



NOISE ELEMENT

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NOISE ELEMENT

7.1 Introduction

The City of San Marcos aims to protect residents' quality of life by reducing excessive or harmful noise. This includes reducing the community's overall ambient noise by minimizing point-source (e.g., construction activities), transportation related (e.g., vehicle, railroad, aircraft traffic) and stationary (e.g., air conditioner units, loading docks) noise sources. The City sets noise standards and identifies measures to control land uses that could impact sensitive receptors such as schools, libraries, hospitals, parks, and residential neighborhoods. The Noise Element addresses these potential issues through the identification of noise sources in the community and the development of goals, policies and implementation programs that serve to protect San Marcos' residents.

Purpose of the Noise Element

The Noise Element is a mandatory General Plan Element, required by California's Health and Safety Code Section 46050.01. The purpose of the Noise Element is to identify problems and noise sources threatening community safety and comfort and to establish policies and programs that will limit the community's exposure to excessive noise levels. It addresses both existing and foreseeable future noise abatement issues.

Recognizing that excessive or unusual noise can have significant adverse impacts on human health and welfare, the state has developed definitive guidelines for determining community noise levels and for establishing programs aimed at reducing community exposure to noise levels defined to be adverse. Goals and policies outlined within the Noise Element are designed to reduce the effects of human-caused noise in the community and to improve residents' quality of life by regulating and reducing noise, particularly within residential areas and near such noise-sensitive land uses as residences, hospitals, convalescent and day care facilities, schools, and libraries. The Noise Element also provides direction regarding best practices and strategies to protect City residents and businesses from severe noise levels.

Scope and Content

The Noise Element consists of three sections, which are Background and Structure; Noise Plan/Goals and Policies; and Implementation Plan.

The Background and Structure section presents a brief background on noise science, existing noise contour maps, defines noise standards, and discusses recommended land use and noise control practices for communities. The Goals and Policies section provides an outline of the community's vision through various statements. First, the general direction and broad ideals that capture the desire of the community for limiting noise are stated in goals. Second, potential solutions for decreasing noise in the community are stated in policies. The Implementation Plan outlines an action plan for implementing the Noise Element Goals and Policies, as well as identifying responsible agencies and timelines for implementation.

Section highlights and key facts relevant to noise in San Marcos are highlighted in Table 7-1 below.

Table 7-1
Noise Highlights and Key Facts

The City of San Marcos is a mix of urban and suburban areas, and is subject to numerous noise sources that affect the ambient noise environment, primarily vehicular traffic on major roadways (State Route 78 and major arterials such as County Highway S12 and Mission Road) and rail traffic (North County Transit District Sprinter and freight rail line).

The City of San Marcos is located approximately 2.5 miles from the McClellan-Palomar Airport (Airport), within the Airport Influence Area (AIA), but is entirely outside of the present and future 60 dBA CNEL noise contour for the Airport, and therefore, airport operations do not significantly affect the ambient noise environment of San Marcos.

Noise measurements were conducted within the City at various points of interest and in proximity to major noise sources. These noise measurements will be used to characterize the existing noise environment and avoid noise conflicts with proposed land uses.

The City currently uses specific noise standards adopted by the County of San Diego. A noise ordinance with specific quantitative noise standards will be adopted in the future to control noise levels throughout the community.

7.2 Background and Structure

Measuring and Defining Noise

Evaluating noise is complex. Although sound can be easily measured, the perception of noise levels is subjective and the physical response to sound complicates the analysis of its effects on people and places. Noise levels are measured as decibels (dB) on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, doubling the energy of a noise source (e.g., traffic volume) would not double the noise level.

Because dB is used to measure sound humans do not perceive changes in dB equally from one dB level to another. Based on subjective testing humans cannot perceive changes in noise levels less than 3 dB, a 5 dB change is clearly noticeable, and a 10 dB change is roughly twice as loud or quiet (FTA 2006).

Because the human ear is not equally sensitive to all audible frequencies, a frequency-dependent rating scale was devised to relate noise to human sensitivity. The A-weighted dB (dBA) scale performs this compensation by discriminating against frequencies that are more sensitive to humans. The basis for compensation is the faintest sound audible to the average ear at the frequency of maximum sensitivity. The dBA scale is used by most public agencies for the purpose of regulating environmental noise.

To provide some perspective on the relative loudness of various types of noise, Table 7-2 lists common sources of noise and their approximate noise levels.

Table 7-2
Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet fly-over at 1,000 feet	100	
Gas lawn mower at 3 feet	90	
Diesel truck at 50 feet (50 mph)	80	Food blender at 3 feet
Gas lawn mower 100 feet	70	Vacuum cleaner at 10 feet
Heavy traffic at 300 feet	60	Normal speech at 3 feet
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Large conference room
Quiet suburban nighttime	30	Library
Quiet rural nighttime	20	Bedroom at night
	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2009

Perception of noise is also sensitive to time and duration as intensity of noise fluctuates over time. Thus, in addition to instantaneous noise levels, sustained levels measured over a period of time are used to assess noise limits and impacts. Noise levels measured over one hour are usually expressed as dBA L_{eq} , the equivalent 1-hour noise level. Time of day is also an important factor for noise assessment; noise levels that may be acceptable during the day may interfere with the ability to sleep

during evening or nighttime hours. Therefore, 24-hour noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment.

Many metrics have been developed to account for the way humans perceive sound, including the following:

- **Leq (Equivalent Noise Level):** Leq represents an average of the sound energy occurring over a specified period of time. Effectively, the varying sound level over a specified period of time contains the same acoustical energy as a steady-state sound level in that same period.
- **Ldn (Day-Night Noise Level):** The 24-hour Leq with a 10-dB “penalty” applied during nighttime noise-sensitive hours, 10 p.m. through 7 a.m. The Ldn attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- **CNEL (Community Noise Equivalent Level):** The cumulative noise exposure in a community during a 24-hour period. Similar to the Ldn described above, but with an additional 5-dB “penalty” for the noise-sensitive hours between 7 p.m. to 10 p.m., which are typically reserved for relaxation, conversation, reading, and watching television. If the same 24-hour noise data are used, the CNEL is typically 0.5 dB higher than the Ldn.
- **Lmax (Maximum Noise Level):** The highest noise level occurring during a specific period of time.

Properly determining and evaluating potential environmental impact on the community is based on assigning the proper noise descriptor. Non-transportation noise (e.g., leaf blowers; heating, ventilation, and air conditioning; and loading docks) are generally analyzed using an hourly standard (Leq) and a maximum standard (Lmax). Transportation noise sources (e.g., vehicular traffic, aircraft overflights, and train pass-bys) occur as variable, individual events throughout the day. Hourly descriptors are not effective at describing transportation noise because it occurs at all hours. Instead, a 24-hour descriptor (Ldn or CNEL) is used to analyze transportation noise sources because the evening and nighttime penalties are applied to reflect increased sensitivity to noise during the evening and nighttime hours.



Transportation noise in the City of San Marcos comes from a variety of sources including State Route 78, major roadways, and rail lines.

Photo credit: AECOM.



Commercial, social, vehicular, and recreational activities all contribute to noise levels in the community.

Photo credit all: City of San Marcos

The Noise Environment

The City of San Marcos is a mix of urbanized and suburban areas, and is subject to numerous noise sources, primarily vehicular traffic on major roadways and rail traffic. The City is also subject to typical urban noise sources such as construction, police and fire department sirens, landscaping equipment, barking dogs, high altitude jet aircraft, and car alarms.

Major noise sources in the City include vehicular traffic on State Route 78, and major arterials (e.g. Rancho Santa Fe Road, San Marcos Boulevard, Las Posas Road, Mission Road, and Twin Oaks Valley Road) throughout the City. Truck traffic, like that prevalent on State Route 78 and major roadways, generates higher noise levels relative to other vehicle types that travel on local roadways. Train traffic on the North County Transit District Sprinter rail line, which is generally oriented parallel to State Route 78, is another major source of noise in the City. Sprinter traffic is limited to daily passenger transit, although the same rail line is periodically used for freight. Existing noise contours are illustrated in Figure 7-1; noise contours are not shown for all streets or street segments as contours are based on traffic generation ADT/LOS analysis data.

The nearest airport is the McClellan-Palomar Airport, located approximately 4 miles west of the western City limits. The City has a San Diego County Sheriff's Office (SDSO) helipad located on Santar Place at the northern County Sheriff's headquarters. Helicopter operations are minimal and for emergency purposes only. The helipad is located in an industrial/commercial area with no nighttime sensitive receptors located within 1,200 feet. McClellan-Palomar Airport is a general aviation airport located near the intersection of Palomar Airport Road and El Camino Real in the City of Carlsbad. In 2010, McClellan-Palomar Airport adopted and amended their Airport Land Use Compatibility Plan (ALUCP) to provide for the orderly growth of the Airport and promote compatibility with the surrounding land uses. McClellan-Palomar Airport served 212,023 operations during 2007 (an operation includes one takeoff or one landing)[County 2008]. The 2010 ALUCP utilized the maximum field capacity of 289,100 annual operations for the development of the most recent noise contours. (County 2010).

The City of San Marcos is located entirely outside of the present and future 60 dBA CNEL noise contour for McClellan-Palomar Airport, and therefore, airport operations do not substantially affect the ambient noise environment of San Marcos. Further information regarding the airport is discussed in Chapter 6 Safety Element.

Non-transportation noise sources would include construction projects, industrial areas (located mainly between East Mission Road and State Route 78), residential and commercial heating, ventilation, and air conditioning (HVAC) systems, loading docks, parking areas, commercial/retail centers, event venues (e.g. sports fields, amphitheaters), and any other miscellaneous sources not associated with transportation.

Noise Standards and Land Use Compatibility

Noise Standards

Noise standards have been adopted at the State, County, and City level to protect sensitive land uses from excessive noise exposure. The following noise standards are those currently adopted and enforceable in the City.

State Noise Standards

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The code provides acoustical regulations for both exterior-to-interior sound insulation as well as sound and impact isolation between adjacent spaces of various occupied units. Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dB Ldn, with windows closed, in any habitable room for general residential uses.

San Marcos Noise Regulation

Currently, San Marcos relies on the San Diego County Noise standards to regulate land use noise compatibility, transportation noise, and non-transportation noise. Utilizing the County's established interior and exterior noise standards, the City can rate compatibility using the terms normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

The City's approach to noise regulation uses the CNEL/ L_{dn} noise descriptor, are intended to be applicable for land use designations exposed to noise levels generated by transportation-related sources. Land use compatibility noise exposure limits are generally established as:

- 60 dBA CNEL/ L_{dn} for exterior spaces at a majority of land use designations throughout the City.
- 65 dBA CNEL/ L_{dn} are permitted for multiple-family housing and housing in mixed-use contexts.



The noise environment is contributed to, by, and effects to some level, all community activities.

Photo credit: City of San Marcos

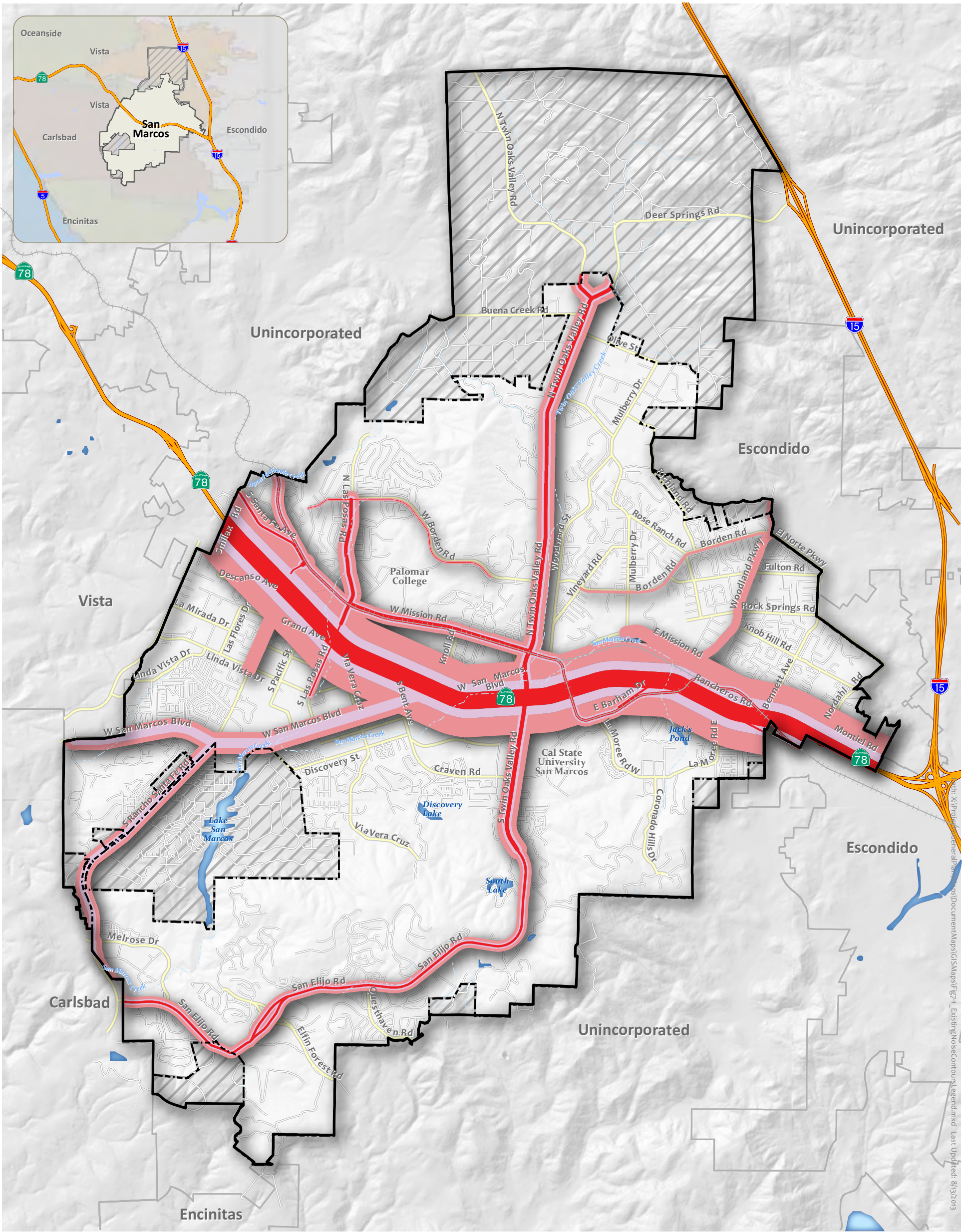


FIGURE 7-1
City of San Marcos

Existing Noise Contours



SOURCES OF DATA:
City of San Marcos 9/12 and AECOM, 11/11

Every effort has been made to assure the accuracy of the maps and data provided; however, some information may not be accurate or current. The City of San Marcos assumes no responsibility arising from use of this information and incorporates by reference its disclaimer regarding the lack of any warranties, whether expressed or implied, concerning the use of the same. For additional information, see the Disclaimer of the City's website.

- San Marcos City Limits
- Sphere of Influence
- Planning Area
- Major Hydrologic Features
- Creeks
- Railroad
- Freeway
- Highway
- Major Road
- Minor Road
- 60 CNEL
- 65 CNEL
- 70 CNEL

Note: Noise contours are not shown for all streets or street segments as contours are based on traffic generation ADT/LOS analysis data.

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Land use adjacencies, compatibility, and relation to streets should be considered for noise conditions.

Photo credit all: AECOM

Higher thresholds are permitted for multiple-family complexes due to location; they are generally located in transitional areas between single-family and commercial districts or in proximity to major arterials and a more integrated mix of residential and commercial activity (accompanied by higher noise levels) is often desired in mixed-use areas closer to transportation corridors. Maximum interior noise level standards are in place for new residential development, requiring that sufficient insulation be provided to reduce interior ambient noise levels to 45 dBA CNEL/ L_{dn} .

The City's existing Noise Ordinance (Chapter 10.24 of the San Marcos Municipal Code) prohibits loud, annoying, or unnecessary noises. It provides definition for and examples of prohibited noise sources but does not establish numeric noise thresholds for transportation related (e.g., vehicle, railroad, aircraft traffic) or non-transportation related (e.g., air conditioner units, loading docks, construction) noise sources. Construction activities are limited to Monday through Friday before 7:00 a.m. and after 6:00 p.m., or on Saturdays before 8:00 a.m. or after 5:00 p.m.

The City intends to formulate and adopt a revised Noise Ordinance that will include numeric noise standards appropriate for the City. Numeric noise standards are more effective tools that can be enforced at the planning, CEQA, implementation, and enforcement project phases to ensure that noise generated in the City remains at acceptable levels.

Land Use Planning

Consideration of the sources and recipients of noise early in the land use planning and development process can be an effective way to reduce the impact of noise on the community. Consideration should be given to both reducing noise in severely impacted areas through rehabilitative improvements and avoiding potential noise impacts through proactive land use planning and design.

Noise generated from automobile use, trucking, airports and rail operations is referred to as **transportation-related noise**, while noise from stationary sources such as commercial establishments, machinery, HVAC systems, compressors and landscape maintenance equipment is typically referred to as **non-transportation noise**. Noise is most problematic when it affects "sensitive receptors". Noise-sensitive land uses typically include residential uses (e.g., single- and multi-family, mobile homes), guest lodging, hospitals, nursing homes and other long-term medical care facilities, parks and outdoor recreational facilities, schools, libraries, churches, and places of public assembly. All of these uses are noise sensitive; however, they are not necessarily sensitive to noise at the same time. A residence would typically be considered sensitive at all times, while a park or school would only be sensitive to noise during the hours of operation, when it is occupied, or used.

The City's updated land use compatibility standards for this Element (Table 7-3) are based first on the General Plan land use designation of the property and secondly on the use of the property. For example, within the Residential land use designation, a multiple-family use exposed to transportation related noise would have an exterior noise standard of 60 dBA CNEL/Ldn. Noise standards for multiple-family and mixed-use land use designations shown in Table 7-4 are higher than those for single-family residential areas reflecting a more urban environment planned for certain areas of the City. The standards shown in Table 7-3 are purposefully general in nature and not every land use type which could be accommodated within each General Plan designation is identified. Application of the noise standards will vary on a case-by-case basis according to location, development type, and associated noise sources.



McClellan-Palomar Airport is 2.5 miles from San Marcos. 65dbL contours from the airport do not reach the City.

Photo credit: AECOM

Table 7-3
Noise and Land Use Compatibility Guidelines for Transportation-related Noise

Land Use Category		Exterior Noise Level (CNEL)					
		55	60	65	70	75	80
A	Residential—single family residences, mobile homes, senior/age-restricted housing						
B	Residential—multifamily residences, mixed use (residential/commercial)						
C	Lodging—hotels, motels						
D ²	Schools, churches, hospitals, residential care facility, child care facilities						
E ²	Passive recreational parks, nature preserves, contemplative spaces, cemeteries						
F ²	Active parks, golf courses, athletic fields, outdoor spectator sports, water recreation						
G ²	Office/professional, government, medical/dental, commercial, retail, laboratories						
H ²	Industrial, manufacturing, utilities, agriculture, mining, stables, ranching, warehouse, maintenance/repair						



Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved



Conditionally Acceptable - New construction or development should be undertaken only after a detailed noise analysis is conducted to determine if noise reduction measures are necessary to achieve acceptable levels for land use. Criteria for determining exterior and interior noise levels are listed in Table 7-4, Noise Standards. If a project cannot mitigate noise to a level deemed Acceptable, the appropriate County decision-maker must determine that mitigation has been provided to the greatest extent practicable or that extraordinary circumstances exist.



Unacceptable - New construction or development shall not be undertaken.

Noise Contours and Impacted Areas

Noise contours, based on the location of major noise sources, describe the ambient noise environment within the community. These contours outline areas of equal noise exposure. Information about existing and projected land use development and transportation activity has been used to estimate future noise contours for San Marcos, which are illustrated in Figure 7-2. Noise contours are not shown for all streets or street segments as contours are based on traffic generation ADT/LOS analysis data.

Table 7-4
Noise Standards⁽¹⁾

1. The exterior noise level (as defined in Item 3) standard for Category A shall be 60 CNEL, and the interior noise level standard for indoor habitable rooms shall be 45 CNEL.

2. The exterior noise level standard for Categories B and C shall be 65 CNEL, and the interior noise level standard for indoor habitable rooms shall be 45 CNEL.

3. The exterior noise level standard for Categories D and G shall be 65 CNEL and the interior noise level standard shall be 50 dBA Leq (one hour average).

4. For single-family detached dwelling units, "exterior noise level" is defined as the noise level measured at an outdoor living area which adjoins and is on the same lot as the dwelling, and which contains at least the following minimum net lot area: (i) for lots less than 4,000 square feet in area, the exterior area shall include 400 square feet, (ii) for lots between 4,000 square feet to 10 acres in area, the exterior area shall include 10 percent of the lot area; (iii) for lots over 10 acres in area, the exterior area shall include 1 acre.

5. For all other residential land uses, "exterior noise level" is defined as noise measured at exterior areas which are provided for private or group usable open space purposes. "Private Usable Open Space" is defined as usable open space intended for use of occupants of one dwelling unit, normally including yards, decks, and balconies. When the noise limit for Private Usable Open Space cannot be met, then a Group Usable Open Space that meets the exterior noise level standard shall be provided. "Group Usable Open Space" is defined as usable open space intended for common use by occupants of a development, either privately owned and maintained or dedicated to a public agency, normally including swimming pools, recreation courts, patios, open landscaped areas, and greenbelts with pedestrian walkways and equestrian and bicycle trails, but not including off-street parking and loading areas or driveways

6. For non-residential noise sensitive land uses, exterior noise level is defined as noise measured at the exterior area provided for public use.

7. For noise sensitive land uses where people normally do not sleep at night, the exterior and interior noise standard may be measured using either CNEL or the one-hour average noise level determined at the loudest hour during the period when the facility is normally occupied.

8. The exterior noise standard does not apply for land uses where no exterior use area is proposed or necessary, such as a library.

9. For Categories E and F the exterior noise level standard shall not exceed the limit defined as "Acceptable" in by the City, or an equivalent one-hour noise standard.

(1) Exterior Noise Level compatibility guidelines for Land Use Categories A-H are identified in Table 3.11-6, Noise Compatibility Guidelines.

Note: "Category(ies)" discussed in this table refer to lettered Land Use Category(ies) in Table 7-3 of this Element.

The noise contours are used as a guide for land use and development decisions. Land uses located within contours of 60 dBA or greater may be noise impacted depending on the use. When noise sensitive land uses are proposed within these contours, an acoustical analysis should be required to ensure that the new land use is built within a compatible noise environment. For a project to be approved in a noise impacted area, the analysis must demonstrate that the project is designed to attenuate noise to meet the City's compatibility guidelines as shown in Table 7-3.

Transportation Related Noise

San Marcos contains a number of transportation-related noise sources including freeways, major roadways, and rail lines. The most significant noise sources in the City are from car and truck traffic on State Route 78. Truck traffic is prevalent on State Route 78 and major roadways and generates higher noise levels relative to other vehicle types that travel on local roadways. In the future, State Route 78 and other major roadways in the City limits are expected to be expanded and carry more traffic than under current conditions. Construction of an HOV lane on State Route 78 is planned for the year 2020 and would affect the Level of Service capacity of State Route 78. Traffic noise contours shown in Figure 7-2 include increases in future traffic volumes predicted under the Regional Transportation Plan (RTP) and from the Mobility Element of this General Plan, which would include future projects, such as the State Route 78 HOV lane expansion.

Train traffic on the North County Transit District Sprinter rail line, which is generally oriented parallel to State Route 78, is another major source of noise in the City. Currently, Sprinter traffic is limited to daily passenger transit. However, under the RTP the Sprinter line is planned to expand in the San Marcos area. Planned expansions include double tracking and increased service through the San Marcos corridor, which would increase Sprinter noise levels.

As shown in Figure 7-3, several locations within the City experience ambient noise levels above 60 dBA associated Sprinter and railroad traffic. When proposed projects are in the planning stage for expansion of the railway by the North County Transportation District, these projects should be carefully reviewed by the City for potential rail quiet zones or wayside horn locations due to the proximity of sensitive land (e.g., residential, educational) uses near the train tracks.

Additional transportation noise sources within the City are the SDSO helipad and aircraft over flights from neighboring airports. As stated under the "Noise Environment" section, the McClellan-Palomar Airport existing and future 60 dBA CNEL noise contour would not extend onto the City limits and the SDSO helipad is located 1,200 feet from any residential areas and used for emergency purposes only.



The SPRINTER light rail provides a high level of mobility for the community and necessarily contributes some noise to the environment.

Photo credit: AECOM

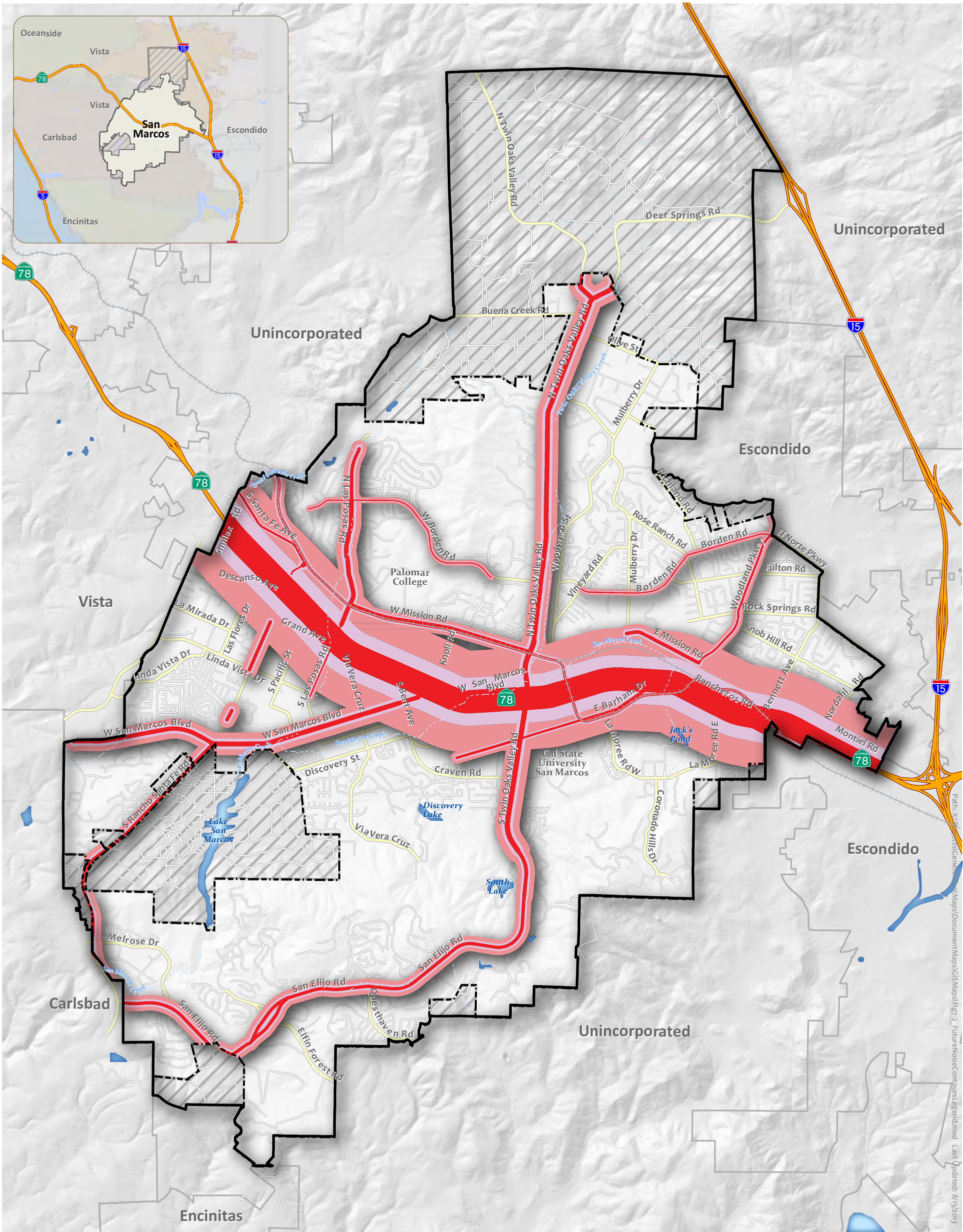


FIGURE 7-2
City of San Marcos

Future Noise Contours



SOURCES OF DATA:
City of San Marcos 9/12 and AECOM, 11/11

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- San Marcos City Limits
- Sphere of Influence
- Planning Area
- Major Hydrologic Features
- Creeks
- Railroad
- Freeway
- Highway
- Major Road
- Minor Road
- 60 CNEL
- 65 CNEL
- 70 CNEL

Note: Noise contours are not shown for all streets or street segments as contours are based on traffic generation ADT/LOS analysis data.

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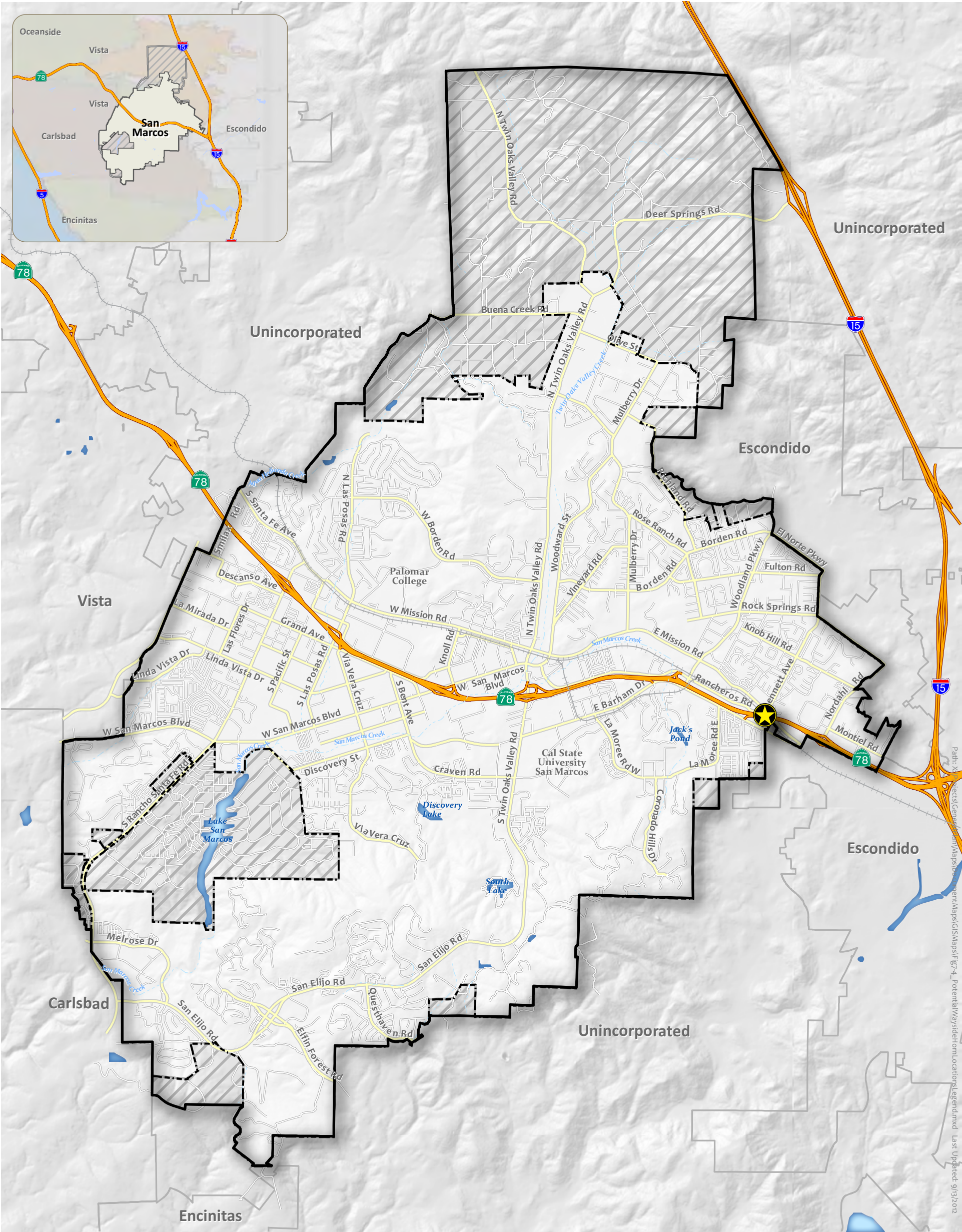
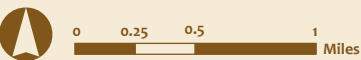


FIGURE 7-3

City of San Marcos

Potential Wayside Horn Location



SOURCES OF DATA:
City of San Marcos 9/12 and AECOM, 11/11

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The City has little direct control over noise produced by individual cars and trucks since the State is responsible for regulating motor vehicle noise. The most effective way for the City to ensure that transportation noise does not affect the community is by implementing effective traffic flow and mitigation strategies when roadways, intersections, and other roadway improvement projects are being designed at the local level. On the land use side, the City can proactively enforce standards during the design review process for new development or redevelopment of potential noise-affected properties. During this stage, the City can work with the project applicant to identify potential impacts and reasonable project design features. These features can include, but not be limited to, noise-sensitive site design, landscaping, use of natural topography, and the design and construction of noise barriers. Small noise reductions can also be achieved by use of setbacks, landscaping and architectural design.

Sound walls may not be desirable in some cases, such as intersections in commercial areas where visibility and access are important. Additionally, effective acoustical design features in new development can provide additional interior noise reduction.

Non-Transportation Related Noise

In addition to transportation related noise, excessive noise generated by non-transportation sources, such as commercial and industrial uses, and restaurants and bars (nightlife), have the potential to impact sensitive receptors and standards for these land uses vary based on property zoning. Noise is also associated with construction activity, manufacturing or business operations, and everyday activities in San Marcos neighborhoods, such as leaf blowing, dog barking, and lawn mowing. Analysis of potential noise impacts during the site design review process, compliance with CEQA, and enforcement of the City noise ordinance are the best means to protect sensitive receptors from non-transportation noise.

When reviewing proposed projects, the City should consider noise generation and potential impacts to surrounding development. New development can be made compatible with the noise environment by using noise and land use compatibility standards and the Future Noise Contour Diagram (see Figure 7-2) as a guide for planning and development decisions. During the project design review process, the City can work with the project applicant to identify potential impacts and reasonable mitigation measures. For example, the City can require an acoustical analysis for projects that will potentially generate noise that would affect sensitive receptors. These mitigation measures can include, but not be limited to, acoustically treated and/or quiet designs for furnaces, fans, motors, compressors, valves, pumps and other mechanical equipment. The City may also require limited delivery hours and/or hours of operation in order to reduce impacts to adjacent sensitive uses. In addition, all City departments must comply with State and federal OSHA standards. Any new equipment or vehicles purchased by the City will comply with local, State and federal noise standards.

7.3 Noise Plan

Certain areas of San Marcos are subject to high levels of noise from one or more of the following sources: freeways and arterial roadways, construction activities and machinery in industrial areas, railroads, and aircraft. All of these noise sources impact the quality of life within the City. Considering noise sources in the planning process, identifying the noise impacts of potential development and transportation projects, and planning accordingly are effective methods of minimizing the impacts of noise on residents. The goals, policies, and implementation programs of the Noise Element address three issues: (1) noise and land use compatibility; (2) transportation related noise; and (3) non-transportation related noise including construction, maintenance, and nuisance noise.

Noise and Land Use Compatibility

Connection to Guiding Themes

A Healthy and Safe Community

Land use directly affects noise compatibility. Consideration of the sources and recipients of noise early in the land use planning and development process can be an effective way to reduce the impact of noise on the community. Consideration should be given to both reducing noise in severely impacted areas through rehabilitative improvements, through re-use and/or redevelopment, and avoiding potential noise impacts through effective land use planning and design. Future and proposed land uses should be compatible with existing and forecasted future noise levels. Incompatible land use noise generators should incorporate noise attenuation and/or control measures as part of project design to reduce noise levels to an acceptable interior level or lower, as required by state regulations (CCRT Title 24) for residential uses.

Goal N-1

Promote a pattern of land uses compatible with current and future noise levels.

- Policy N-1.1: Address the potential for excessive noise levels when making land use planning decisions in accordance with Table 7-3 Land Use Compatibility Noise Standards.
- Policy N-1.2: Ensure that acceptable noise levels are maintained near noise-sensitive uses.
- Policy N-1.3: Incorporate design features into residential land use projects that can be used to shield residents from excessive noise. Design features may include, but are not limited to: berms, walls, and sound attenuating architectural design and construction methods.

- Policy N-1.4: Require new development projects to provide barriers to reduce noise levels, or provide sufficient spatial buffers to separate excessive noise generating land uses and noise-sensitive land uses.
- Policy N-1.5: Require an acoustical study for proposed developments in areas where the existing and projected noise level exceeds or would exceed the Normally Acceptable levels identified in Table 7-3.

Mixed Use Development

- Policy N-1.6: Require the design and construction of buildings to reduce the effect of commercial noise within indoor areas of residential components of the mixed-use development.
- Policy N-1.7: Through site planning techniques, noise reduction features, and enforcement, minimize non-residential noise impacts on residential uses.
- Policy N-1.8: Ensure residents in mixed-use developments located adjacent to commercial or retail related land uses are notified that they could be affected by noise from adjacent uses.

Transportation Related Noise

Connection to Guiding Themes

A Healthy and Safe Community

Transportation related noise primarily comes from three sources in San Marcos. Vehicular traffic is the most common source of noise experienced throughout the City of San Marcos. Primary sources of traffic noise include State Route 78 and major arterials. Train noise currently experienced within the City results from the locomotive engines and warning horns associated with rail operations. These daily operations tend to produce periodic high short-term noise levels that can be a source of annoyance to nearby sensitive uses. Although no airports or airfields are located in San Marcos, noise generated by aircraft overflights can be noticeable through the central portion of the City. Aircraft operations associated with McClellan-Palomar Airport, and the Camp Pendleton Marine Corp Air Station, and the Sheriff's helipad use the airspace above the City in arrival and departure operations.

Goal N-2

Control transportation-related noise from traffic, rail, and aviation sources near noise sensitive land uses.

Vehicular Traffic Noise

- Policy N-2.1: Encourage only noise-compatible land uses along existing and future roadways, highways, and freeways.
- Policy N-2.2: Promote coordinated site planning and traffic control measures that reduce traffic noise on noise-sensitive land uses.
- Policy N-2.3: Advocate the use of alternative transportation modes such as walking, bicycling, mass transit, and non-combustible engine vehicles to reduce traffic noise.
- Policy N-2.4: Encourage the installation, maintenance, and renovation of freeway and highway rights-of-way buffers and sound walls through continued cooperation with the California Department of Transportation (Caltrans) and SANDAG.
- Policy N-2.5: Examine the applicability and noise reduction capabilities of cost effective alternative roadway surfaces, such as rubberized asphalt.

Train Noise

- Policy N-2.6: Support noise-compatible land uses along rail corridors.
- Policy N-2.7: Require noise-reducing design features as part of any sensitive use proposed near rail corridors.
- Policy N-2.8: Evaluate the use of wayside horns near areas where rail crossings intersect public roads to reduce noise impacts from train horns.

Aircraft Noise

- Policy N-2.9: Provide input to the San Diego County Airport Authority as appropriate to control airport noise.

Non-Transportation Related Noise

Connection to Guiding Themes

A Healthy and Safe Community

Commercial and industrial land uses have the potential to generate noise that can be considered intrusive to sensitive land uses. Depending on the type of activities associated with a commercial or industrial operation, noise sources could involve mechanical equipment, loading and unloading of vehicles and trucks, as well as amplified or unamplified communications. The level and intrusiveness of the noise generated also vary depending on the size of the facility, type of business, hours of operation, and location relative to noise-sensitive land uses.

Another source of non-transportation noise comes from construction operations and maintenance vehicles, such as refuse trucks and parking lot sweepers, which generate noise throughout the City. Although these types of noise sources tend to be short term, temporary, and limited, they can be a source of annoyance, especially during the late night or early morning hours.

Goal N-3

Control non-transportation-related noise from commercial, industrial, construction, and other sources on noise sensitive land uses.

- Policy N-3.1: When adjacent to noise sensitive receptors, require developers and contractors to employ noise reduction techniques during construction and maintenance operations.
- Policy N-3.2: Limit the hours of construction and maintenance operations located adjacent to noise-sensitive land uses.
- Policy N-3.3: Limit the allowable hours of operations and deliveries for commercial, mixed-use, and industrial uses located adjacent to residential areas.
- Policy N-3.4: Avoid excessive noise of commercial and industrial land uses through site and building design features.
- Policy N-3.5: Require industrial land uses to locate vehicular traffic and operations away from adjacent residential areas as much as possible.

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