



Noise Analysis for the
Creek Plan Specific Plan Update
San Marcos, California
EIR 2006121080

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Acronyms and Abbreviations

ADT	average daily traffic
APN	assessor parcel number
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
City	City of San Marcos
CNEL	community noise equivalent level
dB	decibel
dB(A)	A-weighted decibel
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	heating, ventilating, and air conditioning
L ₉₀	noise level exceeded 90 percent of the time
L _{eq}	one-hour equivalent noise level
LLG	Linscott, Law & Greenspan, Engineers, Inc.
L _{max}	maximum noise level
L _{pw}	sound power level
MND	Mitigated Negative Declaration
O-S	Open Space
P-I	Public-Institutional
PPV	peak particle velocity
project	Creek District Specific Plan Update
REMEL	Reference Energy Mean Emission Level
ROW	right-of-way
SANDAG	San Diego Association of Governments
SPA	Specific Plan Area
STC	sound transmission class
UBC	Uniform Building Code
VdB	Vibration decibel

Executive Summary

The Creek Plan Specific Plan Update (project) is in the southwest central portion of the City of San Marcos (City), California. The previously certified San Marcos Creek Specific Plan and Floodway Improvement Project Environmental Impact Report (2007 EIR; State Clearinghouse No. 2006121080; certified June 24, 2007) addressed impacts associated with the adopted San Marcos Creek Specific Plan (Adopted Specific Plan). The project proposes to modify the Adopted Specific Plan to establish a renewed vision for a distinct, mixed-use district that would serve as the City's cultural focal point and provide a mix of residential opportunities that couples urban living with a connection to nature. The project includes a General Plan Amendment, Specific Plan Amendment, and Rezone.

This report discusses potential noise impacts resulting from the project; determines compatibility of the existing noise environment with proposed land uses; and recommends measures to avoid, minimize, and/or mitigate significant impacts consistent with applicable regulations, including the City's Noise Ordinance (Municipal Code, Chapters 10.24), noise-related Performance Standards (Municipal Code, Section 20.300.070), and the Noise Element of the General Plan. A summary of the findings is provided below.

Excessive Noise Levels

Construction Noise

Construction noise would be generated by future construction activities within the Creek District (Planning Area). The City regulates construction noise through Municipal Code Sections 10.24.020 (b)(9) and 17.32.180, which set noise standards for construction activities and limit construction to the hours detailed in Section 3.3.2. Additionally, Policies N-3.1 and N-3.2 require developers and contractors to employ noise reduction techniques during construction and maintenance operations and limit the hours of construction and maintenance operations located adjacent to noise-sensitive land uses. As calculated in this analysis, construction noise levels of 85 dB(A) L_{eq} at 50 feet would attenuate to 75 dB(A) L_{eq} at 125 feet. Therefore, significant impacts would occur if sensitive land uses are located closer than 125 feet of construction activities. Implementation of mitigation measures MM 3.8-1 and MM 3.8-2 and adherence to the Municipal Code would reduce the short-term construction impacts to below a level of significance.

Potential impacts could occur if construction activity proceeded during designated breeding seasons. Implementation of mitigation measure MM 3.3-11 would require a one-time pre-construction biological survey for nesting bird species and avoidance of any active nests and the performance of a protocol gnatcatcher survey. With incorporation of this mitigation measure, impacts to biological resources as a result of construction noise would be less than significant.

Noise Compatibility

The main source of traffic noise in the Planning Area is vehicle traffic on SR-78, San Marcos Boulevard, Grand Avenue, Bent Avenue, Via Vera Cruz, Las Posas Road, Creekside Drive, Discovery Street, and La Sombra Drive. A noise compatibility impact could occur if the project resulted in development of new receptors exposed to noise levels in excess of the applicable standards in General Plan Noise Element. As calculated in this analysis, residential land uses located adjacent to San Marcos Boulevard, Discovery Street, Via Vera Cruz, Bent Avenue, and Grand Avenue could be exposed to vehicle traffic noise exceeding 65 community noise equivalent level (CNEL). While some restrictions are identified indicating where residential uses cannot occur on the ground floor, it is possible that residential uses could be adjacent to one of the segments within the 65 CNEL contour as identified in this analysis. At this time, detailed development plans for future development within the Planning Area are not available. Rather, these plans would come forward as individual parcel developments are proposed. Therefore, depending on the ultimate location of the residential uses, there is a potential for balcony and patio areas to exceed the City's compatibility level of 65 CNEL. Interior noise levels are expected to exceed the 45 dB CNEL requirement for these residential units as well. Exterior and interior noise impacts would be potentially significant. Implementation of mitigation measures MM 3.8-3 through MM 3.8-5 would require noise attenuation measures that would reduce exterior and interior noise levels to acceptable standards. With implementation of these measures, impacts would be reduced to less than significant.

Off-site Traffic Noise

A project would result in a significant impact related to ambient vehicle noise if it would cause a roadway noise level to exceed the applicable normally compatible noise standard at land uses adjacent to the segment or cause a 3 dB(A) or more increase on a roadway segment that would exceed the compatibility standard without the project. As calculated in this analysis, a 3.0 dB or greater noise level increase would occur adjacent to segments of Via Vera Cruz, Bent Avenue, Grand Avenue, Linda Vista Drive, Creekside Drive, and Discovery Street. However, as discussed in this analysis, existing commercial, retail, and industrial land uses located adjacent to Via Vera Cruz, Bent Avenue, Grand Avenue, and Linda Vista Drive do not include noise-sensitive exterior use areas. Because there are no noise-sensitive exterior receivers adjacent to these roadway segments, impacts to existing receivers due to the noise level increase would be considered less than significant. For the residential uses located adjacent to Creekside Drive and Discovery Street, exterior noise levels at these residences would not exceed the compatibility level of 65 CNEL. Thus, impacts to existing receivers due to the noise level increase would be considered less than significant. Additionally, when compared to the horizon year without the project, an overall decrease in vehicle traffic noise would occur because the project would result in less development and traffic when compared to the Adopted Specific Plan. Impacts associated with the increase in vehicle traffic noise would be less than significant. No mitigation is required.

On-Site Generated Noise

Stationary noise is regulated by Section 20.300.070(E) of the City's Municipal Code. The project site is comprised of special purpose zones including Specific Plan Area (SPA), Open Space (O-S), and Public-Institutional (P-I). The Municipal Code does not contain limits specific to these zones, however, the multi-family residential and commercial limits in Table 8 would apply to the proposed land uses. These limits are 65 dB(A) L_{eq} between 7:00 a.m. and 10:00 p.m. and 55 dB(A) L_{eq} between 10:00 p.m. and 7:00 a.m.

Mixed-use developments, such as those proposed by the project, can result in potential noise conflicts at the interface between retail commercial development and residential uses. Residential uses above restaurants or entertainment venues, or above retail uses with early morning deliveries, trash pick-up, may create noise nuisance conflict situations. Impacts associated with stationary noise sources in mixed-use areas would be potentially significant. Implementation of mitigation measure MM 3.8-6 would require future noise studies that analyze the impact of co-locating residential and commercial uses and, if necessary, incorporate measures to reduce impacts associated with these uses. With implementation of this mitigation measure, impacts would be reduced to less than significant.

Groundborne Vibration

Vibration generated by construction equipment has the potential to be substantial if it exceeds the Federal Transit Administration criteria for architectural damage (e.g., 0.12 peak particle velocity [PPV] for fragile or historical resources, 0.2 PPV for non-engineered timber and masonry buildings, and 0.3 PPV for engineered concrete and masonry). With the exception of one property, buildings within the Planning Area are not fragile or historic and would therefore have a vibration damage criteria of 0.2 PPV or greater. The property known as the Meyer-Doran House (also known as Pink House) has been identified as a historic resource. Construction-related vibration levels are not anticipated to exceed 0.2 PPV at existing structures. Additionally, no construction would occur in the vicinity of the historic structure. The project does not propose any uses that would be characterized as capable of causing excessive vibration during operation. Construction- and operational-related vibration impacts would be less than significant. No mitigation is required.

Aircraft Noise

The closest airport is the McClellan-Palomar Airport, located approximately four miles west of the project site. Aircraft noise levels at the Planning Area would be well less than 60 CNEL. Impacts would be less than significant. No mitigation is required.

1.0 Introduction

1.1 Purpose of the Report

The purpose of this report is to document the sensitive noise receptors identified as potentially affected by the Creek District Specific Plan Update (project); identify potential noise impacts resulting from the project; determine compatibility of the existing noise environment with proposed land uses; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with applicable regulations, including the City's Noise Ordinance (Municipal Code Chapters 10.24), noise-related Performance Standards (Section 20.300.070), and the Noise Element of the General Plan. This report was prepared using the City's *Noise Technical Report Format and Content Recommendations* (City of San Marcos 2024).

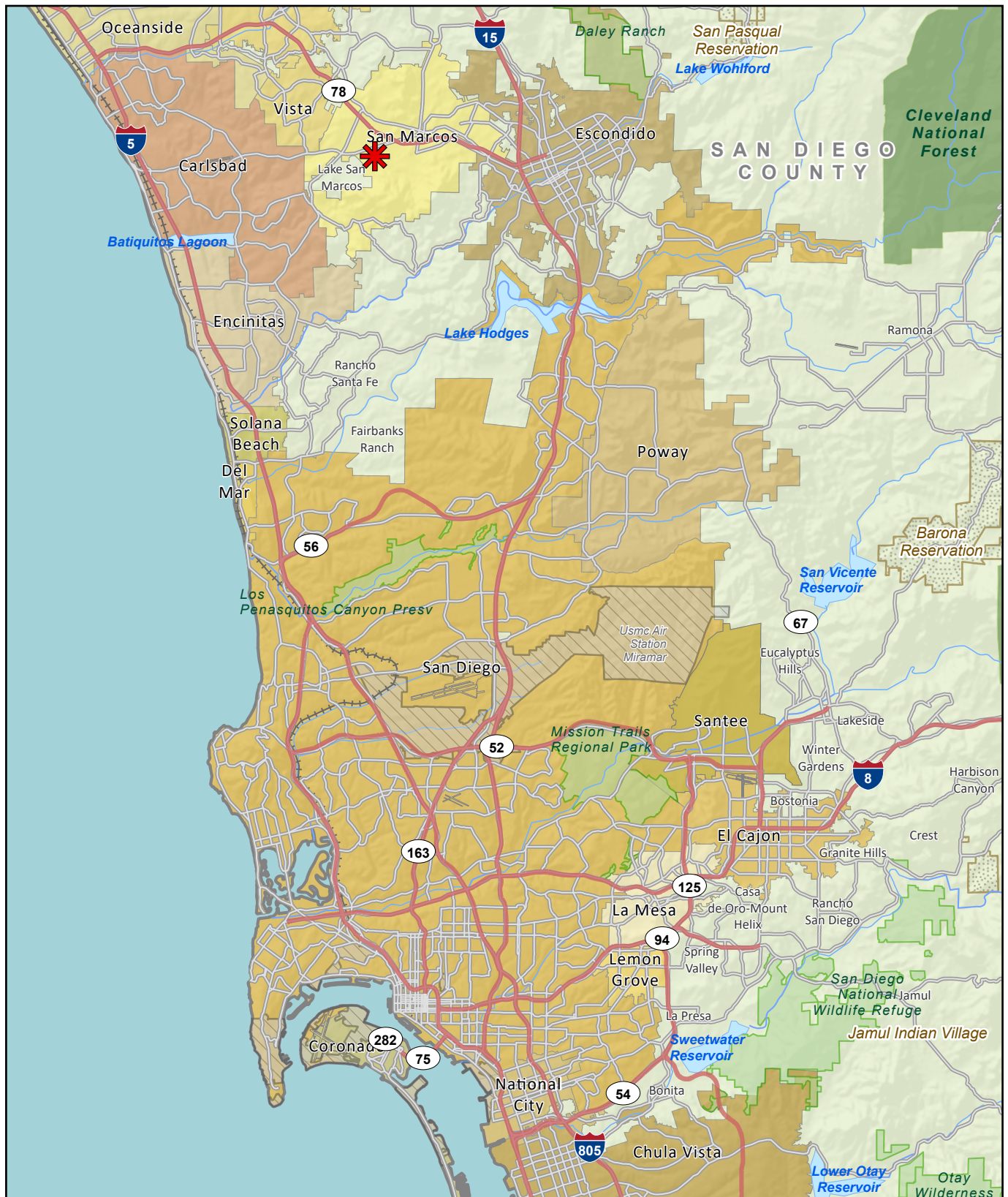
1.2 Project Location and Description

1.2.1 Project Location

The Creek District (Planning Area) is in the southwest central portion of the City of San Marcos (City), approximately one mile southwest of the City's Town Center, and one mile northwest of California State University, San Marcos. The Planning Area is generally bounded on the north by San Marcos Boulevard, on the south and west by Discovery Street, and on the east by Grand Avenue and State Route 78 (SR-78). A mix of commercial and industrial land uses are located north and east of the Planning Area, and residential uses and schools are located south and west of the Planning Area. The northern portion of the Planning Area is generally developed with a mix of commercial, industrial, and residential uses and undeveloped lots, and the southern portion of the Planning Area is preserved as park and open space. Figure 1 shows the regional location. Figure 2 shows an aerial photograph of the project site and vicinity.

1.2.2 Project Background and History

The previously certified San Marcos Creek Specific Plan and Floodway Improvement Project Environmental Impact Report (2007 EIR; State Clearinghouse No. 2006121080; certified June 24, 2007) addressed impacts associated with the adopted San Marcos Creek Specific Plan (Adopted Specific Plan). The project analyzed in the 2007 EIR included three component parts: (1) a program-level analysis of implementation of the San Marcos Creek Specific Plan (Adopted Specific Plan); (2) project-level analyses of floodway improvements to San Marcos Creek, including hydraulic improvements to SR-78; and (3) roadway and infrastructure improvements. The Adopted Specific Plan was adopted in 2007 to provide a comprehensive vision for the Planning Area, along with goals, policies, and development standards to guide future public and private actions relating to the Planning Area's development and conservation of open space and natural resources (City of San Marcos 2007). The Adopted Specific Plan was found to be consistent with, and currently serves as an extension of, the San Marcos General Plan. The Adopted Specific Plan includes goals and policies specific to the Planning Area. Development within the Planning Area was also held to design guidelines and



 Project Location

FIGURE 1
Regional Location



 Planning Area Boundary

development standards focused on a transformation from its uncoordinated and underutilized condition into a vibrant, commercial, mixed-use town center.

Since 2007, several major events have impeded the feasibility of on-going private development in the Planning Area, including the following:

- Economic uncertainty, starting with the 2008 global financial crisis
- Dissolution of redevelopment agencies by the State of California (taking away an important funding source)
- Build-out of the adjacent University District/North City area
- Shifting market demands for retail and office space following the COVID-19 pandemic

1.2.3 Project Description

The project proposes to modify the Adopted Specific Plan to establish a renewed vision for a distinct, mixed-use district that would serve as the City's cultural focal point and provide a mix of residential opportunities that couples urban living with a connection to nature. The project includes a General Plan Amendment, Specific Plan Amendment, and Rezone.

1.2.3.1 Land Use

The Planning Area is organized into nine distinct land use districts, each intended to support a cohesive mix of housing, commercial activity, cultural amenities, and open space while maintaining compatibility with surrounding uses. Together, these districts establish a graduated range of residential intensities, mixed-use and commercial areas, parkland, and protected open space along San Marcos Creek. The framework is designed to promote walkability, economic vitality, community gathering spaces, and environmental stewardship.

Housing (H-1): This district would accommodate lower-intensity, small-scale residential development featuring a variety of housing types, including small-lot subdivisions, cottage clusters, townhomes, duplexes, triplexes, and fourplexes. Developments are encouraged to integrate multiple compatible housing types within a single project to respond to site conditions, expand housing choice, and create varied streetscapes that reinforce a cohesive neighborhood character. Limited neighborhood-serving commercial uses are permitted as a secondary use, provided they do not involve late-night operations or activities that generate excessive noise .

Housing (H-2): This district would allow for medium-intensity housing consisting of garden apartments, stacked flats, and units wrapped around a parking structure. Commercial uses would be allowed as a secondary use. .

Housing (H-3): This district would allow for the highest-density housing within the plan area, at an urban scale, consisting of multi-level apartments and condominiums, generally constructed over a podium containing commercial uses and parking. Fully integrated mixed-use buildings are encouraged, with commercial and office uses occupying the ground floor and offices allowed on upper floors as well. The district would also accommodate horizontal mixed-use development

approaches, where stand-alone commercial buildings are constructed on the same site as residential, with the uses able to share parking facilities..

Entertainment, Arts, and Culture (EAC): This district would provide areas for live entertainment venues, museums, art galleries, community centers, public plazas, and similar facilities serving a broad community. Complementary commercial uses are allowed.

Commercial (C): This district would incorporate a broad array of retail commercial, dining, service-oriented, and office business uses that serve local residents and San Marcos visitors. The focus would be on active commercial uses. Specifically prohibited are self-storage facilities and drive-through establishments.

Creekside Promenade (CSP): This district would apply to properties fronting Creekside Drive, where the back parts of properties may have a separate district applied. Commercial uses are required along the Creekside Drive frontage, with ground-floor uses consisting of those that benefit from views to the creek, such as restaurants and cafes with an outdoor dining component. Given the pedestrian-oriented character of this district, drive-through establishments would not be allowed. Rooftop active uses would be encouraged.

Unmodified Specific Plan Area (USPA): The USPA designation would apply to properties developed prior to 2025 and pursuant to the Adopted Specific Plan. As these properties would not be subject to redevelopment, the use regulations reflect the original intent of this sub-district: mixed-use development combining moderate-density housing with ground-floor commercial uses, with new flexibility for ground-floor uses.

Open Space – Parks (OS-P): This district would reflect existing park space and recreation uses along San Marcos Creek and allows for any future enhancement. The intent of this district would be development of trails, green space, and recreation equipment within these public spaces, with full public access. Parks and recreation uses would also be permitted within any of the other land use districts, except for Open Space-Conservation.

Open Space – Conservation (OS-C): In contrast to the Open Space-Parks district, the Open Space-Conservation district consists of natural open space areas that would not allow public access. The designated areas are intended to support habitat and flood control areas, including properties subject to conservation easements.

The project's land use plan is shown in Figure 3, and Table 1 identifies the nine districts with dedicated acreages.



- | | | |
|---|---|--|
| ----- Plan Area Boundary | H-1: Lowest Intensity Housing Focused | C: Commercial |
| Creek | H-2: Medium Intensity Housing Focused | CSP: Creekside Promenade |
| | H-3: Highest Intensity Housing Focused | EAC: Entertainment, Arts, and Culture |
| | USPA: Unmodified Specific Plan Area | OS-P: Open Space - Parks |
| | | OS-C: Open Space - Conservation |

FIGURE 3
Proposed Land Use Plan

Table 1 Land Use Districts/Acreages	
Land Use District	Area (acres)
H-1 (Lowest Intensity Housing Focused)	15.87
H-2 (Medium Intensity Housing Focused)	24.42
H-3 (Highest Intensity Housing Focused)	8.31
EAC (Entertainment, Arts, and Culture)	9.44
C (Commercial)	12.18
CSP (Creekside Promenade)	2.47
USPA(Unmodified Specific Plan Area)	8.01
OS-P (Open Space – Parks)	17.89
OS-C (Open Space – Conservation)	83.45

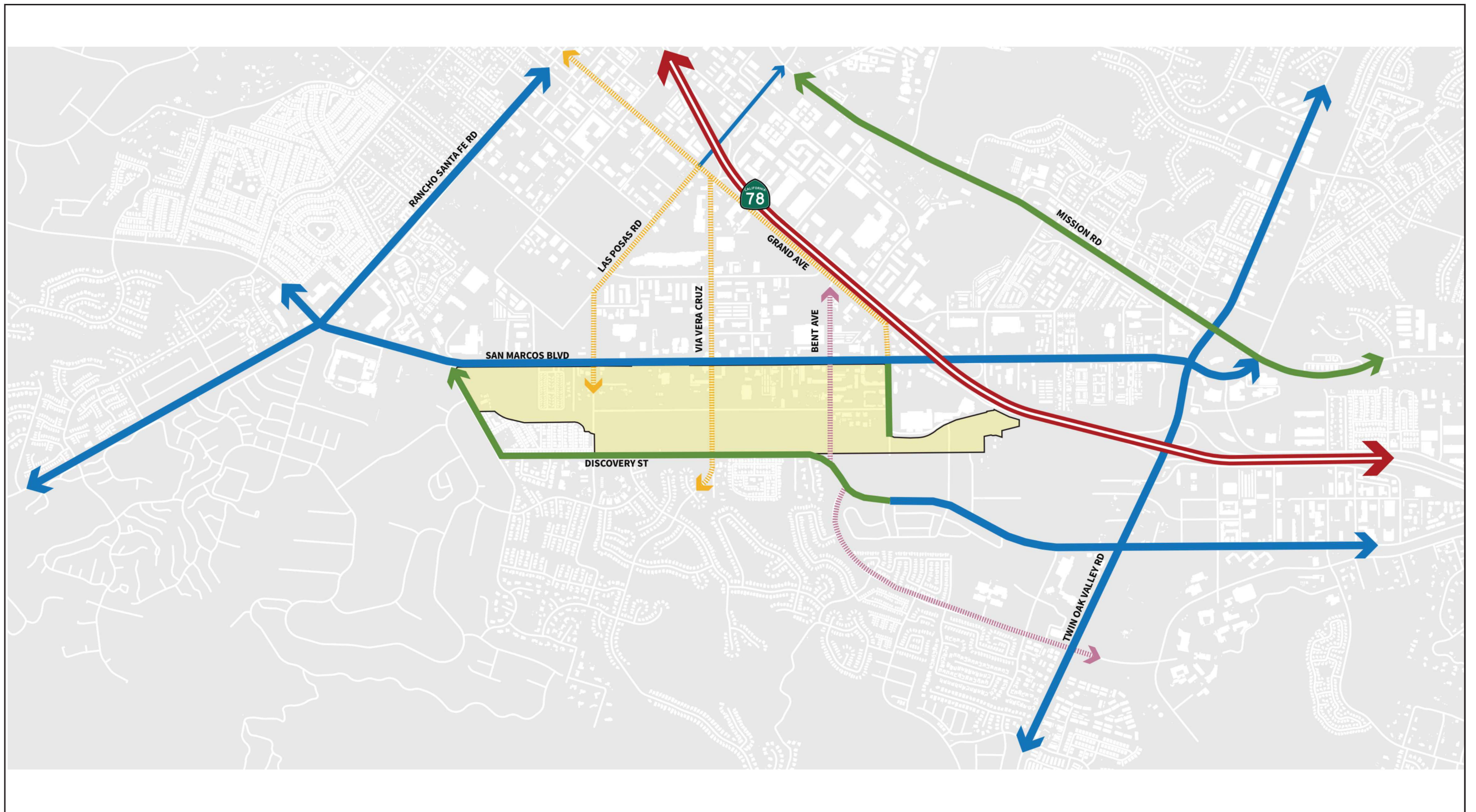
1.2.3.2 Mobility Concepts

The Specific Plan Update includes a framework aimed at improving the internal circulation within the Planning Area. As an existing grid system, the street network currently consists of collectors and local access streets interconnected within a framework of primary, major, and secondary arterials that serve the Planning Area. The Specific Plan Update would improve opportunities to connect to planned regional bike routes and enhance access for cyclists and pedestrians. Additional connections to both light rail and regional transit would be encouraged. The proposed circulation system and its relationship to surrounding city and regional roadways is shown in Figure 4.

1.2.3.3 Development Potential

The general mix of land uses within the 214-acre Planning Area would remain the same under the Specific Plan Update compared to the Adopted Specific Plan. The Planning Area would continue to support commercial and mixed-use residential development along with designated open space and community amenities. Tables 2 and 3 summarize modification to the land use mix and development potential under both plans.

Table 2 Development Acreages		
Districts	Adopted Specific Plan (acres)	Specific Plan Update (acres)
Developable Areas (includes residential, commercial uses)	81.3	72.97
Promenade at Creekside	Included in acreages for development and parks	8.01
Open Space - Parks	20.6	17.89
Open Space - Conservation	73.6	83.45
ROW	38.5	31.96
Total	214	214



- Plan Area Boundary
- State Freeway
- Primary Arterial
- Major Arterial
- Secondary Arterial
- Collector

FIGURE 4
Proposed Circulation System Use

Table 3 Build-Out Projections		
Use	Adopted Specific Plan	Specific Plan Update
Population	6,831 residents	6,831 residents
Employment	2,530 jobs	1,312 jobs
Residential	2,760,000 sf/ 2300 DU	2,261,701 sf/ 2,300 DU
Commercial	1,265,000 sf	655,856 sf
DU = dwelling units sf=square feet		

2.0 Existing Conditions

2.1 Noise Basics

Sound levels are described in units called the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease. A change in noise levels is generally perceived as follows: 3 A-weighted dB [dB(A)] barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise (California Department of Transportation [Caltrans] 2013).

In technical terms, sound levels are described as either a “sound power level” or a “sound pressure level,” which while commonly confused, are two distinct characteristics of sound. Both share the same unit of measure, the dB. However, sound power, expressed as L_{pw} , is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers such as an eardrum or microphone, the sound pressure level. Sound measurement instruments only measure sound pressure, and limits used in standards are generally sound pressure levels.

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Therefore, the “A-weighted” noise scale is used for measurements and standards involving the human perception of noise. Noise levels using A-weighted measurements are designated with the notation dB(A).

2.1.1 Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this study are the equivalent noise level (L_{eq}) and the community noise

equivalent level (CNEL). The L_{eq} is the equivalent steady-state noise level in a stated period of time that is calculated by averaging the acoustic energy over a time period; when no period is specified, a 1-hour period is assumed.

The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and a 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.

2.1.2 Propagation

Sound from a localized source (approximating a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate of 6 dB(A) for each doubling of the distance.

Traffic noise is not a single, stationary point source of sound. The movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The drop-off rate for a line source is 3 dB(A) for each doubling of distance.

The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site (such as parking lots or smooth bodies of water) receives no additional ground attenuation, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the source. A soft site (such as soft dirt, grass, or scattered bushes and trees) provides an additional ground attenuation value of 1.5 dB(A) per doubling of distance. Thus, a point source over a soft site would drop off at 7.5 dB(A) per doubling of distance.

2.2 Environmental Vibration Basics

Vibration is oscillatory movement of mass (typically a solid) over time. It is described in terms of frequency and amplitude and, unlike sound, can be expressed as displacement, velocity, or acceleration. For environmental studies, vibration is often studied as a velocity that, akin to the discussion of sound pressure levels, can also be expressed in dB as a way to cast a large range of quantities into a more convenient scale and with respect to a reference quantity. Vibration impacts to buildings are generally discussed in terms of inches per second (in/sec) peak particle velocity (PPV), which will be used herein to discuss vibration levels for ease of reading and comparison with relevant standards. Vibration can also be annoying and thereby impact occupants of structures, and vibration of sufficient amplitude can disrupt sensitive equipment and processes (Caltrans 2020), such as those involving the use of electron microscopes and lithography equipment. Common sources of vibration within communities include construction activities and railroads. Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities where sudden releases of subterranean energy or powerful impacts of tools on hard materials occur. Depending on their distances to a sensitive receptor, operation of large bulldozers, graders, loaded dump trucks, or other heavy construction equipment and vehicles on a construction site also have the potential to cause high vibration amplitudes.

2.3 Existing Noise Environment

Existing noise levels in the vicinity of the Planning Area were measured on November 7, 2025, using one Larson-Davis Model LxT, Type 1 Integrating Sound Level Meter, serial number 3896. The following parameters were used:

Filter:	A-weighted
Response:	Slow
Interval Period:	1 minute
Time History Period:	5 seconds

The meter was calibrated before and after each measurement. The meter was set 5 feet above the ground level for each measurement.

Noise measurements were taken to obtain typical ambient noise levels within the Planning Area and in the vicinity. The weather was sunny and warm. Six 15-minute measurements were taken, as described below. The measurement locations are shown in Figure 5, and detailed data is contained in Attachment 1.

Measurement 1 was located at the western project boundary, approximately 25 feet from the edge of Discovery Street. The main source of noise was vehicle traffic on Discovery Street. Other sources of noise included a lawn mower, aircraft flyovers, and activities at the adjacent Valley Christian School. Vehicle traffic on Discovery Street was counted during the measurement period. The average measured noise level was 64.4 dB(A) L_{eq} .

Measurement 2 was located at the southern project boundary, approximately 25 feet from the edge of Discovery Street. The main source of noise was vehicle traffic on Discovery Street. Other sources of noise included aircraft flyovers. Vehicle traffic on Discovery Street was counted during the measurement period. The average measured noise level was 67.0 dB(A) L_{eq} .

Measurement 3 was located at the northern project boundary within a vacant lot, approximately 50 feet from the edge of San Marcos Boulevard. The main source of noise was vehicle traffic on San Marcos Boulevard. Other sources of noise included a large construction vehicle on San Marcos Boulevard and aircraft flyovers. Vehicle traffic on San Marcos Boulevard was counted during the measurement period. The average measured noise level was 65.8 dB(A) L_{eq} .

Measurement 4 was located on the sidewalk of the Via Vera Cruze bridge over San Marcos Creek, approximately 20 feet from the edge of Via Vera Cruz. The main source of noise was vehicle traffic on Via Vera Cruz. Other sources of noise included aircraft flyovers. Vehicle traffic on Via Vera Cruz was counted during the measurement period. The average measured noise level was 58.9 dB(A) L_{eq} .

Measurement 5 was located on the sidewalk of the Bent Avenue bridge over San Marcos Creek, approximately 20 feet from the edge of Bent Avenue. The main source of noise was vehicle traffic on Bent Avenue. Other sources of noise included aircraft flyovers. Vehicle traffic on Bent Avenue was counted during the measurement period. The average measured noise level was 64.4 dB(A) L_{eq} .

Measurement 6 was located at the northeastern project boundary, approximately 11 feet from the edge of San Marcos Boulevard. The main source of noise was vehicle traffic on San Marcos Boulevard. Other sources of noise included a truck backup alarm, pedestrians, and aircraft flyovers. Vehicle traffic

on San Marcos Boulevard was counted during the measurement period. The average measured noise level was 71.9 dB(A) L_{eq} .

Noise measurements are summarized in Table 4. Traffic counts are summarized in Table 5.

Table 4 Noise Measurements				
Measurement	Location	Time	Main Noise Source	L_{eq}
1	Western project boundary, 25 feet east of edge of Discovery Street	9:17 a.m. – 9:32 a.m.	Vehicle traffic on Discovery Street	64.4
2	Southern project boundary, 25 north of edge of Discovery Street	9:50 a.m. – 10:05 a.m.	Vehicle traffic on Discovery Street	67.0
3	Northern project boundary, 50 feet south of edge of San Marcos Boulevard	10:30 a.m. – 10:45 a.m.	Vehicle traffic on San Marcos Boulevard	65.8
4	Via Vera Cruz bridge near southern project boundary, 20 feet from edge of roadway	11:07 a.m. – 11:22 a.m.	Vehicle traffic on Via Vera Cruz	58.9
5	Bent Avenue bridge near southern project boundary, 20 feet from edge of roadway	11:46 a.m. – 12:01 p.m.	Vehicle traffic on Bent Avenue	64.4
6	Northeastern project boundary, approximately 11 feet from edge of San Marcos Boulevard	12:28 p.m. – 12:43 p.m.	Vehicle traffic on San Marcos Boulevard	71.9
NOTE: Noise measurement data is contained in Attachment 1.				

Table 5 15-minute Traffic Counts							
Measurement	Roadway	Direction	Autos	Medium Trucks	Heavy Trucks	Buses	Motorcycles
1	Discovery Street	Southbound	65	1	0	0	0
		Northbound	97	1	0	0	0
2	Discovery Street	Eastbound	54	2	0	0	0
		Westbound	68	2	0	0	0
3	San Marcos Boulevard	Westbound	216	4	11	1	1
		Eastbound	252	5	3	0	0
4	Via Vera Cruz	Northbound	51	1	0	0	0
		Southbound	50	0	2	0	0
5	Bent Avenue	Northbound	120	2	1	0	0
		Southbound	90	1	1	0	0
6	San Marcos Boulevard	Westbound	290	5	3	1	1
		Eastbound	358	5	5	2	1



-  Planning Area Boundary
-  Noise Measurement Locations



FIGURE 5
Noise Measurement Locations

3.0 Regulatory Framework

3.1 Federal Regulations

3.1.1 Construction Noise

The Federal Transit Administration (FTA) provides financial and technical assistance to local public transit systems, including buses, subways, light rail, commuter rail, trolleys, and ferries. The FTA also oversees safety measures. The FTA's Transit Noise and Vibration Impact Assessment manual indicates that 80 dB(A) L_{eq} is reasonable criteria for assessing construction noise levels at residential uses (FTA 2018). In the absence of local construction noise level limits, the FTA recommended 80 dB(A) L_{eq} criteria is often used to assess the significance of construction noise at residential receivers.

3.1.2 Vibration

The FTA provides criteria for acceptable levels of groundborne vibration for various types of buildings. Structures amplify groundborne vibration; wood-frame buildings, such as typical residential structures, are more affected by ground vibration than heavier buildings. The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively, but the standards recommended by the FTA are presented in Table 6.

Table 6 Construction Vibration Damage Criteria		
Building/Structural Category	PPV (in/sec)	Approximate VdB
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90
SOURCE: Federal Transit Administration 2018		
PPV = peak particle velocity; in/sec = inch per second; VdB = vibration decibel		

3.2 State Regulations

For residential uses, interior noise levels for habitable rooms are regulated by Title 24 of the California Code of Regulations, California Noise Insulation Standards. Title 24, Chapter 12, Section 1206.4 of the 2022 California Building Code requires that interior noise levels attributable to exterior sources not exceed 45 CNEL in any habitable room within a residential structure. A habitable room is a room used for living, sleeping, eating, or cooking. Bathrooms, closets, hallways, utility spaces, and similar areas are not considered habitable rooms for this regulation.

For non-residential structures, Title 24, Chapter 12, Section 1207.5 refers to 2022 California Green Building Standards, Chapter 5–Nonresidential Mandatory Measures, Division 5.5–Environmental Quality, Section 5.507–Environmental Comfort, Subsection 5.507.4–Acoustical Control. Pursuant to

these standards, all non-residential building construction shall employ building assemblies and components that achieve a composite sound transmission class rating of at least 50 or shall otherwise demonstrate that exterior noise shall not result in interior noise environment where noise levels exceed 50 dB(A) L_{eq} in occupied areas during any hour of operation.

3.3 Local Regulations

3.3.1 City of San Marcos General Plan

The Noise Element of the City General Plan provides land use compatibility guidelines to ensure that new developments are sited, designed, and constructed in such a manner that ambient noise levels would not create an unacceptable noise environment for the occupants and patrons of the new development. Table 7 provides the noise and land use compatibility guidelines applicable to transportation-related noise for various types of uses and developments.

The Noise Element also contains the following goals and policies:

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 nonresidential 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.

Table 7 Noise and Land Use Compatibility Guidelines for Transportation-Related Noise						
Land Use Category		Exterior Noise Level (CNEL)				
		55	60	65	70	75
A	Residential – single-family, mobile homes, or age-restricted housing					
B	Residential – multi-family residences or mixed use					
C	Lodging – hotels, motels					
D	Schools, churches, hospitals, residential care facility, child-care facilities					
E	Passive recreational parks, nature preserves, contemplative spaces, cemeteries					
F	Active parks, golf courses, athletic fields, outdoor spectator sports, water recreation					
G	Office/professional, government, medical/dental, commercial, retail, laboratories					
H	Industrial, manufacturing, utilities, agriculture, mining, stables, ranching, warehouse, maintenance/repair					
	Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal construction, without any special noise insulation requirements.					
	Conditionally Acceptable - New construction or development should be undertaken only after a detailed 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.					

Table 7
Noise and Land Use Compatibility Guidelines for Transportation-Related Noise

SOURCE: City of San Marcos General Plan Update, Noise Element 2012, Table 7-3 and 7-4.

CNEL = community noise equivalent level.

Noise Standards:

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.

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.

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.

3.3.2 City of San Marcos Municipal Code

3.3.2.1 Title 10, Chapter 10.24

Section 10.24.020 (b)(9) of the City's Municipal Code identifies permissible hours for general construction activities. This section states:

Erection or demolition of buildings, excluding owner resident additions or remodeling, and the grading and excavation of land including the use of blasting, the start up and use of heavy equipment such as dump trucks and graders and the use of jack hammers except on week days Monday through Friday between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays 8:00 a.m. to 5:00 p.m. The City Manager may waive any or all of the provisions of this subsection in cases of urgent necessity, or in the interest of public health and safety. The provisions of this subsection may also be waived or modified pursuant to a Conditional Use Permit or other development entitlement processed and issued in accordance with the applicable City requirements and procedures.

3.3.2.2 Title 17, Chapter 17.32

Section 17.32.180 identifies permissible hours for grading, excavation and other earthmoving activities. This section states:

- (a) Grading, excavation, blasting, other related movement of earth and/or materials, equipment warm-up, repair, and other noise activities are hereby restricted to the hours of 7:00 a.m. to 4:30 p.m., Monday through Friday.
- (b) Grading, excavation, blasting, or other related movement of earth are hereby forbidden at any time on Saturdays, Sundays, and City Holidays.
- (c) The Administrative Authority may authorize Grading at other hours and on other days in cases of urgent necessity or in the interest of public health and safety.

3.3.2.3 Title 20, Section 20.300.070

Title 20 – Zoning Ordinance of the City's Municipal Code contains General Development Standards that relate to noise and vibration. Performance standards in Section 20.300.070(E) set restrictions on noise levels by zoning. No person shall create or allow the creation of exterior noise that causes the noise level to exceed the noise standards shown in Table 8.

Table 8
Municipal Code Exterior Noise Standards by Zone

Zone	Time	Allowable Property Line Noise Level [dB(A) L_{eq}]
Single-Family Residential (A, R-1, R-2) ^{1,2}	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	50
Multi-Family Residential (R-3) ^{1,2}	7:00 a.m. to 10:00 p.m.	65
	10:00 p.m. to 7:00 a.m.	55
Commercial (C, O-P, SR) ³	7:00 a.m. to 10:00 p.m.	65
	10:00 p.m. to 7:00 a.m.	55
Industrial	7:00 a.m. to 10:00 p.m.	65
	10:00 p.m. to 7:00 a.m.	60

SOURCE: Section 20.300.070(E) Table 20.300-4, Title 20 – Zoning Code
 dB(A) L_{eq} = A-weighted decibels equivalent noise level
¹For single-family detached dwelling units, the "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.
²For 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.
³For non-residential noise sensitive land uses, exterior noise level is defined as noise measured at the exterior area provided for public use.

Performance standards in Section 20.300.070 (F) apply to vibration. It states:

Vibration may disturb the conduct of certain activities and create discomfort for some individuals. To minimize the disturbance and inconvenience from vibrations, no person or use shall create, maintain, or cause ground vibration that is discernible without instruments to a person of normal sensitivity at any point on a property that is adjacent to the property of the vibration source. The ground vibration caused by moving vehicles, trains, aircraft, or temporary construction or demolition is exempted.

4.0 Methods and Significance Thresholds

4.1 Methods

4.1.1 Excessive Noise Levels

4.1.1.1 Construction Noise Analysis

Construction noise would be generated by diesel engine-driven construction equipment used for site preparation and grading, building construction, loading, unloading, and placing materials and paving. Diesel engine-driven trucks would also bring materials to the site and remove the soils from excavation.

Construction equipment with a diesel engine typically generates maximum noise levels from 70 to 95 dB(A) L_{eq} at a distance of 50 feet (Federal Highway Administration [FHWA] 2006, 2008; FTA 2018). During construction, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for nonequipment tasks, such as measurement. Table 9 summarizes typical construction equipment noise levels and duty cycles.

Equipment	Maximum Noise Level at 50 Feet [dB(A) L_{eq}]	Typical Duty Cycle	Average Noise Level at 50 Feet [dB(A) L_{eq}]
Auger Drill Rig	84	20%	77
Backhoe	80	40%	76
Blasting	94	1%	74
Chainsaw	85	20%	78
Clam Shovel	93	20%	86
Compactor (ground)	80	20%	73
Compressor (air)	80	40%	76
Concrete Mixer Truck	85	40%	81
Concrete Pump	82	20%	75
Concrete Saw	90	20%	83
Crane (mobile or stationary)	81	16%	73
Dozer	85	40%	81
Dump Truck	84	40%	80
Excavator	85	40%	81
Front End Loader	80	40%	76
Generator (25 kilovolt amps or less)	70	50%	67
Generator (more than 25 kilovolt amps)	82	50%	79
Grader	85	40%	81
Hydra Break Ram	90	10%	80
Impact Pile Driver (diesel or drop)	95	20%	88
In-situ Soil Sampling Rig	84	20%	77
Jackhammer	85	20%	78

Table 9 Typical Construction Equipment Noise Levels			
Equipment	Maximum Noise Level at 50 Feet [dB(A) L_{eq}]	Typical Duty Cycle	Average Noise Level at 50 Feet [dB(A) L_{eq}]
Mounted Impact Hammer (hoe ram)	90	20%	83
Paver	85	50%	82
Pneumatic Tools	85	50%	82
Pumps	77	50%	74
Rock Drill	85	20%	78
Roller	74	40%	70
Scraper	85	40%	81
Tractor	84	40%	80
Vacuum Excavator (vac-truck)	85	40%	81
Vibratory Concrete Mixer	80	20%	73
Vibratory Pile Driver	95	20%	88
SOURCE: Federal Highway Administration 2006, 2008; Federal Transit Authority 2018. dB(A) L_{eq} = A-weighted decibels average noise level			

The exact locations and equipment required for construction activities throughout the Planning Area are not known at this level of analysis. For the purposes of disclosing construction noise impacts, average construction noise levels were calculated for the simultaneous operation of three common pieces of construction equipment: dozer, excavator, and loader. The usage factors were applied to the maximum noise level at 50 feet for each piece of equipment, and then noise levels were added logarithmically. Hourly average noise levels would be approximately 85 dB(A) L_{eq} at 50 feet from the center of construction activity when assessing three pieces of common construction equipment working simultaneously. Noise propagation for construction equipment is calculated based on the following equation for point sources:

$$N_{equip} = N_{ref} + 20 \log 50/D$$

where,

N_{equip} = Equipment noise level adjusted for distance

N_{ref} = Reference noise level at 50 feet

D = Distance from equipment to receiver

4.1.1.2 Traffic Noise Compatibility Analysis

Noise level predictions and contour mapping were developed using noise modeling software, SoundPlan Essential, version 4.1 (Navcon Engineering 2018). SoundPLAN calculates noise propagation based on the International Organization for Standardization method (ISO 9613-2 – Acoustics, Attenuation of Sound during Propagation Outdoors). The model calculates noise levels at selected receiver locations using input parameter estimates such as total noise generated by each

noise source; distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. The model outputs can be developed as noise level contour maps or noise levels at specific receivers. In all cases, receivers were modeled at 5 feet above ground elevation, which represents the average height of the human ear. The SoundPLAN program uses the FHWA Traffic Noise Model algorithms and reference levels to calculate noise levels at selected receiver locations. The model uses various input parameters, such as projected hourly average traffic rates; vehicle mix, distribution, and speed; roadway lengths and gradients; distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. Receivers, roadways, and barriers were input into the model using three-dimensional coordinates.

The main source of traffic noise in the Planning Area is vehicle traffic on SR-78, San Marcos Boulevard, Grand Avenue, Bent Avenue, Via Vera Cruz, Las Posas Road, Creekside Drive, Discovery Street, and La Sombra Drive. Future horizon year with project traffic volumes for San Marcos Boulevard, Grand Avenue, Bent Avenue, Via Vera Cruz, Las Posas Road, Creekside Drive were obtained from the traffic consultant (Intersecting Metrics 2026). Future year 2050 volumes for SR-78, Discovery Street, and La Sombra Drive were obtained from San Diego Association of Governments (SANDAG) traffic projections (SANDAG 2026). A vehicle classification mix of 93.4 percent automobiles, 2.9 percent medium trucks, 1.7 percent heavy trucks, 1.0 percent buses, and 1.0 percent motorcycles was modeled. This mix is based on Caltrans truck counts (Caltrans 2023). Caltrans does not count buses or motorcycles, thus, one percent of the automobiles were modeled as buses and one percent of the automobiles were modeled as motorcycles. Based on the field traffic counts, this classification mix is conservative.

Table 10 summarizes the future traffic volumes and vehicle classification mixes for the modeled roadways for the purposes of the on-site noise compatibility analysis.

Table 10 Compatibility Analysis Modeled Vehicle Traffic Parameters			
Roadway	Segment	Horizon Year + Project Average Daily Traffic	Speed (mph)
SR-78	Twin Oaks Valley Road to San Marcos Boulevard	155,100	65/55*
	San Marcos Boulevard to Las Posas Road	138,000	65/55*
Las Posas Road	Linda Vista Drive to San Marcos Boulevard	13,000	45
Via Vera Cruz	Linda Vista Drive to San Marcos Boulevard	19,500	40
	San Marcos Boulevard to Discovery Street	21,400	35
Bent Avenue	Grand Avenue to San Marcos Boulevard	13,500	40
	San Marcos Boulevard to Creekside Drive	24,900	30
	Creekside Drive to Discovery Street	10,200	30
Grand Avenue	Bent Avenue to San Marcos Boulevard	12,500	45
	San Marcos Boulevard to Creekside Drive	29,300	45
	Creekside Drive to Discovery Street	20,800	45
San Marcos Boulevard	Knights Realm to Discovery Street	63,800	45
	Discovery Street to Pacific Street	44,000	45
	Pacific Street to Las Posas Road	44,500	45
	La Posas Road to Via Vera Cruz	49,700	45
	Via Vera Cruz to Bent Avenue	53,800	45
	Bent Avenue to Grand Avenue	49,000	40
	Grand Avenue to SR-78 Eastbound Ramps	73,700	40
	SR-78 Eastbound Ramps to SR-78 Westbound Ramps	68,300	40
Creekside Drive	Bent Avenue to Grand Avenue	12,900	40
Discovery Street/La Sombra Drive	San Marcos Boulevard to Discovery Street	20,700	40
Discovery Street	Discovery Street/La Sombra Drive to McMahr Road	21,000	40
	McMahr Road to Via Vera Cruz	19,600	40
	Via Vera Cruz to Bent Avenue	27,500	40
	Bent Avenue to Craven Road	20,300	40
	Craven Road to North City Drive	26,900	40
	North City Drive to Twin Oaks Valley Road	26,900	40
La Sombra Drive	South of Discovery Street	4,400	25
mph = miles per hour SOURCE: Intersecting Metrics 2026; SANDAG 2026 *Trucks were modeled at the truck speed limit of 55 mph, and all other vehicles were modeled at the speed limit of 65 mph.			

4.1.1.3 Ambient Traffic Noise Analysis

Off-site traffic noise was modeled using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model-FHWA-RD-77-108 algorithms and reference levels. The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California, the national REMELs are substituted with the California Vehicle Noise Emission Levels. Adjustments are then made to the REMEL to account for: the roadway classification (e.g.,

collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Traffic noise levels were calculated at 50 feet from the centerline of the affected roadways to determine the noise level increase associated with the project.

The roadways included in the Volume and Level of Service Summary traffic analysis are Las Posas Road, Via Vera Cruz, Bent Avenue, Grand Avenue, Linda Vista Drive, San Marcos Boulevard, and Creekside Drive (Intersecting Metrics 2026). Traffic noise levels were calculated based on the total average daily traffic volumes on each roadway segment. For modeling purposes, "hard" ground conditions were used for the analysis of future conditions, since a majority of the project area is paved and the hard site provides the most conservative impact assessment. Modeled noise levels do not account for shielding provided by intervening barriers and structures.

Existing (year 2025), horizon year (year 2050), and horizon year plus project traffic volumes were obtained from the project traffic analysis (Intersecting Metrics 2026). Table 11 summarizes the traffic volumes for the area roadway segments.

Table 11 Off-Site Traffic Noise Analysis Modeled Vehicle Traffic Parameters					
Roadway	Segment	Average Daily Traffic			Speed (mph)
		Existing	Horizon Year	Horizon Year + Project	
Las Posas Road	Grand Avenue to La Mirada Drive	16,359	31,300	26,900	45
	La Mirada Drive to Linda Vista Drive	12,985	24,700	20,300	45
	Linda Vista Drive to San Marcos Boulevard	9,557	17,900	13,000	45
Via Vera Cruz	Grand Avenue to Linda Vista Drive	9,814	23,000	21,800	40
	Linda Vista Drive to San Marcos Boulevard	10,168	21,200	19,500	40
	San Marcos Boulevard to Discovery Street	6,908	23,600	21,400	35
Bent Avenue	Grand Ave to San Marcos Boulevard	7,281	16,400	13,500	40
	San Marcos Boulevard to Creekside Drive	7,571	30,800	24,900	30
	Creekside Drive to Discovery Street	7,571	12,700	10,200	30
Grand Avenue	Las Posas Road to Via Vera Cruz	23,061	33,600	29,900	45
	Via Vera Cruz to Bent Avenue	12,292	24,300	18,300	45
	Bent Avenue to San Marcos Boulevard	11,914	15,600	12,500	45
	San Marcos Boulevard to Creekside Drive	9,215	35,400	29,300	45
	Creekside Drive to Discovery Street	N/A	23,900	20,800	45
Linda Vista Drive	Las Posas Road to Via Vera Cruz	5,003	15,800	15,200	35
	Via Vera Cruz to Grand Avenue	3,972	8,300	8,300	35
San Marcos Boulevard	Knights Realm to Discovery Street	41,351	73,000	63,800	45
	Discovery Street to Pacific Street	36,521	53,200	44,000	45
	Pacific Street to Las Posas Road	36,875	53,700	44,500	45
	La Posas Road to Via Vera Cruz	32,141	56,400	49,700	45
	Via Vera Cruz to Bent Avenue	36,890	57,600	53,800	45

Table 11 Off-Site Traffic Noise Analysis Modeled Vehicle Traffic Parameters					
Roadway	Segment	Average Daily Traffic			Speed (mph)
		Existing	Horizon Year	Horizon Year + Project	
	Bent Avenue to Grand Avenue	39,415	54,900	49,000	40
	Grand Avenue to SR-78 Eastbound Ramps	51,538	82,700	73,700	40
	SR-78 Eastbound Ramps to SR-78 Westbound Ramps	47,476	77,100	68,300	40
	Knoll Road to Travelers Way	24,363	44,200	38,000	40
Creekside Drive	Bent Avenue to Grand Avenue	5,131	31,300	12,900	25
Discovery Street	Via Vera Cruz to Bent Avenue	16,122	28,200	27,500	40
	Bent Avenue to Craven Road	22,544	25,800	20,300	40
	Craven Road to North City Drive	10,559	29,200	26,900	40
mph = miles per hour SOURCE: Intersecting Metrics 2026					

4.1.1.4 Stationary Noise Analysis

Stationary sources of noise include activities associated with a given land use. Various land uses contain on-site stationary noise sources, including rooftop heating, ventilation, and air conditioning equipment; mechanical equipment; emergency electrical generators; parking lot activities; loading dock operations; and recreation activities. Stationary noise is considered a “point source” and attenuates over distance at a rate of 6 dB(A) for each doubling of distance. The exact location and nature of future stationary noise sources is not known at this time and therefore cannot be calculated in this analysis. Impacts were assessed in this analysis by identifying potential types of stationary sources and locations of mixed-use land use interfaces and identifying applicable regulations and mitigation framework for addressing impacts.

4.1.2 Groundborne Vibration

Potential sources of groundborne vibration include construction activities. Table 12 presents approximate vibration levels for construction equipment at a distance of 25 feet.

Table 12 Vibration Levels for Construction Equipment	
Equipment	Approximate PPV Vibration Level at 25 feet (inch/second)
Pile Driver, Impact (Upper Range)	1.518
Pile Drive, Impact (Typical)	0.644
Pile Driver, Sonic (Upper Range)	0.734
Pile Drive, Sonic (Typical)	0.170
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003
SOURCE: FTA 2018 PPV = peak particle velocity	

Vibration propagation is calculated based on the following equation (Caltrans 2020, FTA 2018):

$$PPV_{equip} = PPV_{ref} \times 25/D^n$$

where,

PPV_{equip} = Equipment vibration level adjusted for distance

PPV_{ref} = Reference vibration level at 25 feet

D = Distance from equipment to receiver

n = Attenuation coefficient based on soil type

Vibration impacts due to construction equipment were evaluated using these source vibration levels and the FTA criteria shown in Table 6.

The project does not include land uses that would involve operational sources of vibration. Additionally, the project site is more than 3,000 feet from the nearest railroad tracks and would therefore not be exposed to railroad vibration.

4.2 Significance Thresholds

Thresholds used to evaluate noise impacts are based on applicable criteria in the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations Sections 15000-15387), Appendix G. A significant impact would occur if the project would do the following:

- 1) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.

- 2) Generate excessive groundborne vibration or groundborne noise levels.
- 3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

5.0 Project Impacts, Significance, and Mitigation Measures/Project Design Features

5.1 Threshold 1: Excessive Noise Levels

5.1.1 Significance Criteria

5.1.1.1 Construction Noise

Construction activities are regulated by the City's Municipal Code. Construction shall comply with the limitations in Sections 10.24.020 (b)(9) and 17.32.180, as discussed in Section 3.3.2. Additionally, the City evaluates construction noise using the County of San Diego 8-hour average noise limit of 75 dB(A) L_{eq} , based on Section 36.409 of the County of San Diego Noise Ordinance (City of San Marcos 2024).

5.1.1.2 Noise Compatibility

A noise compatibility impact could occur if the project would result in the development of new receptors that would be exposed to noise levels in excess of the applicable standards in General Plan Noise Element Tables 7-3 and 7-4 (see Table 7 in Section 3.3.1). The project would include multi-family residential, mixed use, park, commercial, and retail land uses. As shown in Table 7, these land uses are compatible with noise levels up to 65 CNEL and conditionally compatible with noise levels from 65 to 75 CNEL. The interior noise level standard for residential uses is 45 CNEL and the interior noise level standard for commercial and retail uses is 50 dB(A) L_{eq} .

5.1.1.3 Ambient Traffic Noise

A project would result in a significant impact related to ambient vehicle noise if it would cause a roadway noise level to exceed the applicable normally compatible noise standard at land uses adjacent to the segment or cause a 3 dB(A) or more increase on a roadway segment that would exceed the compatibility standard without the project.

5.1.1.4 Stationary Noise

Stationary noise is regulated by Section 20.300.070(E) of the City's Municipal Code (see Table 8 in section 3.3.2.3). The project site is comprised of special purpose zones including Specific Plan Area (SPA), Open Space (O-S), and Public-Institutional (P-I). The Municipal Code does not contain limits

specific to these zones, however, the multi-family residential and commercial limits in Table 8 would apply to the proposed land uses. These limits are 65 dB(A) L_{eq} between 7:00 a.m. and 10:00 p.m. and 55 dB(A) L_{eq} between 10:00 p.m. and 7:00 a.m.

5.1.2 Analysis of Impacts

5.1.2.1 Construction Noise

Implementation of the project could result in simultaneous construction of various development and redevelopment projects over the duration of project build-out. Future development and redevelopment under the project could result in a temporary ambient noise increase due to construction activities. Due to the developed nature of the project area, there is a high likelihood that construction activities would take place adjacent to existing structures and that sensitive receptors would be close to construction activities. Additionally, construction activities may occur near existing noise-sensitive avian habitats.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., demolition; land clearing, grading, and excavation; erection). Construction noise would be short term and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and the use of power tools. Noise would also be generated by construction equipment use, including earthmovers, material handlers, and portable generators, and could reach high noise levels for brief periods.

As discussed in Section 4.1.1.1 above, hourly average noise levels would be approximately 85 dB(A) L_{eq} at 50 feet from the center of construction activity when assessing three pieces of common construction equipment working simultaneously. Noise levels would vary depending on the nature of the construction activities, including the duration of specific activities, the equipment involved, the location of the sensitive receivers, and the presence of intervening barriers. As discussed, the City utilizes the County's construction noise level limit of 75 dB(A) $L_{eq(8)}$ at noise-sensitive receivers. Construction noise levels of 85 dB(A) L_{eq} at 50 feet would attenuate to 75 dB(A) L_{eq} at 125 feet. Therefore, significant impacts would occur if sensitive land uses are located closer than 125 feet of construction activities.

The City regulates construction noise through Sections 10.24.020 (b)(9) and 17.32.180 of the Municipal Code, which set noise standards for construction activities and limit construction to the hours detailed in Section 3.3.2. Additionally, Policies N-3.1 and N-3.2 require developers and contractors to employ noise reduction techniques during construction and maintenance operations and limit the hours of construction and maintenance operations located adjacent to noise-sensitive land uses. By limiting the hours in which construction can occur, early morning and evening noise nuisance related to construction activities can be reduced. Nonetheless, construction activities could have a significant short-term noise impact.

Regarding noise-sensitive avian habitats, studies on the noise effects on bird behavior have demonstrated a negative impact on nesting and breeding behavior when noise levels exceed 60 dB(A) L_{eq} . Breeding birds can be significantly affected by short-term construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities. Therefore, indirect

impacts from construction-related noise may occur to sensitive wildlife if construction occurs during the breeding season (i.e., February 15 through August 31 for most bird species and January 1 through August 31 for raptors). While best management practices are in place to reduce construction-related indirect impacts, impacts resulting from construction noise would still occur. This represents a potentially significant impact.

5.1.2.2 Noise Compatibility

Development of the project would result in the construction of up to 2,300 residential units. Residential uses are sensitive receptors. As discussed in Section 4.1.1.2, residential uses and other uses proposed within the Planning Area are compatible with noise levels up to 65 CNEL and conditionally compatible with noise levels from 65 to 75 CNEL. The interior noise level standard for residential uses is 45 CNEL and the interior noise level standard for commercial and retail uses is 50 dB(A) L_{eq} .

On-site traffic noise contours were developed using the SoundPLAN program and the parameters summarized in Section 4.1.1.2. Future vehicle traffic noise contours are shown in Figure 6. SoundPLAN data are contained in Attachment 2. Residential uses could be included in the following districts: H-1, H-2, H-3, EAC, and PC. As shown in Figure 6, residential land uses located adjacent to San Marcos Boulevard, Discovery Street, Via Vera Cruz, Bent Avenue, and Grand Avenue could be exposed to vehicle traffic noise exceeding 65 CNEL. The 65 CNEL contour for Creekside Drive does not extend beyond the ROW. No development is proposed within the 65 CNEL contour for SR-78.

While some restrictions are identified in the Specific Plan Update indicating where residential uses cannot occur on the ground floor, it is possible that residential uses could be adjacent to one of the segments within the 65 CNEL contour as identified in Figure 6. Private yards are not expected for the residences, rather, usable outdoor space would be provided by patios and balconies. At this time, detailed development plans for the project are not available. Rather, future individual plans would come forward as individual parcel developments are proposed. Therefore, depending on the ultimate location of the residential uses, there is a potential for balcony and patio areas to exceed 65 CNEL. The interior noise level standard is 45 CNEL. Interior noise levels can be reduced through standard construction techniques. When windows are closed, standard construction techniques provide various exterior-to-interior noise level reductions depending on the type of structure and window. Standard light-frame construction would reduce exterior to interior noise levels by at least 20 dB (FHWA 2011). Thus, where exterior noise levels exceed 65 CNEL, interior noise levels are expected to exceed the 45 dB CNEL requirement for these residential units as well. Therefore, at this level of review, exterior and interior noise impacts would be potentially significant.

5.1.2.3 Ambient Traffic Noise

The project would increase traffic volumes on local roadways. However, the project would not substantially alter the vehicle classifications mix on local or regional roadways, nor would the project alter the speed on an existing roadway or create a new roadway. Thus, the primary factor affecting off-site noise levels would be increased traffic volumes. For noise assessment purposes, noise level increases are assumed to be greatest nearest the Planning Area, as this location would represent the greatest concentration of project-related traffic. As discussed in Section 5.1.1.3, the project would

result in a significant impact related to ambient vehicle noise if it would cause a roadway noise level to exceed the applicable normally compatible noise standard at land uses adjacent to the segment or cause a 3 dB(A) or more increase on a roadway segment that would exceed the compatibility standard without the project.

Table 13 presents a conservative assessment of traffic noise levels at 50 feet from the roadways based on the existing (year 2025), horizon year (year 2050), and horizon year plus project traffic. Noise level calculations are contained in Attachment 3.

As shown in Table 13, a 3.0 dB or greater noise level increase would occur adjacent to segments of Via Vera Cruz, Bent Avenue, Grand Avenue, Linda Vista Drive, Creekside Drive, and Discovery Street. Existing and future land uses located adjacent to these roadway segments were analyzed in more detail to determine if the noise level increase would result in a significant impact.

Via Vera Cruz – A 3 dB or greater noise level increase was identified adjacent to the segments of Via Vera Cruz from Grand Avenue to Linda Vista Drive and from San Marcos Boulevard to Discovery Street. There are existing commercial/retail uses located adjacent to these segments. As shown in Table 7, commercial/retail land uses are “acceptable” with noise levels up to 65 CNEL, “conditionally acceptable” with noise levels from 65 to 75 CNEL, and “unacceptable” with noise levels above 75 CNEL. As shown in Figure 6, future noise levels would be less than 75 CNEL. As described in the Noise Standards note (8) in Table 7, the exterior noise standard does not apply for land uses where no exterior use area is proposed or necessary. Because there are no noise-sensitive exterior receivers adjacent to these roadway segments, impacts to existing receivers due to the noise level increase would be considered less than significant. Future residential uses could be constructed adjacent to the segment of Via Vera Cruz between San Marcos Boulevard and Discovery Street as a part of the project. Impacts associated with future land use compatibility are addressed in Section 5.1.2.2.

Bent Avenue – A 3 dB or greater noise level increase was identified adjacent to the segment of Bent Avenue from San Marcos Boulevard to Creekside Drive. There are existing commercial and industrial uses located adjacent to this segment. As described above for Via Vera Cruz, there are no exterior use areas associated with these uses, thus, impacts to existing receivers due to the noise level increase would be considered less than significant. Future residential uses could be constructed adjacent to this roadway segment as a part of the project. Impacts associated with future land use compatibility are addressed in Section 5.1.2.2.

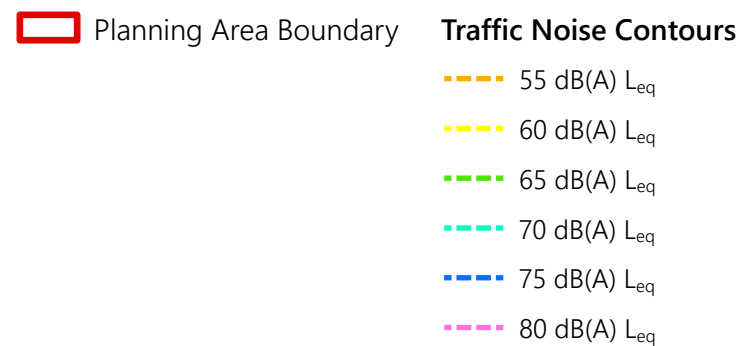
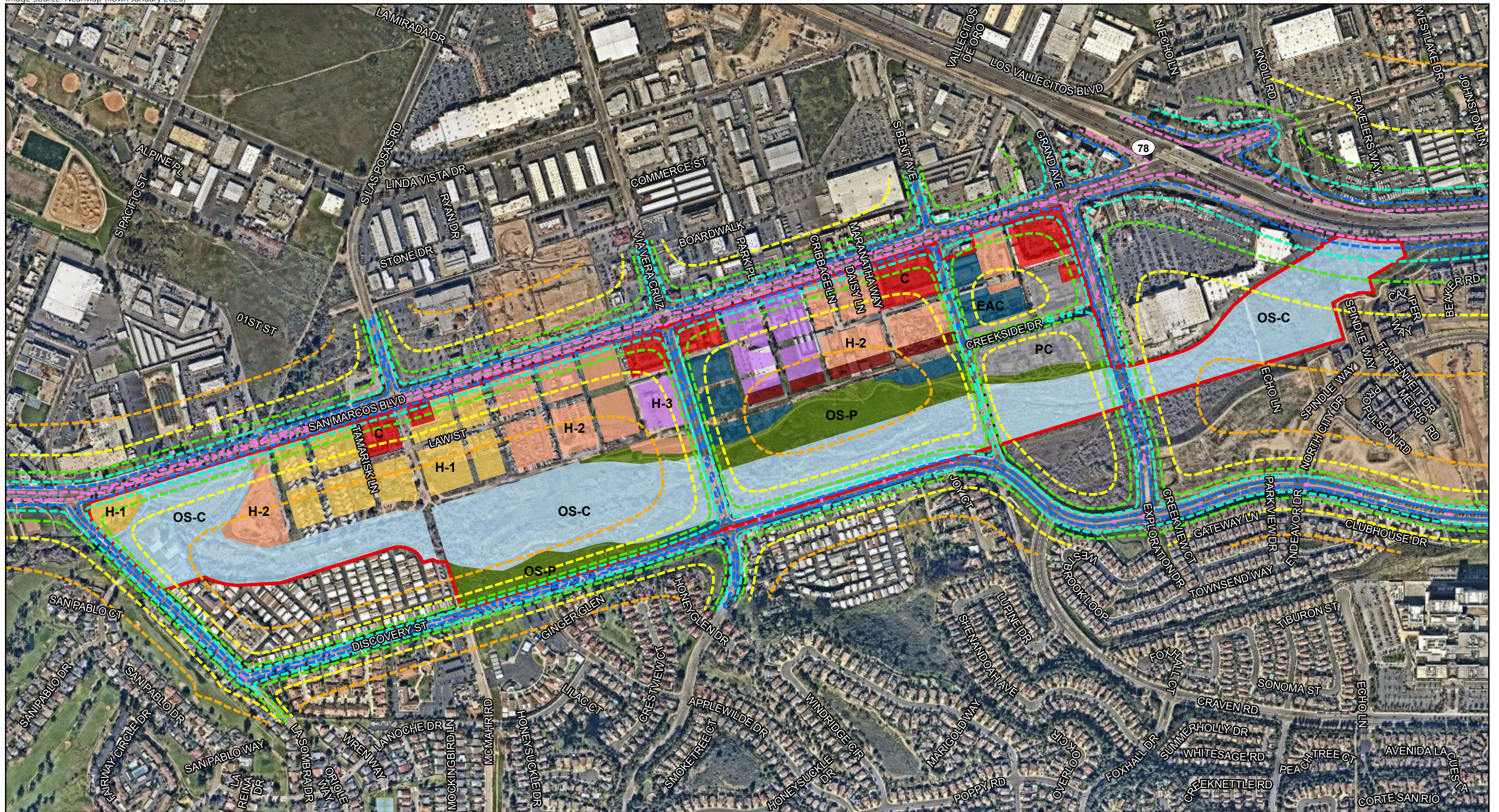


Table 13
Traffic Noise Level with and without Project and Ambient Noise Increases (CNEL)

Roadway	Segment	Existing	Horizon Year without Project (Adopted Specific Plan)		Horizon Year with Project		
			CNEL	Increase Over Existing	CNEL	Change over Horizon Year without Project	Increase Over Existing
		CNEL					
Las Posas Road	Grand Avenue to La Mirada Drive	71.5	74.4	2.9	73.7	-0.7	2.2
	La Mirada Drive to Linda Vista Drive	70.5	73.3	2.8	72.5	-0.8	2.0
	Linda Vista Drive to San Marcos Boulevard	69.2	71.9	2.7	70.5	-1.4	1.3
Via Vera Cruz	Grand Avenue to Linda Vista Drive	68.2	71.9	3.7	71.6	-0.3	3.4
	Linda Vista Drive to San Marcos Boulevard	68.3	71.5	3.2	71.2	-0.3	2.9
	San Marcos Boulevard to Discovery Street	65.4	70.7	5.3	70.3	-0.4	4.9
Bent Avenue	Grand Ave to San Marcos Boulevard	66.9	70.4	3.5	69.6	-0.8	2.7
	San Marcos Boulevard to Creekside Drive	65.0	71.1	6.1	70.2	-0.9	5.2
	Creekside Drive to Discovery Street	65.0	67.3	2.3	66.3	-1.0	1.3
Grand Avenue	Las Posas Road to Via Vera Cruz	73.0	74.7	1.7	74.2	-0.5	1.2
	Via Vera Cruz to Bent Avenue	70.3	73.3	3.0	72.0	-1.3	1.7
	Bent Avenue to San Marcos Boulevard	70.2	71.3	1.1	70.4	-0.9	0.2
	San Marcos Boulevard to Creekside Drive	69.0	74.9	5.9	74.1	-0.8	5.1
	Creekside Drive to Discovery Street	N/A	73.2	N/A	72.6	-0.6	N/A
Linda Vista Drive	Las Posas Road to Via Vera Cruz	64.0	69.0	5.0	68.8	-0.2	4.8
	Via Vera Cruz to Grand Avenue	63.0	66.2	3.2	66.2	0.0	3.2
San Marcos Boulevard	Knights Realm to Discovery Street	75.6	78.0	2.4	77.4	-0.6	1.8
	Discovery Street to Pacific Street	75.0	76.7	1.7	75.8	-0.9	0.8
	Pacific Street to Las Posas Road	75.1	76.7	1.6	75.9	-0.8	0.8
	La Posas Road to Via Vera Cruz	74.5	76.9	2.4	76.4	-0.5	1.9
	Via Vera Cruz to Bent Avenue	75.1	77.0	1.9	76.7	-0.3	1.6
	Bent Avenue to Grand Avenue	74.2	75.6	1.4	75.2	-0.4	1.0
	Grand Avenue to SR-78 Eastbound Ramps	75.4	77.4	2.0	76.9	-0.5	1.5
	SR-78 Eastbound Ramps to SR-78 Westbound Ramps	75.0	77.1	2.1	76.6	-0.5	1.6
	Knoll Road to Travelers Way	72.1	74.7	2.6	74.1	-0.6	2.0
Creekside Drive	Bent Avenue to Grand Avenue	60.7	68.6	7.9	64.7	-3.9	4.0
Discovery Street	Via Vera Cruz to Bent Avenue	69.7	72.1	2.4	72.0	-0.1	2.3
	Bent Avenue to Craven Road	71.1	71.7	0.6	70.7	-1.0	-0.4
	Craven Road to North City Drive	67.8	72.3	4.5	71.9	-0.4	4.1

SOURCE: Attachment 3

Bold = Noise increase is 3.0 dB or greater.

Grand Avenue – A 3 dB or greater noise level increase was identified adjacent to the segment of Grand Avenue from San Marcos Boulevard to Creekside Drive. There are existing commercial and industrial uses located adjacent to this segment. As described above for Via Vera Cruz, there are no exterior use areas associated with these uses, thus, impacts to existing receivers due to the noise level increase would be considered less than significant. Future residential uses could be constructed adjacent to this roadway segment as a part of the project. Impacts associated with future land use compatibility are addressed in Section 5.1.2.2.

Linda Vista Drive – A 3 dB or greater noise level increase was identified adjacent to the segments of Linda Vista Drive from Las Posas Road to Via Vera Cruz and from Via Vera Cruz to Grand Avenue. There are existing commercial and industrial uses located adjacent to these segments. As described above for Via Vera Cruz, there are no exterior use areas associated with these uses, thus, impacts to existing receivers due to the noise level increase would be considered less than significant.

Creekside Drive – A noise level increase greater than 3 dB would occur adjacent to the segment of Creekside Drive between Bent Avenue and Grand Avenue, however, overall noise levels would remain less than the residential compatibility standards, thus, impacts would be less than significant.

Discovery Street – A 3 dB or greater noise level increase was identified adjacent to the segment of Discovery Street from Craven Road to North City Drive. There are existing residential uses located south of Discovery Street. These residential uses are elevated above Discovery Street and include solid six-foot-high barriers between the residences and the road. Noise level calculations do not take into account reductions associated with topography and barriers. The barriers alone provide at least a 5 dB reduction in vehicle traffic noise. Based on the noise contours shown in Figure 6 and accounting for a minimum 5 dB reduction, exterior noise levels at these residences would not exceed the compatibility level of 65 CNEL. Thus, impacts to existing receivers due to the noise level increase would be considered less than significant.

In summary, the project would not result in a significant increase in vehicle traffic noise. When compared to the horizon year without the project, an overall decrease in vehicle traffic noise would occur because the project would result in less development and traffic when compared to the Adopted Specific Plan.

5.1.2.4 Stationary Noise

A significant impact could occur if implementation of the project resulted in the exposure of people to noise levels that exceed property line limits established in the Municipal Code under Section 20.300.070(E) (see Table 8 above). Stationary sources of noise include activities associated with a given land use. For example, noise sources from residential uses would include mechanical ventilation equipment and landscaping equipment, and noise sources from commercial land uses would include mechanical ventilation equipment, activities restaurants and entertainment venues, loading docks, and a variety of other uses. Noise generated by residential or commercial uses is generally short-lived and intermittent.

Mixed-use developments, such as those proposed by the project, could result in potential noise conflicts at the interface between retail commercial development and residential uses. In mixed-use

urban-character environments, the source of noise conflict may be more vertical when residential uses are constructed above commercial uses. The project would be required to adhere to all Uniform Building Code (UBC). The UBC includes requirements for sound transmission control (Chapter 12, Section 1208), addressing the requirements for airborne sound insulation and impact sound insulation to separate dwelling units.

Residential uses above restaurants or entertainment venues, or above retail uses with early morning deliveries, trash pick-up, may create noise nuisance conflict situations. At this time, detailed development plans for the Planning Area are not available. Rather, these plans would come forward as individual parcel developments are proposed. Typically, such uses with the potential for noise issues require conditional use permits to create special conditions on the proposed use as necessary. While there may be a different expectation of acceptable levels of noise in a vibrant mixed-use environment than there might be in an isolated subdivision, there is a potential for a noise impact. Both the juxtaposition of residential and commercial uses (horizontal as well as vertical) and the appropriate noise standard that should be applied within the mixed-use environment must be analyzed when development plans are finalized and when permits must be approved by City staff. Impacts associated with stationary noise sources in mixed-use areas would be potentially significant.

5.1.3 Mitigation Measures and Design Considerations

5.1.3.1 Construction Noise

Implementation of the following mitigation measures identified in the 2007 EIR would be required to reduce impact related to construction noise.

MM 3.8-1 A condition on the improvement plans and within construction contracts which require:

- Exterior construction, hauling, or delivery activities shall be scheduled to occur during normal daytime working hours, i.e., 7:00 a.m. and 6:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on Saturday. No construction would occur on Sundays and legal holidays. These criteria shall be included in the improvement plans prior to initiation of construction. Exceptions to allow expanded construction activity hours shall be reviewed on a case-by-case basis as determined by the Planning Director.
- All heavy construction equipment and all stationary noise sources (such as diesel generators) shall be fitted with factory-specified mufflers.
- Truck routes, equipment warm up areas, water tanks, and equipment storage areas shall be located in an area as far away from existing residences, schools and other sensitive receptors, as is feasible.

The condition shall be reviewed and approved by the Development Services prior to the issuance of permits.

MM 3.8-2 The applicant shall prepare and post readily visible informational signs at each entrance of the construction area indicating that the site is a "Noise Controlled Zone" and that

person, vehicles, machinery and equipment may be barred from the site for violations of the noise regulations. A Noise Complaint Hotline telephone number shall appear prominently on the sign. The overall sign, including format, size, style and content shall be pre-approved by the City prior to posting.

- MM 3.3-11 Prior to issuance of grading permit, a protocol California coastal gnatcatcher survey shall be required. The survey shall be conducted by a permitted CAGN biologist. If the habitat is found to be occupied by a California gnatcatcher, no clearing or construction shall be allowed during the breeding season (February 15–August 31). If construction should occur during the breeding season, a 300-foot buffer shall be established between construction activities and any occupied habitat. Protocol survey results shall be submitted to the Planning Director and USFWS for review.

5.1.3.2 Noise Compatibility

Implementation of the following mitigation measures identified in the 2007 EIR would be required to reduce impact related to noise compatibility.

- MM 3.8-3 As development proposals come forward for the Specific Plan area, noise attenuation shall be required to reduce noise levels to acceptable standards. In the event that patios and balconies are determined to occur within the 65 CNEL noise contour, noise attenuation would be required to reduce noise levels to 65 CNEL or lower. This may include the use of architectural treatments, barriers, or other noise attenuating measures. The mitigation measures shall provide sound level reductions so that future uses within the Specific Plan area are consistent with the CNEL levels identified in the San Marcos General Plan.
- MM 3.8-4 Residential uses adjacent to project site roadways shall have dual-paned windows and supplemental ventilation (e.g., air conditioning systems) on their facades facing exterior roads.
- MM 3.8-5 Noise-sensitive uses within 500 feet of San Marcos Boulevard shall be shielded by intervening structures, or shall employ upgraded noise mitigation (e.g., premium windows, etc.). The hierarchy of structural noise reduction is as follows, and shall be employed as needed to meet interior noise level of 45 CNEL.

Exterior to Interior Reduction Desired (dB)	Measure(s) Needed
0-10	None.
10-20	Close single-paned windows facing roadway. Provide supplemental ventilation.
20-25	Close standard dual-paned windows. Provide supplemental ventilation.
25-30	Close upgraded dual-paned windows. Provide supplemental ventilation. Baffle vents and line ducts with absorbers.
>30	Custom upgrades (dual layer drywall, triple-paned windows, steel doors, etc.)

5.1.3.3 Ambient Traffic Noise

Impacts would be less than significant. No mitigation is required.

5.1.3.4 Stationary Noise

Implementation of the following mitigation measures identified in the would be required to reduce impact related to stationary noise sources noise.

MM 3.8-6 As development proposals come forward for the Specific Plan area, a site specific noise study shall be prepared for the development. The noise study shall analyze the impact of co-locating residential and commercial uses on the project site. Mitigation measures shall be identified and incorporated into the Conditional Use Permits, to reduce noise impacts associated with these uses. The mitigation measures shall provide sound level reductions so that future uses within the Specific Plan area are consistent with the CNEL levels identified in the San Marcos General Plan.

5.1.4 Significance After Mitigation

5.1.4.1 Construction Noise

Construction activities for the project would adhere to the requirements of Sections 10.24.020 (b)(9) and 17.32.180 of the City's Municipal Code. Implementation of mitigation measures MM 3.8-1 and MM 3.8-2 and adherence to the Municipal Code would reduce the short-term construction impacts to below a level of significance. Additionally, mitigation measure MM-3.3-1 would reduce indirect construction noise impacts to sensitive habitat.

5.1.4.2 Noise Compatibility

Future land uses within the Planning Area could be exposed to vehicle traffic noise levels that exceed the City's noise compatibility levels. Implementation of mitigation measures MM 3.8-3 through

MM 3.8-5 would require noise attenuation measures that would reduce exterior and interior noise levels to acceptable standards. With implementation of these measures, impacts would be reduced to less than significant.

5.1.4.3 Ambient Traffic Noise

The project would not result in a significant increase in vehicle traffic noise. Impacts would be less than significant. No mitigation or design considerations are required.

5.1.4.4 Stationary Noise

Impacts associated with stationary noise sources in mixed-use areas would be potentially significant. Implementation of mitigation measure MM 3.8-6 would require future noise studies that analyze the impact of co-locating residential and commercial uses and if necessary, incorporate measures to reduce impacts associated with these uses. With implementation of this mitigation measure, impacts would be reduced to less than significant.

5.2 Threshold 2: Groundborne Vibration

5.2.1 Significance Criteria

As shown in Table 6, vibration generated by construction equipment has the potential to be substantial if it exceeds the FTA criteria for architectural damage (e.g., 0.12 PPV for fragile or historical resources, 0.2 PPV for non-engineered timber and masonry buildings, and 0.3 PPV for engineered concrete and masonry).

5.2.2 Analysis of Impacts

Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction. As with any type of construction, vibration levels during any phase may at times be perceptible. However, non-pile driving or foundation work construction phases that have the highest potential of producing vibration (such as jackhammering and other high-power tools) would be intermittent and would only occur for short periods of time for any individual development site. Groundborne vibration attenuates rapidly, even over short distances. By use of administrative controls, such as scheduling construction activities with the highest potential to produce perceptible vibration to hours with least potential to affect nearby properties, perceptible vibration can be kept to a minimum and as such would not generate perceptible levels of vibration.

With the exception of one property, buildings within the Planning Area are not fragile or historic and would therefore have a vibration damage criteria of 0.2 PPV or greater. The property known as the Meyer-Doran House ("pink house") originally sat at 918 Discovery Street has been identified as a historic resource. Although the house has been relocated a few hundred yards west of its original location, this structure remains surrounded by land designated as open space and no construction would occur within its immediate vicinity, thus, groundborne vibration is not anticipated to exceed

0.12 PPV at this historic resource. Table 14 summarizes vibration levels from common construction equipment and the distances to the 0.2 PPV vibration level.

Table 14 Vibration Levels from General Construction Equipment		
Equipment	Vibration Level at 25 feet (PPV)	Distance to 0.2 PPV (feet)
Small Bulldozer	0.003	<1
Jackhammer	0.035	5
Loaded Trucks	0.076	10
Large Bulldozer	0.089	12

As shown, construction equipment vibration levels are projected to exceed 0.2 PPV at only very close distances. Large construction equipment would not operate within these close distances of existing structures given the necessary room needed to safely operate the equipment and property line building setback distances. Impacts associated with construction-related vibration impacts would be less than significant.

The project does not propose any uses that would be characterized as capable of causing excessive groundborne vibration or groundborne noise during operation. Further, the performance measure in Section 20.300.070 (F) of the Municipal Code prohibits the generation of vibration that is discernable to a person of normal sensitivity. Impacts associated with project operation would be less than significant.

5.2.3 Mitigation Measures and Design Considerations

Impacts would be less than significant. No mitigation is required.

5.2.4 Significance After Mitigation

Construction-related vibration levels are not anticipated to exceed 0.2 PPV at existing structures. Additionally, no construction would occur in the vicinity of the historic structure. The project does not propose any uses that would be characterized as capable of causing excessive vibration during operation. Construction- and operational-related vibration impacts would be less than significant. No mitigation is required.

5.3 Threshold 3: Aircraft Noise

5.3.1 Significance Criteria

A project would result in a significant impact if it would expose new or existing receptors to noise levels in excess of the City's Noise Element compatibility standards (see Table 7) as a result of aircraft noise exposure.

5.3.2 Analysis of Impacts

The closest airport is the McClellan-Palomar Airport located approximately four miles west of the project site. Noise contours for the McClellan-Palomar Airport are provided in the Airport Land Use Compatibility Plan (San Diego County Airport Land Use Commission 2011). The project site is located 2.2 miles east from the 60 CNEL airport noise contour, thus, aircraft noise levels at the Planning Area would be well less than 60 CNEL. Impacts associated with airport noise would be less than significant.

5.3.3 Mitigation Measures and Design Considerations

Impacts would be less than significant. No mitigation is required.

5.3.4 Significance After Mitigation

Aircraft noise levels at the Planning Area would be well less than 60 CNEL. Impacts would be less than significant. No mitigation is required.

6.0 Conclusion

6.1 Excessive Noise Levels

6.1.1 Construction Noise

The City regulates construction noise through Sections 10.24.020 (b)(9) and 17.32.180 of the Municipal Code, which set noise standards for construction activities and limit construction to the hours detailed in Section 3.3.2. Additionally, Policies N-3.1 and N-3.2 require developers and contractors to employ noise reduction techniques during construction and maintenance operations and limit the hours of construction and maintenance operations located adjacent to noise-sensitive land uses. As calculated in this analysis, construction noise levels of 85 dB(A) L_{eq} at 50 feet would attenuate to 75 dB(A) L_{eq} at 125 feet. Therefore, significant impacts would occur if sensitive land uses are located closer than 125 feet of construction activities. Implementation of mitigation measures MM 3.8-1 and MM 3.8-2 and adherence to the Municipal Code would reduce the short-term construction impacts to below a level of significance.

Potential impacts could occur if construction activity proceeded during designated breeding seasons. Implementation of mitigation measure MM 3.3-11 would require a one-time pre-construction biological survey for nesting bird species and avoidance of any active nests and the performance of a protocol gnatcatcher survey. With incorporation of this mitigation measure, impacts to biological resources as a result of construction noise would be less than significant.

6.1.2 Noise Compatibility

As shown in Figure 6, residential land uses located adjacent to San Marcos Boulevard, Discovery Street, Via Vera Cruz, Bent Avenue, and Grand Avenue could be exposed to vehicle traffic noise exceeding 65 CNEL. While some restrictions are identified indicating where residential uses cannot occur on the ground floor, it is possible that residential uses could be adjacent to one of the segments within the 65 CNEL contour as identified in Figure 6. At this time, detailed development plans for the project are not available. Rather, these plans would come forward as individual parcel developments are proposed. Therefore, depending on the ultimate location of the residential uses, there is a potential for balcony and patio areas to exceed 65 CNEL. Interior noise levels are expected to exceed the 45 dB CNEL requirement for these residential units as well. Exterior and interior noise impacts would be potentially significant. Implementation of mitigation measures MM 3.8-3 through MM 3.8-5 would require noise attenuation measures that would reduce exterior and interior noise levels to acceptable standards. With implementation of these measures, impacts would be reduced to less than significant.

6.1.2 Off-site Traffic Noise

As shown in Table 13, a 3.0 dB or greater noise level increase would occur adjacent to segments of Via Vera Cruz, Bent Avenue, Grand Avenue, Linda Vista Drive, Creekside Drive, and Discovery Street. However, as discussed in this analysis, existing commercial, retail, and industrial land uses located adjacent to Via Vera Cruz, Bent Avenue, Grand Avenue, and Linda Vista Drive do not include noise-sensitive exterior use areas. Because there are no noise-sensitive exterior receivers adjacent to these roadway segments, impacts to existing receivers due to the noise level increase would be considered less than significant. For the residential uses located adjacent to Creekside Drive and Discovery Street, exterior noise levels at these residences would not exceed the compatibility level of 65 CNEL. Thus, impacts to existing receivers due to the noise level increase would be considered less than significant. Additionally, when compared to the horizon year without the project, an overall decrease in vehicle traffic noise would occur because the project would result in less development and traffic when compared to the Adopted Specific Plan. Impacts associated with the increase in vehicle traffic noise would be less than significant. No mitigation is required.

6.1.3 On-site Generated Noise

Mixed-use developments, such as those proposed by the project, can result in potential noise conflicts at the interface between retail commercial development and residential uses. Residential uses above restaurants or entertainment venues, or above retail uses with early morning deliveries and trash pick-up, may create noise nuisance conflict situations. Impacts associated with stationary noise sources in mixed-use areas would be potentially significant. Implementation of mitigation measure MM 3.8-6 would require future noise studies that analyze the impact of co-locating residential and commercial uses and, if necessary, incorporate measures to reduce impacts associated with these uses. With implementation of this mitigation measure, impacts would be reduced to less than significant.

6.2 Groundborne Vibration

Construction-related vibration levels are not anticipated to exceed 0.2 PPV at existing structures. Additionally, no construction would occur in the vicinity of the historic structure located at 918 Discovery Street. The project does not propose any uses that would be characterized as capable of causing excessive vibration during operation. Construction- and operational-related vibration impacts would be less than significant. No mitigation is required.

6.3 Aircraft Noise

The closest airport is the McClellan-Palomar Airport located approximately four miles west of the project site. Aircraft noise levels at the Planning Area would be well less than 60 CNEL. Impacts would be less than significant. No mitigation is required.

7.0 Summary of Mitigation Measures/Project Design Features

Implementation of the following mitigation measures identified in the 2007 EIR would be required to reduce noise impacts. No new mitigation measures would be required.

MM 3.8-1 A condition on the improvement plans and within construction contracts which require:

- Exterior construction, hauling, or delivery activities shall be scheduled to occur during normal daytime working hours, i.e., 7:00 a.m. and 6:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on Saturday. No construction would occur on Sundays and legal holidays. These criteria shall be included in the improvement plans prior to initiation of construction. Exceptions to allow expanded construction activity hours shall be reviewed on a case-by-case basis as determined by the Planning Director.
- All heavy construction equipment and all stationary noise sources (such as diesel generators) shall be fitted with factory-specified mufflers.
- Truck routes, equipment warm up areas, water tanks, and equipment storage areas shall be located in an area as far away from existing residences, schools and other sensitive receptors, as is feasible.

The condition shall be reviewed and approved by the Development Services prior to the issuance of permits.

MM 3.8-2 The applicant shall prepare and post readily visible informational signs at each entrance of the construction area indicating that the site is a "Noise Controlled Zone" and that person, vehicles, machinery and equipment may be barred from the site for violations of the noise regulations. A Noise Complaint Hotline telephone number shall appear

prominently on the sign. The overall sign, including format, size, style and content shall be pre-approved by the City prior to posting.

- MM 3.3-11 Potential impacts could occur if construction activity proceeded during designated breeding seasons. Implementation of MM 3.3-11 would require a one-time pre-construction biological survey for nesting bird species and avoidance of any active nests and the performance of a protocol gnatcatcher survey. With incorporation of this mitigation measure, impacts to biological resources as a result of construction noise would be less than significant.
- MM 3.8-3 As development proposals come forward for the Specific Plan area, noise attenuation shall be required to reduce noise levels to acceptable standards. In the event that patios and balconies are determined to occur within the 65 CNEL noise contour, noise attenuation would be required to reduce noise levels to 65 CNEL or lower. This may include the use of architectural treatments, barriers, or other noise attenuating measures. The mitigation measures shall provide sound level reductions so that future uses within the Specific Plan area are consistent with the CNEL levels identified in the San Marcos General Plan.
- MM 3.8-4 Residential uses adjacent to project site roadways shall have dual-paned windows and supplemental ventilation (e.g., air conditioning systems) on their facades facing exterior roads.
- MM 3.8-5 Noise-sensitive uses within 500 feet of San Marcos Boulevard shall be shielded by intervening structures, or shall employ upgraded noise mitigation (e.g., premium windows, etc.). The hierarchy of structural noise reduction is as follows, and shall be employed as needed to meet interior noise level of 45 CNEL.

Exterior to Interior Reduction Desired (dB)	Measure(s) Needed
0-10	None.
10-20	Close single-paned windows facing roadway. Provide supplemental ventilation.
20-25	Close standard dual-paned windows. Provide supplemental ventilation.
25-30	Close upgraded dual-paned windows. Provide supplemental ventilation. Baffle vents and line ducts with absorbers.
>30	Custom upgrades (dual layer drywall, triple-paned windows, steel doors, etc.)

- MM 3.8-6 As development proposal come forward for the Specific Plan area, a site specific noise study shall be prepared for the development. The noise study shall analyze the impact of co-locating residential and commercial uses on the project site. Mitigation measures shall be identified and incorporated into the Conditional Use Permits, to reduce noise impacts

associated with these uses. The mitigation measures shall provide sound level reductions so that future uses within the Specific Plan area are consistent with the CNEL levels identified in the San Marcos General Plan.

8.0 References

California Department of Transportation (Caltrans)

- 2013 Technical Noise Supplement to the Traffic Noise Analysis Protocol. September.
- 2020 Transportation and Construction Vibration Guidance Manual. April.
- 2023 2023 Annual Average Daily Truck Traffic on the California State Highway System.

Federal Highway Administration (FHWA)

- 2006 Roadway Construction Noise Model User's Guide. FHWA-HEP-05-054, DOT-VNTSC-FHWA-05-01. Final Report. January.
- 2008 Roadway Construction Noise Model, V1.1. Washington, D.C.
- 2011 Highway Traffic Noise: Analysis and Abatement Guidance. FHWA-HEP-10-025. December.

Federal Transit Administration (FTA)

- 2018 Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123. Prepared by John A. Volpe National Transportation Systems Center. September.

Intersecting Metrics

- 2026 Local Transportation Analysis for the San Marcos Creek Specific Plan Update. Prepared for the City of San Marcos. May 29, 2026.

Navcon Engineering, Inc.

- 2018 SoundPLAN Essential version 4.1.

San Diego Association of Governments (SANDAG)

- 2026 Transportation Forecast Information Center. Year 2050 ABM2+/2021 RP Traffic Volumes. Accessed February 3, 2026. <https://tfic.sandag.org/>.

San Diego County Airport Land Use Commission

- 2011 McClellan-Palomar Airport Land Use Compatibility Plan. Adopted January 25, 2010. Amended March 4, 2010 and December 1, 2011.

San Marcos, City of

- 2007 2007 Final EIR, San Marcos Creek Specific Plan and Floodway Improvement Project, June.
- 2012 City of San Marcos General Plan Update, Noise Element.

2024 Noise Technical Report Format and Content Recommendations. October 2024.

9.0 List of Preparers

Jessica Fleming, Senior Noise Specialist
Lori Spar, CEQA Director
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ATTACHMENTS

ATTACHMENT 1

Noise Measurement Data

10624 San Marcos Creek Specific Plan
Noise Measurement Data

Summary

File Name on Meter

File Name on PC

Serial Number

Model

Firmware Version

User

Location

Job Description

Note

LxT_Data.052.s

LxT_0003896-20251107 091659-LxT_Data.052.ldbin

0003896

SoundTrack LxT®

2.404

Measurement 1

San Marcos Creek Specific Plan Update

Measurement

Description

Start

Stop

Duration

Run Time

Pause

Pre-Calibration

Post-Calibration

Calibration Deviation

2025-11-07 09:16:59

2025-11-07 09:32:48

00:15:48.7

00:15:07.6

00:00:41.1

2025-11-07 08:58:09

None

Overall Settings

RMS Weight

Peak Weight

Detector

Preamplifier

Microphone Correction

Integration Method

Overload

A

C

Z

Under Range Peak

Under Range Limit

Noise Floor

A Weighting

A Weighting

Slow

PRMLxT1

Off

Linear

145.6 dB

101.6

38.8

29.6

98.6

38.4

29.3

103.6 dB

45.5 dB

36.3 dB

Results

LAeq

LAE

EA

EA8

EA40

LAp_{peak} (max)

LAS_{max}

LAS_{min}

SEA

LAS > 60.0 dB (Exceedance Counts / Duration)

LAS > 70.0 dB (Exceedance Counts / Duration)

LAp_{peak} > 135.0 dB (Exceedance Counts / Duration)

LAp_{peak} > 137.0 dB (Exceedance Counts / Duration)

LAp_{peak} > 140.0 dB (Exceedance Counts / Duration)

LCeq

LAeq

LCeq - LAeq

LAl_{eq}

L_{Aeq}

LAl_{eq} - LAeq

Leq

LS(max)

LS(min)

LPeak(max)

Overload Count

Overload Duration

64.4

94.0

277.115 μPa²h

8.793 mPa²h

43.967 mPa²h

2025-11-07 09:23:05

2025-11-07 09:30:17

2025-11-07 09:18:40

-99.9 dB

35

16

0

0

0

72.2 dB

64.4 dB

7.8 dB

66.0 dB

64.4 dB

1.6 dB

64.4

74.6

50.1

93.7

0

0.0 s

C

Z

93.7 dB

74.6 dB

50.1 dB

0.0 s

A	C	Z
dB	Time Stamp	dB
64.4		72.2
74.6	2025/11/07 9:30:17	
50.1	2025/11/07 9:18:40	
93.7	2025/11/07 9:23:05	

Dose Settings

Dose Name

Exchange Rate

Threshold

Criterion Level

Criterion Duration

OSHA-1

5

90

90

8

OSHA-2

5 dB

80 dB

90 dB

8 h

Results

Dose

Projected Dose

TWA (Projected)

TWA (t)

Lep (t)

-99.94

-99.94

-99.9

-99.9

49.4

-99.94 %

-99.94 %

-99.9 dB

-99.9 dB

49.4 dB

Statistics

LA5.00

LA10.00

LA33.30

LA50.00

LA66.60

LA90.00

69.1 dB

68.1 dB

65.0 dB

62.7 dB

59.8 dB

54.1 dB

10624 San Marcos Creek Specific Plan
Noise Measurement Data

Summary	
File Name on Meter	LxT_Data.053.s
File Name on PC	LxT_0003896-20251107_095007-LxT_Data.053.ldbin
Serial Number	0003896
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	Measurement 2
Job Description	San Marcos Creek Specific Plan Update
Note	

Measurement	
Description	
Start	2025-11-07 09:50:07
Stop	2025-11-07 10:05:18
Duration	00:15:10.1
Run Time	00:15:01.6
Pause	00:00:08.5
Pre-Calibration	2025-11-07 08:57:56
Post-Calibration	None
Calibration Deviation	---

Overall Settings			
RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1		
Microphone Correction	Off		
Integration Method	Linear		
Overload	145.6 dB		
	A	C	Z
Under Range Peak	101.6	98.6	103.6 dB
Under Range Limit	38.8	38.4	45.5 dB
Noise Floor	29.6	29.3	36.3 dB

Results			
LAeq		67.0	
LAE		96.5	
EA		499.593	µPa²h
EA8		15.959	mPa²h
EA40		79.793	mPa²h
LApeak (max)	2025-11-07 09:59:54		99.1 dB
LASmax	2025-11-07 10:01:46		77.2 dB
LASmin	2025-11-07 09:59:36		45.6 dB
SEA		-99.9	dB

LAS > 60.0 dB (Exceedance Counts / Duration)	37	517.1 s
LAS > 70.0 dB (Exceedance Counts / Duration)	37	190.1 s
L _{Apeak} > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
L _{Apeak} > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
L _{Apeak} > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

LCeq	72.3 dB
LAeq	67.0 dB
LCeq - LAeq	5.3 dB
LAlaq	70.1 dB
LAeq	67.0 dB
LAlaq - LAeq	3.1 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	67.0		72.3			
LS(max)	77.2	2025/11/07 10:01:46				
LS(min)	45.6	2025/11/07 9:59:36				
LPeak(max)	99.1	2025/11/07 9:59:54				

Overload Count	0
Overload Duration	0.0 s

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	51.9	51.9 dB

Statistics	
LA5.00	73.6 dB
LA10.00	72.1 dB
LA33.30	65.8 dB
LA50.00	61.0 dB
LA66.60	55.5 dB
LA90.00	49.8 dB

10624 San Marcos Creek Specific Plan
Noise Measurement Data

Summary

File Name on Meter

File Name on PC

Serial Number

Model

Firmware Version

User

Location

Job Description

Note

LxT_Data.054.s

LxT_0003896-20251107 102958-LxT_Data.054.ldbin

0003896

SoundTrack LxT®

2.404

Measurement 3

San Marcos Creek Specific Plan Update

Measurement

Description

Start

2025-11-07 10:29:58

Stop

2025-11-07 10:45:06

Duration

00:15:08.4

Run Time

00:15:01.9

Pause

00:00:06.5

Pre-Calibration

2025-11-07 08:57:56

Post-Calibration

None

Calibration Deviation

Overall Settings

RMS Weight

A Weighting

Peak Weight

A Weighting

Detector

Slow

Preamplifier

PRMLxT1

Microphone Correction

Off

Integration Method

Linear

Overload

145.6 dB

A

C

Z

Under Range Peak

101.6

98.6

103.6 dB

Under Range Limit

38.8

38.4

45.5 dB

Noise Floor

29.6

29.3

36.3 dB

Results

LAeq

65.8

LAE

95.4

EA

382.548 µPa²h

EA8

12.216 mPa²h

EA40

61.079 mPa²h

LApeak (max)

2025-11-07 10:35:47

103.2 dB

LASmax

2025-11-07 10:35:48

85.2 dB

LASmin

2025-11-07 10:43:13

46.6 dB

SEA

-99.9 dB

LAS > 60.0 dB (Exceedance Counts / Duration)

15

762.6 s

LAS > 70.0 dB (Exceedance Counts / Duration)

6

29.2 s

LApeak > 135.0 dB (Exceedance Counts / Duration)

0

0.0 s

LApeak > 137.0 dB (Exceedance Counts / Duration)

0

0.0 s

LApeak > 140.0 dB (Exceedance Counts / Duration)

0

0.0 s

LCeq

73.5 dB

LAeq

65.8 dB

LCeq - LAeq

7.7 dB

LAleq

67.4 dB

LAeq

65.8 dB

LAleq - LAeq

1.6 dB

A

C

Z

dB

Time Stamp

dB

Time Stamp

dB

Time Stamp

Leq

65.8

73.5

LS(max)

85.2

2025/11/07 10:35:48

LS(min)

46.6

2025/11/07 10:43:13

LPeak(max)

103.2

2025/11/07 10:35:47

Overload Count

0

Overload Duration

0.0 s

Dose Settings

Dose Name

OSHA-1

OSHA-2

Exchange Rate

5

5 dB

Threshold

90

80 dB

Criterion Level

90

90 dB

Criterion Duration

8

8 h

Results

Dose

-99.94

0.01 %

Projected Dose

-99.94

0.19 %

TWA (Projected)

-99.9

44.6 dB

TWA (t)

-99.9

19.6 dB

Lep (t)

50.8

50.8 dB

Statistics

LA5.00

68.5 dB

LA10.00

67.4 dB

LA33.30

64.8 dB

LA50.00

63.1 dB

LA66.60

61.5 dB

LA90.00

56.7 dB

10624 San Marcos Creek Specific Plan
Noise Measurement Data

Summary

File Name on Meter

File Name on PC

Serial Number

Model

Firmware Version

User

Location

Job Description

Note

LxT_Data.055.s

LxT_0003896-20251107 110658-LxT_Data.055.lbin

0003896

SoundTrack LxT®

2.404

Measurement 4

San Marcos Creek Specific Plan Update

Measurement

Description

Start

2025-11-07 11:06:58

Stop

2025-11-07 11:22:06

Duration

00:15:08.1

Run Time

00:15:03.3

Pause

00:00:04.8

Pre-Calibration

2025-11-07 08:57:56

Post-Calibration

None

Calibration Deviation

Overall Settings

RMS Weight

A Weighting

Peak Weight

A Weighting

Detector

Slow

Preamplifier

PRMLxT1

Microphone Correction

Off

Integration Method

Linear

Overload

145.6 dB

A

C

Z

Under Range Peak

101.6

98.6

103.6 dB

Under Range Limit

38.8

38.4

45.5 dB

Noise Floor

29.6

29.3

36.3 dB

Results

LAeq

58.9

LAE

88.5

EA

78.593

µPa²h

EA8

2.506

mPa²h

EA40

12.529

mPa²h

LAPeak (max)

2025-11-07 11:16:23

89.6 dB

LASmax

2025-11-07 11:16:23

73.7 dB

LASmin

2025-11-07 11:18:51

47.7 dB

SEA

-99.9

dB

LAS > 60.0 dB (Exceedance Counts / Duration)

29

228.8 s

LAS > 70.0 dB (Exceedance Counts / Duration)

2

7.6 s

LAPeak > 135.0 dB (Exceedance Counts / Duration)

0

0.0 s

LAPeak > 137.0 dB (Exceedance Counts / Duration)

0

0.0 s

LAPeak > 140.0 dB (Exceedance Counts / Duration)

0

0.0 s

LCeq

71.4

dB

LAeq

58.9

dB

LCeq - LAeq

12.4

dB

LAleq

60.3

dB

LAeq

58.9

dB

LAleq - LAeq

1.4

dB

A

C

Z

dB

Time Stamp

dB

Time Stamp

dB

Time Stamp

Leq

58.9

2025/11/07 11:16:23

71.4

2025/11/07 11:18:51

LS(max)

73.7

2025/11/07 11:16:23

LS(min)

47.7

2025/11/07 11:18:51

LPeak(max)

89.6

2025/11/07 11:16:23

Overload Count

0

Overload Duration

0.0 s

Dose Settings

Dose Name

OSHA-1

OSHA-2

Exchange Rate

5

5 dB

Threshold

90

80 dB

Criterion Level

90

90 dB

Criterion Duration

8

8 h

Results

Dose

-99.94

-99.94 %

Projected Dose

-99.94

-99.94 %

TWA (Projected)

-99.9

-99.9 dB

TWA (t)

-99.9

-99.9 dB

Lep (t)

43.9

43.9 dB

Statistics

LA5.00

64.1

dB

LA10.00

61.9

dB

LA33.30

57.9

dB

LA50.00

55.6

dB

LA66.60

53.6

dB

LA90.00

50.4

dB

Summary	
File Name on Meter	LxT_Data.056.s
File Name on PC	LxT_0003896-20251107 114558-LxT_Data.056.ldbin
Serial Number	0003896
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	Measurement 5
Job Description	San Marcos Creek Specific Plan Update
Note	

Measurement	
Description	
Start	2025-11-07 11:45:58
Stop	2025-11-07 12:01:03
Duration	00:15:04.6
Run Time	00:15:00.9
Pause	00:00:03.7
Pre-Calibration	2025-11-07 08:57:56
Post-Calibration	None
Calibration Deviation	---

Overall Settings			
RMS Weight	A Weighting		
Peak Weight	A Weighting		
Detector	Slow		
Preamplifier	PRMLxT1		
Microphone Correction	Off		
Integration Method	Linear		
Overload	145.6 dB		
	A	C	Z
Under Range Peak	101.6	98.6	103.6 dB
Under Range Limit	38.8	38.4	45.5 dB
Noise Floor	29.6	29.3	36.3 dB

Results				
LAeq				64.4
LAE				93.9
EA				274.840 μPa²h
EA8				8.786 mPa²h
EA40				43.930 mPa²h
LApeak (max)	2025-11-07	11:57:20		108.5 dB
LASmax	2025-11-07	11:57:20		89.4 dB
LASmin	2025-11-07	11:50:27		49.0 dB
SEA				-99.9 dB

LAS > 60.0 dB (Exceedance Counts / Duration)	34	519.8 s
LAS > 70.0 dB (Exceedance Counts / Duration)	3	15.3 s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

LCeq	73.2 dB
LAeq	64.4 dB
LCeq - LAeq	8.8 dB
LAlaq	69.7 dB
LAeq	64.4 dB
LAlaq - LAeq	5.3 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	64.4		73.2			
LS(max)	89.4	2025/11/07 11:57:20				
LS(min)	49.0	2025/11/07 11:50:27				
LPeak(max)	108.5	2025/11/07 11:57:20				

Overload Count	0
Overload Duration	0.0 s

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.94	0.01 %
Projected Dose	-99.94	0.19 %
TWA (Projected)	-99.9	45.0 dB
TWA (t)	-99.9	20.0 dB
Lep (t)	49.3	49.3 dB

Statistics	
LA5.00	65.2 dB
LA10.00	63.4 dB
LA33.30	61.3 dB
LA50.00	59.7 dB
LA66.60	57.6 dB
LA90.00	53.8 dB

10624 San Marcos Creek Specific Plan Noise Measurement Data

Summary

File Name on Meter

File Name on PC

Serial Number

Model

Firmware Version

User

Location

Job Description

Note

LxT_Data.057.s

LxT_0003896-20251107 122759-LxT_Data.057.ldbin

0003896

SoundTrack LxT®

2.404

Measurement 6

San Marcos Creek Specific Plan Update

Measurement

Description

Start

Stop

Duration

Run Time

Pause

2025-11-07 12:27:59

2025-11-07 12:43:03

00:15:04.3

00:15:01.5

00:00:02.8

Pre-Calibration

Post-Calibration

Calibration Deviation

2025-11-07 08:57:56

None

Overall Settings

RMS Weight

Peak Weight

Detector

Preamplifier

Microphone Correction

Integration Method

Overload

A Weighting

A Weighting

Slow

PRMLxT1

Off

Linear

145.6 dB

A

C

Z

Under Range Peak

Under Range Limit

Noise Floor

101.6

38.8

29.6

98.6

38.4

29.3

103.6 dB

45.5 dB

36.3 dB

Results

LAeq

LAE

EA

EA8

EA40

LApeak (max)

LASmax

LASmin

SEA

LAS > 60.0 dB (Exceedance Counts / Duration)

LAS > 70.0 dB (Exceedance Counts / Duration)

LApeak > 135.0 dB (Exceedance Counts / Duration)

LApeak > 137.0 dB (Exceedance Counts / Duration)

LApeak > 140.0 dB (Exceedance Counts / Duration)

LCeq

LAeq

LCeq - LAeq

LAleq

LAeq

LAeq - LAeq

71.9

101.4

1.536 mPa²h

49.067 mPa²h

245.334 mPa²h

2025-11-07 12:42:30

2025-11-07 12:42:30

2025-11-07 12:36:58

-99.9 dB

1

14

0

0

0

82.2 dB

71.9 dB

10.4 dB

75.3 dB

71.9 dB

3.5 dB

111.4 dB

90.2 dB

59.0 dB

ATTACHMENT 2

SoundPLAN Data – Future Vehicle Traffic Noise

10624 San Marcos Creek Specific Plan
SoundPLAN Data - Traffic

Station	Traffic values							Control	Constr.	Affect.		Gradient
km	ADT	Vehicles type	Vehicle nar day	evening	night	Speed		device	Speed	veh.	Road surface	Min / Max
	Veh/24h		Veh/h	Veh/h	Veh/h	km/h			km/h	%		%
Las Posas Road												
		Traffic direction:	In entry direction									
0+000	12999	Total	-	834	433	188	-	none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Automobiles	-	779	404	176	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Medium trucks	-	24	13	5	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Heavy trucks	-	14	7	3	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Buses	-	8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Motorcycles	-	8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12999	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+213	-	-	-	-	-	-	-	-	-	-	-	-
Via Vera Cruz												
		Traffic direction:	In entry direction									
0+000	19500	Total	-	1251	650	282	-	none	-	-	Average (of DGAC and PCC)	0
0+000	19500	Automobiles	-	1168	607	263	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19500	Medium trucks	-	36	19	8	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19500	Heavy trucks	-	21	11	5	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19500	Buses	-	13	7	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19500	Motorcycles	-	13	7	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19500	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+220	21396	Total	-	1373	713	309	-	none	-	-	Average (of DGAC and PCC)	0
0+220	21396	Automobiles	-	1282	666	289	56	none	-	-	Average (of DGAC and PCC)	0
0+220	21396	Medium trucks	-	40	21	9	56	none	-	-	Average (of DGAC and PCC)	0
0+220	21396	Heavy trucks	-	23	12	5	56	none	-	-	Average (of DGAC and PCC)	0
0+220	21396	Buses	-	14	7	3	56	none	-	-	Average (of DGAC and PCC)	0
0+220	21396	Motorcycles	-	14	7	3	56	none	-	-	Average (of DGAC and PCC)	0
0+220	21396	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+899	-	-	-	-	-	-	-	-	-	-	-	-
Bent Avenue												
		Traffic direction:	In entry direction									
0+000	13497	Total	-	866	450	195	-	none	-	-	Average (of DGAC and PCC)	0
0+000	13497	Automobiles	-	809	420	182	64	none	-	-	Average (of DGAC and PCC)	0
0+000	13497	Medium trucks	-	25	13	6	64	none	-	-	Average (of DGAC and PCC)	0
0+000	13497	Heavy trucks	-	15	8	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	13497	Buses	-	9	5	2	64	none	-	-	Average (of DGAC and PCC)	0
0+000	13497	Motorcycles	-	9	5	2	64	none	-	-	Average (of DGAC and PCC)	0
0+000	13497	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+202	24906	Total	-	1598	830	360	-	none	-	-	Average (of DGAC and PCC)	0
0+202	24906	Automobiles	-	1493	775	336	48	none	-	-	Average (of DGAC and PCC)	0
0+202	24906	Medium trucks	-	46	24	10	48	none	-	-	Average (of DGAC and PCC)	0
0+202	24906	Heavy trucks	-	27	14	6	48	none	-	-	Average (of DGAC and PCC)	0
0+202	24906	Buses	-	16	8	4	48	none	-	-	Average (of DGAC and PCC)	0
0+202	24906	Motorcycles	-	16	8	4	48	none	-	-	Average (of DGAC and PCC)	0
0+202	24906	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+439	10203	Total	-	655	340	147	-	none	-	-	Average (of DGAC and PCC)	0
0+439	10203	Automobiles	-	612	318	137	48	none	-	-	Average (of DGAC and PCC)	0
0+439	10203	Medium trucks	-	19	10	4	48	none	-	-	Average (of DGAC and PCC)	0
0+439	10203	Heavy trucks	-	11	6	2	48	none	-	-	Average (of DGAC and PCC)	0
0+439	10203	Buses	-	7	3	1	48	none	-	-	Average (of DGAC and PCC)	0
0+439	10203	Motorcycles	-	7	3	1	48	none	-	-	Average (of DGAC and PCC)	0
0+439	10203	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+703	-	-	-	-	-	-	-	-	-	-	-	-
Grand Avenue												
		Traffic direction:	In entry direction									
0+000	12504	Total	-	802	417	181	-	none	-	-	Average (of DGAC and PCC)	0
0+000	12504	Automobiles	-	749	389	169	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12504	Medium trucks	-	23	12	5	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12504	Heavy trucks	-	14	7	3	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12504	Buses	-	8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12504	Motorcycles	-	8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12504	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+214	29298	Total	-	1880	977	423	-	none	-	-	Average (of DGAC and PCC)	0
0+214	29298	Automobiles	-	1756	913	395	72	none	-	-	Average (of DGAC and PCC)	0
0+214	29298	Medium trucks	-	55	28	12	72	none	-	-	Average (of DGAC and PCC)	0
0+214	29298	Heavy trucks	-	32	17	7	72	none	-	-	Average (of DGAC and PCC)	0
0+214	29298	Buses	-	19	10	4	72	none	-	-	Average (of DGAC and PCC)	0
0+214	29298	Motorcycles	-	19	10	4	72	none	-	-	Average (of DGAC and PCC)	0
0+214	29298	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+449	20799	Total	-	1335	693	300	-	none	-	-	Average (of DGAC and PCC)	0
0+449	20799	Automobiles	-	1247	647	280	72	none	-	-	Average (of DGAC and PCC)	0
0+449	20799	Medium trucks	-	39	20	9	72	none	-	-	Average (of DGAC and PCC)	0
0+449	20799	Heavy trucks	-	23	12	5	72	none	-	-	Average (of DGAC and PCC)	0
0+449	20799	Buses	-	13	7	3	72	none	-	-	Average (of DGAC and PCC)	0
0+449	20799	Motorcycles	-	13	7	3	72	none	-	-	Average (of DGAC and PCC)	0
0+449	20799	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+557	-	-	-	-	-	-	-	-	-	-	-	-

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San Marcos Boulevard	Traffic direction:	In entry direction								
0+000	63807 Total	-	4094	2127	922	-	none	-	-	Average (of DGAC and PCC) 0
0+000	63807 Automobiles	-	3824	1987	861	72	none	-	-	Average (of DGAC and PCC) 0
0+000	63807 Medium trucks	-	119	62	27	72	none	-	-	Average (of DGAC and PCC) 0
0+000	63807 Heavy trucks	-	70	36	16	72	none	-	-	Average (of DGAC and PCC) 0
0+000	63807 Buses	-	41	21	9	72	none	-	-	Average (of DGAC and PCC) 0
0+000	63807 Motorcycles	-	41	21	9	72	none	-	-	Average (of DGAC and PCC) 0
0+000	63807 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
0+339	44001 Total	-	2823	1467	636	-	none	-	-	Average (of DGAC and PCC) 0
0+339	44001 Automobiles	-	2637	1370	594	72	none	-	-	Average (of DGAC and PCC) 0
0+339	44001 Medium trucks	-	82	43	18	72	none	-	-	Average (of DGAC and PCC) 0
0+339	44001 Heavy trucks	-	48	25	11	72	none	-	-	Average (of DGAC and PCC) 0
0+339	44001 Buses	-	28	15	6	72	none	-	-	Average (of DGAC and PCC) 0
0+339	44001 Motorcycles	-	28	15	6	72	none	-	-	Average (of DGAC and PCC) 0
0+339	44001 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
0+754	44496 Total	-	2855	1483	643	-	none	-	-	Average (of DGAC and PCC) 0
0+754	44496 Automobiles	-	2667	1385	601	72	none	-	-	Average (of DGAC and PCC) 0
0+754	44496 Medium trucks	-	83	43	19	72	none	-	-	Average (of DGAC and PCC) 0
0+754	44496 Heavy trucks	-	49	25	11	72	none	-	-	Average (of DGAC and PCC) 0
0+754	44496 Buses	-	29	15	6	72	none	-	-	Average (of DGAC and PCC) 0
0+754	44496 Motorcycles	-	29	15	6	72	none	-	-	Average (of DGAC and PCC) 0
0+754	44496 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
1+046	49701 Total	-	3189	1657	718	-	none	-	-	Average (of DGAC and PCC) 0
1+046	49701 Automobiles	-	2979	1548	671	72	none	-	-	Average (of DGAC and PCC) 0
1+046	49701 Medium trucks	-	92	48	21	72	none	-	-	Average (of DGAC and PCC) 0
1+046	49701 Heavy trucks	-	54	28	12	72	none	-	-	Average (of DGAC and PCC) 0
1+046	49701 Buses	-	32	17	7	72	none	-	-	Average (of DGAC and PCC) 0
1+046	49701 Motorcycles	-	32	17	7	72	none	-	-	Average (of DGAC and PCC) 0
1+046	49701 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
1+629	53796 Total	-	3452	1793	777	-	none	-	-	Average (of DGAC and PCC) 0
1+629	53796 Automobiles	-	3224	1675	726	72	none	-	-	Average (of DGAC and PCC) 0
1+629	53796 Medium trucks	-	100	52	23	72	none	-	-	Average (of DGAC and PCC) 0
1+629	53796 Heavy trucks	-	59	30	13	72	none	-	-	Average (of DGAC and PCC) 0
1+629	53796 Buses	-	35	18	8	72	none	-	-	Average (of DGAC and PCC) 0
1+629	53796 Motorcycles	-	35	18	8	72	none	-	-	Average (of DGAC and PCC) 0
1+629	53796 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
2+214	48999 Total	-	3144	1633	708	-	none	-	-	Average (of DGAC and PCC) 0
2+214	48999 Automobiles	-	2936	1525	661	64	none	-	-	Average (of DGAC and PCC) 0
2+214	48999 Medium trucks	-	91	47	21	64	none	-	-	Average (of DGAC and PCC) 0
2+214	48999 Heavy trucks	-	53	28	12	64	none	-	-	Average (of DGAC and PCC) 0
2+214	48999 Buses	-	31	16	7	64	none	-	-	Average (of DGAC and PCC) 0
2+214	48999 Motorcycles	-	31	16	7	64	none	-	-	Average (of DGAC and PCC) 0
2+214	48999 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
2+502	73704 Total	-	4729	2457	1065	-	none	-	-	Average (of DGAC and PCC) 0
2+502	73704 Automobiles	-	4417	2295	995	64	none	-	-	Average (of DGAC and PCC) 0
2+502	73704 Medium trucks	-	137	71	31	64	none	-	-	Average (of DGAC and PCC) 0
2+502	73704 Heavy trucks	-	80	42	18	64	none	-	-	Average (of DGAC and PCC) 0
2+502	73704 Buses	-	47	25	11	64	none	-	-	Average (of DGAC and PCC) 0
2+502	73704 Motorcycles	-	47	25	11	64	none	-	-	Average (of DGAC and PCC) 0
2+502	73704 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
2+697	68310 Total	-	4383	2277	987	-	none	-	-	Average (of DGAC and PCC) 0
2+697	68310 Automobiles	-	4094	2127	922	64	none	-	-	Average (of DGAC and PCC) 0
2+697	68310 Medium trucks	-	127	66	29	64	none	-	-	Average (of DGAC and PCC) 0
2+697	68310 Heavy trucks	-	75	39	17	64	none	-	-	Average (of DGAC and PCC) 0
2+697	68310 Buses	-	44	23	10	64	none	-	-	Average (of DGAC and PCC) 0
2+697	68310 Motorcycles	-	44	23	10	64	none	-	-	Average (of DGAC and PCC) 0
2+697	68310 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
2+952	-	-	-	-	-	-	-	-	-	-

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Creekside Drive		Traffic direction:	In entry direction								
0+000	12900	Total	-	828	430	186	-	none	-	-	Average (of DGAC and PCC) 0
0+000	12900	Automobiles	-	773	402	174	40	none	-	-	Average (of DGAC and PCC) 0
0+000	12900	Medium trucks	-	24	12	5	40	none	-	-	Average (of DGAC and PCC) 0
0+000	12900	Heavy trucks	-	14	7	3	40	none	-	-	Average (of DGAC and PCC) 0
0+000	12900	Buses	-	8	4	2	40	none	-	-	Average (of DGAC and PCC) 0
0+000	12900	Motorcycles	-	8	4	2	40	none	-	-	Average (of DGAC and PCC) 0
0+000	12900	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
0+295	-	-	-	-	-	-	-	-	-	-	-
Discovery Street/La Sombra Drive		Traffic direction:	In entry direction								
0+000	20697	Total	-	1328	690	299	-	none	-	-	Average (of DGAC and PCC) 0
0+000	20697	Automobiles	-	1240	644	279	64	none	-	-	Average (of DGAC and PCC) 0
0+000	20697	Medium trucks	-	39	20	9	64	none	-	-	Average (of DGAC and PCC) 0
0+000	20697	Heavy trucks	-	23	12	5	64	none	-	-	Average (of DGAC and PCC) 0
0+000	20697	Buses	-	13	7	3	64	none	-	-	Average (of DGAC and PCC) 0
0+000	20697	Motorcycles	-	13	7	3	64	none	-	-	Average (of DGAC and PCC) 0
0+000	20697	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
0+533	4401	Total	-	282	147	64	-	none	-	-	Average (of DGAC and PCC) 0
0+533	4401	Automobiles	-	263	137	60	40	none	-	-	Average (of DGAC and PCC) 0
0+533	4401	Medium trucks	-	8	4	2	40	none	-	-	Average (of DGAC and PCC) 0
0+533	4401	Heavy trucks	-	5	2	1	40	none	-	-	Average (of DGAC and PCC) 0
0+533	4401	Buses	-	3	1	1	40	none	-	-	Average (of DGAC and PCC) 0
0+533	4401	Motorcycles	-	3	1	1	40	none	-	-	Average (of DGAC and PCC) 0
0+533	4401	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
0+681	-	-	-	-	-	-	-	-	-	-	-
Discovery Street		Traffic direction:	In entry direction								
0+000	21003	Total	-	1348	700	303	-	none	-	-	Average (of DGAC and PCC) 0
0+000	21003	Automobiles	-	1259	654	283	64	none	-	-	Average (of DGAC and PCC) 0
0+000	21003	Medium trucks	-	39	20	9	64	none	-	-	Average (of DGAC and PCC) 0
0+000	21003	Heavy trucks	-	23	12	5	64	none	-	-	Average (of DGAC and PCC) 0
0+000	21003	Buses	-	13	7	3	64	none	-	-	Average (of DGAC and PCC) 0
0+000	21003	Motorcycles	-	13	7	3	64	none	-	-	Average (of DGAC and PCC) 0
0+000	21003	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
0+470	19602	Total	-	1258	653	283	-	none	-	-	Average (of DGAC and PCC) 0
0+470	19602	Automobiles	-	1175	610	264	64	none	-	-	Average (of DGAC and PCC) 0
0+470	19602	Medium trucks	-	36	19	8	64	none	-	-	Average (of DGAC and PCC) 0
0+470	19602	Heavy trucks	-	21	11	5	64	none	-	-	Average (of DGAC and PCC) 0
0+470	19602	Buses	-	13	7	3	64	none	-	-	Average (of DGAC and PCC) 0
0+470	19602	Motorcycles	-	13	7	3	64	none	-	-	Average (of DGAC and PCC) 0
0+470	19602	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
1+053	27504	Total	-	1765	917	397	-	none	-	-	Average (of DGAC and PCC) 0
1+053	27504	Automobiles	-	1649	856	371	64	none	-	-	Average (of DGAC and PCC) 0
1+053	27504	Medium trucks	-	51	27	12	64	none	-	-	Average (of DGAC and PCC) 0
1+053	27504	Heavy trucks	-	30	16	7	64	none	-	-	Average (of DGAC and PCC) 0
1+053	27504	Buses	-	18	9	4	64	none	-	-	Average (of DGAC and PCC) 0
1+053	27504	Motorcycles	-	18	9	4	64	none	-	-	Average (of DGAC and PCC) 0
1+053	27504	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
1+638	20304	Total	-	1303	677	293	-	none	-	-	Average (of DGAC and PCC) 0
1+638	20304	Automobiles	-	1217	632	274	64	none	-	-	Average (of DGAC and PCC) 0
1+638	20304	Medium trucks	-	38	20	8	64	none	-	-	Average (of DGAC and PCC) 0
1+638	20304	Heavy trucks	-	22	12	5	64	none	-	-	Average (of DGAC and PCC) 0
1+638	20304	Buses	-	13	7	3	64	none	-	-	Average (of DGAC and PCC) 0
1+638	20304	Motorcycles	-	13	7	3	64	none	-	-	Average (of DGAC and PCC) 0
1+638	20304	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
1+780	26904	Total	-	1726	897	389	-	none	-	-	Average (of DGAC and PCC) 0
1+780	26904	Automobiles	-	1612	838	363	64	none	-	-	Average (of DGAC and PCC) 0
1+780	26904	Medium trucks	-	50	26	11	64	none	-	-	Average (of DGAC and PCC) 0
1+780	26904	Heavy trucks	-	29	15	7	64	none	-	-	Average (of DGAC and PCC) 0
1+780	26904	Buses	-	17	9	4	64	none	-	-	Average (of DGAC and PCC) 0
1+780	26904	Motorcycles	-	17	9	4	64	none	-	-	Average (of DGAC and PCC) 0
1+780	26904	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
3+200	-	-	-	-	-	-	-	-	-	-	-

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SR-78	Traffic direction: In entry direction									
0+000	155094 Total	-	9952	5170	2240	-	none	-	-	Average (of DGAC and PCC) 0
0+000	155094 Automobiles	-	9295	4829	2092	105	none	-	-	Average (of DGAC and PCC) 0
0+000	155094 Medium trucks	-	289	150	65	89	none	-	-	Average (of DGAC and PCC) 0
0+000	155094 Heavy trucks	-	169	88	38	89	none	-	-	Average (of DGAC and PCC) 0
0+000	155094 Buses	-	100	52	22	105	none	-	-	Average (of DGAC and PCC) 0
0+000	155094 Motorcycles	-	100	52	22	105	none	-	-	Average (of DGAC and PCC) 0
0+000	155094 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
1+210	137997 Total	-	8855	4600	1993	-	none	-	-	Average (of DGAC and PCC) 0
1+210	137997 Automobiles	-	8271	4296	1861	105	none	-	-	Average (of DGAC and PCC) 0
1+210	137997 Medium trucks	-	257	133	58	89	none	-	-	Average (of DGAC and PCC) 0
1+210	137997 Heavy trucks	-	151	78	34	89	none	-	-	Average (of DGAC and PCC) 0
1+210	137997 Buses	-	89	46	20	105	none	-	-	Average (of DGAC and PCC) 0
1+210	137997 Motorcycles	-	89	46	20	105	none	-	-	Average (of DGAC and PCC) 0
1+210	137997 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
1+831	-	-	-	-	-	-	-	-	-	-
Grand Avenue Extension Traffic direction: In entry direction										
0+449	20799 Total	-	1335	693	300	-	none	-	-	Average (of DGAC and PCC) 0
0+449	20799 Automobiles	-	1247	647	280	72	none	-	-	Average (of DGAC and PCC) 0
0+449	20799 Medium trucks	-	39	20	9	72	none	-	-	Average (of DGAC and PCC) 0
0+449	20799 Heavy trucks	-	23	12	5	72	none	-	-	Average (of DGAC and PCC) 0
0+449	20799 Buses	-	13	7	3	72	none	-	-	Average (of DGAC and PCC) 0
0+449	20799 Motorcycles	-	13	7	3	72	none	-	-	Average (of DGAC and PCC) 0
0+449	20799 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC) 0
0+797	-	-	-	-	-	-	-	-	-	-

ATTACHMENT 3

FHWA RD-77-108 – Off-site Traffic Noise Calculations

**FHWA RD-77-108
Traffic Noise Prediction Model**

Data Input Sheet

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Existing

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway Name	Segment	Traffic Vol.	Speed	Distance	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
				(Mph)	to CL							
1	Las Posas Rd	Grand Ave to La Mirada Dr	16,359	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
2	Las Posas Rd	La Mirada Dr to Linda Vista Dr	12,985	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
3	Las Posas Rd	Linda Vista Dr to San Marcos Blvd	9,557	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
4	Via Vera Cruz	Grand Ave to Linda Vista Dr	9,814	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
5	Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	10,168	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
6	Via Vera Cruz	San Marcos Blvd to Discovery St	6,908	35	50	95.40	2.90	1.70	77.00	10.00	13.00	
7	Bent Ave	Grand Ave to San Marcos Blvd	7,281	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
8	Bent Ave	San Marcos Blvd to Creekside Dr	7,571	30	50	95.40	2.90	1.70	77.00	10.00	13.00	
9	Bent Ave	Creekside Dr to Discovery St	7,571	30	50	95.40	2.90	1.70	77.00	10.00	13.00	
10	Grand Ave	Las Posas Rd to Via Vera Cruz	23,061	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
11	Grand Ave	Via Vera Cruz to Bent Ave	12,292	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
12	Grand Ave	Bent Ave to San Marcos Blvd	11,914	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
13	Grand Ave	San Marcos Blvd to Creekside Dr	9,215	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
14	Grand Ave	Creekside Dr to Discovery St	0	45	50		2.90	1.70	77.00	10.00		
15	Linda Vista Dr	Las Posas Rd to Via Vera Cruz	5,003	35	50	95.40	2.90	1.70	77.00	10.00	13.00	
16	Linda Vista Dr	Via Vera Cruz to Grand Ave	3,972	35	50	95.40	2.90	1.70	77.00	10.00	13.00	
17	San Marcos Blvd	Knights Realm to Discovery St	41,351	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
18	San Marcos Blvd	Discovery St to Pacific St	36,521	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
19	San Marcos Blvd	Pacific St to Las Posas Rd	36,875	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
20	San Marcos Blvd	Las Posas Rd to Via Vera Cruz	32,141	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
21	San Marcos Blvd	Via Vera Cruz to Bent Ave	36,890	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
22	San Marcos Blvd	Bent Ave to Grand Ave	39,415	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
23	San Marcos Blvd	Grand Ave to SR-78 EB Ramps	51,538	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
24	San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	47,476	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
25	San Marcos Blvd	Knoll Rd to Travelers Wy	24,363	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
26	Creekside Dr	Bent Ave to Grand Ave	5,131	25	50	97.00	2.00	1.00	77.00	10.00	13.00	
27	Discovery St	Via Vera Cruz to Bent Ave	16,122	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
28	Discovery St	Bent Ave to Craven Rd	22,544	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
29	Discovery St	Craven Rd to N City Dr	10,559	40	50	97.00	2.00	1.00	77.00	10.00	13.00	

**FHWA RD-77-108
Traffic Noise Prediction Model**

Data Input Sheet

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Existing

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

**FHWA RD-77-108
Traffic Noise Prediction Model**

Predicted Noise Levels

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Existing
Assessment Metric: Hard

Segment	Roadway Name	Segment	Noise Levels, dBA Hard				Distance to Traffic Noise Level Contours, Feet					
			Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
1	Las Posas Rd	Grand Ave to La Mirada Dr	69.7	62.7	64.9	71.5	22	71	223	706	2,233	7,063
2	Las Posas Rd	La Mirada Dr to Linda Vista Dr	68.7	61.7	63.9	70.5	18	56	177	561	1,774	5,610
3	Las Posas Rd	Linda Vista Dr to San Marcos Blvd	67.3	60.4	62.6	69.2	13	42	132	416	1,315	4,159
4	Via Vera Cruz	Grand Ave to Linda Vista Dr	66.0	59.7	62.2	68.2	10	33	104	330	1,045	3,303
5	Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	66.1	59.9	62.4	68.3	11	34	107	338	1,069	3,380
6	Via Vera Cruz	San Marcos Blvd to Discovery St	62.8	57.3	60.2	65.4	5	17	55	173	548	1,734
7	Bent Ave	Grand Ave to San Marcos Blvd	64.7	58.4	60.9	66.9	8	24	77	245	774	2,449
8	Bent Ave	San Marcos Blvd to Creekside Dr	61.2	56.6	61.5	65.0	5	16	50	158	500	1,581
9	Bent Ave	Creekside Dr to Discovery St	61.2	56.6	61.5	65.0	5	16	50	158	500	1,581
10	Grand Ave	Las Posas Rd to Via Vera Cruz	71.2	64.2	66.4	73.0	32	100	315	998	3,155	9,976
11	Grand Ave	Via Vera Cruz to Bent Ave	68.4	61.5	63.7	70.3	17	54	169	536	1,694	5,358
12	Grand Ave	Bent Ave to San Marcos Blvd	68.3	61.4	63.5	70.2	17	52	166	524	1,656	5,236
13	Grand Ave	San Marcos Blvd to Creekside Dr	67.2	60.2	62.4	69.0	13	40	126	397	1,256	3,972
14	Grand Ave	Creekside Dr to Discovery St	#VALUE!									
15	Linda Vista Dr	Las Posas Rd to Via Vera Cruz	61.4	55.9	58.8	64.0	4	13	40	126	397	1,256
16	Linda Vista Dr	Via Vera Cruz to Grand Ave	60.4	54.9	57.8	63.0	3	10	32	100	315	998
17	San Marcos Blvd	Knights Realm to Discovery St	73.7	66.8	68.9	75.6	57	182	574	1,815	5,741	18,154
18	San Marcos Blvd	Discovery St to Pacific St	73.2	66.2	68.4	75.0	50	158	500	1,581	5,000	15,811
19	San Marcos Blvd	Pacific St to Las Posas Rd	73.2	66.3	68.4	75.1	51	162	512	1,618	5,116	16,180
20	San Marcos Blvd	Las Posas Rd to Via Vera Cruz	72.6	65.7	67.9	74.5	45	141	446	1,409	4,456	14,092
21	San Marcos Blvd	Via Vera Cruz to Bent Ave	73.2	66.3	68.5	75.1	51	162	512	1,618	5,116	16,180
22	San Marcos Blvd	Bent Ave to Grand Ave	72.0	65.8	68.3	74.2	42	132	416	1,315	4,159	13,151
23	San Marcos Blvd	Grand Ave to SR-78 EB Ramps	73.2	66.9	69.4	75.4	55	173	548	1,734	5,482	17,337
24	San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	72.8	66.6	69.1	75.0	50	158	500	1,581	5,000	15,811
25	San Marcos Blvd	Knoll Rd to Travelers Wy	69.9	63.7	66.2	72.1	26	81	256	811	2,564	8,109
26	Creekside Dr	Bent Ave to Grand Ave	57.3	52.1	56.7	60.7	2	6	19	59	186	587
27	Discovery St	Via Vera Cruz to Bent Ave	68.2	60.3	62.1	69.7	15	47	148	467	1,476	4,666
28	Discovery St	Bent Ave to Craven Rd	69.7	61.7	63.5	71.1	20	64	204	644	2,037	6,441
29	Discovery St	Craven Rd to N City Dr	66.4	58.4	60.2	67.8	10	30	95	301	953	3,013

FHWA RD-77-108
Traffic Noise Prediction Model

Data Input Sheet

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Horizon Year Without Project

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway Name	Segment	Speed		Distance	Traffic Vol.	(Mph)	to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
1	Las Posas Rd	Grand Ave to La Mirada Dr	31,300	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
2	Las Posas Rd	La Mirada Dr to Linda Vista Dr	24,700	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
3	Las Posas Rd	Linda Vista Dr to San Marcos Blvd	17,900	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
4	Via Vera Cruz	Grand Ave to Linda Vista Dr	23,000	40	50	95.40	2.90	1.70	77.00	10.00	13.00				
5	Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	21,200	40	50	95.40	2.90	1.70	77.00	10.00	13.00				
6	Via Vera Cruz	San Marcos Blvd to Discovery St	23,600	35	50	95.40	2.90	1.70	77.00	10.00	13.00				
7	Bent Ave	Grand Ave to San Marcos Blvd	16,400	40	50	95.40	2.90	1.70	77.00	10.00	13.00				
8	Bent Ave	San Marcos Blvd to Creekside Dr	30,800	30	50	95.40	2.90	1.70	77.00	10.00	13.00				
9	Bent Ave	Creekside Dr to Discovery St	12,700	30	50	95.40	2.90	1.70	77.00	10.00	13.00				
10	Grand Ave	Las Posas Rd to Via Vera Cruz	33,600	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
11	Grand Ave	Via Vera Cruz to Bent Ave	24,300	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
12	Grand Ave	Bent Ave to San Marcos Blvd	15,600	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
13	Grand Ave	San Marcos Blvd to Creekside Dr	35,400	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
14	Grand Ave	Creekside Dr to Discovery St	23,900	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
15	Linda Vista Dr	Las Posas Rd to Via Vera Cruz	15,800	35	50	95.40	2.90	1.70	77.00	10.00	13.00				
16	Linda Vista Dr	Via Vera Cruz to Grand Ave	8,300	35	50	95.40	2.90	1.70	77.00	10.00	13.00				
17	San Marcos Blvd	Knights Realm to Discovery St	73,000	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
18	San Marcos Blvd	Discovery St to Pacific St	53,200	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
19	San Marcos Blvd	Pacific St to Las Posas Rd	53,700	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
20	San Marcos Blvd	Las Posas Rd to Via Vera Cruz	56,400	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
21	San Marcos Blvd	Via Vera Cruz to Bent Ave	57,600	45	50	95.40	2.90	1.70	77.00	10.00	13.00				
22	San Marcos Blvd	Bent Ave to Grand Ave	54,900	40	50	95.40	2.90	1.70	77.00	10.00	13.00				
23	San Marcos Blvd	Grand Ave to SR-78 EB Ramps	82,700	40	50	95.40	2.90	1.70	77.00	10.00	13.00				
24	San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	77,100	40	50	95.40	2.90	1.70	77.00	10.00	13.00				
25	San Marcos Blvd	Knoll Rd to Travelers Wy	44,200	40	50	95.40	2.90	1.70	77.00	10.00	13.00				
26	Creekside Dr	Bent Ave to Grand Ave	31,300	25	50	97.00	2.00	1.00	77.00	10.00	13.00				
27	Discovery St	Via Vera Cruz to Bent Ave	28,200	40	50	97.00	2.00	1.00	77.00	10.00	13.00				
28	Discovery St	Bent Ave to Craven Rd	25,800	40	50	97.00	2.00	1.00	77.00	10.00	13.00				
29	Discovery St	Craven Rd to N City Dr	29,200	40	50	97.00	2.00	1.00	77.00	10.00	13.00				

**FHWA RD-77-108
Traffic Noise Prediction Model**

Data Input Sheet

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Horizon Year Without Project

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

**FHWA RD-77-108
Traffic Noise Prediction Model**

Predicted Noise Levels

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Horizon Year Without Project
Assessment Metric: Hard

Segment	Roadway Name	Segment	Noise Levels, dBA Hard				Distance to Traffic Noise Level Contours, Feet					
			Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
1	Las Posas Rd	Grand Ave to La Mirada Dr	72.5	65.6	67.7	74.4	44	138	435	1,377	4,355	13,771
2	Las Posas Rd	La Mirada Dr to Linda Vista Dr	71.5	64.5	66.7	73.3	34	107	338	1,069	3,380	10,690
3	Las Posas Rd	Linda Vista Dr to San Marcos Blvd	70.1	63.1	65.3	71.9	24	77	245	774	2,449	7,744
4	Via Vera Cruz	Grand Ave to Linda Vista Dr	69.7	63.4	65.9	71.9	24	77	245	774	2,449	7,744
5	Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	69.3	63.1	65.6	71.5	22	71	223	706	2,233	7,063
6	Via Vera Cruz	San Marcos Blvd to Discovery St	68.1	62.6	65.5	70.7	19	59	186	587	1,858	5,874
7	Bent Ave	Grand Ave to San Marcos Blvd	68.2	62.0	64.5	70.4	17	55	173	548	1,734	5,482
8	Bent Ave	San Marcos Blvd to Creekside Dr	67.3	62.7	67.5	71.1	20	64	204	644	2,037	6,441
9	Bent Ave	Creekside Dr to Discovery St	63.5	58.9	63.7	67.3	8	27	85	269	849	2,685
10	Grand Ave	Las Posas Rd to Via Vera Cruz	72.8	65.9	68.0	74.7	47	148	467	1,476	4,666	14,756
11	Grand Ave	Via Vera Cruz to Bent Ave	71.4	64.5	66.6	73.3	34	107	338	1,069	3,380	10,690
12	Grand Ave	Bent Ave to San Marcos Blvd	69.5	62.5	64.7	71.3	21	67	213	674	2,133	6,745
13	Grand Ave	San Marcos Blvd to Creekside Dr	73.0	66.1	68.3	74.9	49	155	489	1,545	4,886	15,451
14	Grand Ave	Creekside Dr to Discovery St	71.3	64.4	66.6	73.2	33	104	330	1,045	3,303	10,446
15	Linda Vista Dr	Las Posas Rd to Via Vera Cruz	66.4	60.9	63.8	69.0	13	40	126	397	1,256	3,972
16	Linda Vista Dr	Via Vera Cruz to Grand Ave	63.6	58.1	61.0	66.2	7	21	66	208	659	2,084
17	San Marcos Blvd	Knights Realm to Discovery St	76.2	69.2	71.4	78.0	100	315	998	3,155	9,976	31,548
18	San Marcos Blvd	Discovery St to Pacific St	74.8	67.9	70.0	76.7	74	234	740	2,339	7,396	23,387
19	San Marcos Blvd	Pacific St to Las Posas Rd	74.8	67.9	70.1	76.7	74	234	740	2,339	7,396	23,387
20	San Marcos Blvd	Las Posas Rd to Via Vera Cruz	75.0	68.1	70.3	76.9	77	245	774	2,449	7,744	24,489
21	San Marcos Blvd	Via Vera Cruz to Bent Ave	75.1	68.2	70.4	77.0	79	251	792	2,506	7,924	25,059
22	San Marcos Blvd	Bent Ave to Grand Ave	73.4	67.2	69.7	75.6	57	182	574	1,815	5,741	18,154
23	San Marcos Blvd	Grand Ave to SR-78 EB Ramps	75.2	69.0	71.5	77.4	87	275	869	2,748	8,689	27,477
24	San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	74.9	68.7	71.2	77.1	81	256	811	2,564	8,109	25,643
25	San Marcos Blvd	Knoll Rd to Travelers Wy	72.5	66.3	68.8	74.7	47	148	467	1,476	4,666	14,756
26	Creekside Dr	Bent Ave to Grand Ave	65.2	60.0	64.6	68.6	11	36	115	362	1,145	3,622
27	Discovery St	Via Vera Cruz to Bent Ave	70.6	62.7	64.5	72.1	26	81	256	811	2,564	8,109
28	Discovery St	Bent Ave to Craven Rd	70.2	62.3	64.1	71.7	23	74	234	740	2,339	7,396
29	Discovery St	Craven Rd to N City Dr	70.8	62.8	64.7	72.3	27	85	269	849	2,685	8,491

**FHWA RD-77-108
Traffic Noise Prediction Model**

Data Input Sheet

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Horizon Year With Project

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway Name	Segment	Speed		Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
			Traffic Vol.	(Mph)								
1	Las Posas Rd	Grand Ave to La Mirada Dr	26,900	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
2	Las Posas Rd	La Mirada Dr to Linda Vista Dr	20,300	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
3	Las Posas Rd	Linda Vista Dr to San Marcos Blvd	13,000	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
4	Via Vera Cruz	Grand Ave to Linda Vista Dr	21,800	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
5	Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	19,500	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
6	Via Vera Cruz	San Marcos Blvd to Discovery St	21,400	35	50	95.40	2.90	1.70	77.00	10.00	13.00	
7	Bent Ave	Grand Ave to San Marcos Blvd	13,500	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
8	Bent Ave	San Marcos Blvd to Creekside Dr	24,900	30	50	95.40	2.90	1.70	77.00	10.00	13.00	
9	Bent Ave	Creekside Dr to Discovery St	10,200	30	50	95.40	2.90	1.70	77.00	10.00	13.00	
10	Grand Ave	Las Posas Rd to Via Vera Cruz	29,900	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
11	Grand Ave	Via Vera Cruz to Bent Ave	18,300	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
12	Grand Ave	Bent Ave to San Marcos Blvd	12,500	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
13	Grand Ave	San Marcos Blvd to Creekside Dr	29,300	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
14	Grand Ave	Creekside Dr to Discovery St	20,800	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
15	Linda Vista Dr	Las Posas Rd to Via Vera Cruz	15,200	35	50	95.40	2.90	1.70	77.00	10.00	13.00	
16	Linda Vista Dr	Via Vera Cruz to Grand Ave	8,300	35	50	95.40	2.90	1.70	77.00	10.00	13.00	
17	San Marcos Blvd	Knights Realm to Discovery St	63,800	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
18	San Marcos Blvd	Discovery St to Pacific St	44,000	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
19	San Marcos Blvd	Pacific St to Las Posas Rd	44,500	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
20	San Marcos Blvd	Las Posas Rd to Via Vera Cruz	49,700	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
21	San Marcos Blvd	Via Vera Cruz to Bent Ave	53,800	45	50	95.40	2.90	1.70	77.00	10.00	13.00	
22	San Marcos Blvd	Bent Ave to Grand Ave	49,000	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
23	San Marcos Blvd	Grand Ave to SR-78 EB Ramps	73,700	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
24	San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	68,300	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
25	San Marcos Blvd	Knoll Rd to Travelers Wy	38,000	40	50	95.40	2.90	1.70	77.00	10.00	13.00	
26	Creekside Dr	Bent Ave to Grand Ave	12,900	25	50	97.00	2.00	1.00	77.00	10.00	13.00	
27	Discovery St	Via Vera Cruz to Bent Ave	27,500	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
28	Discovery St	Bent Ave to Craven Rd	20,300	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
29	Discovery St	Craven Rd to N City Dr	26,900	40	50	97.00	2.00	1.00	77.00	10.00	13.00	

**FHWA RD-77-108
Traffic Noise Prediction Model**

Data Input Sheet

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Horizon Year With Project

Surface Refelction: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

**FHWA RD-77-108
Traffic Noise Prediction Model**

Predicted Noise Levels

Project Name : San Marcos Creek Specific Plan Update
Project Number : 10624
Modeled Condition : Horizon Year With Project
Assessment Metric: Hard

Segment	Roadway Name	Segment	Noise Levels, dBA Hard				Distance to Traffic Noise Level Contours, Feet					
			Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
1	Las Posas Rd	Grand Ave to La Mirada Dr	71.8	64.9	67.1	73.7	37	117	371	1,172	3,707	11,721
2	Las Posas Rd	La Mirada Dr to Linda Vista Dr	70.6	63.7	65.9	72.5	28	89	281	889	2,812	8,891
3	Las Posas Rd	Linda Vista Dr to San Marcos Blvd	68.7	61.7	63.9	70.5	18	56	177	561	1,774	5,610
4	Via Vera Cruz	Grand Ave to Linda Vista Dr	69.4	63.2	65.7	71.6	23	72	229	723	2,285	7,227
5	Via Vera Cruz	Linda Vista Dr to San Marcos Blvd	69.0	62.7	65.2	71.2	21	66	208	659	2,084	6,591
6	Via Vera Cruz	San Marcos Blvd to Discovery St	67.7	62.2	65.1	70.3	17	54	169	536	1,694	5,358
7	Bent Ave	Grand Ave to San Marcos Blvd	67.4	61.1	63.6	69.6	14	46	144	456	1,442	4,560
8	Bent Ave	San Marcos Blvd to Creekside Dr	66.4	61.8	66.6	70.2	17	52	166	524	1,656	5,236
9	Bent Ave	Creekside Dr to Discovery St	62.5	57.9	62.7	66.3	7	21	67	213	674	2,133
10	Grand Ave	Las Posas Rd to Via Vera Cruz	72.3	65.4	67.5	74.2	42	132	416	1,315	4,159	13,151
11	Grand Ave	Via Vera Cruz to Bent Ave	70.2	63.2	65.4	72.0	25	79	251	792	2,506	7,924
12	Grand Ave	Bent Ave to San Marcos Blvd	68.5	61.6	63.8	70.4	17	55	173	548	1,734	5,482
13	Grand Ave	San Marcos Blvd to Creekside Dr	72.2	65.3	67.5	74.1	41	129	406	1,285	4,064	12,852
14	Grand Ave	Creekside Dr to Discovery St	70.7	63.8	66.0	72.6	29	91	288	910	2,877	9,099
15	Linda Vista Dr	Las Posas Rd to Via Vera Cruz	66.2	60.7	63.6	68.8	12	38	120	379	1,199	3,793
16	Linda Vista Dr	Via Vera Cruz to Grand Ave	63.6	58.1	61.0	66.2	7	21	66	208	659	2,084
17	San Marcos Blvd	Knights Realm to Discovery St	75.6	68.7	70.8	77.4	87	275	869	2,748	8,689	27,477
18	San Marcos Blvd	Discovery St to Pacific St	74.0	67.0	69.2	75.8	60	190	601	1,901	6,011	19,009
19	San Marcos Blvd	Pacific St to Las Posas Rd	74.0	67.1	69.3	75.9	62	195	615	1,945	6,151	19,452
20	San Marcos Blvd	Las Posas Rd to Via Vera Cruz	74.5	67.6	69.7	76.4	69	218	690	2,183	6,902	21,826
21	San Marcos Blvd	Via Vera Cruz to Bent Ave	74.8	67.9	70.1	76.7	74	234	740	2,339	7,396	23,387
22	San Marcos Blvd	Bent Ave to Grand Ave	73.0	66.7	69.2	75.2	52	166	524	1,656	5,236	16,557
23	San Marcos Blvd	Grand Ave to SR-78 EB Ramps	74.7	68.5	71.0	76.9	77	245	774	2,449	7,744	24,489
24	San Marcos Blvd	SR-78 EB Ramps to SR-78 WB Ramps	74.4	68.2	70.7	76.6	72	229	723	2,285	7,227	22,854
25	San Marcos Blvd	Knoll Rd to Travelers Wy	71.9	65.6	68.1	74.1	41	129	406	1,285	4,064	12,852
26	Creekside Dr	Bent Ave to Grand Ave	61.4	56.1	60.7	64.7	5	15	47	148	467	1,476
27	Discovery St	Via Vera Cruz to Bent Ave	70.5	62.6	64.4	72.0	25	79	251	792	2,506	7,924
28	Discovery St	Bent Ave to Craven Rd	69.2	61.3	63.1	70.7	19	59	186	587	1,858	5,874
29	Discovery St	Craven Rd to N City Dr	70.4	62.5	64.3	71.9	24	77	245	774	2,449	7,744