within one hundred (100) feet of a commercial property or use, if the noise originates from that commercial property or use.

E. If the measurement location is on a boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply. (Ord. 07-17 § 2 (part))

8.40.060 Exemptions.

The following activities shall be exempted from the provisions of this chapter:

A. Any activity conducted on public property, or on private property with the consent of the owner, by any public entity or its officers, employees, representatives, agents, subcontractors, permittees, licensees or lessees that the public entity has authorized, shall be exempt from the provisions of this chapter. This includes, without limitation, sporting and recreational activities that are sponsored, co-

sponsored, permitted or allowed by the city of San Jacinto or any school district within the city's jurisdictional boundaries. This also includes, without limitation, occasional outdoor gatherings, public dances, shows or sporting and entertainment events, provided such events are conducted pursuant to an approval, authorization, contract, lease, permit or sublease by the appropriate public entity, including the planning commission or city council;

B. Occasional outdoor gatherings, public dances, show, sporting and entertainment events, provided said events are conducted pursuant to a permit or license issued by the appropriate jurisdiction relative to the staging of said events;

C. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle, work or warning alarm or bell, provided the sounding of any bell or alarm on any building or motor vehicle shall terminate its operation within forty-five (45) minutes in any hour of its being activated;

D. Noise sources associated with construction, repair, remodeling, demolition or grading of any real property. Such activities shall instead be subject to the provisions of Section [8.40.090](#);

E. Noise sources associated with construction, repair, remodeling, demolition or grading of public rights-of-way or during authorized seismic surveys;

F. All mechanical devices, apparatus or equipment associated with agriculture operations; provided, that:

1. Operations do not take place between eight p.m. and seven a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday, or
2. Such operations and equipment are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions, or
3. Such operations and equipment are associated with agricultural pest control through pesticide application, provided the application is made in accordance with permits issued by or regulations enforced by the California Department of Agriculture;

G. Noise sources associated with the maintenance of real property. Such activities shall instead be subject to the provisions of Section [8.40.080](#);

H. Any activity to the extent regulation thereof has been preempted by state or federal law;

I. Any noise sources associated with people and/or music associated with a party at a residential property. Such noise shall be subject to the provisions of Section [8.40.070](#);

J. Any noise source emanating from an ice cream truck within the city of San Jacinto. Such noise shall be subject to the provisions of Section [5.28.140](#);

K. Any noise sources associated with barking dogs or other intermittent noises made by animals on any property within the city of San Jacinto. Such noise shall be subject to the provisions of Section [6.24.030](#);

L. Noise sources related to uses approved by a permit or development agreement adopted prior to the date of adoption of the ordinance codified in this chapter and that contains acoustic or noise standard conditions of approval. This exemption shall only be applicable during the effective period of the city-approved permit or development agreement. (Ord. 07-17 § 2 (part))

8.40.070 Loud and disturbing noise.

A. It is unlawful for any person or property owner within the city to make, cause or allow to be made any loud, excessive, impulsive or intrusive noise, disturbance or commotion that disturbs the peace or quiet of any area or that causes discomfort or annoyance to any reasonable person of normal sensitivities in the area. The types of loud, disturbing, excessive, impulsive or intrusive noise may include, but shall not be limited to, yelling, shouting, hooting, whistling, singing, playing a musical instrument, or emitting or transmitting any loud music or noise from any mechanical or electrical sound-making or sound-amplifying device.

B. The factors, standards, and conditions that may be considered in determining whether a violation of the provisions of this section has been committed include, but are not limited to, the following:

1. The level of the noise;
2. The level and intensity of the background (ambient) noise, if any;
3. The proximity of the noise to residential or commercial sleeping areas;
4. The nature and zoning of the area within which the noise emanates;
5. The density of inhabitation of the area within which the noise emanates;
6. The time of day and night the noise occurs;
7. The duration of the noise;
8. Whether the noise is constant, recurrent or intermittent;
9. Whether the noise is produced by a commercial or noncommercial activity;
10. Whether the use is lawful under the provisions of this code and whether the noise is one that could reasonably be expected from the activity or allowed use. (Ord. 07-17 § 2 (part))

8.40.080 Real property maintenance noise regulations.

A. No person, while engaged in maintenance of real property, shall operate any tool, equipment or machine (including, but not limited to, any lawnmower, weedeater, leafblower, mulching machine, or chainsaw) in a manner that produces loud noise that disturbs a person of normal sensitivity who works or resides in the vicinity, or a peace officer, except between the hours of seven a.m. and seven p.m. of the same day.

B. No landowner, occupant, gardener, property maintenance service, contractor, subcontractor or employer shall permit or allow any person or persons working under his or her direction or control to operate any tool, equipment or machine in violation of the provisions of this section. (Ord. 07-17 § 2 (part))

8.40.090 Construction activity noise regulations.

A. Weekdays and Saturdays. No person shall engage in construction, remodeling, digging, grading, demolition or any other related building activity, nor shall operate any tool, equipment or machine, on any weekday or Saturday except between the hours of seven a.m. and seven p.m.

B. Sundays and Holidays. No person shall engage in construction, remodeling, grading, demolition or other related building activity, nor shall operate any tool, equipment or machine, on any Sunday or any federal holiday.

C. No landowner, construction company owner, contractor, subcontractor or employer shall permit or allow any person or persons working under their direction and control to operate any tool, equipment or machine in violation of the provisions of this section.

D. Exceptions.

1. The provisions of this section shall not apply to emergency construction work performed by a private party when authorized by the city manager or his or her designee;
2. The maintenance, repair or improvement of any public work or facility by public employees, by any person or persons acting pursuant to a public works contract, or by any person or persons performing such work or pursuant to the direction of, or on behalf of, any public agency; provided, however, this exception shall not apply to the city of San Jacinto, or its employees, contractors or agents, unless:
 - a. The city manager or a department head determines that the maintenance, repair or improvement is immediately necessary to maintain public services, or
 - b. The maintenance, repair or improvement is of a nature that cannot feasibly be conducted during normal business hours, or
 - c. The city council has approved project specifications, contract provisions, or an environmental document that specifically authorizes construction during hours of the day that would otherwise be prohibited pursuant to this section;
3. Any construction that complies with the noise limits specified in Section [8.40.040](#) or [8.40.050](#). (Ord. 15-07 § 1; Ord. 07-17 § 2 (part))

8.40.100 Other public agency exceptions.

The provisions of this chapter shall not be construed to prohibit any work at different hours by or under the direction of any other public agency or public or private utility company in cases of necessity or emergency. (Ord. 07-17 § 2 (part))

8.40.110 Schools, day care centers, churches, libraries, museums, health-care institutions— Special provisions.

It is unlawful for any person to create any noise that causes the outdoor noise level at any school, day care center, hospital or similar health-care institution, church, library or museum while the same is in use, to exceed the noise standards specified in Section [8.40.040](#) prescribed for the assigned Noise Zone I. (Ord. 07-17 § 2 (part))

8.40.120 Sound-amplifying equipment.

Loudspeakers, sound amplifiers, public address systems or similar devices used to amplify sounds shall be subject to the provisions of Section [8.40.130](#). Such sound-amplifying equipment shall not be construed to include electronic devices, including, but not limited to, radios, tape players, tape recorders, compact disc players, MP3 players, electric keyboards, music synthesizers, record players or televisions, which are designed and operated for personal use, or used entirely within a building and are not designed or used to convey the human voice, music or any other sound to an audience outside such building, or which are used in vehicles and heard only by occupants of the vehicle in which installed. (Ord. 07-17 § 2 (part))

8.40.130 Amplified sound.

- A. The city council enacts the following legislation for the sole purpose of securing and promoting the public health, comfort, safety and welfare for its citizenry. While recognizing that the use of sound-amplifying equipment may be entitled to certain protection by the constitutional rights of freedom of speech and assembly, the city council finds that in order to protect the public safety and the correlative rights of the citizens of this community to privacy and freedom from public nuisance of loud and unnecessary noise, reasonable regulation of the time, place and manner of the use of amplifying equipment is necessary. In no event shall approval or authorization required herein be withheld by reason of the constitutionally protected content of any material proposed to be broadcast through amplifying equipment.
- B. It is unlawful for any person, other than personnel of law enforcement or governmental agencies, to install, use or operate a loudspeaker or sound-amplifying device in a fixed or movable position or mounted upon any vehicle within the city for the purpose of giving instructions, directions, talks, addresses or lectures to any persons or assemblages of persons in or upon any street, alley, sidewalk, park, place or public property without a permit to do so from the police chief or his or her designee. Notwithstanding any other provision of this chapter, the provisions of this section shall also apply to the use of sound-amplifying equipment upon public or private property when used in connection with outdoor or indoor public or private events, whether or not admission is charged or food or beverages are sold, when such activity is to be attended by more than one hundred (100) persons and the noise emanating from the event will be audible at the property plane, or, in the case of a street dance or concert, on the nearest residential property. Those activities listed in Section [8.40.060\(A\)](#) are exempt from the requirements of this section.
- C. The police chief or his or her designee is authorized to approve and issue permits under this section.
- D. An application for a permit required by this section shall be filed with the police chief at least sixteen (16) days and no more than one hundred twenty (120) days prior to the date on which the sound-amplifying equipment is intended to be used. Applications for events covered by the First Amendment of the United States Constitution are exempt from the time requirements of this section if it is shown that circumstances require a shorter filing period and the event will not constitute an unsafe condition. The application shall contain the following information:
1. The name, address and telephone number of both the owner and the user of the sound-amplifying equipment;
 2. The license number, if a sound truck is to be used;
 3. A general description of the sound-amplifying equipment which is to be used;
 4. Whether sound-amplifying equipment will be used for commercial or noncommercial purpose;
 5. The dates and times upon and within which, and the streets or property over or upon which, the equipment is proposed to be operated;
 6. The name or names of one or more persons who will be present during the conduct of any activities for which registration is sought and who will have authority to reduce the volume of any sound-amplifying equipment during the course of the activities if required pursuant to this chapter and, otherwise, to ensure compliance with the provisions of this chapter;
 7. A statement by the applicant that he or she is willing and able to comply with the provisions of this chapter and the conditions of the permit;

8. A sketch of the area or facilities within which the activities are to be conducted, with approximate dimensions and illustration of the location and orientation of all sound-amplifying equipment.
- E. The police chief shall deny the permit application or revoke any permit if the chief finds any of the following:
1. The application contains materially false or intentionally misleading information; or
 2. The use of sound-amplifying equipment at an event or activity proposed will be located in or upon a premises, building or structure that is hazardous to the health or safety of the employees or patrons of the premises, business, activity, or event, or the general public, under the standards established by the International Building or Fire Codes, or other applicable codes, as set forth in this title and Title [15](#) of this code; or
 3. The use of sound-amplifying equipment at an event or activity proposed in or upon a premises, building or structure that lacks adequate on-site parking for participants attending the proposed event or activity under the applicable standards set forth in Article 15 of the San Jacinto Zoning Ordinance; or
 4. The conditions of any motor vehicle movement are such that, in his or her opinion, the use of the equipment would constitute an unreasonable interference with traffic safety; or
 5. The conditions of pedestrian movement are such that the use of the equipment would constitute a detriment to traffic safety; or
 6. The application submitted by the applicant reveals that the applicant would violate the provisions of this section or any other provision of federal, state and/or local law; or
 7. The applicant is unwilling or unable to comply with the provisions of this chapter or any conditions imposed upon any permit issued; or
 8. There had already been a permitted event at the intended location, or within a two hundred (200) yard radius of the intended location and the prior permitted event was located on residentially zoned property or on a street, alley, public parking lot or neighborhood park within three months prior to the intended event. Community parks are exempt from this subsection (E)(8); or
 9. The applicant or location has had previous violations within the past calendar year, and in the judgment of the police chief, issuance would be contrary to the intent of this section.
- F. In determining whether the use of the equipment would constitute an unreasonable interference with or detriment to traffic safety, the police chief shall consider, but shall not necessarily be limited to:
1. The volumes, patterns and speed of vehicular and pedestrian traffic in the proposed area of use;
 2. The relationship of the proposed use of equipment and potential impacts upon traffic patterns;
 3. Availability of sufficient room for the operation of the equipment without significantly interfering with the traffic patterns;

4. Proximity to schools, playgrounds and similar facilities where use of such equipment might attract children into traffic patterns;
5. Proximity to busy intersections or other potentially hazardous conditions where use of such equipment might constitute a hazard by reason of its tendency to distract drivers of vehicles or pedestrians.

G. Issuance or Denial.

1. If the application is approved, the police chief shall return an approved copy of the application to the applicant and shall issue a permit. The permit shall constitute permission for the use of the sound-amplifying equipment as requested.
2. Any application filed shall be either approved or disapproved within five days of the filing thereof.
3. If the application is disapproved, the police chief shall return a disapproved copy forthwith to the applicant with a written statement on the reason for disapproval.
 - a. Any person aggrieved by a decision of the police chief or his or her designee may file an appeal to the city manager. A complete and proper appeal shall be filed with the city clerk within ten (10) calendar days of the action that is the subject of the appeal. If the applicant fails to file an appeal within the ten (10) day filing period provided herein, denial shall take effect immediately upon expiration of such filing period. All appeals shall be in writing and shall contain the following information: (i) name(s) of the person filing the appeal, (ii) a brief statement in ordinary and concise language of the relief sought, and (iii) the signatures of all parties named as appellants and their mailing addresses. After receiving the appeal, the city clerk shall immediately forward the matter to the city manager for handling.
 - b. The city manager shall, upon receipt of the appeal, set the matter for hearing before the city manager or a hearing officer. Any hearing officer shall be a licensed attorney or recognized mediator designated by the city manager. The hearing shall be set for not more than ten (10) calendar days after the receipt of the appeal unless a longer time is requested or consented to by the appellant. Notice of such hearing shall be given in writing and mailed at least five calendar days prior to the date of the hearing, by United States mail, with a proof of service attached, addressed to the address listed on the permit application, or the written appeal if different from the permit application. The notice shall state the grounds of the complaint or reason for the denial and shall state the time and place where such hearing will be held.
 - c. The city manager or hearing officer shall, within ten (10) calendar days following the conclusion of the hearing, make a written finding and decision, which shall be delivered to the city and the appellant by first class mail. Notwithstanding any provisions in this code, the decision of the city manager or hearing officer shall be the final administrative decision of the city of San Jacinto. Any party dissatisfied with the decision of the city manager or hearing officer may seek review of such decision under the provisions of Code of Civil Procedure Sections [1094.5](#) and [1094.8](#), as amended from time to time.

H. In addition to any other provisions of this code, the use of sound-amplifying equipment and sound trucks in the city shall be subject to the following regulations:

1. The only sounds permitted are music and human speech;

2. Sound shall not be emitted within one hundred (100) yards of hospitals, churches, schools and City Hall;
3. The volume of sound shall be controlled so that it will not be audible for a distance in excess of one hundred (100) feet from the sound-amplifying equipment or sound truck, and so that the volume is not unreasonably loud, raucous, jarring, disturbing or a nuisance to persons within the range of allowed audibility;
4. The sound-amplifying equipment or sound truck shall not be used between the hours of eight p.m. and eight a.m. (Ord. 07-17 § 2 (part))

8.40.140 Heating, venting, pool/spa and air conditioning—Special provisions.

Permits for heating, venting and air conditioning (HVAC) and pool/spa equipment in or adjacent to residential areas shall be issued only after the installation contractor signs an acknowledgment that the installation will meet the noise limits established in Section 5-29.04. Applications for residential mechanical permits for air conditioners may use the methodology specified in Standard 275 “Standard Application of Sound Rated Outdoor Unitary Equipment” of the Air Conditioning and Refrigeration Institute (ARI), 1984, as amended. Applicants of mechanical permits for commercial HVAC equipment shall be required to submit a detailed acoustical study that demonstrates compliance with the noise limits established in Section [8.40.040](#). (Ord. 07-17 § 2 (part))

8.40.150 Motor vehicles.

The use of any motor vehicle in such a condition as to create excessive, impulsive or intrusive noises is prohibited. The discharge into the open air of the exhaust of any internal combustion engine, stationary or mounted on wheels, motorboat or motor vehicle, including motorcycle, whether or not discharged through a muffler or other similar device, which discharge creates excessive, unusual, impulsive or intrusive noise is prohibited. Motor vehicles shall comply with the noise regulations of the California Vehicle Code. (Ord. 07-17 § 2 (part))

8.40.160 Noise level measurement.

- A. The location selected for measuring exterior noise levels in a residential area shall be at any part of a private yard, patio, deck or balcony normally used for human activity and identified by the owner or, if occupied by someone other than the owner, the occupant of the affected property as suspected of exceeding the noise level standard. This location may be the closest point in the private yard or patio, or on the deck or balcony, to the noise source, but should not be located in nonhuman activity areas such as trash container storage areas, planter beds, above or contacting a property line fence, or other areas not normally used as part of the yard, patio, deck or balcony. The location selected for measuring exterior noise levels in a nonresidential area shall be at the closest point to the noise source. The measurement microphone height shall be five feet above finish elevation or, in the case of a deck or balcony, the measurement microphone height shall be five feet above the finished floor level.
- B. The location selected for measuring interior noise levels shall be made within the affected residential unit. The measurements shall be made at a point at least four feet from the wall, ceiling or floor, or within the frame of a window opening, nearest the noise source. The measurements shall be made with windows in an open position.
- C. Any decibel measurement made pursuant to the provisions of this chapter shall be measured in decibels (dBAs) as measured with a sound level meter using the A-weighted sound pressure level. (Ord. 07-17 § 2 (part))

8.40.170 Prima facie violation.

Any noise exceeding the noise level standard as specified in Sections [8.40.040](#) and [8.40.050](#) shall be deemed to be prima facie evidence of a violation of the provisions of this chapter. (Ord. 07-17 § 2 (part))

8.40.180 Penalty.

A. Any person who negligently or knowingly violates any provision of this chapter shall be guilty of an infraction and upon conviction shall be punishable by a fine specified in Section [1.24.030](#). Each day a violation occurs shall constitute a separate offense and shall be punishable as such.

B. As an additional remedy, the operation or maintenance of any device, instrument, vehicle or machinery in violation of any provisions of this chapter, which operation or maintenance causes or creates sound levels exceeding the allowable standards as specified in this chapter, shall be deemed and is declared to be a public nuisance and may be subject to abatement by a restraining order or injunction issued by a court of competent jurisdiction.

C. Any violation of this chapter is declared to be a public nuisance and may be abated in accordance with law. The expense of enforcing this chapter is declared to be a public nuisance and may be by resolution of the city council declared to be a lien and special assessment against the property on which such nuisance is maintained, and any such charge shall also be a personal obligation of the property owner. (Ord. 07-17 § 2 (part))

8.40.190 Enforcement and administration.

A. The police department shall have the primary responsibility for enforcing provisions of this chapter. The police department shall receive and investigate noise complaints alleged to be in violation of this chapter.

B. It shall be the responsibility of peace officers to enforce the provisions of this chapter and to perform all other functions required by this chapter. Such duties shall include, but not be limited to, investigating potential violations, issuing warning notices and citations, and providing evidence to the city prosecutor for legal action.

C. For violations of Section [8.40.070](#), a peace officer shall either:

1. Obtain a declaration, signed under penalty of perjury, from two declarants living in separate dwelling units, stating in detail all of the following:

a. That the declarant is a resident located within two hundred (200) yards of the noise source; and

b. Within the past month declarant has heard noise for substantially long periods to the extreme annoyance of the declarant.

2. Personally hear the subject sound and provide, at trial or any administrative hearing, percipient evidence of the loud and disturbing noise. (Ord. 07-17 § 2 (part))

8.40.200 City manager waiver.

The city manager is authorized to grant a temporary waiver to the provisions of this chapter for a period of time necessary to correct the violations of this chapter, if such temporary waiver would be in the public interest and there is no feasible and prudent alternative to the activity, or the method of conducting the activity, for which the temporary waiver is sought. This time period may include a commitment to a program that includes placing necessary orders and entering into necessary contracts within thirty (30) days for repair or installation. (Ord. 07-17 § 2 (part))

8.40.210 Noise abatement program.

A. In circumstances where adopted community-wide noise standards and policies prove impractical in controlling noise generated from a specific source, the city council may establish a noise abatement program that recognizes the characteristics of the noise source and affected property and that incorporates specialized mitigation measures.

B. Noise abatement programs shall set forth in detail the approved terms, conditions and requirements for achieving maximum compliance with noise standards and policies. Said terms, conditions and requirements may include, but shall not be limited to, limitations, restrictions, or prohibitions on operating hours, location of operations, and the types of equipment. (Ord. 07-17 § 2 (part))



The San Jacinto Municipal Code is current through Ordinance 19-17, passed September 3, 2019.

Disclaimer: The City Clerk's Office has the official version of the San Jacinto Municipal Code. Users should contact the City Clerk's Office for ordinances passed subsequent to the ordinance cited above.

City Website: <http://www.sanjacintoca.gov/>

City Telephone: (951) 487-7330

[Code Publishing Company](#)

Introduction



Noise levels within the community can affect the quality of life experienced by people living and working in San Jacinto. High noise levels can create stress and irritation. The Noise Element addresses this issue by creating effective strategies to reduce excessive noise and limit the community's exposure to loud noise sources.

PURPOSE OF THE NOISE ELEMENT

The Noise Element addresses noise sources in the community and identifies ways to reduce the impacts of these noise sources. The Noise Element contains policies and programs to achieve and maintain noise levels compatible with various types of land uses. The Element identifies those land uses that are sensitive to noise and assures that noise-generating land use are located so that they do not impact those sensitive areas.

SCOPE AND CONTENT OF THE NOISE ELEMENT

The Noise Element satisfies the requirements of State planning law and is a mandated component of the General Plan. Government Code Section 65302(f) establishes the required components of the Noise Element. The Element also complies with California Health and Safety Code Section 56050.1 guidelines for Noise Elements.

Future noise conditions from short- and long-term growth are quantified as noise exposure contours. This noise information serves as the basis for developing guidelines identifying compatible land uses.



The Noise Element comprises three sections: 1) this Introduction; 2) Issues, Goals and Policies; and 3) the Noise Plan. An Implementation Program is provided as an appendix to this Element. In the Issues, Goals and Policies section, major issues pertaining to noise sources are identified and related goals and policies are established. The goals are statements of the City's desires and comprise broad statements of purpose and direction. The policies serve as guides for reducing or avoiding adverse noise effects on residents. The Plan explains how the goals and policies will be achieved and implemented. Specific implementation programs for the Noise Element are contained in the Noise Element appendix.

***RELATED PLANS
AND PROGRAMS***

There are a number of existing plans and programs that directly relate to the goals of the Noise Element. These plans and programs have been enacted through state and local legislation and are administered by agencies with powers to enforce state and local laws.

***California Environmental
Quality Act Guidelines***

The California Environmental Quality Act (CEQA) was adopted by the state legislature in response to a public mandate for thorough environmental analysis of projects that might affect the environment. Excessive noise is considered an environmental impact under CEQA. The provisions of the law and environmental review procedures are described in the CEQA Statutes and the CEQA Guidelines. Implementation of CEQA ensures that during the decision making stage of development, City officials and the general public will be able to assess the noise impacts associated with public and private development projects.

***California Noise
Insulation Standards
(Title 24)***

The California Commission of Housing and Community Development officially adopted noise standards in 1974. In 1988, the Building Standards Commission approved revisions to the standards (Title 24, Part 2, California Code of Regulations). As revised, Title 24 establishes an interior noise standard of 45 dB(A) for residential space (CNEL or Ldn). Acoustical studies must be prepared for residential structures to be located within noise contours of 60 dB(A) or greater (CNEL or Ldn) from freeways, major streets, thoroughfares, rail lines, rapid transit lines, or industrial noise sources. The studies must demonstrate that the building is designed to reduce interior noise to 45 dB(A) or lower (CNEL or Ldn).

***City of San Jacinto
Noise Ordinance***

The City's Noise Ordinance provides controls for excessive and annoying noise from stationary sources such as air conditioning and refrigeration units, industrial development and commercial activities. The Ordinance also regulates construction activities within the City. The Noise Ordinance establishes allowable interior and exterior noise levels for residential and commercial areas. Specific standards for daytime and nighttime hours are also provided. Certain noise sources are prohibited and the ordinance establishes an enforcement process. Noise Ordinance requirements are identified in this Element.

**RELATIONSHIP TO OTHER
GENERAL PLAN
ELEMENTS**

According to state planning law, the Noise Element must be consistent with the other General Plan elements. Each element is independent and all the elements together comprise the General Plan. All elements of the General Plan are interrelated to a degree, and certain goals and policies of each element may also address issues that are primary subjects of other elements. This integration of overlapping issues and policies provides a strong basis for implementation of plans and programs and achievement of community goals.

Policies and plans in the Noise Element are designed to protect existing and planned land uses. Potential noise sources are identified in the Noise Element and programs are established to avoid or mitigate noise impacts from planned development. Concurrently, the Land Use Element contains policies to ensure that environmental conditions, including noise, are considered in all land use decisions. The distribution of residential and other sensitive land uses as identified on the Land Use Policy map is designed to avoid areas where noisy conditions have been identified.

The Noise Element is inextricably linked to the transportation policies in the Circulation Element. Transportation noise is largely responsible for excessive noise levels in certain locations in an urban environment. The projected noise distribution identified in the Noise Element directly corresponds to the Circulation Plan. Both the Noise and Circulation Elements contain policies and plans to minimize the effects of transportation noise on existing and planned land uses. Noise exposure is a key consideration when locating and designing new arterials.

The Noise Element also relates to the Resource Management Element and the parks component of the Community Services and Facilities Element. Excessive noise can diminish enjoyment of parks and open space. Because of this, noise levels should be considered in the planning of new recreational and open space areas. Additionally, open space areas can be used to buffer noise sensitive land uses from noise producers.

Issues, Goals and Policies



The quality of life in San Jacinto can be reduced by excessive noise levels. Three major issues related to noise are addressed in the Noise Element. These major issues are: 1) avoiding the negative effects of noise through the use of land use planning and noise reduction techniques; 2) minimizing the impact of transportation related noise; and 3) minimizing the impact of non-transportation related noise.

NOISE AND LAND USE PLANNING

Certain areas within San Jacinto are subject to high noise levels. Consideration of the sources and recipients of noise early in the land use planning and development process can be an effective method of minimizing the impact of noise on people in the community. Areas already impacted by noise need to have noise reduced through rehabilitative improvements.

Noise Goal 1: Minimize the effects of noise through proper land use planning and development techniques.

- Policy 1.1:** Use the City's adopted noise/land use compatibility standards as a guide for future planning and development decisions.
- Policy 1.2:** Require noise control measures, such as berms, walls, and sound attenuating construction in areas of new development or rehabilitation.
- Policy 1.3** When necessary, require buffer areas between noise sources and sensitive receptors.
- Policy 1.4:** Use creative techniques to mitigate potential noise incompatibilities, particularly in areas with a mixture of uses.
- Policy 1.5:** Discourage development that will create unmitigated nuisances associated with noise.

Related Noise Element Implementation Programs: N-1, N-2, N-3, N-4

TRANSPORTATION RELATED NOISE

The primary source of noise in San Jacinto results from transportation related noise. The Ramona Expressway, State Route 79, the railroad, and other major roadways create high levels of noise that affect the overall quality of life in the community. Trucks and tractors associated with agricultural activities also create noise that may not be compatible with surrounding land uses. Reduction in transportation related noise is

necessary to deal with the detrimental effects attributable to excessive noise.

Noise Goal 2: Minimize the effects of transportation-related noise.

Policy 2.1: Reduce transportation-related noise impacts to sensitive land uses through the use of noise control measures.

Policy 2.2: Require sound-reduction design in development projects impacted by transportation-related noise, particularly along highways and major arterials.

Policy 2.3: Control truck traffic routing to reduce transportation-related noise impacts to sensitive land uses.

Related Noise Element Implementation Programs: N-1

**NON-TRANSPORTATION
RELATED NOISE**

Noise sources that are not directly related to transportation include construction, manufacturing or business operations, agricultural operations, and property maintenance activities. Such noise sources should be controlled to minimize exposure to excessive noise levels.

Noise Goal 3: Minimize the effects of non-transportation-related noise.

Policy 3.1: Reduce the impacts of noise-producing land uses and activities on noise-sensitive land uses.

Policy 3.2: Require sound-reduction design techniques in new construction or rehabilitation projects impacted by non-transportation noise.

Policy 3.3: Provide a means for the public to report non-transportation related nuisance noises.

Related Noise Element Implementation Programs: N-1, N-2, N-3, N-4

Noise Plan



San Jacinto, like most urbanized areas, is experiencing increased noise levels associated with transportation and non-transportation related noise. As the ambient noise level in the community rises, the City must seek ways to safeguard the community from excessive noise levels. The goals and policies contained in the previous section establish an agenda to reduce the overall noise levels within the City. The Noise Plan defines the City's approach for achieving the agenda and generally outlines action programs. The Noise Element Implementation Program contained in Appendix A of this General Plan is an extension of the Noise Plan and contains specific programs that the City enacts to protect community well being.

NOISE AND LAND USE PLANNING

Noise in the Planning Area is the cumulative effect of noise from transportation activities and stationary sources. Transportation noise refers to noise from automobile use, trucking, airport operations, and rail operations. Non-transportation noise typically refers to noise from stationary sources such as commercial establishments, machinery, air conditioning systems, compressors and landscape maintenance equipment. Regardless of the type of noise, the noise levels are highest near the source and decrease with distance.

Noise Sensitive Receptors

Noise is problematic when noise sensitive land uses are affected. Noise sensitive land uses, (i.e., sensitive receptors) include residences, schools, hospitals, religious meetings and recreation areas. Most noise impacts can be avoided when noise sources, sensitive land uses and information about the future noise environment are considered in land use planning and development decisions.



**Noise Standards and
Land Use Compatibility
Guidelines**

To ensure that noise producers do not adversely affect sensitive receptors, the City uses land use compatibility standards when planning and making development decisions. **Table N-1** summarizes City noise standards for various types of land uses. The standards represent the maximum acceptable noise level and are used to determine noise impacts.

**Table N-1
Interior and Exterior Noise Standards**

Land Use	Noise Standards ¹	
	Exterior	Interior
Residential – single-family, multi-family, duplex and mobile home	65 dB(A)	45 dB(A)
Residential – transient lodging, hotels, motels, nursing homes, hospitals, assisted care facilities	65 dB(A)	45 dB(A)
Private offices, churches, libraries, theaters, concert halls, meeting halls, schools	65 dB(A)	45 dB(A)
General commercial, office, retail, reception, restaurant	65 dB(A)	45 dB(A)
Light industrial ²	---	---
Parks and playgrounds	65 dB(A)	50 dB(A)
Golf courses, outdoor spectator sports	70 dB(A)	---

- 1 In Community Noise Level Equivalent (CNEL).
- 2 Noise standards do not apply to Light Industrial areas.
- 3 Outdoor environment limited to playground areas, picnic areas and other areas of frequent human use.

These noise standards are the basis for the development of the land use compatibility guidelines presented in **Table N-2**. If the noise level of a project falls within Zone A or Zone B, the project is considered compatible with the noise environment. Zone A implies that no mitigation will be needed. Zone B implies that minor mitigation measures may be required to meet the City's noise standards.

If the noise level of a project falls within Zone C, substantial noise mitigation will be necessary to meet the noise standards. Mitigation may involve construction of noise barriers and substantial building sound insulation. Projects in Zone C can be successfully mitigated; however, project proponents must demonstrate that the noise standards will be met prior to issuance of building permits. If noise levels fall outside of Zones A, B, and C, projects are considered clearly incompatible with the noise environment and should generally not be approved.

Table N-2
Noise/Land Use Compatibility Matrix
Noise Contours and Noise Impact Areas

Land Use Category	Community Noise Equivalent Level CNEL, dB						
	55	60	65	70	75	80	
Residential - Single Family, Multifamily, Duplex	A	A	B	B	C	---	---
Residential - Mobile Homes	A	A	B	C	C	---	---
Transient Lodging - Motels, Hotels	A	A	B	B	C	C	---
Schools, Libraries, Churches, Hospitals, Nursing Homes	A	A	B	C	C	---	---
Auditoriums, Concert Halls, Amphitheaters, Meeting Halls	B	B	C	C	---	---	---
Sports Arenas, Outdoor Spectator Sports, Amusement Parks	A	A	A	B	B	---	---
Playgrounds, Neighborhood Parks	A	A	A	B	C	---	---
Golf Courses, Riding Stables, Cemeteries	A	A	A	A	B	C	C
Office and Professional Buildings	A	A	A	B	B	C	---
Commercial Retail, Banks, Restaurants, Theaters	A	A	A	A	B	B	C
Industrial, Manufacturing, Utilities, Wholesale, Service Stations	A	A	A	A	B	B	B
Agriculture	A	A	A	A	A	A	A

Source: Taken in part from Aircraft Noise Impact Planning Guidelines for Local Agencies, U.S. Department of Housing and Urban Development, TE/NA-472, November 1972.

- A = Normally Acceptable - Specified land use is satisfactory based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
- B = Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
- C = Normally Unacceptable - New construction or development should generally be discouraged. If it does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
- = Clearly Unacceptable - New construction or development should generally not be undertaken.

The Director of Planning acts as the noise control coordinator. This delegation of responsibility allows consistent and continued enforcement of the established noise standards.

The noise environment for the community can be described with noise contours based on the major noise sources. Noise contours define areas of equal noise exposures. Future noise contours have been estimated with information about existing and projected land use development and transportation activity.

Figure N-1 shows the projected noise contours for San Jacinto and the noise impact areas. The noise contours are used as a guide for land use and development decisions. Contours of 60 dB(A) or greater define noise impacted areas. When noise sensitive land uses are proposed within these contours, an acoustical analysis must be prepared. For the project to be approved, the analysis must demonstrate that the project is designed to attenuate noise to meet the City's noise standards as defined in **Table N-1**. If the project is not designed to meet the noise standards, mitigation measures can be recommended in the analysis. If the analysis demonstrates that the noise standards can be met with implementation of the mitigation measures, the project can be approved with the mitigation measures required as conditions of project approval.

Construction Standards

The provisions of the state Noise Insulation Standards (Title 24) are enforced in San Jacinto. Title 24 specifies that combined indoor noise for multi-family living spaces shall not exceed 45 db(A) CNEL. This standard must be implemented when the outdoor noise level exceeds 60 dB(A) CNEL. The future noise contour map (**Figure N-1**) can be used to determine when to implement this standard. Title 24 requires that the standard be applied to all new hotels, motels, apartments and multi-family projects. The City also applies the standard to new single-family development.

The City also requires all construction activity to comply with the limits (maximum noise levels, hours and days of allowed activity) established in the City noise regulations (Title 24 California Code of Regulations, Noise Ordinance)

TRANSPORTATION RELATED NOISE

Noise from transportation activity is the primary component of the noise environment in San Jacinto. Transportation noise is related to the transportation corridors that traverse the community such as State Route 79, the Ramona Expressway, major arterials such as Sanderson, and the railroad. The most efficient and effective means of controlling noise from transportation systems is to reduce the noise at the source.

The City has little direct control over noise produced by transportation sources because state noise regulations for motor vehicles preempt local regulations. Because the City cannot control the noise at the source, City noise programs focus on reducing the impact of transportation

noise on the community. Cost effective strategies to control noise impacts are an essential component of this Element.

The most effective method for mitigating transportation noise impacts on the community is by utilizing the site design review process and CEQA.

During the planning stages of the development process, potential impacts from transportation noise shall be identified and mitigation measures will be required as needed to meet the City's noise standards.

Site planning, landscaping, topography and the design and construction of noise barriers are the most common method of alleviating vehicular traffic and train noise impacts. Setbacks and buffers can also be used to achieve small noise reductions.

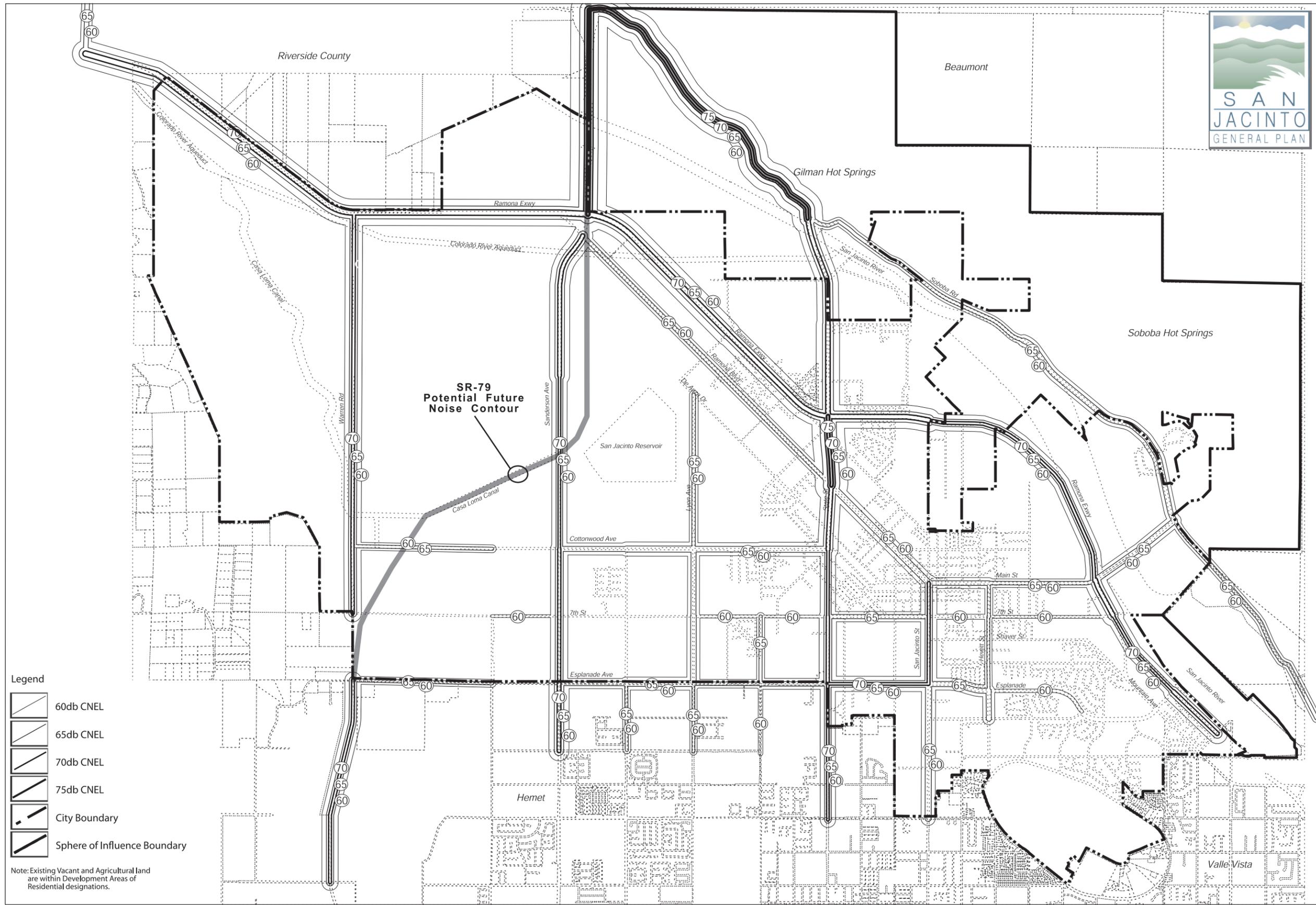
Noise attenuating barriers are commonly incorporated into projects and can be extremely effective in reducing noise levels. The effectiveness of the barrier depends on the relative height and materials of the barrier, the noise source, the affected area, and the horizontal distance between the barrier and the affected area. Although noise barriers can be extremely effective, the aesthetic impact of barriers on neighborhoods should be considered and minimized.

Noise barriers should be included in the design of roadway, freeway and rail improvements. The City supports efforts by Caltrans, the County of Riverside and other transportation providers to provide acoustical protection for noise sensitive uses. In addition, the City will request that barriers are constructed as part of highway, roadway and rail improvement projects to mitigate significant noise impacts. State Route 79 and the Ramona Expressway are prime candidates for barriers to protect the community from excessive transportation noise.

Noise Control at the Source

The California Vehicle Code contains noise regulations pertaining to the operation of all vehicles on public roads. These noise standards for cars, trucks, and motorcycles are enforced through coordination with the California Highway Patrol and the Riverside County Sheriff's Department. The City also regulates traffic flow and coordinates with the California Highway Patrol to enforce speed limits to reduce traffic noise.





Legend

- 60db CNEL
- 65db CNEL
- 70db CNEL
- 75db CNEL
- City Boundary
- Sphere of Influence Boundary

Note: Existing Vacant and Agricultural land are within Development Areas of Residential designations.

Sources: County of Riverside GIS, City of San Jacinto, USGS

North

Figure N-1
Future Noise Contours
May 2006

**NON-TRANSPORTATION
RELATED NOISE**

Sensitive receptors must also be protected from excessive noise generated by non-transportation sources such as commercial and industrial centers, agricultural activities, restaurants and bars, religious institutions and civic centers. Application of the City Noise Ordinance is the best means to control noise from existing noise sources. The Community Development Department and Police Department cooperate to identify development or activities that violate the noise regulations. The City's Municipal Code gives the City the authority to enforce the noise standards through penalties and other abatement tactics.

Noise generated by new development is effectively controlled through the site design review process, compliance with CEQA and compliance with the City noise standards contained in this Noise Element and the City Noise Ordinance. During these preliminary stages in the development process, potential noise impacts shall be identified and mitigation measures can be imposed.

When reviewing proposed non-residential projects, noise generation and potential impacts to surrounding development are considered. An acoustical analysis is required for projects that will generate noise potentially affecting sensitive receptors. Where significant impacts are identified, mitigation measures will be required. Mitigation measures that could be applied when reviewing projects include acoustically treated and/or quiet design: 1) furnaces; 2) fans; 3) motors; 4) compressors; and 5) valves and pumps. The City may also require limited delivery hours and hours of operation in order to minimize impacts to adjacent residential or other sensitive uses.

In addition, all City departments must comply with state and federal OSHA standards. Any new equipment or vehicle purchased by the City will comply with local, state and federal noise standards.

Noise Ordinance

The City Noise Ordinance is designed to protect people from non-transportation noise sources such as: construction activity; commercial, industrial, and agricultural operations; machinery and pumps; and air conditioners. Enforcement of the ordinance ensures that adjacent properties are not exposed to excessive noise from stationary sources. Enforcing the ordinance includes requiring proposed development projects to show compliance with the ordinance, including operating in accordance with noise levels and hours of operations limits placed on the project site. The City also requires construction activity to comply with established work schedule limits. The ordinance is reviewed periodically for adequacy and amended as needed to address community needs and development patterns.

Appendix: Implementation Program



This Implementation Program provides actions to implement the adopted policies and plans identified in the Noise Element. The Noise Element Implementation Program is a series of actions, procedures and techniques that includes a description of the responsible agency/department, funding source, time frame and related policies in the Noise Element.

N-1
Review Development
Projects

Review discretionary development proposals for potential on- and off-site stationary and vehicular noise impacts per the California Environmental Quality Act (CEQA). Any proposed development located within a 60 dB or higher noise contour (per Figures N-1 and N-2) shall be reviewed for potential noise impacts and compliance with the noise and land use compatibility standards. The thresholds established in the Noise Element, Noise Ordinance, the Noise Contours Maps (Figure N-2), and Tables N-2 and N-3 of the Noise Element will be used to determine the significance of impacts. If potential impacts are identified, mitigation in the form of noise reduction designs/structures (e.g., landscaped berms, barriers, walls, enhanced parkways, increased setbacks) will be required to reduce the impact to a level less than significant, where feasible.

Responsible
Agency/Department:
Funding Source:
Time Frame:
Related Policies:

Community Development
General Fund, project proponent
Ongoing
1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 3.1, 3.2

N-2
Minimize Commercial/
Industrial Noise

Review the locations of proposed projects with the potential to generate stationary noise in relation to sensitive receptors through the discretionary project review process. Limit delivery or service hours for stores and businesses with loading areas, docks, or trash bins that front, side, border, or gain access on driveways next to residential and other noise sensitive areas. Only approve exceptions if full compliance with the nighttime limits of the noise regulations is achieved.

Responsible Agency/Department: Community Development, Police
Funding Source: General Fund
Time Frame: Ongoing
Related Policies: 1.1, 1.2, 1.4, 1.5, 2.1, 2.2, 3.1

N-3 Minimize Construction Noise
 Require all construction activity to comply with the limits (maximum noise levels, hours and days of allowed activity) established in the City noise regulations (Title 24 California Code of Regulations, Noise Ordinance) in order to reduce impacts associated with temporary construction noise to the extent feasible. Trucks associated with construction activities shall follow the designated truck routes described in Implementation Program C-3.

Responsible Agency/Department: Community Development, Police
Funding Source: General Fund, Development Fees
Time Frame: Ongoing
Related Policies: 3.1

N-4: Noise Ordinance
 Actively enforce the standards identified within the City's Noise Ordinance and Noise Plan in order to reduce impacts to the extent feasible. Update and amend the Noise Ordinance and Plan as appropriate. Provide a link on the City's website for those to file complaints against activities and uses that may be violating the Noise Ordinance.

Responsible Agency/Department: Community Development, Police
Funding Source: General Fund, Development Fees
Time Frame: Ongoing
Related Policies: 3.1, 3.3

Appendix B

Roadway Calculations

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: [Rancho de Alamo TTM 37881 Noise Impact Study](#)
 ROADWAY: [Cottonwood Avenue](#)
 LOCATION: [Residential \(1-9 & 64-73\) Property Line](#)

JOB #: [2878-2020-02](#)
 DATE: [2-Nov-20](#)
 ENGINEER: [D. Shivaiah](#)

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT = **35,900**
 SPEED = **45**
 PK HR % = **10**
 NEAR LANE/FAR LANE DIST = **64**
 ROAD ELEVATION = **0.0**
 GRADE = **0.0** %
 PK HR VOL = **4,250**

RECEIVER INPUT DATA

RECEIVER DISTANCE = **71**
 DIST C/L TO WALL = **61**
 RECEIVER HEIGHT = **5.0**
 WALL DISTANCE FROM RECEIVER = **10**
 PAD ELEVATION = **0.0**
 ROADWAY VIEW: LF ANGLE= **-90**
 RT ANGLE= **90**
 DF ANGLE= **180**

SITE CONDITIONS

AUTOMOBILES = **10**
 MEDIUM TRUCKS = **10** (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = **10**

WALL INFORMATION

HTH WALL= **6.0**
 AMBIENT= **0.0**
 BARRIER = **1** (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.695	0.129	0.096	0.9200
MEDIUM TRUCKS	0.014	0.001	0.015	0.0300
HEAVY TRUCKS	0.024	0.010	0.025	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	62.14	--
MEDIUM TRUCKS	4.0	62.02	--
HEAVY TRUCKS	8.0	62.02	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.4	69.3	68.0	62.0	70.4	71.0
MEDIUM TRUCKS	65.8	45.9	38.1	47.3	53.5	53.5
HEAVY TRUCKS	72.6	54.9	57.1	56.3	62.6	62.9
NOISE LEVELS (dBA)	76.0	69.5	68.4	63.1	71.1	71.7

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.3	60.2	58.9	52.9	61.3	61.9
MEDIUM TRUCKS	57.1	37.2	29.4	38.6	44.8	44.8
HEAVY TRUCKS	64.5	46.8	49.0	48.2	54.5	54.8
NOISE LEVELS (dBA)	67.0	60.5	59.4	54.2	62.2	62.8

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	105	333	1053	3331
LDN	92	291	922	2915

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: [Rancho de Alamo TTM 37881 Noise Impact Study](#)
 ROADWAY: [Cottonwood Avenue](#)
 LOCATION: [Residential \(1-9 & 64-73\) First Floor.](#)

JOB #: [2878-2020-02](#)
 DATE: [2-Nov-20](#)
 ENGINEER: [D. Shivaiah](#)

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT = **35,900**
 SPEED = **45**
 PK HR % = **10**
 NEAR LANE/FAR LANE DIST = **64**
 ROAD ELEVATION = **0.0**
 GRADE = **0.0** %
 PK HR VOL = **4,250**

RECEIVER INPUT DATA

RECEIVER DISTANCE = **81**
 DIST C/L TO WALL = **61**
 RECEIVER HEIGHT = **5.0**
 WALL DISTANCE FROM RECEIVER = **20**
 PAD ELEVATION = **0.0**
 ROADWAY VIEW: LF ANGLE= **-90**
 RT ANGLE= **90**
 DF ANGLE= **180**

SITE CONDITIONS

AUTOMOBILES = **10**
 MEDIUM TRUCKS = **10** (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = **10**

WALL INFORMATION

HTH WALL= **6.0**
 AMBIENT= **0.0**
 BARRIER = **1** (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.695	0.129	0.096	0.9200
MEDIUM TRUCKS	0.014	0.001	0.015	0.0300
HEAVY TRUCKS	0.024	0.010	0.025	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	72.11	--
MEDIUM TRUCKS	4.0	72.00	--
HEAVY TRUCKS	8.0	72.00	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.8	68.7	67.4	61.3	69.7	70.4
MEDIUM TRUCKS	65.2	45.2	37.5	46.7	52.8	52.9
HEAVY TRUCKS	71.9	54.2	56.4	55.6	61.9	62.2
NOISE LEVELS (dBA)	75.3	68.8	67.7	62.5	70.5	71.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.9	59.8	58.5	52.4	60.8	61.5
MEDIUM TRUCKS	56.7	36.7	29.0	38.2	44.3	44.4
HEAVY TRUCKS	64.0	46.2	48.5	47.7	54.0	54.3
NOISE LEVELS (dBA)	66.5	60.1	59.0	53.7	61.7	62.3

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	104	327	1035	3274
LDN	91	287	906	2865

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: [Rancho de Alamo TTM 37881 Noise Impact Study](#)
 ROADWAY: [Cottonwood Avenue](#)
 LOCATION: [Residential \(1-9 & 64-73\) Second Floor](#)

JOB #: [2878-2020-02](#)
 DATE: [2-Nov-20](#)
 ENGINEER: [D. Shivaiah](#)

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT = **35,900**
 SPEED = **45**
 PK HR % = **10**
 NEAR LANE/FAR LANE DIST = **64**
 ROAD ELEVATION = **0.0**
 GRADE = **0.0** %
 PK HR VOL = **4,250**

RECEIVER INPUT DATA

RECEIVER DISTANCE = **81**
 DIST C/L TO WALL = **61**
 RECEIVER HEIGHT = **14.0**
 WALL DISTANCE FROM RECEIVER = **20**
 PAD ELEVATION = **0.0**
 ROADWAY VIEW: LF ANGLE= **-90**
 RT ANGLE= **90**
 DF ANGLE= **180**

SITE CONDITIONS

AUTOMOBILES = **10**
 MEDIUM TRUCKS = **10** (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = **10**

WALL INFORMATION

HTH WALL= **6.0**
 AMBIENT= **0.0**
 BARRIER = **1** (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.695	0.129	0.096	0.9200
MEDIUM TRUCKS	0.014	0.001	0.015	0.0300
HEAVY TRUCKS	0.024	0.010	0.025	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	75.37	--
MEDIUM TRUCKS	4.0	75.08	--
HEAVY TRUCKS	8.0	74.65	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.6	68.5	67.2	61.1	69.6	70.2
MEDIUM TRUCKS	65.0	45.1	37.3	46.5	52.6	52.7
HEAVY TRUCKS	71.8	54.0	56.3	55.5	61.8	62.1
NOISE LEVELS (dBA)	75.1	68.6	67.5	62.3	70.3	70.9

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.6	68.5	67.2	61.1	69.6	70.2
MEDIUM TRUCKS	65.0	45.1	37.3	46.5	52.6	52.7
HEAVY TRUCKS	71.8	54.0	56.3	55.5	61.8	62.1
NOISE LEVELS (dBA)	75.1	68.6	67.5	62.3	70.3	70.9

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	99	314	992	3136
LDN	87	274	868	2745

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: [Rancho de Alamo TTM 37881 Noise Impact Study](#)
 ROADWAY: [Cawston Avenue](#)
 LOCATION: [Residential \(44-63\) Property Line](#)

JOB #: [2878-2020-02](#)
 DATE: 2-Nov-20
 ENGINEER: [D. Shivaiah](#)

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT = 25,900
 SPEED = 25
 PK HR % = 10
 NEAR LANE/FAR LANE DIST = 62
 ROAD ELEVATION = 0.0
 GRADE = 0.0 %
 PK HR VOL = 4,250

RECEIVER INPUT DATA

RECEIVER DISTANCE = 60
 DIST C/L TO WALL = 50
 RECEIVER HEIGHT = 5.0
 WALL DISTANCE FROM RECEIVER = 10
 PAD ELEVATION = 0.0
 ROADWAY VIEW: LF ANGLE= -90
 RT ANGLE= 90
 DF ANGLE= 180

SITE CONDITIONS

AUTOMOBILES = 10
 MEDIUM TRUCKS = 10 (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = 10

WALL INFORMATION

HTH WALL= 6.0
 AMBIENT= 0.0
 BARRIER = 1 (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.695	0.129	0.096	0.9200
MEDIUM TRUCKS	0.014	0.001	0.015	0.0300
HEAVY TRUCKS	0.024	0.010	0.025	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	49.48	--
MEDIUM TRUCKS	4.0	49.33	--
HEAVY TRUCKS	8.0	49.33	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.1	61.5	60.2	54.2	62.6	63.2
MEDIUM TRUCKS	62.8	41.5	33.7	42.9	49.1	49.1
HEAVY TRUCKS	71.2	52.1	54.3	53.5	59.8	60.1
NOISE LEVELS (dBA)	72.8	62.0	61.2	57.0	64.6	65.1

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	56.8	52.3	51.0	44.9	53.4	54.0
MEDIUM TRUCKS	54.1	32.8	25.0	34.2	40.4	40.4
HEAVY TRUCKS	63.1	44.0	46.2	45.4	51.7	52.0
NOISE LEVELS (dBA)	64.0	53.2	52.4	48.2	55.7	56.3

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	19	61	193	611
LDN	17	54	172	543

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: [Rancho de Alamo TTM 37881 Noise Impact Study](#)
 ROADWAY: [Cawston Avenue](#)
 LOCATION: [Residential \(44-63\) Property Line](#)

JOB #: [2878-2020-02](#)
 DATE: 2-Nov-20
 ENGINEER: [D. Shivaiah](#)

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT = 25,900
 SPEED = 25
 PK HR % = 10
 NEAR LANE/FAR LANE DIST = 62
 ROAD ELEVATION = 0.0
 GRADE = 0.0 %
 PK HR VOL = 4,250

RECEIVER INPUT DATA

RECEIVER DISTANCE = 70
 DIST C/L TO WALL = 50
 RECEIVER HEIGHT = 5.0
 WALL DISTANCE FROM RECEIVER = 20
 PAD ELEVATION = 0.0
 ROADWAY VIEW: LF ANGLE= -90
 RT ANGLE= 90
 DF ANGLE= 180

SITE CONDITIONS

AUTOMOBILES = 10
 MEDIUM TRUCKS = 10 (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = 10

WALL INFORMATION

HTH WALL= 6.0
 AMBIENT= 0.0
 BARRIER = 1 (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.695	0.129	0.096	0.9200
MEDIUM TRUCKS	0.014	0.001	0.015	0.0300
HEAVY TRUCKS	0.024	0.010	0.025	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	59.46	--
MEDIUM TRUCKS	4.0	59.31	--
HEAVY TRUCKS	8.0	59.31	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.3	60.7	59.4	53.4	61.8	62.4
MEDIUM TRUCKS	62.0	40.7	32.9	42.1	48.3	48.3
HEAVY TRUCKS	70.4	51.3	53.5	52.7	59.0	59.3
NOISE LEVELS (dBA)	72.0	61.2	60.4	56.2	63.8	64.3

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	56.2	51.6	50.3	44.3	52.7	53.3
MEDIUM TRUCKS	53.5	32.2	24.4	33.6	39.8	39.8
HEAVY TRUCKS	62.5	43.3	45.5	44.7	51.0	51.4
NOISE LEVELS (dBA)	63.3	52.5	51.7	47.6	55.1	55.6

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	19	59	188	593
LDN	17	53	167	527

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL (CALVENO)

PROJECT: [Rancho de Alamo TTM 37881 Noise Impact Study](#)
 ROADWAY: [Cawston Avenue](#)
 LOCATION: [Residential \(44-63\) Property Line](#)

JOB #: [2878-2020-02](#)
 DATE: 2-Nov-20
 ENGINEER: [D. Shivaiah](#)

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT = 25,900
 SPEED = 25
 PK HR % = 10
 NEAR LANE/FAR LANE DIST = 62
 ROAD ELEVATION = 0.0
 GRADE = 0.0 %
 PK HR VOL = 4,250

RECEIVER INPUT DATA

RECEIVER DISTANCE = 70
 DIST C/L TO WALL = 50
 RECEIVER HEIGHT = 14.0
 WALL DISTANCE FROM RECEIVER = 20
 PAD ELEVATION = 0.0
 ROADWAY VIEW: LF ANGLE= -90
 RT ANGLE= 90
 DF ANGLE= 180

SITE CONDITIONS

AUTOMOBILES = 10
 MEDIUM TRUCKS = 10 (10 = HARD SITE, 15 = SOFT SITE)
 HEAVY TRUCKS = 10

WALL INFORMATION

HTH WALL= 6.0
 AMBIENT= 0.0
 BARRIER = 1 (0 = WALL, 1 = BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY
AUTOMOBILES	0.695	0.129	0.096	0.9200
MEDIUM TRUCKS	0.014	0.001	0.015	0.0300
HEAVY TRUCKS	0.024	0.010	0.025	0.0500

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES	2.0	63.90	--
MEDIUM TRUCKS	4.0	63.55	--
HEAVY TRUCKS	8.0	63.05	0.00

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.9	60.4	59.1	53.1	61.5	62.1
MEDIUM TRUCKS	61.7	40.4	32.6	41.8	48.0	48.0
HEAVY TRUCKS	70.2	51.0	53.2	52.4	58.7	59.1
NOISE LEVELS (dBA)	71.8	60.9	60.1	55.9	63.5	64.0

NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.9	60.4	59.1	53.1	61.5	62.1
MEDIUM TRUCKS	61.7	40.4	32.6	41.8	48.0	48.0
HEAVY TRUCKS	70.2	51.0	53.2	52.4	58.7	59.1
NOISE LEVELS (dBA)	71.8	60.9	60.1	55.9	63.5	64.0

NOISE CONTOUR (FT)

NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	18	55	175	554
LDN	16	49	156	492