

APPENDIX B.3 – NOISE STUDY



Noise Analysis for the
Foothill Central Specific Plan
Rialto, California

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TABLE OF CONTENTS

Acronyms and Abbreviations.....	iii
Executive Summary	1
1.0 Introduction	3
1.1 Project Description	3
1.2 Fundamentals of Noise and Vibration	8
2.0 Regulatory Framework	10
2.1 Federal	10
2.2 State.....	11
2.3 Local	12
3.0 Existing Conditions	17
4.0 Analysis Methodology	17
4.1 Traffic Noise	17
4.2 Stationary Noise	20
4.3 Construction Noise	20
4.4 Vibration.....	22
5.0 Basis for Determining Significance	22
6.0 Impact Analysis.....	23
6.1 Traffic Noise	23
6.2 Stationary Noise	35
6.3 Construction Noise	36
6.4 Vibration.....	36
7.0 Conclusions	39
7.1 Traffic Noise	39
7.2 Stationary Noise	39
7.3 Construction Noise	40
7.4 Vibration.....	40
8.0 References Cited	41

TABLE OF CONTENTS (cont.)

FIGURES

1:	Regional Location	4
2:	Project Location on Aerial Photograph	5
3:	Proposed Zoning.....	7
4:	Existing Noise Contours.....	18
5a:	Future Noise Contours	25
5b:	Future Noise Contours – Single Family Residential (SFR)	26
5c:	Future Noise Contours – Multi-Family Residential (MFR).....	28
5d:	Future Noise Contours – Increase Density Residential (R-X)	29
5e:	Future Noise Contours – Foothill Mixed-Use (FMUZ).....	30
5f:	Future Noise Contours – Downtown Mixed-Use (DMUZ)	31
5g:	Future Noise Contours – Commercial (C)	33
5h:	Future Noise Contours – Public Facilities (PF)	34
6:	Generalized Ground Surface Vibration Curves.....	38

TABLES

1:	Proposed Land Uses	6
2:	Construction Vibration Damage Criteria.....	10
3:	Guidelines for Determining the Significance of Groundborne Vibration and Noise Impacts	11
4:	Noise Guidelines for Land Use Planning	12
5:	Modeled Vehicle Traffic Parameters.....	19
6:	Modeled Metrolink Parameters.....	20
7:	Typical Construction Equipment Noise Levels	21
8:	Vibration Levels for Construction Equipment.....	22
9:	Vehicle Traffic Noise Level Increases	23

ATTACHMENTS

1:	SoundPLAN Data – Existing Noise Contours
2:	FHWA RD-77-108 – Existing and Future Vehicle Traffic Noise Calculations
3:	SoundPLAN Data – Future Noise Contours

Acronyms and Abbreviations

Caltrans	California Department of Transportation
City	City of Rialto
CNEL	community noise equivalent level
dB	decibel
dB(A)	A-weighted decibel
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	heating, ventilation, and air conditioning
Hz	hertz
in/sec	inch per second
L _{DN}	day-night noise level
L _{eq}	one-hour equivalent noise level
L _{pw}	sound power level
PPV	peak particle velocity
Proposed Project	Foothill Central Specific Plan
STC	sound transmission class
VdB	vibration decibel

Executive Summary

The Foothill Central Specific Plan (Proposed Project) provides the overall vision for the Foothill Central Area of the city of Rialto. The Foothill Central Area is defined as the area along Foothill Boulevard bounded by Maple Avenue to the east and Pepper Avenue to west, in addition to central Rialto, bounded by Merrill Avenue to the south, Foothill Boulevard to the north, Willow Avenue to the west, and Sycamore Avenue to the east. The Proposed Project updates and merges the existing City of Rialto (City) Foothill Boulevard and Central Area Specific Plans into the Foothill Central Specific Plan and amends the Municipal Code Chapter 18 Zoning. The Proposed Project increases the allowable density of residential and commercial uses within the Foothill Central Area and provides updates to the development standards for this area. The Specific Plan identifies permitted land uses within the Foothill Central Area and establishes development standards for implementation of future development within the Specific Plan area.

This report evaluates potential noise and vibration impacts associated with implementation of the Proposed Project. As part of this assessment, noise levels due to vehicle and rail traffic were calculated and evaluated against City noise and land use compatibility guidelines. In addition to compatibility, this report evaluates the potential for noise to impact receivers from the increase in vehicle traffic, stationary sources of noise, construction activity, and vibration. A summary of the findings is provided below.

Traffic Noise

Ambient Noise Increase

The transportation-related noise sources include vehicle traffic on Foothill Boulevard, Riverside Avenue, and other area roadways as well as the Metrolink, which traverses the southern portion of the Specific Plan area. Traffic noise occurs adjacent to every roadway and is directly related to the traffic volume, speed, and mix of vehicles. As calculated in this analysis, cumulative noise level increases due to buildout of the Proposed Project would be less than the applicable significance thresholds. Noise level increases due to Proposed Project-related traffic on other area roadways further away from the Specific Plan area would be less than the increases on study area roadways since noise level increases are assumed to be greatest nearest the Specific Plan area, as this location would represent the greatest concentration of project-related traffic. Therefore, operational roadway noise would not generate a substantial permanent increase in ambient noise levels for off-site noise sensitive land uses, and impacts would be less than significant.

Land Use Compatibility

Existing and future noise contour mapping was developed for buildout of the Proposed Project. The City's General Plan Safety and Noise Element establishes policies that guard against the creation of any new noise and land use conflicts, and to minimize the impact of existing noise sources on the community. Based on the modeled future noise contours, all land uses would be considered either

normally acceptable or conditionally acceptable with the City's noise compatibility standards. No land uses would be exposed to noise levels that are considered normally unacceptable or clearly unacceptable. No specific project-level development is proposed at this time. However, for future development proposed under the Specific Plan, existing General Plan policies and Title 24 requirements are in place to ensure an acceptable exterior and interior noise environment. For land uses located where exterior noise levels are within the conditionally acceptable noise level range, effective site measures for reducing noise levels include shielding common exterior use areas from roadway and Metrolink noise with buildings or other barriers and providing window and door components with increased sound transmission class ratings. Through implementation of this regulatory framework, exterior and interior noise impacts associated with new development would be less than significant.

Stationary Noise

Chapter 9.50 of the Municipal Code regulates noise from stationary (operational) sources of noise. Stationary sources of noise include activities associated with a given land use. The type of land uses proposed under the Proposed Project would be similar to the land uses that currently exist. Although the Proposed Project would increase density and provide for more mixed-use areas, the allowed uses would be similar to what currently exists within the Specific Plan area. For future noise-sensitive land uses located adjacent to the industrial uses to the west, it is recommended that site design measures such as blocking the line-of-sight between exterior use areas and the industrial use with buildings or other barriers and increasing the sound transmission class ratings of window and door components be incorporated into the project design. Enforcement of Chapter 9.50 of the Municipal Code and General Plan Policies 5-10.1 through 5-10.5 would ensure that future development under the Proposed Project would not result in a substantial permanent increase in ambient noise levels, and impacts would be less than significant.

Construction Noise

Future development implemented under the Proposed Project could result in a temporary ambient noise increase due to construction activities. Due to the developed nature of the Specific Plan area, construction activities would take place adjacent to existing structures and sensitive receptors would be located in proximity to construction activities. The City regulates construction noise through Section 9.50.070 of the Municipal Code by limiting the hours of construction activities. Additionally, General Plan Policy 5-10.5 requires that construction equipment use available noise suppression devices and techniques to reduce exterior noise to acceptable levels that are compatible with adjacent land uses. Enforcement of Section 9.50.070 of the Municipal Code and General Plan Policy 5-10.1 would ensure that temporary construction noise associated with development implemented under the Proposed Project would be less than significant.

Vibration

Construction

Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction. Construction activities produce varying degrees of ground vibration depending on the equipment and methods employed. Generally, the buildings located in the Specific Plan area consist of commercial buildings and a mix of newer and older residential structures. Construction activities from development implemented under the Proposed Project would not result in structural damage to nearby structures from vibration-generating construction activities. Additionally, 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 result in a less than significant impact with respect to perception. Therefore, construction vibration impacts would be considered less than significant.

Metrolink

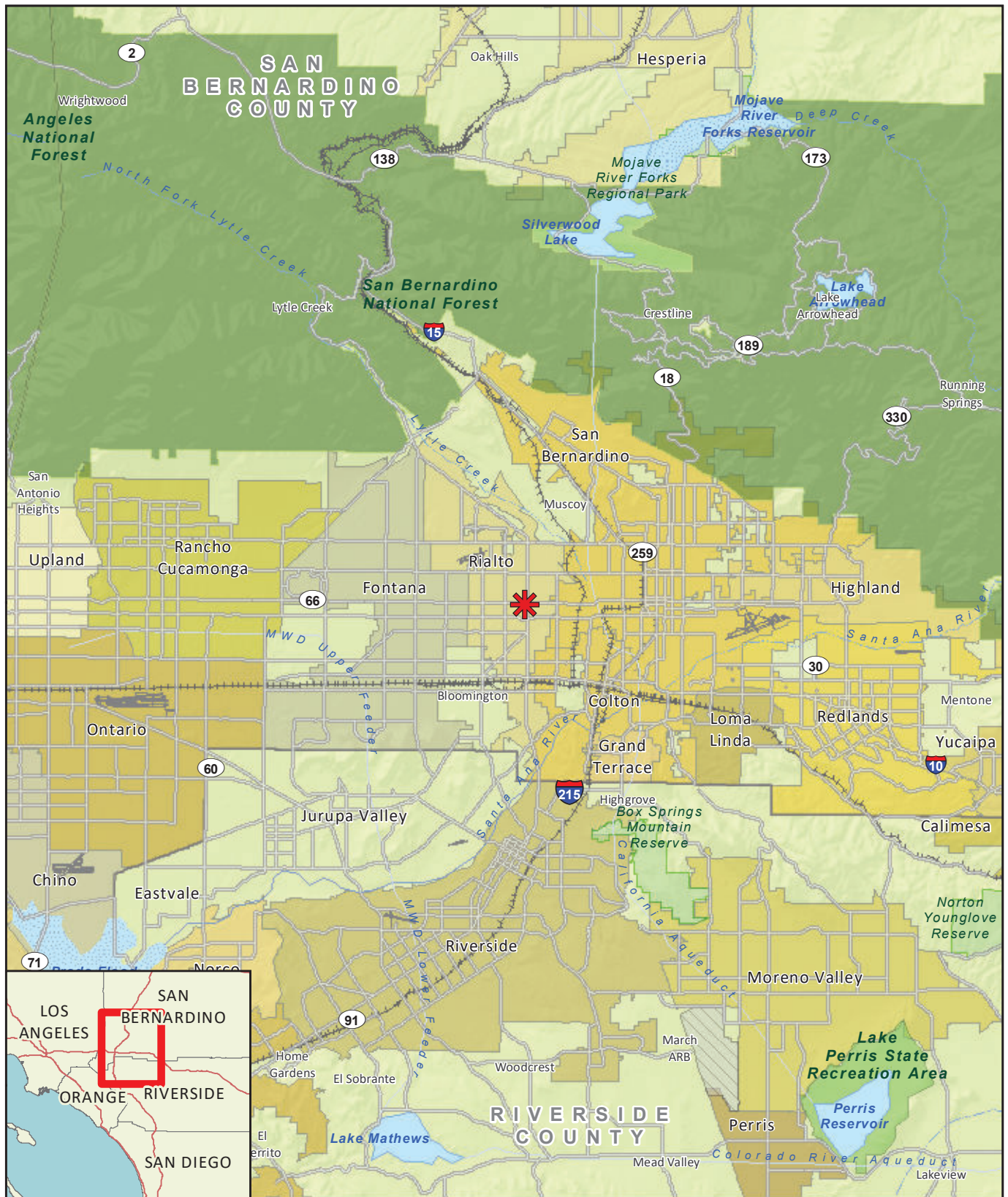
Railroads generate ground-borne vibration that may be perceptible at on-site uses. Based on the generalized ground surface vibration curves, the Metrolink would generate a vibration level of 80 vibration decibels at approximately 15 to 20 feet from the track centerline. Due to railroad right-of-way and setback requirements, no residential structures would be constructed within 20 feet of the track. Vibration impacts due to the Metrolink would be less than significant.

1.0 Introduction

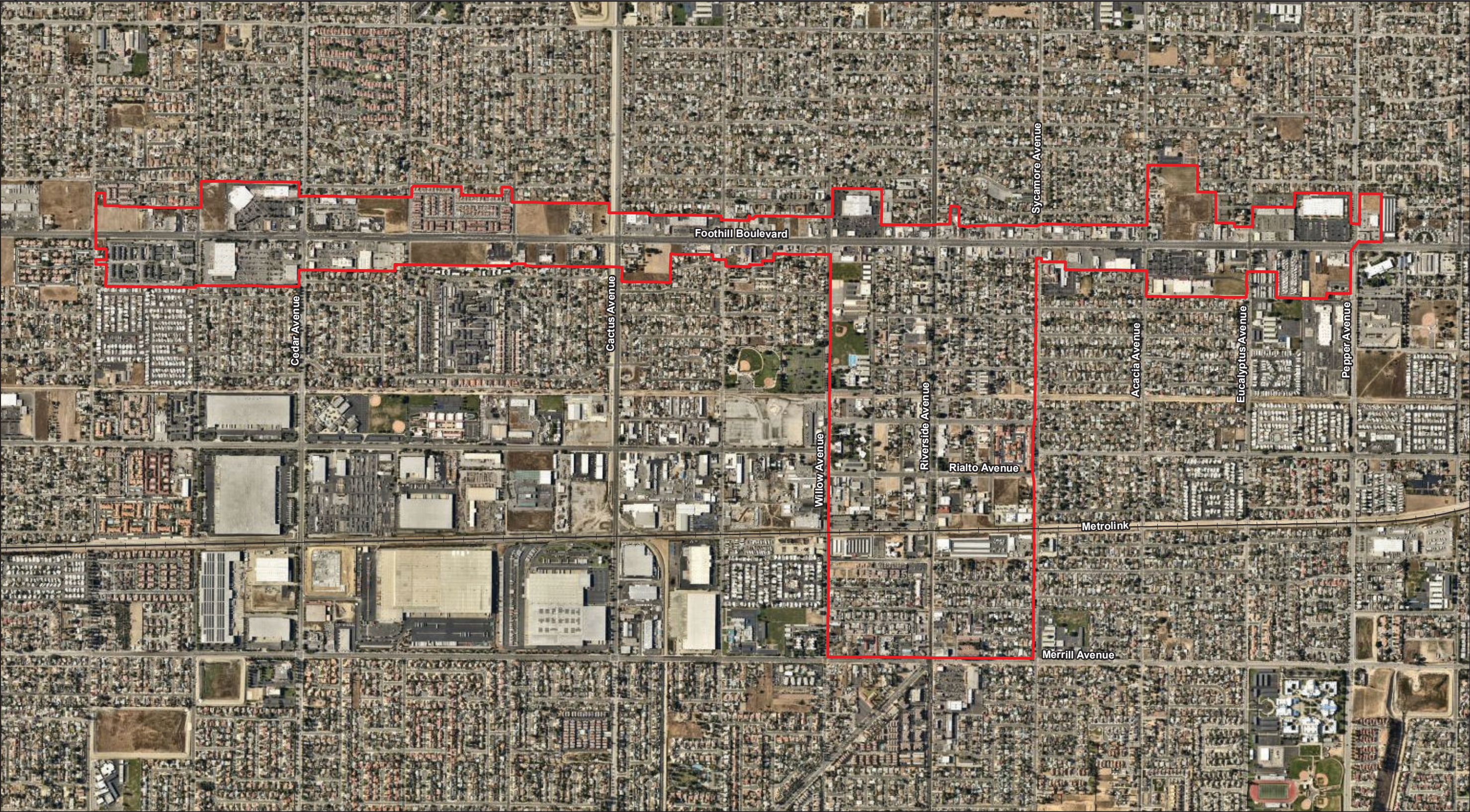
1.1 Project Description

The proposed Foothill Central Specific Plan (Proposed Project) provides the overall vision for the Foothill Central Area of the city of Rialto (City). The Foothill Central Area is defined as the area along Foothill Boulevard bounded by Maple Avenue to the east and Pepper Avenue to west, in addition to central Rialto, bounded by Merrill Avenue to the south, Foothill Boulevard to the north, Willow Avenue to the west, and Sycamore Avenue to the east. Figure 1 shows the regional location. Figure 2 shows an aerial photograph of the Specific Plan area.

The Proposed Project updates and merges the existing Foothill Boulevard and Central Area Specific Plans into the Foothill Central Specific Plan and amends the Municipal Code Chapter 18 Zoning. This Specific Plan is intended to guide development in the Foothill Central Area. The plan increases the allowable density of residential and commercial uses within the Foothill Central Area (see Table 1) and establishes development standards for implementation of future development within the Specific Plan area.



 Project Location



 Project Boundary
 Metrolink



FIGURE 2
Project Location on Aerial Photograph

Table 1 Proposed Land Uses				
	Existing Development	Total 2045 Buildout (Current Adopted Land Use) (0.75 Realistic Factor)	Total 2045 Buildout (Proposed Specific Plan Land Use) (0.75 Realistic Factor)	Delta (change 2045 Adopted to 2045 Proposed)
Dwelling Units	7,476	9,141	10,056	915
Retail/Office Space (square feet)	1,732,653	4,767,915	5,138,749	370,834

Figure 3 shows the proposed zoning. Proposed districts within the Foothill Central Area include:

Residential Districts

Single Family Residential (SFR): Provides low-density residential uses in downtown Rialto. Encourages single family dwellings separated from multi-family and non-residential uses to protect the residential characteristics of these areas and encourage a suitable environment for family life.

Multi-Family Residential (MFR): Provides medium-density residential uses in downtown Rialto to encourage the creation of walkable interconnected residential neighborhoods. Allows a mix of medium-density housing types, such as apartments, townhomes, and duplexes.

Increased Density Residential (R-X): Encourages the development of housing through increase of allowable density and flexibility to lot development standards. Allows a mix of medium-density housing types, such as apartments, townhomes, and duplexes, intended to support adjacent commercial uses.

Mixed-Use Districts

Foothill Mixed-Use (FMUZ): Encourages a combination of ground floor retail, with office and/or residential uses above around the future bus rapid transit (BRT) stops located along Foothill Boulevard. Allows a variety of uses at the ground floor, including restaurants, retail, gyms, and salons. Ground floor activities must be compatible with upper floor residences.

Downtown Mixed-Use (DMUZ): Encourages a walkable interconnected mixed-use urban area by providing a combination of ground-floor retail, higher intensity office, and/or residential near the Rialto Metrolink Station in downtown Rialto. Provides retail and commercial uses, including restaurants, breweries, and entertainment destinations.

Commercial Districts

Commercial (C): Allows retail establishments, including businesses that may rely on customers arriving by auto, with on-site parking. Examples of uses include bars, restaurants, medical offices, and furniture stores. Offices may be allowed on the second floor or above.

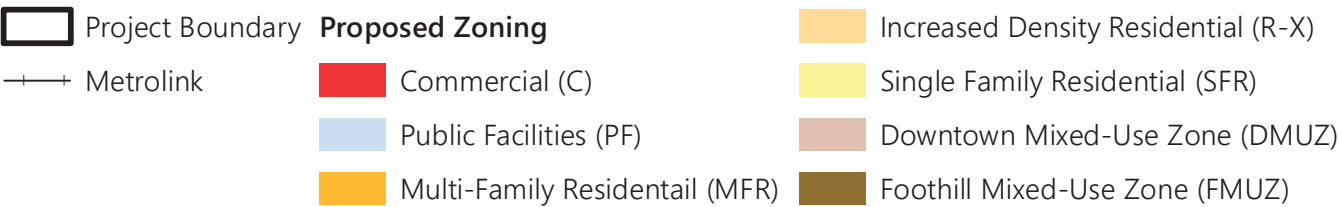
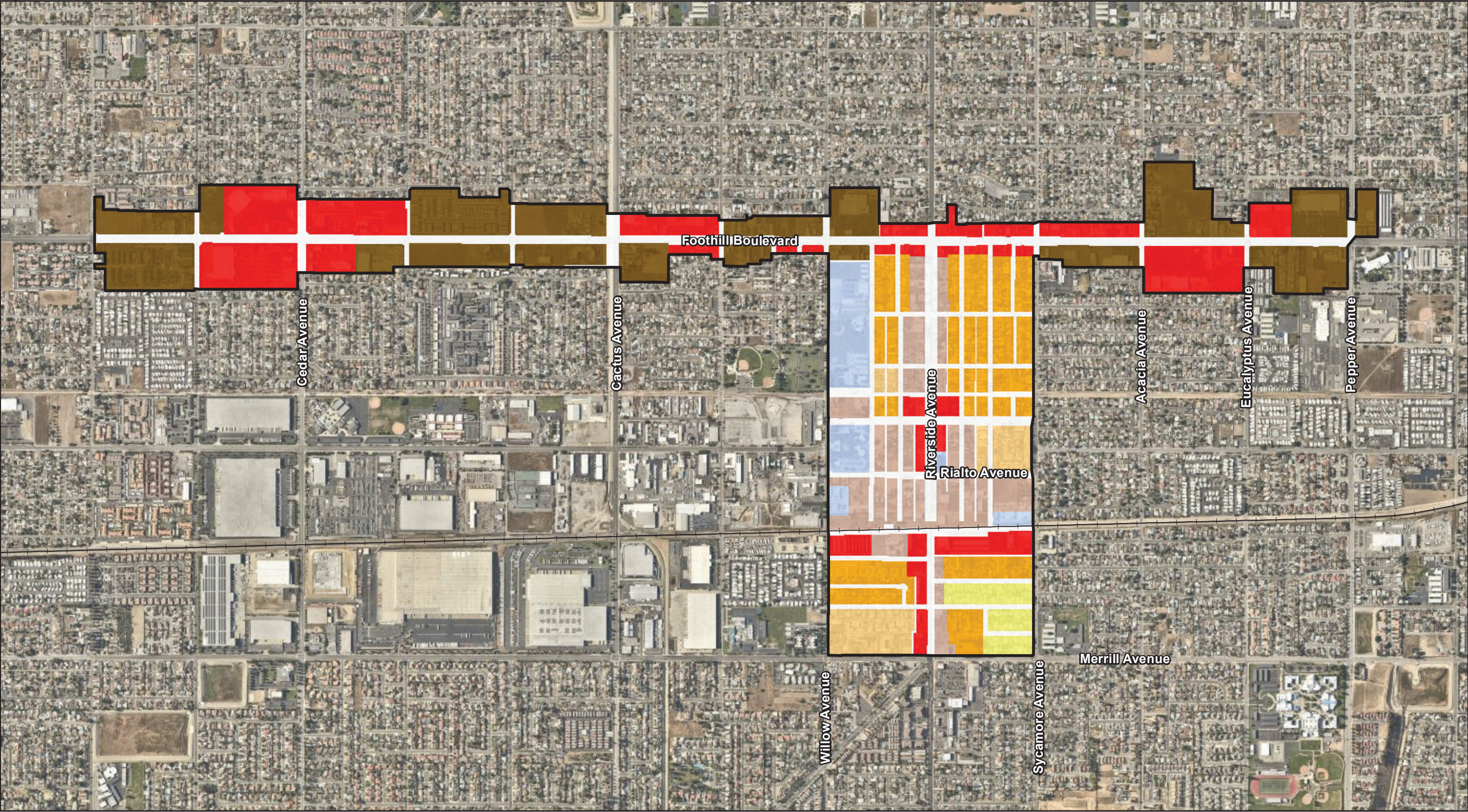


FIGURE 3
Proposed Zoning

Other Districts

Public Facilities (PF): Includes facilities serving the public and the larger community, including the Civic Center, fire stations, government buildings, libraries, public utility stations and yards, public schools, and other community-serving centers and recreational facilities.

1.2 Fundamentals of Noise and Vibration

1.2.1 Noise

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. Additionally, 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. The L_{pw} is used to estimate how far a noise will travel and to predict the sound levels at various distances from 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 and is the sound pressure level. Noise measurement instruments only measure sound pressure, and noise level 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).

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 one-hour equivalent noise level (L_{eq}), the community noise equivalent level (CNEL), and the sound exposure level. 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 an additional 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. Similar to the CNEL, the day-night noise level (L_{DN}) applies a 10 dB(A) penalty 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. The sound exposure level is a noise level over a stated period of time or event and normalized to one second. Sound from a small, 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) receives an additional ground attenuation value of 1.5 dB(A) per doubling of distance. Thus, a point source over a soft site would attenuate at 7.5 dB(A) per doubling of distance.

Human perception of noise has no simple correlation with acoustical energy. A change in noise levels is generally perceived as follows: 3 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).

1.2.2 Vibration

Vibration consists of energy waves transmitted through solid material (Federal Transit Administration [FTA] 2018). Groundborne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in hertz (Hz). The normal frequency range of most groundborne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz (FTA 2018).

Groundborne vibration is measured by its peak particle velocity (PPV), which is normally described in inches per second (in/sec). PPV is appropriate for determining potential structure damage but does not evaluate human response to vibration. The ground motion caused by vibration may also be described in decibel notation (vibration decibels), referenced as VdB, which serves to compress the range of numbers required to describe vibration relative to human response.

Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. The way in which vibration is transmitted through the earth is called propagation. As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

Groundborne vibration can be a concern for nearby residents along a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. Groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as

buses and trucks to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains; buses on rough roads; and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment.

2.0 Regulatory Framework

2.1 Federal

2.1.1 Construction Noise

The 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).

2.1.2 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 shown in Table 2.

Table 2 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: FTA 2018. PPV = peak particle velocity; in/sec = inch per second; VdB = vibration decibel		

The FTA also provides guidance for assessing vibration impacts from railroad operations. The criteria for determining the significance of impacts are presented in Table 3.

Table 3 Guidelines for Determining the Significance of Groundborne Vibration and Noise Impacts						
Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 micro-inch per second)			Groundborne Noise Impact Levels (dB re 20 micro Pascals)		
	Frequent Events	Occasional Events	Infrequent Events	Frequent Events	Occasional Events	Infrequent Events
Category 1: Buildings where low ambient vibration is essential for interior operations (research & manufacturing facilities with special vibration constraints) ⁶	65 VdB	65 VdB	65 VdB	N/A	N/A	N/A
Category 2: Residences and buildings where people normally sleep (hotels, hospitals, residences, & other sleeping facilities) ⁶	72 VdB	75 VdB	80 VdB	35 dB(A)	38 dB(A)	43 dB(A)
Category 3: Institutional land uses with primarily daytime use (schools, churches, libraries, other institutions, & quiet offices) ⁶	75 VdB	78 VdB	83 VdB	40 dB(A)	43 dB(A)	48 dB(A)
SOURCE: FTA 2018. VdB = vibration decibel; re = relative; N/A = not applicable "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category. "Occasional Events" is defined as 30 to 70 vibration events per day. Most commuter trunk links fall into this category. "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.						

2.2 State

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 (STC) 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.

2.3 Local

2.3.1 City of Rialto General Plan

The City's General Plan Safety and Noise Element establishes policies that guard against the creation of any new noise and land use conflicts, and to minimize the impact of existing noise sources on the community. The noise criteria identified in the Safety and Noise Element are guidelines to evaluate the land use compatibility of transportation-related noise. The land use compatibility guidelines are summarized in Table 4 (City of Rialto 2010).

Table 4 Noise Guidelines for Land Use Planning							
Land Use Category	Community Noise Exposure (L _{DN})						
	55	60	65	70	75	80	85
R2 – Residential 2							
R6 – Residential 6							
R12 – Residential 12							
R 21 – Residential 21							
R45 – Residential 45							
DMU – Downtown Mixed-Use							
CC – Community Commercial							
GC – General Commercial							
BP – Business Park							
O – Office							
LI – Light Industrial							
GI – General Industrial							
P – Public Facility							
P – School Facility							
OSRC – Open Space – Recreation							
OSRS – Open Space – Resources							
	Normally Acceptable Specified land use is satisfactory, assuming buildings are of conventional construction.						
	Conditionally Acceptable New development should be undertaken only after a detailed analysis of the noise reduction requirement is made.						
	Normally Unacceptable New development should generally be discouraged, if not, a detailed analysis of noise reduction requirements must be made.						
	Clearly Unacceptable New development should generally not be undertaken.						
SOURCE: Exhibit 5.5 of the City's General Plan.							

The Safety and Noise Element also contains the following goals and policies related to noise.

Goal 5-10: Minimize the impact of point source and ambient noise levels throughout the community.

Policy 5-10.1: Revise the City's noise ordinance to address ongoing noise issues by using quantitative noise limits where appropriate and establishing comprehensive noise control measures.

Policy 5-10.2: Consider noise impacts as part of the development review process, particularly the location of parking, ingress/egress/loading, and refuse collection areas relative to surrounding residential development and other noise-sensitive land uses.

Policy 5-10.3: Ensure that acceptable noise levels are maintained near schools, hospitals, and other noise sensitive areas in accordance with the Municipal Code and noise standards contained in Exhibit 5-5.

Policy 5-10.4: Limit the hours of operation at all noise generation sources that are adjacent to noise-sensitive areas.

Policy 5-10.5: Require all exterior noise sources (construction operations, air compressors, pumps, fans, and leaf blowers) to use available noise suppression devices and techniques to reduce exterior noise to acceptable levels that are compatible with adjacent land uses.

Goal 5-11: Minimize the impacts of transportation-related noise.

Policy 5-11.1: Work with responsible Federal and State agencies to minimize the impact of transportation-related noise, including noise associated with freeways, major arterials, and Metrolink and other rail lines.

Policy 5-11.2: Require development which is, or will be, affected by railroad noise to include appropriate measures to minimize adverse noise effects on residents and business persons.

Policy 5-11.3: Require development of truck-intensive uses to minimize noise impacts on adjacent uses through appropriate site design.

Policy 5-11.4: Develop a program for monitoring noise levels and investigating complaints.

Policy 5-11.5: Provide education to the community at large about the importance of maintaining a healthy noise environment, and identify ways residents can assist in noise abatement efforts.

2.3.2 City of Rialto Municipal Code

Chapter 9.50 of the City's Municipal Code regulates construction activities and noise from stationary (operational) sources of noise. The following sections from the Municipal Code are related to the Proposed Project.

9.50.030 – Prohibited acts.

A. It is unlawful for any person to engage in the following activities:

1. Sounding any horn or signal device on any automobile, motorcycle, bus or other motor vehicle in any other manner or circumstances or for any other purpose than required or permitted by the Vehicle Code or other California laws.
2. Racing the engine of any motor vehicle while the vehicle is not in motion, except when necessary to do so in the course of repairing, adjusting or testing the same.

3. Operating or permitting the use of any motor vehicle on any public right-of-way or public place or on private property within a residential zone for which the exhaust muffler, intake muffler or any other noise abatement device has been modified or changed in a manner such that the noise emitted by the motor vehicle is increased above that emitted by the vehicle as originally manufactured.
 4. Operating or permitting the use or operation of personal or commercial music or sound amplification or production equipment that is:
 - a. Plainly audible across property boundaries;
 - b. Plainly audible through partitions common to two residences within a building;
 - c. Plainly audible at a distance of fifty feet in any direction from the source of music or sound between the hours of eight a.m. and ten p.m.; or
 - d. Plainly audible at a distance of twenty-five feet in any direction from the source of music or sound between the hours of ten p.m. and eight a.m.
 5. The intentional sounding or permitting the sounding outdoors of any fire, burglar, or civil defense alarm, siren, whistle, or any motor vehicle burglar alarm, except for emergency purposes or for testing, unless such alarm is terminated within fifteen minutes of activation.
 6. Creating excessive noise adjacent to any school, church, court or library while the same is in use, or adjacent to any hospital or care facility, which unreasonably interferes with the workings of such institution, or which disturbs or unduly annoys patients in the hospital, students in the school, users of the court or library, provided conspicuous signs are displayed in such streets indicating the presence of a school, institution of learning, church, court or hospital.
 7. Making or knowingly and unreasonably permitting to be made any unreasonably loud, unnecessary or unusual noise that disturbs the comfort, repose, health, peace and quiet or which causes discomfort or annoyance to any reasonable person of normal sensitivity. The characteristics and conditions that may be considered in determining whether this section has been violated, include, but are not limited to, the following:
 - a. The level of noise;
 - b. Whether the nature of the noise is usual or unusual;
 - c. Whether the origin of the noise is natural or unnatural;
 - d. The level of the background noise;
 - e. The proximity of the noise to sleeping facilities;
 - f. The nature and zoning of the areas within which the noise emanates;
 - g. The density of the inhabitation of the area within which the noise emanates;
 - h. The time of day or night the noise occurs;
 - i. The duration of the noise;
 - j. Whether the noise is recurrent, intermittent or constant; and
 - k. Whether the noise is produced by a commercial or noncommercial activity.
- B. A violation of this section is an infraction and a public nuisance.
- C. A violation of this section may result in the following:
1. Issuance of an infraction citation;
 2. Issuance of a notice of public nuisance;

3. Imposition of criminal and civil penalties; and
 4. Confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise.
- D. An enforcement officer who encounters a violation of this section may issue a written notice to the responsible person demanding immediate abatement of the violation (written notice). The written notice shall inform the recipient that a second violation of the same provision within a seventy-two-hour period may result in the issuance of a criminal citation and/or notice of public nuisance, the imposition of criminal and civil penalties, and confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise.
- E. Any peace officer who encounters a second violation of this section within a seventy-two-hour period following issuance of a written notice is empowered to confiscate and impound as evidence, any or all of the components amplifying or transmitting the sound.
- F. Any person claiming legal ownership of the items confiscated and impounded under this section may request the return of the item by filing a written request with the police department within seven calendar days of the confiscation. Such requests shall be processed in accordance with the procedures adopted by the department.

9.50.040 – Excessive noise and vibration emanating from a motor vehicle.

- A. No person shall operating or occupy a motor vehicle on any public right-of-way, public place or private property, while operating or permitting the use or operation of any radio, stereo receiver, musical instrument, television, computer, compact disc player, tape recorder, cassette player or any other device for the production or reproduction of sound from within the motor vehicle so that the sound is plainly audible at a distance of fifty feet from such vehicle, or in the case of a motor vehicle on private property, beyond the property line.
- B. Pursuant to Section 9.50.130, a violation of this section is a misdemeanor offense and a public nuisance.
- C. A violation of this section may result in the following:
1. Issuance of a misdemeanor citation;
 2. Issuance of a notice of public nuisance;
 3. Imposition of criminal and civil penalties; and
 4. Immediate confiscation and impoundment as evidence, of the components that are amplifying or transmitting the prohibited noise or the immediate confiscation and impoundment of the motor vehicle to which the component is attached if the same may not be removed without causing harm to the vehicle or the component.
- D. Any person claiming legal ownership of a motor vehicle confiscated and impounded under this section may request the return of the vehicle by filing a written request with the police department within seven calendar days of the confiscation. Such requests shall be processed in accordance with the procedures adopted by the department.
- E. Any person claiming legal ownership of the items confiscated and impounded under this section, other than a motor vehicle, may request the return of the item by filing a written request with the police department, which shall be processed in accordance with the procedures adopted by the department.

9.50.050 – Controlled hours of operation.

It is unlawful for any person to engage in the following activities other than between the hours of seven a.m. and eight p.m. in all zones:

- A. Operate or permit the use of powered model vehicles and planes;
- B. Load or unload any vehicle, or operate or permit the use of dollies, carts, forklifts, or other wheeled equipment that causes any impulsive sound, raucous or unnecessary noise within one thousand feet of a residence;
- C. Operate or permit the use of domestic power tools, or machinery or any other equipment or tool in any garage, workshop, house or any other structure;
- D. Operate or permit the use of gasoline or electric powered leaf blowers, such as commonly used by gardeners and other persons for cleaning lawns, yards, driveways, gutters and other property;
- E. Operate or permit the use of privately operated street/parking lot sweepers or vacuums, except that emergency work and/or work necessitated by unusual conditions may be performed with the written consent of the city manager;
- F. Operate or permit the use of pile driver, steam or gasoline shovel, pneumatic hammer, steam or electric hoist or other similar devices;
- G. Operate or permit the use of electrically operated compressor, fan, and other similar devices;
- H. Perform ground maintenance on golf course grounds and tennis courts contiguous to golf courses that creates a noise disturbance across a residential or commercial property line;
- I. Operate or permit the use of any motor vehicle with a gross vehicle weight rating in excess of ten thousand pounds, or of any auxiliary equipment attached to such a vehicle, including but not limited to refrigerated truck compressors, for a period longer than fifteen minutes in any hour while the vehicle is stationary and on a public right-of-way or public space except when movement of the vehicle is restricted by other traffic;
- J. Repair, rebuild, reconstruct or dismantle any motor vehicle or other mechanical equipment or devices in a manner so as to be plainly audible across property lines.

9.50.070 – Disturbances from construction activity.

- A. No person shall be engaged or employed, or cause any other person to be engaged or employed, in any work of construction, erection, alteration, repair, addition, movement, demolition, or improvement to any building or structure except within the hours provided for by subsection B of this section.
- B. The permitted hours for such construction work are as follows:
 - 1. October 1st through April 30th.

Monday through Friday	7:00 a.m. to 5:30 p.m.
Saturday	8:00 a.m. to 5:00 p.m.
Sunday	No permissible hours
State holidays	No permissible hours

2. May 1st through September 30th.

Monday through Friday	6:00 a.m. to 7:00 p.m.
Saturday	8:00 a.m. to 5:00 p.m.
Sunday	No permissible hours
State holidays	No permissible hours

3.0 Existing Conditions

The Specific Plan area is subject to typical urban noises such as noise generated by traffic, rail, and typical day-to-day outdoor activities associated with residential and commercial uses. The transportation-related noise sources include vehicle traffic on Foothill Boulevard, Riverside Avenue, and other area roadways as well as the Metrolink which traverses the southern portion of the Specific Plan area. Existing vehicle and Metrolink noise contours were developed using the existing traffic volumes provided in the Foothill Boulevard and Central Area Specific Plans Transportation Analysis (Iteris, Inc. 2023) and published Metrolink schedules. The existing noise contours are shown in Figure 4. SoundPLAN data is provided in Attachment 1.

4.0 Analysis Methodology

4.1 Traffic Noise

4.1.1 Ambient Noise Increase

Traffic noise occurs adjacent to every roadway and is directly related to the traffic volume, speed, and mix of vehicles. The Federal Highway Administration (FHWA) Traffic Noise Prediction Model RD-77-108 was used to calculate noise levels adjacent to roadways segments in the study area. The FHWA model takes into account traffic mix, speed, and volume; roadway gradient; relative distances between sources, barriers, and sensitive receptors; and shielding provided by intervening terrain or structures. The analysis of the noise environment considered that the topography was flat with no intervening terrain between sensitive land uses and roadways. Because modeled predicted noise levels do not account for obstructions, they are higher than those which would actually occur. In actuality, buildings and other obstructions along the roadways would shield distant receivers from the traffic noise.

The San Bernardino Transportation Analysis Model was used as part of the vehicle miles travelled analysis prepared for the Proposed Project. Existing and future traffic volumes and speeds were obtained from the Transportation Analysis (Iteris Inc. 2023) prepared for the Proposed Project and the traffic engineer's San Bernardino Transportation Analysis Model data. A vehicle traffic mix of 97 percent automobiles, 2 percent medium trucks, 1 percent heavy trucks was modeled based on Caltrans truck counts for Foothill Boulevard (Caltrans 2021). Table 5 summarizes the modeled vehicle traffic parameters. Existing and future vehicle traffic noise calculations are provided in Attachment 2.

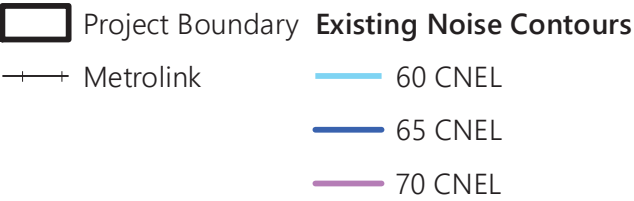
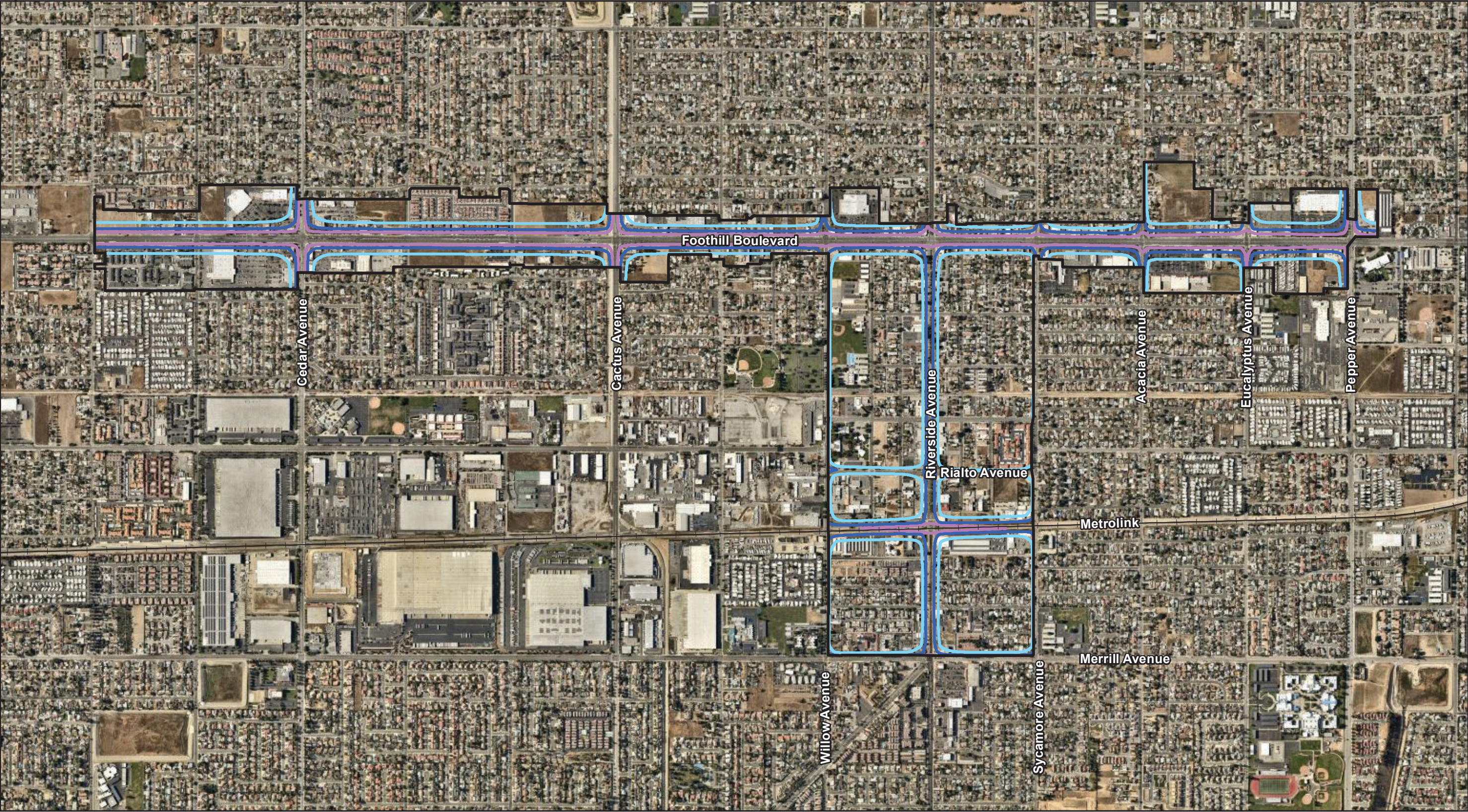


FIGURE 4
Existing Noise Contours

Table 5
Modeled Vehicle Traffic Parameters

Roadway	Existing ADT	Future Plus Project ADT	Speed (mph)
Foothill Boulevard between Willow Avenue & Riverside Avenue	24,195	30,980	40/45/50
Foothill Boulevard between Riverside Avenue & Sycamore Avenue	24,745	31,130	40/45/50
Rialto Avenue west of Riverside Avenue	4,756	7,820	30
Rialto Avenue east of Riverside Avenue	4,008	7,670	30
Merrill Avenue west of Riverside Avenue	8,989	12,420	35
Merrill Avenue east of Riverside Avenue	9,968	12,080	35
Cedar Avenue north of Foothill Boulevard	19,344	26,180	40
Cedar Avenue south of Foothill Boulevard	23,330	31,570	40
Cactus Avenue north of Foothill Boulevard	12,173	16,400	45
Cactus Avenue south of Foothill Boulevard	12,824	17,380	45
Willow Avenue north of Foothill Boulevard	6,473	9,280	35
Willow Avenue south of Foothill Boulevard	6,729	10,173	35
Riverside Avenue between Etiwanda Avenue & Foothill Boulevard	18,508	24,940	40
Riverside Avenue between Foothill Boulevard & Rialto Avenue	18,391	24,190	30
Riverside Avenue between Rialto Avenue & Merrill Avenue	20,001	25,560	30
Sycamore Avenue north of Foothill Boulevard	5,279	6,160	35
Sycamore Avenue south of Foothill Boulevard	7,188	10,910	35
Acacia Avenue north of Foothill Boulevard	3,473	3,140	35
Acacia Avenue south of Foothill Boulevard	4,907	4,830	35
Eucalyptus Avenue north of Foothill Boulevard	2,947	3,790	40
Eucalyptus Avenue south of Foothill Boulevard	4,559	5,860	40
Pepper Avenue north of Foothill Boulevard	16,602	19,430	40
Pepper Avenue south of Foothill Boulevard	17,757	19,080	40
SOURCE: Iteris, Inc. 2023			
ADT = average daily traffic; mph = miles per hour			

4.1.2 Land Use Compatibility

Noise level predictions and contour mapping were developed for the Specific Plan area 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 five feet above ground elevation, which represents the average height of the human ear.

Table 5 summarizes the existing and future traffic parameters used to develop the vehicle traffic noise contours. A vehicle traffic mix of 95 percent automobiles, 2 percent medium trucks, 1 percent heavy trucks, 1 percent motorcycles, and 1 percent buses was modeled based on Caltrans truck counts for Foothill Boulevard and adjusted to include a proportion of motorcycles and buses (Caltrans 2021).

The Metrolink commuter rail San Bernardino Line operates through the southern portion of the Specific Plan area. Table 6 summarizes the number of Metrolink trains used to develop the rail noise contours. SoundPLAN data is provided in Attachment 3.

Table 6 Modeled Metrolink Parameters			
Station/Direction	Number of Trains		
	Day 7 a.m. – 7 p.m.	Evening 7 p.m. – 10 p.m.	Night 10 p.m. – 7 a.m.
Rialto/Westbound	10	0	7
Rialto/Eastbound	11	4	2
Total	21	4	9

4.2 Stationary Noise

Stationary sources of noise include activities associated with a given land use. The Specific Plan area includes multiple land uses, including residential, commercial, and mixed-use land uses. Various land uses contain on-site stationary noise sources, including rooftop heating, ventilation, and air conditioning (HVAC) equipment; mechanical equipment; 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. Impacts associated with future residential uses being located adjacent to existing industrial land uses along the western Specific Plan boundary are also addressed.

4.3 Construction Noise

Construction noise has the potential to result in temporary ambient noise increase due to construction activities. Construction noise is generated by diesel-powered construction equipment used for site preparation and grading, removal of existing structures and pavement, loading, unloading, and placing materials and paving. Diesel engine-driven trucks also bring materials to the site and remove the spoils from excavation. Table 7 summarizes typical construction equipment noise levels.

Construction equipment would generate maximum noise levels between 70 and 95 dB(A) L_{max} at 50 feet from the source when in operation. During excavation, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Average construction noise levels were calculated for the simultaneous operation of three common pieces of construction equipment: backhoe, 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 83 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 including the duration of specific activities, nature of the equipment involved, location of the particular receiver, and nature of intervening barriers.

Table 7 Typical Construction Equipment Noise Levels		
Equipment	Noise Level at 50 Feet [dB(A) L _{eq}]	Typical Duty Cycle
Auger Drill Rig	85	20%
Backhoe	80	40%
Blasting	94	1%
Chain Saw	85	20%
Clam Shovel	93	20%
Compactor (ground)	80	20%
Compressor (air)	80	40%
Concrete Mixer Truck	85	40%
Concrete Pump	82	20%
Concrete Saw	90	20%
Crane (mobile or stationary)	85	20%
Dozer	85	40%
Dump Truck	84	40%
Excavator	85	40%
Front End Loader	80	40%
Generator (25 kilovolt amps or less)	70	50%
Generator (more than 25 kilovolt amps)	82	50%
Grader	85	40%
Hydra Break Ram	90	10%
Impact Pile Driver (diesel or drop)	95	20%
Insitu Soil Sampling Rig	84	20%
Jackhammer	85	20%
Mounted Impact Hammer (hoe ram)	90	20%
Paver	85	50%
Pneumatic Tools	85	50%
Pumps	77	50%
Rock Drill	85	20%
Roller	74	40%
Scraper	85	40%
Tractor	84	40%
Vacuum Excavator (vac-truck)	85	40%
Vibratory Concrete Mixer	80	20%
Vibratory Pile Driver	95	20%
SOURCE: FHWA 2006.		

4.4 Vibration

Potential sources of groundborne vibration include construction activities and the Metrolink. Table 8 lists vibration levels for construction equipment.

Table 8 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 impacts due to construction equipment were evaluated using these source vibration levels and the FTA criteria shown in Table 2. Vibration impacts due to railroad operations were evaluated using the FTA criteria shown in Table 3.

5.0 Basis for Determining Significance

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

- 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; or
- 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.

6.0 Impact Analysis

6.1 Traffic Noise

6.1.1 Ambient Noise Increase

For the purposes of this analysis, a significant impact would occur if the Proposed Project's off-site mobile sources (i.e., vehicle traffic) would generate a substantial permanent increase in ambient noise levels surrounding the Proposed Project and any nearby roadways. The City has not adopted mobile operational-related noise thresholds of significance for California Environmental Quality Act consideration, but Rialto General Plan Policy 5-10.3 establishes that acceptable noise levels should be maintained near noise sensitive uses in accordance with the noise standards shown in Table 4 of this report. The Municipal Code does not contain quantitative standards that would apply to the Proposed Project's off-site mobile sources. As such, the following criteria to determine significance are informed by Rialto General Plan Policy 5-10.3 and the acceptable noise levels outlined in Table 4.

For this analysis, a readily perceptible 5 dB or greater project-related noise level increase is considered a significant impact when the Without Project noise levels are below 60 CNEL, a barely perceptible 3 dB or greater project-related noise level increase is considered a significant impact when the Without Project noise levels are between 60 and 65 CNEL, and a 1.5 dB or greater project-related noise level increase is considered a significant impact when the Without Project noise levels are above 65 CNEL.

The calculated noise levels at 50 feet from the centerline of the study area roadways were calculated using FHWA algorithms and are summarized in Table 9. Calculations are provided in Attachment 2.

Table 9 Vehicle Traffic Noise Level Increases					
Roadway	Existing CNEL	Future Plus Project CNEL	ΔdB	Significance Threshold	Significant?
Foothill Boulevard between Willow Avenue & Riverside Avenue	73.8	74.9	1.1	1.5	No
Foothill Boulevard between Riverside Avenue & Sycamore Avenue	73.9	74.9	1.0	1.5	No
Rialto Avenue west of Riverside Avenue	62.0	64.1	2.1	3.0	No
Rialto Avenue east of Riverside Avenue	61.2	64.0	2.8	3.0	No
Merrill Avenue west of Riverside Avenue	65.8	67.2	1.4	1.5	No
Merrill Avenue east of Riverside Avenue	66.2	67.1	0.9	1.5	No
Cedar Avenue north of Foothill Boulevard	70.5	71.8	1.3	1.5	No
Cedar Avenue south of Foothill Boulevard	71.3	72.6	1.3	1.5	No
Cactus Avenue north of Foothill Boulevard	69.7	71.0	1.3	1.5	No
Cactus Avenue south of Foothill Boulevard	69.9	71.2	1.3	1.5	No
Willow Avenue north of Foothill Boulevard	64.4	65.9	1.5	3.0	No
Willow Avenue south of Foothill Boulevard	64.5	66.3	1.8	3.0	No
Riverside Avenue between Etiwanda Avenue & Foothill Boulevard	70.3	71.6	1.3	1.5	No

Table 9 Vehicle Traffic Noise Level Increases					
Roadway	Existing CNEL	Future Plus Project CNEL	Δ dB	Significance Threshold	Significant?
Riverside Avenue between Foothill Boulevard & Rialto Avenue	67.8	69.0	1.2	1.5	No
Riverside Avenue between Rialto Avenue & Merrill Avenue	68.2	69.3	1.1	1.5	No
Sycamore Avenue north of Foothill Boulevard	63.5	64.1	0.6	3.0	No
Sycamore Avenue south of Foothill Boulevard	64.8	66.6	1.8	3.0	No
Acacia Avenue north of Foothill Boulevard	61.7	61.2	-0.5	3.0	No
Acacia Avenue south of Foothill Boulevard	63.2	63.1	-0.1	3.0	No
Eucalyptus Avenue north of Foothill Boulevard	62.3	63.4	1.1	3.0	No
Eucalyptus Avenue south of Foothill Boulevard	64.2	65.3	1.1	3.0	No
Pepper Avenue north of Foothill Boulevard	69.8	70.5	0.7	1.5	No
Pepper Avenue south of Foothill Boulevard	70.1	70.4	0.3	1.5	No
SOURCE: Attachment 2. Δ dB = Change in Noise Level (delta)					

As shown, cumulative noise level increases due to buildout of the Proposed Project would be less than the applicable significance thresholds. Noise level increases due to project-related traffic on other area roadways further away from the Specific Plan area would be less than the increases on study area roadways since noise level increases are assumed to be greatest nearest the Specific Plan area, as this location would represent the greatest concentration of project-related traffic. Therefore, operational roadway noise would not generate a substantial permanent increase in ambient noise levels for off-site noise sensitive land uses, and impacts would be less than significant.

6.1.2 Land Use Compatibility

The Specific Plan area is exposed to noise from traffic on area roadways and the Metrolink. Future vehicle and Metrolink noise contours are shown in Figure 5a. SoundPLAN data is provided in Attachment 3. The following is a discussion of the noise levels and noise compatibility standards at each of the proposed zones.

Single Family Residential (SFR)

SFR zoned parcels are located in the southeast portion of the Specific Plan area. This area is developed with existing single family residential uses. These uses are normally acceptable with noise levels up to 60 CNEL and conditionally acceptable with noise levels up to 65 CNEL. These single family residential uses are exposed to vehicle traffic noise from Sycamore Avenue and Merrill Avenue. As shown in Figure 5b, future noise levels are not anticipated to exceed 65 CNEL at these uses. Noise levels range from 60 to 65 CNEL only at the residential uses located immediately adjacent to Sycamore Avenue and Merrill Avenue. All other parcels are exposed to noise levels less than 60 CNEL.

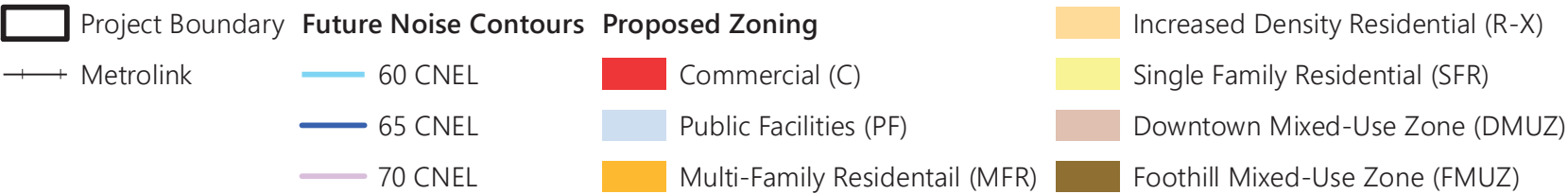
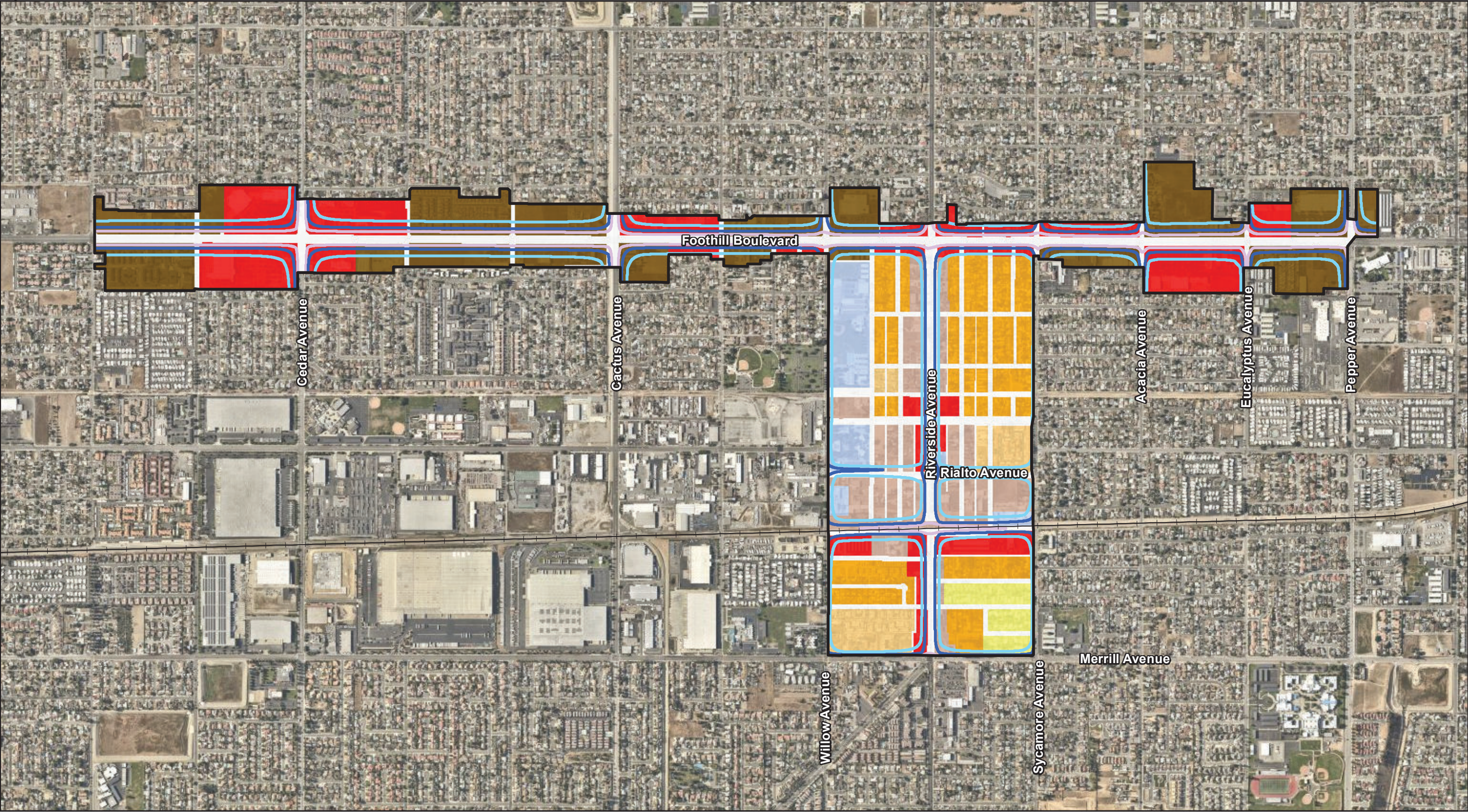


FIGURE 5a
Future Noise Contours

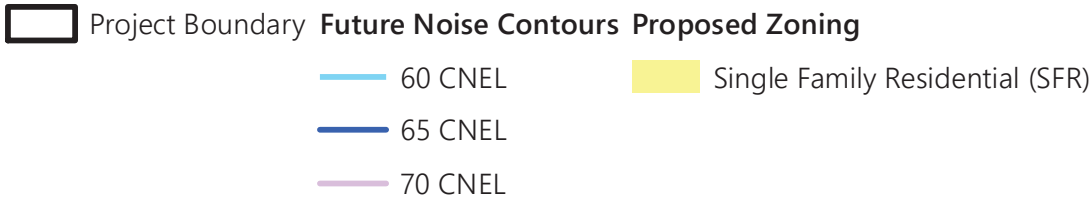
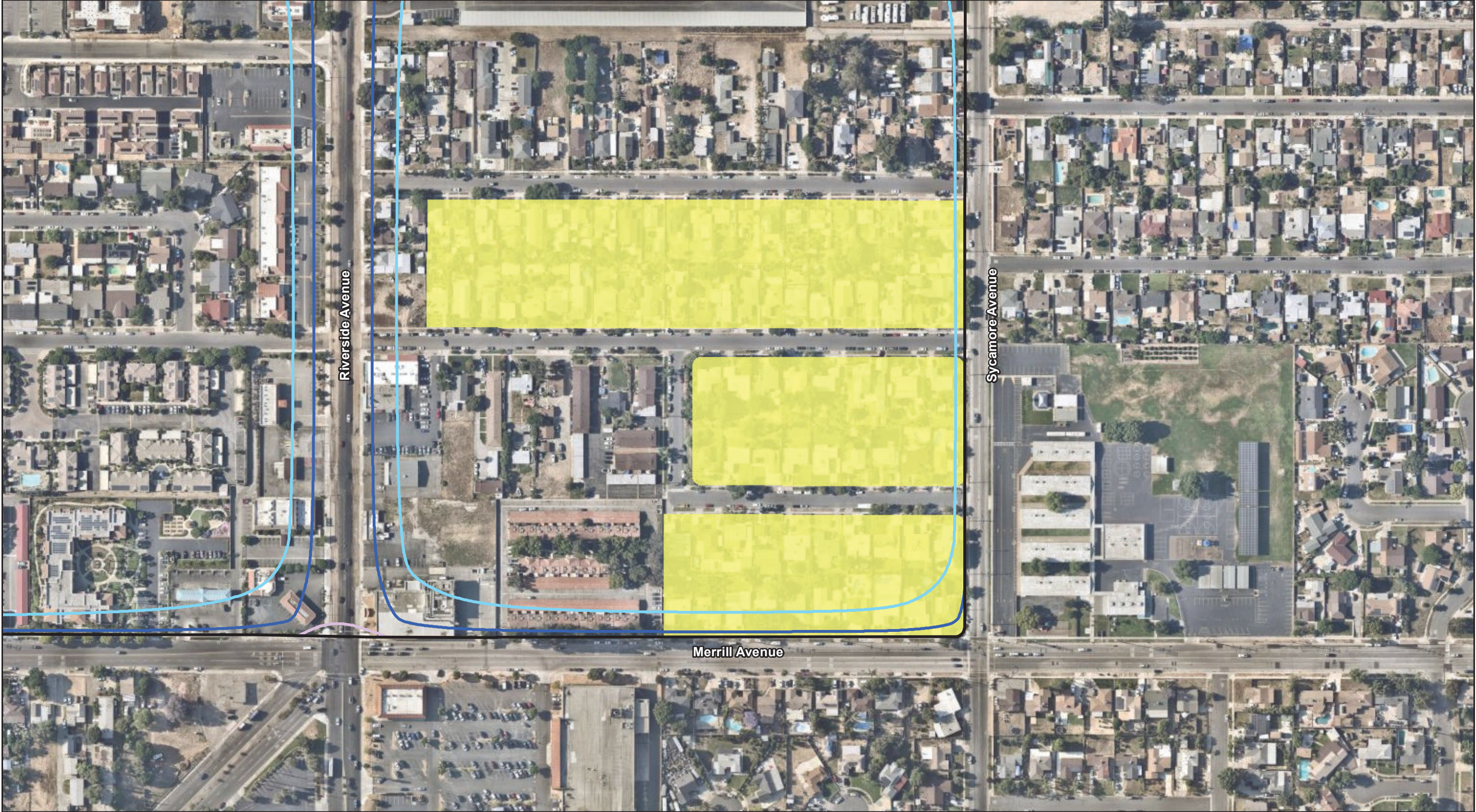


FIGURE 5b
Future Noise Contours – Single Family Residential (SFR)

Multi-Family Residential (MFR)

MFR zoned parcels are located throughout the central portion of the Specific Plan area. These residential uses are normally acceptable with noise levels up to 60 CNEL and conditionally acceptable with noise levels up to 70 CNEL. As shown in Figure 5c, future exterior noise levels are projected to exceed 60 CNEL only at those parcels immediately adjacent to Sycamore Avenue, Merrill Avenue, and Willow Avenue. Noise levels would not exceed 70 CNEL at any MFR parcels.

Increased Density Residential (R-X)

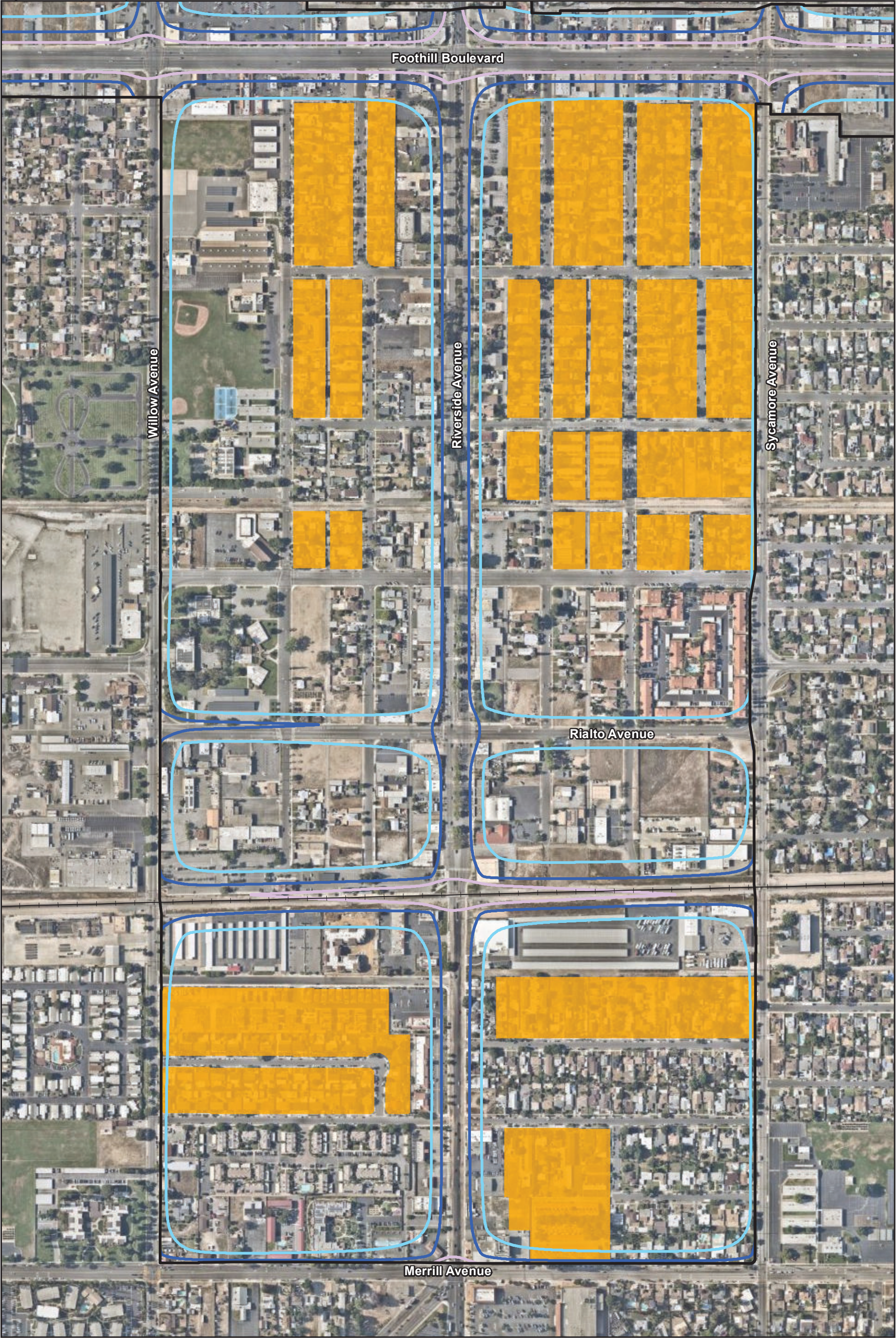
R-X zoned parcels are located in the southwest portion of the Specific Plan area between Riverside Avenue, Merrill Avenue, and Willow Avenue; in the southeast portion of the Specific Plan area adjacent to Sycamore Avenue and Rialto Avenue; and in the central Specific Plan area between Orange Avenue, Palm Avenue, and 2nd Street. These higher density residential uses are normally acceptable with noise levels up to 60 CNEL and conditionally acceptable with noise levels up to 70 CNEL. As shown in Figure 5d, future exterior noise levels are projected to exceed 60 CNEL only at the parcels located immediately adjacent to Rialto Avenue, Merrill Avenue, and Willow Avenue. Noise levels would not exceed 70 CNEL at any R-X parcels.

Foothill Transit-Oriented (FTOZ)

FTOZ zoned parcels are located adjacent to Foothill Boulevard. This zone encourages a combination of ground floor retail, with office and/or residential uses above around the future BRT stops located along Foothill Boulevard. The FTOZ zoned parcels are designated as General Commercial in the City's General Plan. General Commercial land uses are normally acceptable with noise levels up to 65 CNEL and conditionally acceptable with noise levels up to 75 CNEL. As shown in Figure 5e, portions of the FTOZ zoned parcels may exceed 65 CNEL only immediately adjacent to Foothill Boulevard, but no roadway in the Specific Plan area would generate noise levels greater than 75 CNEL.

Downtown Transit-Oriented (DTOZ)

DTOZ zoned parcels are located throughout the central portion of the Specific Plan area primarily adjacent to Riverside Avenue, Rialto Avenue, and the Metrolink. This zone encourages a walkable interconnected mixed-use urban area by providing a combination of ground-floor retail, higher intensity office, and/or residential near the Rialto Metrolink Station in downtown Rialto. It provides retail and commercial uses, including restaurants, breweries, and entertainment destinations. Mixed use land uses are normally acceptable with noise levels up to 60 CNEL and conditionally acceptable with noise levels up to 75 CNEL. As shown in Figure 5f, noise levels would exceed 60 CNEL only at those portions of the parcels located immediately adjacent to Riverside Avenue, Willow Avenue, Sycamore Avenue, Rialto Avenue, and the Metrolink. No roadway in the Specific Plan area would generate noise levels greater than 75 CNEL.



Project Boundary

Metrolink

60 CNEL

65 CNEL

70 CNEL

Proposed Zoning

Multi-Family Residential (MFR)

0

Feet

400

RECON
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FIGURE 5c
Future Noise Contours – Multi-Family Residential (MFR)

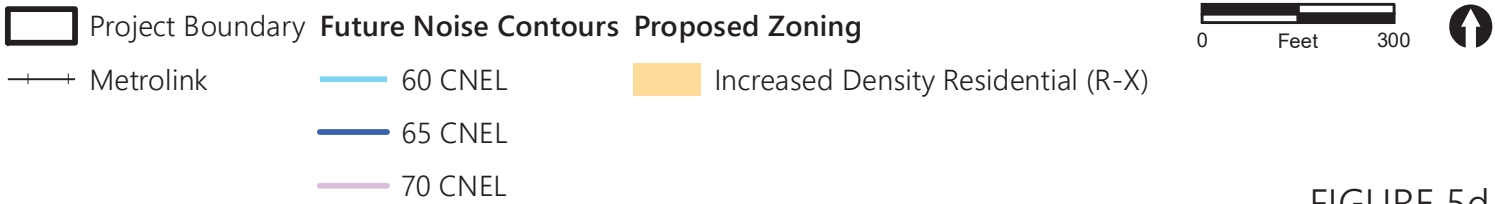
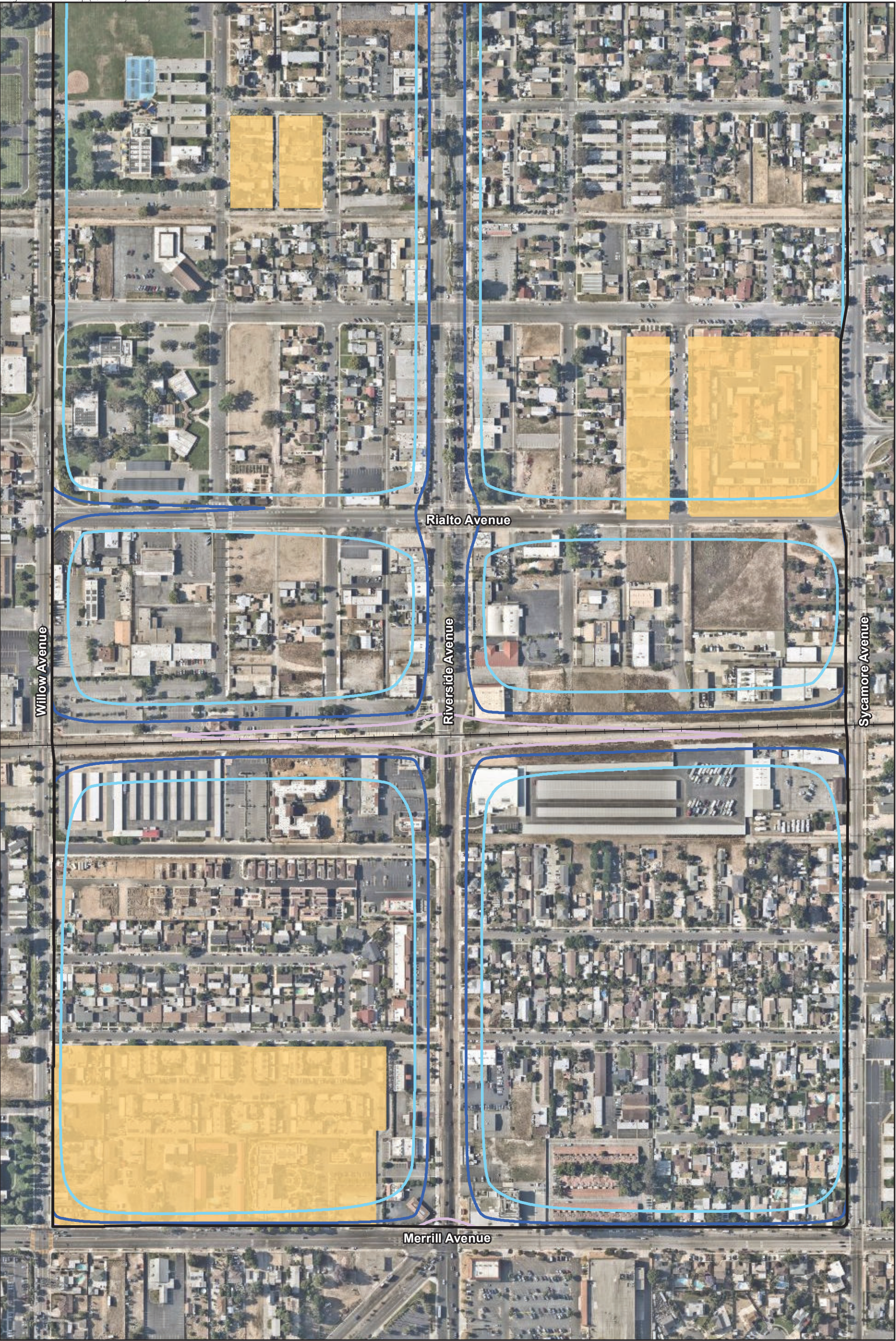


FIGURE 5d
Future Noise Contours – Increase Density Residential (R-X)

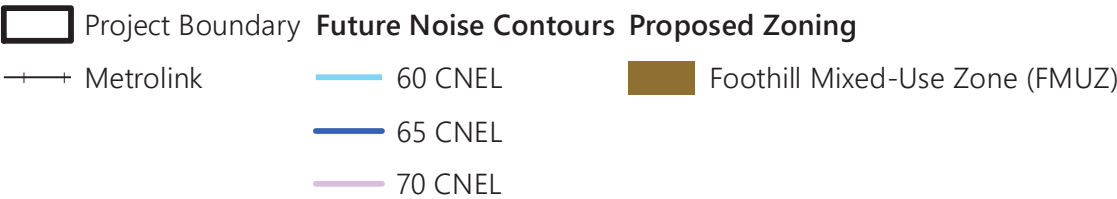
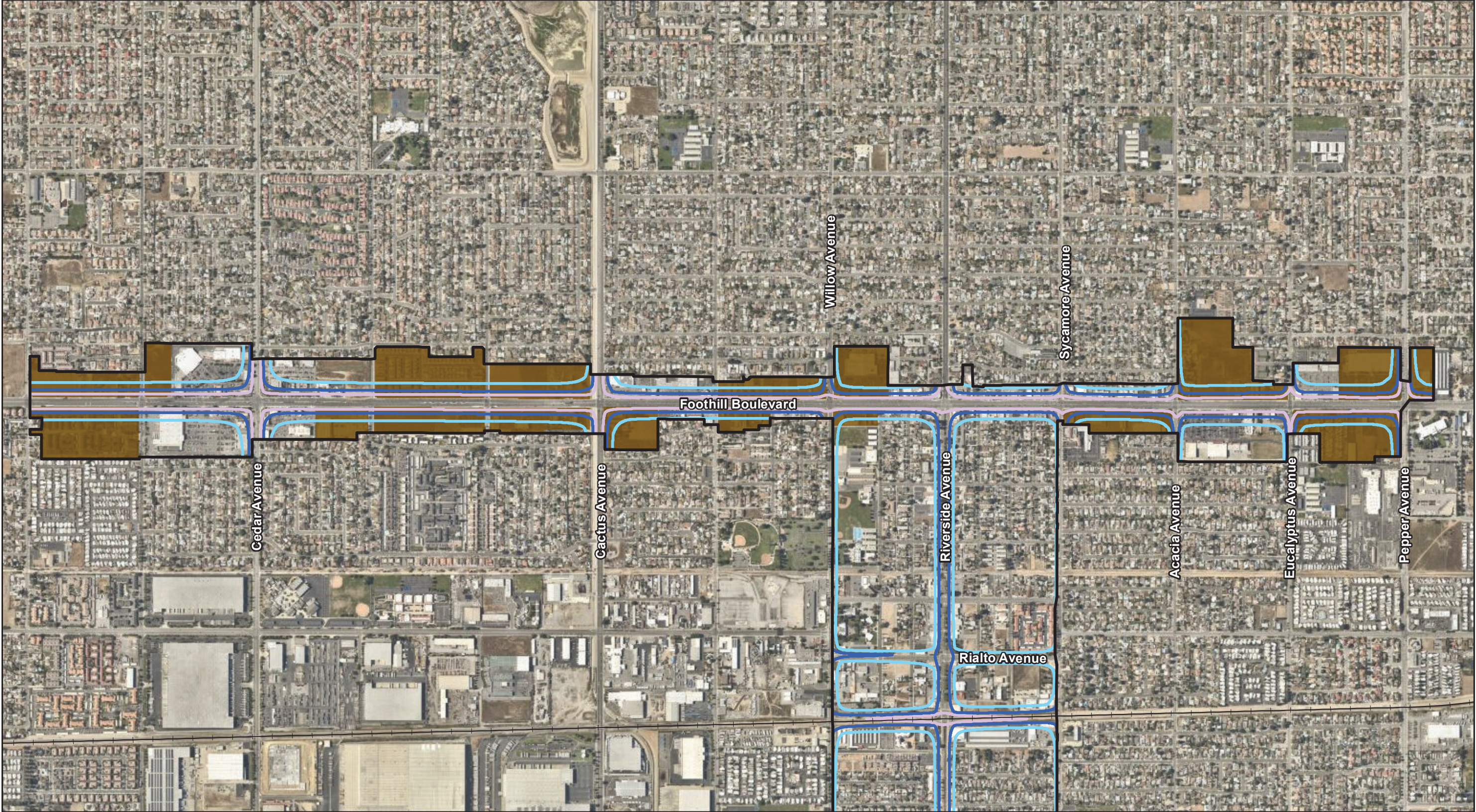


FIGURE 5e
Future Noise Contours – Foothill Mixed-Use Zone (FMUZ)

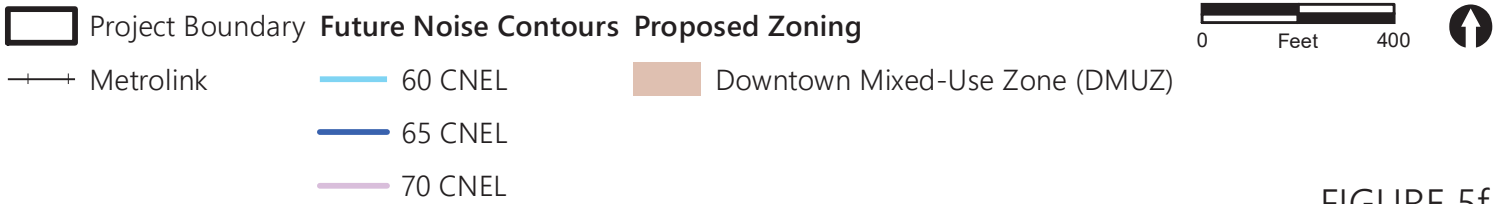


FIGURE 5f
Future Noise Contours – Downtown Mixed-Use Zone (DMUZ)

Commercial (C)

C zoned parcels are located throughout the Specific Plan area, primarily adjacent to Foothill Boulevard, Riverside Avenue, and the Metrolink. Commercial uses are normally acceptable with noise levels up to 65 CNEL and conditionally acceptable with noise levels up to 75 CNEL. As shown in Figure 5g, portions of the commercially zoned parcels may exceed 65 CNEL only immediately adjacent to the roadways, but no roadway in the Specific Plan area would generate noise levels greater than 75 CNEL.

Public Facilities (PF)

PF zoned parcels are located along the western Specific Plan boundary adjacent to Willow Avenue and at the intersection of Sycamore Avenue and the Metrolink tracks. Public facilities are normally acceptable with noise levels up to 60 CNEL and conditionally acceptable with noise levels up to 65 CNEL. As shown in Figure 5h, future noise levels are not projected to exceed 65 CNEL at the parcels adjacent to Willow Avenue. Additionally, for the parcel located adjacent to Sycamore Avenue and the Metrolink tracks, due to the railroad right-of-way setback, future exterior noise levels are not projected to exceed 65 CNEL.

Based on the noise contours shown in Figures 5a through 5h and the discussion above for each of the proposed zones, all land uses would be considered either normally acceptable or conditionally acceptable with the City's noise compatibility standards. No land uses would be exposed to noise levels that are considered normally unacceptable or clearly unacceptable. No specific project-level development is proposed at this time. However, for future development proposed under the Specific Plan, existing General Plan policies and Title 24 requirements are in place to ensure an acceptable exterior and interior noise environment. General Plan Goal 5-11 and Policies 5-11.1 through 5-11.5 are intended to minimize impacts of transportation-related noise. Policy 5-11.2 specifically requires development which is, or will be, affected by railroad noise to include appropriate measures to minimize adverse noise effects on residents and business persons. Future discretionary proposals within the Specific Plan area would be required to conduct site-specific exterior noise analyses to demonstrate that the proposed development would not place sensitive receptors in locations where the exterior existing or future noise levels would exceed the land use compatibility standards. For land uses located where exterior noise levels are within the conditionally acceptable noise level range, effective site measures for reducing noise levels include shielding common exterior use areas from roadway and Metrolink noise with buildings or other barriers and providing window and door components with increased STC ratings, which is an integer value that rates how well a building component attenuates noise. Additionally, all future development would be required to demonstrate compliance with the Title 24 interior noise standards through submission of a Title 24 Compliance Report. Through implementation of this regulatory framework, exterior and interior noise impacts associated with new development would be less than significant.

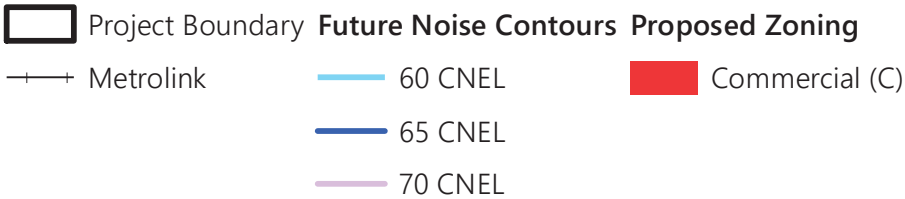
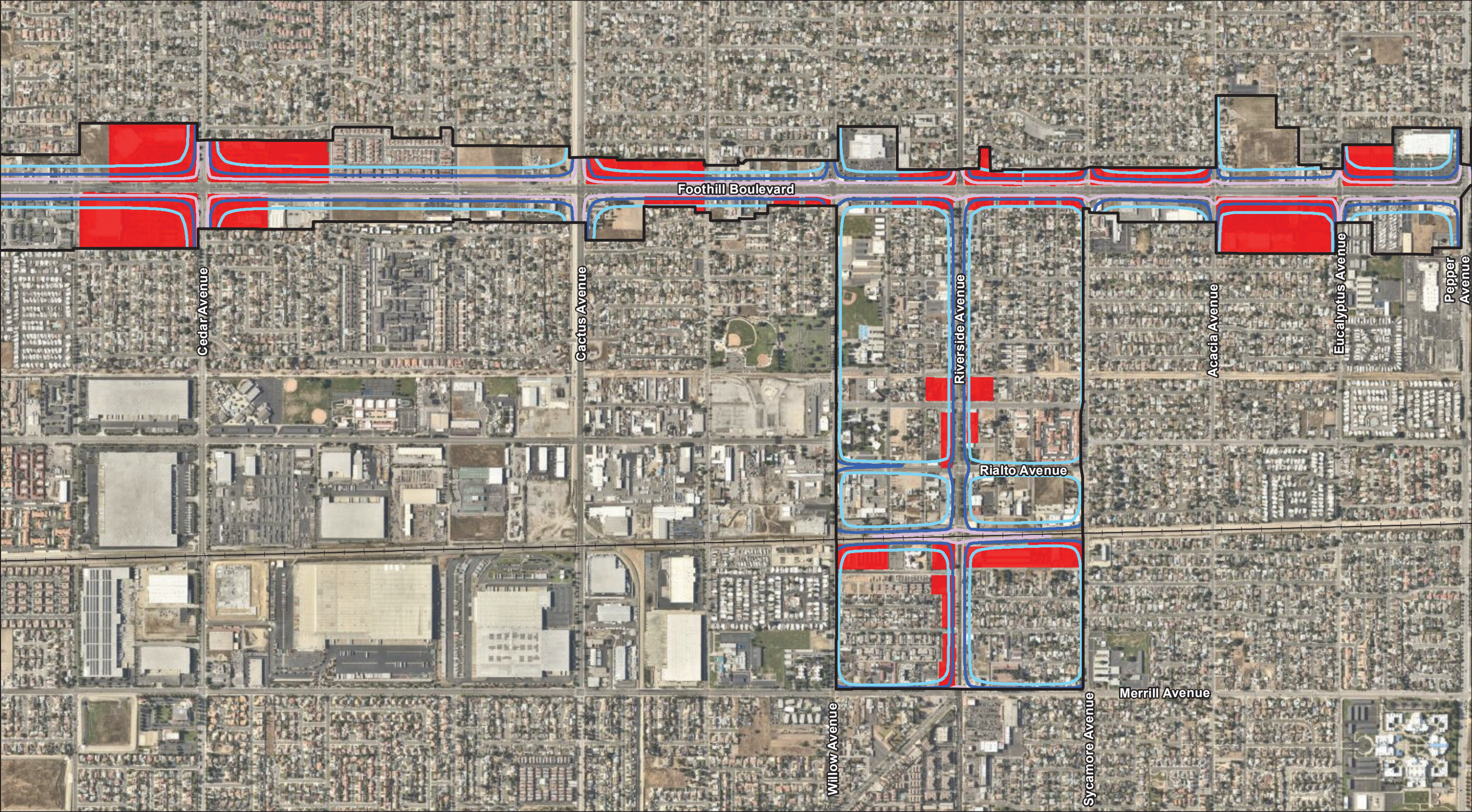


FIGURE 5g

Future Noise Contours – Commercial (C)

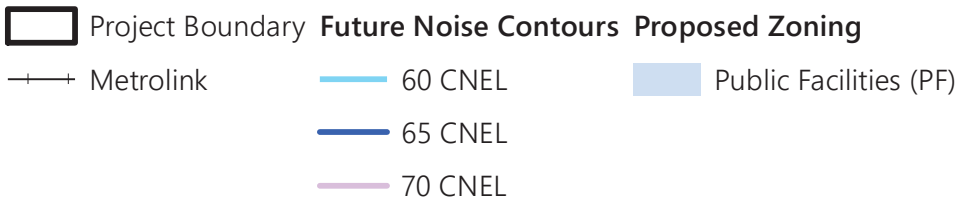
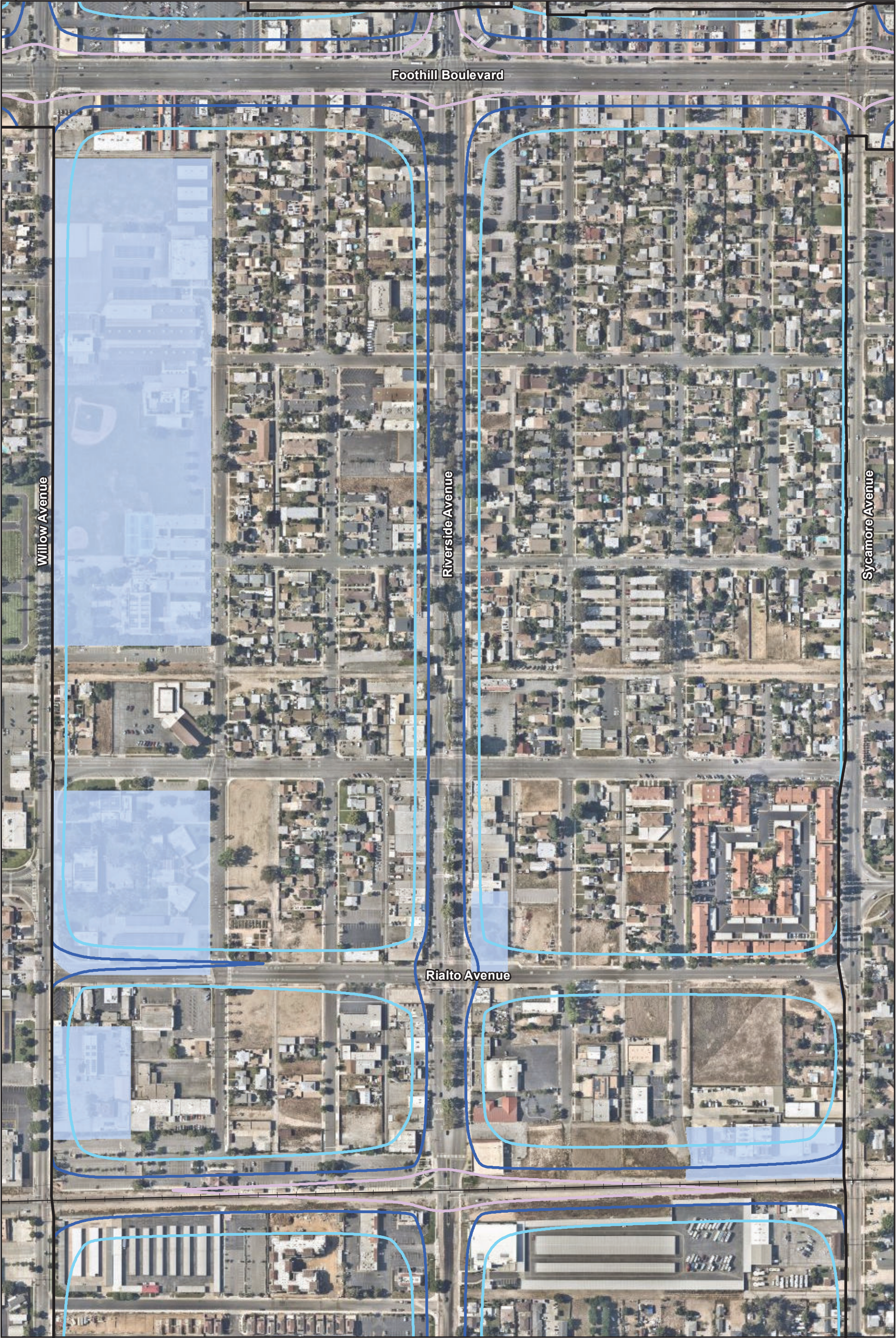


FIGURE 5h
Future Noise Contours – Public Facilities (PF)

6.2 Stationary Noise

A significant impact would occur if implementation of the Proposed Project resulted in the exposure of people to noise levels that exceed the requirements of Chapter 9.50 of the City's Municipal Code. Stationary sources of noise include activities associated with a given land use. For example, noise from residential uses would include landscaping equipment, HVAC equipment, and pedestrians, while noise sources from commercial land uses could include car washes, fast food restaurants, parking lots, and a variety of other uses. Noise generated by residential or commercial uses is generally short-lived and intermittent. No industrial sources of noise are located within the Specific Plan area; however, industrial land uses are located adjacent to the Specific Plan area generally bounded by Willow Avenue on the east, Merrill Avenue on the south, Linden Avenue on the West, and the Pacific Electric Trail on the north. Noise sources associated with industrial land uses include trucks, loading dock activities, and mechanical equipment. Potential noise conflicts could occur in mixed-use areas where residential uses are located in close proximity to commercial and retail uses and where residential uses are located near the industrial uses.

The type of land uses proposed under the Proposed Project would be similar to the land uses that currently exist. Although the Proposed Project would increase density and provide for more mixed-use areas, the allowed uses would be similar to what currently exists within the Specific Plan area.

Noise levels within the Specific Plan area are currently dominated by vehicle traffic on area roadways and would continue to be the primary source of noise under buildout of the Proposed Project. Therefore, future noise levels from stationary sources throughout the Specific Plan area would not be expected to increase the hourly or daily average sound level with respect to current conditions. While noise-sensitive residential land uses would be exposed to noise associated with the operation of commercial and industrial uses, future development would be required to show compliance with Chapter 9.50 of the Municipal Code. As detailed in Section 2.3.2, the City regulates noise conflicts between land uses by prohibiting or restricting horns and signaling devices, excessive motor vehicle noise, music and sound amplification equipment, alarms, and any other "unnecessary or unusual noise that disturbs the comfort, repose, health, peace and quiet or which causes discomfort or annoyance to any reasonable person of normal sensitivity." The City also regulates noise conflicts between land uses by restricting the allowable hours of operation of loading docks, power tools, landscaping equipment, and other heavy equipment. The City enforces these requirements through the issuance of citations. General Plan Policies 5-10.1 through 5-10.5 (see Section 2.3.1) also ensure that acceptable noise levels are maintained in noise sensitive areas and the hours of operation of noise generation sources are limited. For future noise-sensitive land uses located adjacent to the industrial uses to the west, it is recommended that site design measure such as blocking the line-of-sight between exterior use areas and the industrial use with buildings or other barriers and increasing the STC ratings of window and door components be incorporated into the project design. Enforcement of Chapter 9.50 of the Municipal Code and General Plan Policies 5-10.1 through 5-10.5 would ensure that future development under the Proposed Project would not result in a substantial permanent increase in ambient noise levels, and impacts would be less than significant.

6.3 Construction Noise

Future development implemented under the Proposed Project could result in a temporary ambient noise increase due to construction activities. Due to the developed nature of the Specific Plan area, construction activities would take place adjacent to existing structures and sensitive receptors would be located in proximity to construction activities.

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 4.3 above, hourly average noise levels would be approximately 83 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.

The City regulates construction noise through Section 9.50.070 of the Municipal Code by limiting construction activities to 7:00 a.m. to 5:30 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturdays between October 1 and April 30, and 6:00 a.m. to 7:00 p.m. Monday through Friday and 8:00 a.m. to 5:00 p.m. on Saturdays between May 1 and September 30. Additionally, General Plan Policy 5-10.5 requires that construction equipment use available noise suppression devices and techniques to reduce exterior noise to acceptable levels that are compatible with adjacent land uses. Enforcement of Section 9.50.070 of the Municipal Code and General Plan Policy 5-10.1 would ensure that temporary construction noise associated with development implemented under the Proposed project would be less than significant.

6.4 Vibration

6.4.1 Construction

Human reaction to vibration is dependent on the environment the receiver is in, as well as individual sensitivity. For example, outdoor vibration is rarely noticeable and generally not considered annoying. Typically, humans must be inside a structure for vibrations to become noticeable and/or annoying (FTA 2018).

Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction. Construction activities produce varying degrees of ground vibration depending on the equipment and methods employed. While ground vibrations from typical construction activities rarely reach levels high enough to cause damage to structures, special consideration must be made when sensitive or historic land uses are near the construction site. Generally, the buildings located in the Specific Plan

area consist of commercial buildings and a mix of newer and older residential structures. To provide a conservative analysis this analysis uses FTA guidance for non-engineered timber and masonry buildings which states that they could be damaged if exposed to vibration levels that exceed 0.2 PPV. Assuming normal propagation conditions, vibration generated by a bulldozer could exceed the threshold for structural damage within approximately 12 feet of bulldozer activity. It is unlikely that a bulldozer would operate within 12 feet of any existing building. Additionally, construction of future projects would not include vibration-intensive activities such as blasting or impact pile driving. Therefore, construction activities from development implemented under the Proposed Project would not result in structural damage to nearby structures from vibration-generating construction activities.

Regarding human disturbance from construction activities, the FTA considers a vibration level of 65 VdB to be the threshold of perceptibility for humans. Based on the FTA's vibration criteria, a significant impact would occur if vibration levels exceeded 80 VdB within places where people normally sleep (FTA 2018). However, as detailed above, construction activity would occur during the daytime hours as required by Section 9.50.070 of the Municipal Code; and thus, would generally not take place when people are sleeping. 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 result in a less than significant impact with respect to perception. Therefore, construction vibration impacts would be considered less than significant.

6.4.2 Metrolink

Railroads generate ground-borne vibration that may be perceptible at on-site uses. Construction of residential units in close proximity to railroad tracks can cause rattling windows and vibration of floors. Train vibration depends upon a variety of factors. The weight of the train, the travel speed, the condition of the track and the character of the subsoil all affect the observed vibration level. As discussed, the Metrolink commuter rail San Bernardino Line operates through the southern portion of the Specific Plan area. As shown in Table 6, there are 34 Metrolink trains that travel through the Specific Plan area per day. Based on the criteria shown in Table 3, a significant vibration impact may occur if vibration levels at residential uses exceed 80 VdB for infrequent events (less than 70 per day). Figure 6 shows the generalized ground surface vibration curves that are based on measurements of ground-borne vibration at representative North American transit systems (FTA 2018). These curves can be used to represent vibration characteristics for standard transportation systems. As shown, the Metrolink would generate a vibration level of 80 VdB at approximately 15 to 20 feet from the track centerline. Due to railroad right-of-way and setback requirements, no residential structures would be constructed within 20 feet of the track. Vibration impacts due to the Metrolink would be less than significant.

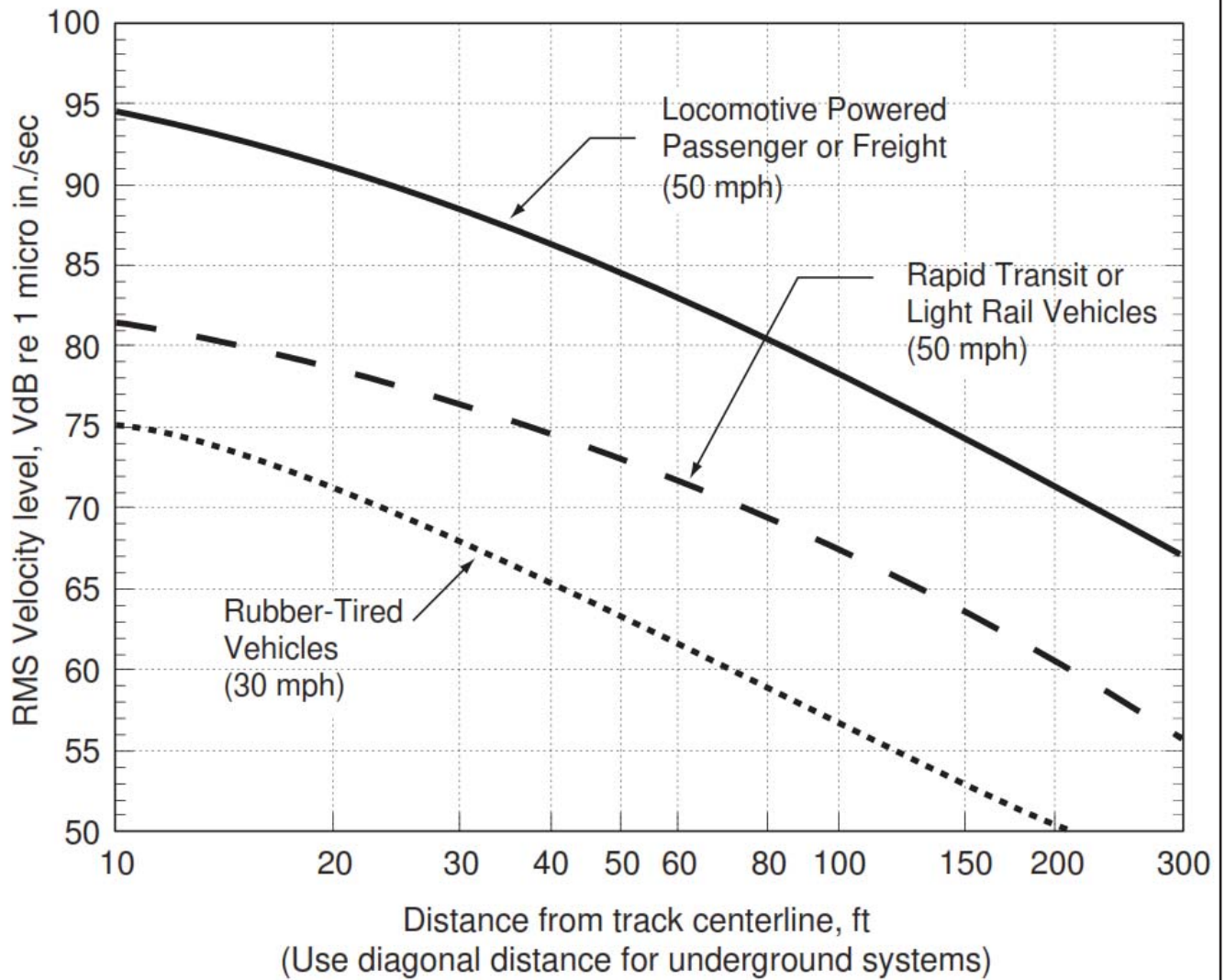


FIGURE 6

Generalized Ground Surface Vibration Curve

7.0 Conclusions

7.1 Traffic Noise

7.1.1 Ambient Noise Increase

Cumulative noise level increases due to buildout of the Proposed Project would be less than the applicable significance thresholds. Noise level increases due to project-related traffic on other area roadways further away from the Specific Plan area would be less than the increases on study area roadways since noise level increases are assumed to be greatest nearest the Specific Plan area, as this location would represent the greatest concentration of project-related traffic. Therefore, operational roadway noise would not generate a substantial permanent increase in ambient noise levels for off-site noise sensitive land uses, and impacts would be less than significant.

7.1.2 Land Use Compatibility

All land uses would be considered either normally acceptable or conditionally acceptable with the City's noise compatibility standards. No land uses would be exposed to noise levels that are considered normally unacceptable or clearly unacceptable. No specific project-level development is proposed at this time. However, for future development proposed under the Specific Plan, existing General Plan policies and Title 24 requirements are in place to ensure an acceptable exterior and interior noise environment. For land uses located where exterior noise levels are within the conditionally acceptable noise level range, effective site measures for reducing noise levels include shielding common exterior use areas from roadway and Metrolink noise with buildings or other barriers and providing window and door components with increased STC ratings. Through implementation of this regulatory framework, exterior and interior noise impacts associated with new development would be less than significant.

7.2 Stationary Noise

Stationary sources of noise include activities associated with a given land use. The type of land uses proposed under the Proposed Project would be similar to the land uses that currently exist. Although the Proposed Project would increase density and provide for more mixed-use areas, the allowed uses would be similar to what currently exists within the Specific Plan area. For future noise-sensitive land uses located adjacent to the industrial uses to the west, it is recommended that site design measure such as blocking the line-of-sight between exterior use areas and the industrial use with buildings or other barriers and increasing the STC ratings of window and door components be incorporated into the project design. Enforcement of Chapter 9.50 of the Municipal Code and General Plan Policies 5-10.1 through 5-10.5 would ensure that future development under the Proposed Project would not result in a substantial permanent increase in ambient noise levels, and impacts would be less than significant.

7.3 Construction Noise

Future development implemented under the Proposed Project could result in a temporary ambient noise increase due to construction activities. Due to the developed nature of the Specific Plan area, construction activities would take place adjacent to existing structures and sensitive receptors would be located in proximity to construction activities. The City regulates construction noise through Section 9.50.070 of the Municipal Code by limiting the hours of construction activities. Additionally, General Plan Policy 5-10.5 requires that construction equipment use available noise suppression devices and techniques to reduce exterior noise to acceptable levels that are compatible with adjacent land uses. Enforcement of Section 9.50.070 of the Municipal Code and General Plan Policy 5-10.1 would ensure that temporary construction noise associated with development implemented under the Proposed project would be less than significant.

7.4 Vibration

7.4.1 Construction

Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction. Construction activities produce varying degrees of ground vibration depending on the equipment and methods employed. Generally, the buildings located in the Specific Plan area consist of commercial buildings and a mix of newer and older residential structures. Construction activities from development implemented under the Proposed Project would not result in structural damage to nearby structures from vibration-generating construction activities. Additionally, 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 result in a less than significant impact with respect to perception. Therefore, construction vibration impacts would be considered less than significant.

7.4.2 Metrolink

Railroads generate ground-borne vibration that may be perceptible at on-site uses. Based on the generalized ground surface vibration curves, the Metrolink would generate a vibration level of 80 VdB at approximately 15 to 20 feet from the track centerline. Due to railroad right-of-way and setback requirements, no residential structures would be constructed within 20 feet of the track. Vibration impacts due to the Metrolink would be less than significant.

8.0 References Cited

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ATTACHMENTS

ATTACHMENT 1

SoundPLAN Data – Existing Noise Contours

10026 Foothill Central Specific Plan
SoundPLAN Data - Existing Noise Contours

Station km	ADT Veh/24h	Traffic values Vehicles type	Vehicle name	day Veh/h	evening Veh/h	night Veh/h	Speed km/h	Control device	Constr. Speed km/h	Affect. veh. %	Road surface	Gradient Min / Max %
Foothill Boulevard		Traffic direction:	In entry direction									
0+000	24198	Total	-		1553	807	349	-	none	-	Average (of DGAC and PCC)	0
0+000	24198	Automobiles	-		1475	767	332	80	none	-	Average (of DGAC and PCC)	0
0+000	24198	Medium trucks	-		31	16	7	80	none	-	Average (of DGAC and PCC)	0
0+000	24198	Heavy trucks	-		16	8	3	80	none	-	Average (of DGAC and PCC)	0
0+000	24198	Buses	-		16	8	3	80	none	-	Average (of DGAC and PCC)	0
0+000	24198	Motorcycles	-		16	8	3	80	none	-	Average (of DGAC and PCC)	0
0+000	24198	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+318	30978	Total	-		1988	1033	447	-	none	-	Average (of DGAC and PCC)	0
2+318	30978	Automobiles	-		1889	981	425	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Medium trucks	-		40	21	9	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Heavy trucks	-		20	10	4	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Buses	-		20	10	4	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Motorcycles	-		20	10	4	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
3+525	24744	Total	-		1588	825	357	-	none	-	Average (of DGAC and PCC)	0
3+525	24744	Automobiles	-		1509	784	339	64	none	-	Average (of DGAC and PCC)	0
3+525	24744	Medium trucks	-		32	17	7	64	none	-	Average (of DGAC and PCC)	0
3+525	24744	Heavy trucks	-		16	8	4	64	none	-	Average (of DGAC and PCC)	0
3+525	24744	Buses	-		16	8	4	64	none	-	Average (of DGAC and PCC)	0
3+525	24744	Motorcycles	-		16	8	4	64	none	-	Average (of DGAC and PCC)	0
3+525	24744	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
4+337	31140	Total	-		1998	1038	450	-	none	-	Average (of DGAC and PCC)	0
4+337	31140	Automobiles	-		1898	986	428	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Medium trucks	-		40	21	9	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Heavy trucks	-		20	10	5	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Buses	-		20	10	5	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Motorcycles	-		20	10	5	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
5+698	-	-	-	-	-	-	-	-	-	-	-	-
Rialto Avenue		Traffic direction:	In entry direction									
0+000	4758	Total	-		305	159	69	-	none	-	Average (of DGAC and PCC)	0
0+000	4758	Automobiles	-		290	151	66	48	none	-	Average (of DGAC and PCC)	0
0+000	4758	Medium trucks	-		6	3	1	48	none	-	Average (of DGAC and PCC)	0
0+000	4758	Heavy trucks	-		3	2	1	48	none	-	Average (of DGAC and PCC)	0
0+000	4758	Buses	-		3	2	1	48	none	-	Average (of DGAC and PCC)	0
0+000	4758	Motorcycles	-		3	2	1	48	none	-	Average (of DGAC and PCC)	0
0+000	4758	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+403	4008	Total	-		257	134	58	-	none	-	Average (of DGAC and PCC)	0
0+403	4008	Automobiles	-		244	127	55	48	none	-	Average (of DGAC and PCC)	0
0+403	4008	Medium trucks	-		5	3	1	48	none	-	Average (of DGAC and PCC)	0
0+403	4008	Heavy trucks	-		3	1	1	48	none	-	Average (of DGAC and PCC)	0
0+403	4008	Buses	-		3	1	1	48	none	-	Average (of DGAC and PCC)	0
0+403	4008	Motorcycles	-		3	1	1	48	none	-	Average (of DGAC and PCC)	0
0+403	4008	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+208	-	-	-	-	-	-	-	-	-	-	-	-
Merrill Avenue		Traffic direction:	In entry direction									
0+000	8994	Total	-		577	300	130	-	none	-	Average (of DGAC and PCC)	0
0+000	8994	Automobiles	-		548	285	124	56	none	-	Average (of DGAC and PCC)	0
0+000	8994	Medium trucks	-		12	6	3	56	none	-	Average (of DGAC and PCC)	0
0+000	8994	Heavy trucks	-		6	3	1	56	none	-	Average (of DGAC and PCC)	0
0+000	8994	Buses	-		6	3	1	56	none	-	Average (of DGAC and PCC)	0
0+000	8994	Motorcycles	-		6	3	1	56	none	-	Average (of DGAC and PCC)	0
0+000	8994	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+207	9972	Total	-		640	332	144	-	none	-	Average (of DGAC and PCC)	0
1+207	9972	Automobiles	-		608	315	137	56	none	-	Average (of DGAC and PCC)	0
1+207	9972	Medium trucks	-		13	7	3	56	none	-	Average (of DGAC and PCC)	0
1+207	9972	Heavy trucks	-		6	3	1	56	none	-	Average (of DGAC and PCC)	0
1+207	9972	Buses	-		6	3	1	56	none	-	Average (of DGAC and PCC)	0
1+207	9972	Motorcycles	-		6	3	1	56	none	-	Average (of DGAC and PCC)	0
1+207	9972	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+818	-	-	-	-	-	-	-	-	-	-	-	-
Cedar Avenue		Traffic direction:	In entry direction									
0+000	19338	Total	-		1241	645	279	-	none	-	Average (of DGAC and PCC)	0

10026 Foothill Central Specific Plan
SoundPLAN Data - Existing Noise Contours

0+000	19338 Automobiles	-		1179	613	265	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19338 Medium trucks	-		25	13	6	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19338 Heavy trucks	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19338 Buses	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19338 Motorcycles	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19338 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+709	23331 Total	-		1497	778	337	-	none	-	-	Average (of DGAC and PCC)	0
0+709	23331 Automobiles	-		1422	739	320	64	none	-	-	Average (of DGAC and PCC)	0
0+709	23331 Medium trucks	-		30	16	7	64	none	-	-	Average (of DGAC and PCC)	0
0+709	23331 Heavy trucks	-		15	8	3	64	none	-	-	Average (of DGAC and PCC)	0
0+709	23331 Buses	-		15	8	3	64	none	-	-	Average (of DGAC and PCC)	0
0+709	23331 Motorcycles	-		15	8	3	64	none	-	-	Average (of DGAC and PCC)	0
0+709	23331 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+513	-	-	-	-	-	-	-	-	-	-	-	-
Cactus Avenue Traffic direction: In entry direction												
0+000	12174 Total	-		781	406	176	-	none	-	-	Average (of DGAC and PCC)	0
0+000	12174 Automobiles	-		742	386	167	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12174 Medium trucks	-		16	8	4	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12174 Heavy trucks	-		8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12174 Buses	-		8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12174 Motorcycles	-		8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	12174 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+711	12822 Total	-		823	427	185	-	none	-	-	Average (of DGAC and PCC)	0
0+711	12822 Automobiles	-		782	406	176	72	none	-	-	Average (of DGAC and PCC)	0
0+711	12822 Medium trucks	-		16	9	4	72	none	-	-	Average (of DGAC and PCC)	0
0+711	12822 Heavy trucks	-		8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+711	12822 Buses	-		8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+711	12822 Motorcycles	-		8	4	2	72	none	-	-	Average (of DGAC and PCC)	0
0+711	12822 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+510	-	-	-	-	-	-	-	-	-	-	-	-
Willow Avenue Traffic direction: In entry direction												
0+000	6465 Total	-		415	216	93	-	none	-	-	Average (of DGAC and PCC)	0
0+000	6465 Automobiles	-		394	205	88	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6465 Medium trucks	-		8	4	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6465 Heavy trucks	-		4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6465 Buses	-		4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6465 Motorcycles	-		4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6465 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+711	6729 Total	-		432	224	97	-	none	-	-	Average (of DGAC and PCC)	0
0+711	6729 Automobiles	-		410	213	92	56	none	-	-	Average (of DGAC and PCC)	0
0+711	6729 Medium trucks	-		9	4	2	56	none	-	-	Average (of DGAC and PCC)	0
0+711	6729 Heavy trucks	-		4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+711	6729 Buses	-		4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+711	6729 Motorcycles	-		4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+711	6729 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+839	-	-	-	-	-	-	-	-	-	-	-	-
Riverside Avenue Traffic direction: In entry direction												
0+000	18510 Total	-		1188	617	267	-	none	-	-	Average (of DGAC and PCC)	0
0+000	18510 Automobiles	-		1129	586	254	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18510 Medium trucks	-		24	12	5	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18510 Heavy trucks	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18510 Buses	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18510 Motorcycles	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18510 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+710	18393 Total	-		1180	613	266	-	none	-	-	Average (of DGAC and PCC)	0
0+710	18393 Automobiles	-		1121	582	253	48	none	-	-	Average (of DGAC and PCC)	0
0+710	18393 Medium trucks	-		24	12	5	48	none	-	-	Average (of DGAC and PCC)	0
0+710	18393 Heavy trucks	-		12	6	3	48	none	-	-	Average (of DGAC and PCC)	0
0+710	18393 Buses	-		12	6	3	48	none	-	-	Average (of DGAC and PCC)	0
0+710	18393 Motorcycles	-		12	6	3	48	none	-	-	Average (of DGAC and PCC)	0
0+710	18393 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+604	19998 Total	-		1283	667	289	-	none	-	-	Average (of DGAC and PCC)	0
1+604	19998 Automobiles	-		1219	634	275	48	none	-	-	Average (of DGAC and PCC)	0
1+604	19998 Medium trucks	-		26	13	6	48	none	-	-	Average (of DGAC and PCC)	0
1+604	19998 Heavy trucks	-		13	7	3	48	none	-	-	Average (of DGAC and PCC)	0
1+604	19998 Buses	-		13	7	3	48	none	-	-	Average (of DGAC and PCC)	0
1+604	19998 Motorcycles	-		13	7	3	48	none	-	-	Average (of DGAC and PCC)	0

10026 Foothill Central Specific Plan
SoundPLAN Data - Existing Noise Contours

1+604	19998 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+314	19998 Total	-	1283	667	289	-	none	-	-	Average (of DGAC and PCC)	0
2+314	19998 Automobiles	-	1219	634	275	64	none	-	-	Average (of DGAC and PCC)	0
2+314	19998 Medium trucks	-	26	13	6	64	none	-	-	Average (of DGAC and PCC)	0
2+314	19998 Heavy trucks	-	13	7	3	64	none	-	-	Average (of DGAC and PCC)	0
2+314	19998 Buses	-	13	7	3	64	none	-	-	Average (of DGAC and PCC)	0
2+314	19998 Motorcycles	-	13	7	3	64	none	-	-	Average (of DGAC and PCC)	0
2+314	19998 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+835	-	-	-	-	-	-	-	-	-	-	-
Sycamore Avenue Traffic direction: In entry direction											
0+000	5280 Total	-	339	176	76	-	none	-	-	Average (of DGAC and PCC)	0
0+000	5280 Automobiles	-	322	167	72	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5280 Medium trucks	-	7	4	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5280 Heavy trucks	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5280 Buses	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5280 Motorcycles	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5280 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+709	7188 Total	-	461	240	104	-	none	-	-	Average (of DGAC and PCC)	0
0+709	7188 Automobiles	-	438	228	99	56	none	-	-	Average (of DGAC and PCC)	0
0+709	7188 Medium trucks	-	9	5	2	56	none	-	-	Average (of DGAC and PCC)	0
0+709	7188 Heavy trucks	-	5	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+709	7188 Buses	-	5	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+709	7188 Motorcycles	-	5	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+709	7188 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+831	-	-	-	-	-	-	-	-	-	-	-
Acacia Avenue Traffic direction: In entry direction											
0+000	3474 Total	-	223	116	50	-	none	-	-	Average (of DGAC and PCC)	0
0+000	3474 Automobiles	-	212	110	48	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3474 Medium trucks	-	4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3474 Heavy trucks	-	2	1	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3474 Buses	-	2	1	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3474 Motorcycles	-	2	1	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3474 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+714	4911 Total	-	315	164	71	-	none	-	-	Average (of DGAC and PCC)	0
0+714	4911 Automobiles	-	299	156	67	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4911 Medium trucks	-	6	3	1	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4911 Heavy trucks	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4911 Buses	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4911 Motorcycles	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4911 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+312	-	-	-	-	-	-	-	-	-	-	-
Eucalyptus Avenue Traffic direction: In entry direction											
0+000	2949 Total	-	189	98	43	-	none	-	-	Average (of DGAC and PCC)	0
0+000	2949 Automobiles	-	180	93	41	64	none	-	-	Average (of DGAC and PCC)	0
0+000	2949 Medium trucks	-	4	2	1	64	none	-	-	Average (of DGAC and PCC)	0
0+000	2949 Heavy trucks	-	2	1	0	64	none	-	-	Average (of DGAC and PCC)	0
0+000	2949 Buses	-	2	1	0	64	none	-	-	Average (of DGAC and PCC)	0
0+000	2949 Motorcycles	-	2	1	0	64	none	-	-	Average (of DGAC and PCC)	0
0+000	2949 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+717	4566 Total	-	293	152	66	-	none	-	-	Average (of DGAC and PCC)	0
0+717	4566 Automobiles	-	278	144	63	64	none	-	-	Average (of DGAC and PCC)	0
0+717	4566 Medium trucks	-	6	3	1	64	none	-	-	Average (of DGAC and PCC)	0
0+717	4566 Heavy trucks	-	3	2	1	64	none	-	-	Average (of DGAC and PCC)	0
0+717	4566 Buses	-	3	2	1	64	none	-	-	Average (of DGAC and PCC)	0
0+717	4566 Motorcycles	-	3	2	1	64	none	-	-	Average (of DGAC and PCC)	0
0+717	4566 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+515	-	-	-	-	-	-	-	-	-	-	-
Pepper Avenue Traffic direction: In entry direction											
0+000	16599 Total	-	1065	553	240	-	none	-	-	Average (of DGAC and PCC)	0
0+000	16599 Automobiles	-	1012	525	228	64	none	-	-	Average (of DGAC and PCC)	0
0+000	16599 Medium trucks	-	21	11	5	64	none	-	-	Average (of DGAC and PCC)	0
0+000	16599 Heavy trucks	-	11	6	2	64	none	-	-	Average (of DGAC and PCC)	0
0+000	16599 Buses	-	11	6	2	64	none	-	-	Average (of DGAC and PCC)	0
0+000	16599 Motorcycles	-	11	6	2	64	none	-	-	Average (of DGAC and PCC)	0
0+000	16599 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+710	17748 Total	-	1139	592	256	-	none	-	-	Average (of DGAC and PCC)	0
0+710	17748 Automobiles	-	1082	562	243	64	none	-	-	Average (of DGAC and PCC)	0

10026 Foothill Central Specific Plan
SoundPLAN Data - Existing Noise Contours

0+710	17748	Medium trucks	-		23	12	5	64	none	-	-	Average (of DGAC and PCC)	0
0+710	17748	Heavy trucks	-		11	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+710	17748	Buses	-		11	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+710	17748	Motorcycles	-		11	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+710	17748	Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+510	-	-	-	-	-	-	-	-	-	-	-	-	-

10026 Foothill Central Specific Plan
SoundPLAN Data - Existing Noise Contours

Track	Coordinates of track axis			Track	Curve	Multiple	Corrected		
Station	X	Y	Z	type	radius	reflections	Emission level		
km				[dB]	[dB]	[dB]	day	Evening	night
Metrolink	Rail track:	Direction:		Section:	1 Km:	0+000			
Train type	Number of trains			Speed	Length per		Emission level		
	day	Evening	night		train	Max	day	Evening	night
				km/h	m		dB(A)	dB(A)	dB(A)
	0	21	4	9	48	153 yes	62.4	61.2	59.9
0+000	463995.31	3772902.64	-	-	-	-	-	62.4	61.2
4+022	468005.72	3773084.86	-	-	-	-	-	62.4	61.2

ATTACHMENT 2

FHWA RD-77-108 – Existing and Future Vehicle Traffic Noise Calculations

	Road	Existing	Future	Δ dB	Sig?	
1	Foothill Boulevard between Willow Avenue & Riverside Avenue	73.8	74.9	1.1	No	Ambient >65, Increase <1.5
2	Foothill Boulevard between Riverside Avenue & Sycamore Avenue	73.9	74.9	1.0	No	Ambient >65, Increase <1.5
3	Rialto Avenue west of Riverside Avenue	62.0	64.1	2.1	No	Ambient 60-65, Increase <3.0
4	Rialto Avenue east of Riverside Avenue	61.2	64.0	2.8	No	Ambient 60-65, Increase <3.0
5	Merrill Avenue west of Riverside Avenue	65.8	67.2	1.4	No	Ambient >65, Increase <1.5
6	Merrill Avenue east of Riverside Avenue	66.2	67.1	0.9	No	Ambient >65, Increase <1.5
7	Cedar Avenue north of Foothill Boulevard	70.5	71.8	1.3	No	Ambient >65, Increase <1.5
8	Cedar Avenue south of Foothill Boulevard	71.3	72.6	1.3	No	Ambient >65, Increase <1.5
9	Cactus Avenue north of Foothill Boulevard	69.7	71.0	1.3	No	Ambient >65, Increase <1.5
10	Cactus Avenue south of Foothill Boulevard	69.9	71.2	1.3	No	Ambient >65, Increase <1.5
11	Willow Avenue north of Foothill Boulevard	64.4	65.9	1.5	No	Ambient 60-65, Increase <3.0
12	Willow Avenue south of Foothill Boulevard	64.5	66.3	1.8	No	Ambient 60-65, Increase <3.0
13	Riverside Avenue between Etiwanda Avenue & Foothill Boulevard	70.3	71.6	1.3	No	Ambient >65, Increase <1.5
14	Riverside Avenue between Foothill Boulevard & Rialto Avenue	67.8	69.0	1.2	No	Ambient >65, Increase <1.5
15	Riverside Avenue between Rialto Avenue & Merrill Avenue	68.2	69.3	1.1	No	Ambient >65, Increase <1.5
16	Sycamore Avenue north of Foothill Boulevard	63.5	64.1	0.6	No	Ambient 60-65, Increase <3.0
17	Sycamore Avenue south of Foothill Boulevard	64.8	66.6	1.8	No	Ambient 60-65, Increase <3.0
18	Acacia Avenue north of Foothill Boulevard	61.7	61.2	-0.5	No	Noise decrease
19	Acacia Avenue south of Foothill Boulevard	63.2	63.1	-0.1	No	Noise decrease
20	Eucalyptus Avenue north of Foothill Boulevard	62.3	63.4	1.1	No	Ambient 60-65, Increase <3.0
21	Eucalyptus Avenue south of Foothill Boulevard	64.2	65.3	1.1	No	Ambient 60-65, Increase <3.0
22	Pepper Avenue north of Foothill Boulevard	69.8	70.5	0.7	No	Ambient >65, Increase <1.5
23	Pepper Avenue south of Foothill Boulevard	70.1	70.4	0.3	No	Ambient >65, Increase <1.5

FHWA RD-77-108
Traffic Noise Prediction Model

Data Input Sheet

Project Name : Foothill Central Specific Plan
Project Number : 10026
Modeled Condition : Specific Plan Area - Existing No Project

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

Segment	Roadway Name	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
1	Foothill Boulevard between Willow Avenue & Riverside Avenue	24,195	50	50	97.00	2.00	1.00	77.00	10.00	13.00	
2	Foothill Boulevard between Riverside Avenue & Sycamore Avenue	24,745	50	50	97.00	2.00	1.00	77.00	10.00	13.00	
3	Rialto Avenue west of Riverside Avenue	4,756	30	50	97.00	2.00	1.00	77.00	10.00	13.00	
4	Rialto Avenue east of Riverside Avenue	4,008	30	50	97.00	2.00	1.00	77.00	10.00	13.00	
5	Merrill Avenue west of Riverside Avenue	8,989	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
6	Merrill Avenue east of Riverside Avenue	9,968	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
7	Cedar Avenue north of Foothill Boulevard	19,344	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
8	Cedar Avenue south of Foothill Boulevard	23,330	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
9	Cactus Avenue north of Foothill Boulevard	12,173	45	50	97.00	2.00	1.00	77.00	10.00	13.00	
10	Cactus Avenue south of Foothill Boulevard	12,824	45	50	97.00	2.00	1.00	77.00	10.00	13.00	
11	Willow Avenue north of Foothill Boulevard	6,473	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
12	Willow Avenue south of Foothill Boulevard	6,729	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
13	Riverside Avenue between Etiwanda Avenue & Foothill Boulevard	18,508	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
14	Riverside Avenue between Foothill Boulevard & Rialto Avenue	18,391	30	50	97.00	2.00	1.00	77.00	10.00	13.00	
15	Riverside Avenue between Rialto Avenue & Merrill Avenue	20,001	30	50	97.00	2.00	1.00	77.00	10.00	13.00	
16	Sycamore Avenue north of Foothill Boulevard	5,279	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
17	Sycamore Avenue south of Foothill Boulevard	7,188	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
18	Acacia Avenue north of Foothill Boulevard	3,473	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
19	Acacia Avenue south of Foothill Boulevard	4,907	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
20	Eucalyptus Avenue north of Foothill Boulevard	2,947	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
21	Eucalyptus Avenue south of Foothill Boulevard	4,559	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
22	Pepper Avenue north of Foothill Boulevard	16,602	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
23	Pepper Avenue south of Foothill Boulevard	17,757	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 : Foothill Central Specific Plan
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Modeled Condition : Specific Plan Area - Existing No Project

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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 : Foothill Central Specific Plan
Project Number : 10026
Modeled Condition : Specific Plan Area - Existing No Project
Assessment Metric: Hard

Segment	0	Roadway Name	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	0	Foothill Boulevard between Willow Avenue & Riverside Avenue	72.8	63.5	64.7	73.8	38	120	379	1,199	3,793	11,994
2	0	Foothill Boulevard between Riverside Avenue & Sycamore Avenue	72.9	63.6	64.8	73.9	39	123	388	1,227	3,881	12,274
3	0	Rialto Avenue west of Riverside Avenue	59.3	53.0	57.1	62.0	3	8	25	79	251	792
4	0	Rialto Avenue east of Riverside Avenue	58.6	52.3	56.4	61.2	2	7	21	66	208	659
5	0	Merrill Avenue west of Riverside Avenue	64.0	56.8	59.0	65.8	6	19	60	190	601	1,901
6	0	Merrill Avenue east of Riverside Avenue	64.4	57.3	59.5	66.2	7	21	66	208	659	2,084
7	0	Cedar Avenue north of Foothill Boulevard	69.0	61.1	62.9	70.5	18	56	177	561	1,774	5,610
8	0	Cedar Avenue south of Foothill Boulevard	69.8	61.9	63.7	71.3	21	67	213	674	2,133	6,745
9	0	Cactus Avenue north of Foothill Boulevard	68.5	59.8	61.3	69.7	15	47	148	467	1,476	4,666
10	0	Cactus Avenue south of Foothill Boulevard	68.7	60.1	61.6	69.9	15	49	155	489	1,545	4,886
11	0	Willow Avenue north of Foothill Boulevard	62.6	55.4	57.6	64.4	4	14	44	138	435	1,377
12	0	Willow Avenue south of Foothill Boulevard	62.7	55.6	57.8	64.5	4	14	45	141	446	1,409
13	0	Riverside Avenue between Etiwanda Avenue & Foothill Boulevard	68.8	60.9	62.7	70.3	17	54	169	536	1,694	5,358
14	0	Riverside Avenue between Foothill Boulevard & Rialto Avenue	65.2	58.9	63.0	67.8	10	30	95	301	953	3,013
15	0	Riverside Avenue between Rialto Avenue & Merrill Avenue	65.5	59.3	63.4	68.2	10	33	104	330	1,045	3,303
16	0	Sycamore Avenue north of Foothill Boulevard	61.7	54.5	56.7	63.5	4	11	35	112	354	1,119
17	0	Sycamore Avenue south of Foothill Boulevard	63.0	55.9	58.0	64.8	5	15	48	151	477	1,510
18	0	Acacia Avenue north of Foothill Boulevard	59.9	52.7	54.9	61.7	2	7	23	74	234	740
19	0	Acacia Avenue south of Foothill Boulevard	61.4	54.2	56.4	63.2	3	10	33	104	330	1,045
20	0	Eucalyptus Avenue north of Foothill Boulevard	60.8	52.9	54.7	62.3	3	8	27	85	269	849
21	0	Eucalyptus Avenue south of Foothill Boulevard	62.7	54.8	56.6	64.2	4	13	42	132	416	1,315
22	0	Pepper Avenue north of Foothill Boulevard	68.3	60.4	62.2	69.8	15	48	151	477	1,510	4,775
23	0	Pepper Avenue south of Foothill Boulevard	68.6	60.7	62.5	70.1	16	51	162	512	1,618	5,116

FHWA RD-77-108
Traffic Noise Prediction Model

Data Input Sheet

Project Name : Foothill Central Specific Plan
Project Number : 10026
Modeled Condition : Specific Plan Area - Future + Project

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

Segment	Roadway Name	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
1	Foothill Boulevard between Willow Avenue & Riverside Avenue	30,980	50	50	97.00	2.00	1.00	77.00	10.00	13.00	
2	Foothill Boulevard between Riverside Avenue & Sycamore Avenue	31,130	50	50	97.00	2.00	1.00	77.00	10.00	13.00	
3	Rialto Avenue west of Riverside Avenue	7,820	30	50	97.00	2.00	1.00	77.00	10.00	13.00	
4	Rialto Avenue east of Riverside Avenue	7,670	30	50	97.00	2.00	1.00	77.00	10.00	13.00	
5	Merrill Avenue west of Riverside Avenue	12,420	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
6	Merrill Avenue east of Riverside Avenue	12,080	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
7	Cedar Avenue north of Foothill Boulevard	26,180	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
8	Cedar Avenue south of Foothill Boulevard	31,570	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
9	Cactus Avenue north of Foothill Boulevard	16,400	45	50	97.00	2.00	1.00	77.00	10.00	13.00	
10	Cactus Avenue south of Foothill Boulevard	17,380	45	50	97.00	2.00	1.00	77.00	10.00	13.00	
11	Willow Avenue north of Foothill Boulevard	9,280	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
12	Willow Avenue south of Foothill Boulevard	10,173	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
13	Riverside Avenue between Etiwanda Avenue & Foothill Boulevard	24,940	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
14	Riverside Avenue between Foothill Boulevard & Rialto Avenue	24,190	30	50	97.00	2.00	1.00	77.00	10.00	13.00	
15	Riverside Avenue between Rialto Avenue & Merrill Avenue	25,560	30	50	97.00	2.00	1.00	77.00	10.00	13.00	
16	Sycamore Avenue north of Foothill Boulevard	6,160	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
17	Sycamore Avenue south of Foothill Boulevard	10,910	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
18	Acacia Avenue north of Foothill Boulevard	3,140	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
19	Acacia Avenue south of Foothill Boulevard	4,830	35	50	97.00	2.00	1.00	77.00	10.00	13.00	
20	Eucalyptus Avenue north of Foothill Boulevard	3,790	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
21	Eucalyptus Avenue south of Foothill Boulevard	5,860	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
22	Pepper Avenue north of Foothill Boulevard	19,430	40	50	97.00	2.00	1.00	77.00	10.00	13.00	
23	Pepper Avenue south of Foothill Boulevard	19,080	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 : Foothill Central Specific Plan
Project Number : 10026
Modeled Condition : Specific Plan Area - Future + 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 : Foothill Central Specific Plan
Project Number : 10026
Modeled Condition : Specific Plan Area - Future + Project
Assessment Metric: Hard

Segment	0	Roadway Name	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	0	Foothill Boulevard between Willow Avenue & Riverside Avenue	73.8	64.6	65.8	74.9	49	155	489	1,545	4,886	15,451
2	0	Foothill Boulevard between Riverside Avenue & Sycamore Avenue	73.8	64.6	65.8	74.9	49	155	489	1,545	4,886	15,451
3	0	Rialto Avenue west of Riverside Avenue	61.5	55.2	59.3	64.1	4	13	41	129	406	1,285
4	0	Rialto Avenue east of Riverside Avenue	61.4	55.1	59.2	64.0	4	13	40	126	397	1,256
5	0	Merrill Avenue west of Riverside Avenue	65.4	58.2	60.4	67.2	8	26	83	262	830	2,624
6	0	Merrill Avenue east of Riverside Avenue	65.3	58.1	60.3	67.1	8	26	81	256	811	2,564
7	0	Cedar Avenue north of Foothill Boulevard	70.3	62.4	64.2	71.8	24	76	239	757	2,393	7,568
8	0	Cedar Avenue south of Foothill Boulevard	71.1	63.2	65.0	72.6	29	91	288	910	2,877	9,099
9	0	Cactus Avenue north of Foothill Boulevard	69.7	61.1	62.6	71.0	20	63	199	629	1,991	6,295
10	0	Cactus Avenue south of Foothill Boulevard	70.0	61.4	62.9	71.2	21	66	208	659	2,084	6,591
11	0	Willow Avenue north of Foothill Boulevard	64.1	57.0	59.1	65.9	6	19	62	195	615	1,945
12	0	Willow Avenue south of Foothill Boulevard	64.5	57.4	59.5	66.3	7	21	67	213	674	2,133
13	0	Riverside Avenue between Etiwanda Avenue & Foothill Boulevard	70.1	62.2	64.0	71.6	23	72	229	723	2,285	7,227
14	0	Riverside Avenue between Foothill Boulevard & Rialto Avenue	66.4	60.1	64.2	69.0	13	40	126	397	1,256	3,972
15	0	Riverside Avenue between Rialto Avenue & Merrill Avenue	66.6	60.3	64.4	69.3	13	43	135	426	1,346	4,256
16	0	Sycamore Avenue north of Foothill Boulevard	62.4	55.2	57.4	64.1	4	13	41	129	406	1,285
17	0	Sycamore Avenue south of Foothill Boulevard	64.8	57.7	59.9	66.6	7	23	72	229	723	2,285
18	0	Acacia Avenue north of Foothill Boulevard	59.4	52.3	54.4	61.2	2	7	21	66	208	659
19	0	Acacia Avenue south of Foothill Boulevard	61.3	54.1	56.3	63.1	3	10	32	102	323	1,021
20	0	Eucalyptus Avenue north of Foothill Boulevard	61.9	54.0	55.8	63.4	3	11	35	109	346	1,094
21	0	Eucalyptus Avenue south of Foothill Boulevard	63.8	55.9	57.7	65.3	5	17	54	169	536	1,694
22	0	Pepper Avenue north of Foothill Boulevard	69.0	61.1	62.9	70.5	18	56	177	561	1,774	5,610
23	0	Pepper Avenue south of Foothill Boulevard	68.9	61.0	62.8	70.4	17	55	173	548	1,734	5,482

ATTACHMENT 3

SoundPLAN Data – Future Noise Contours

10026 Foothill Central Specific Plan
SoundPLAN Data - Future Noise Contours

Station km	ADT Veh/24h	Traffic values Vehicles type	Vehicle name	day Veh/h	evening Veh/h	night Veh/h	Speed km/h	Control device	Constr. Speed km/h	Affect. veh. %	Road surface	Gradient Min / Max %
Foothill Boulevard		Traffic direction:	In entry direction									
0+000	30978	Total	-		1988	1033	447	-	none	-	Average (of DGAC and PCC)	0
0+000	30978	Automobiles	-		1889	981	425	80	none	-	Average (of DGAC and PCC)	0
0+000	30978	Medium trucks	-		40	21	9	80	none	-	Average (of DGAC and PCC)	0
0+000	30978	Heavy trucks	-		20	10	4	80	none	-	Average (of DGAC and PCC)	0
0+000	30978	Buses	-		20	10	4	80	none	-	Average (of DGAC and PCC)	0
0+000	30978	Motorcycles	-		20	10	4	80	none	-	Average (of DGAC and PCC)	0
0+000	30978	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+318	30978	Total	-		1988	1033	447	-	none	-	Average (of DGAC and PCC)	0
2+318	30978	Automobiles	-		1889	981	425	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Medium trucks	-		40	21	9	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Heavy trucks	-		20	10	4	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Buses	-		20	10	4	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Motorcycles	-		20	10	4	64	none	-	Average (of DGAC and PCC)	0
2+318	30978	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
3+525	31140	Total	-		1998	1038	450	-	none	-	Average (of DGAC and PCC)	0
3+525	31140	Automobiles	-		1898	986	428	64	none	-	Average (of DGAC and PCC)	0
3+525	31140	Medium trucks	-		40	21	9	64	none	-	Average (of DGAC and PCC)	0
3+525	31140	Heavy trucks	-		20	10	5	64	none	-	Average (of DGAC and PCC)	0
3+525	31140	Buses	-		20	10	5	64	none	-	Average (of DGAC and PCC)	0
3+525	31140	Motorcycles	-		20	10	5	64	none	-	Average (of DGAC and PCC)	0
3+525	31140	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
4+337	31140	Total	-		1998	1038	450	-	none	-	Average (of DGAC and PCC)	0
4+337	31140	Automobiles	-		1898	986	428	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Medium trucks	-		40	21	9	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Heavy trucks	-		20	10	5	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Buses	-		20	10	5	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Motorcycles	-		20	10	5	72	none	-	Average (of DGAC and PCC)	0
4+337	31140	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
5+698	-	-	-	-	-	-	-	-	-	-	-	-
Rialto Avenue		Traffic direction:	In entry direction									
0+000	7824	Total	-		502	261	113	-	none	-	Average (of DGAC and PCC)	0
0+000	7824	Automobiles	-		477	248	107	48	none	-	Average (of DGAC and PCC)	0
0+000	7824	Medium trucks	-		10	5	2	48	none	-	Average (of DGAC and PCC)	0
0+000	7824	Heavy trucks	-		5	3	1	48	none	-	Average (of DGAC and PCC)	0
0+000	7824	Buses	-		5	3	1	48	none	-	Average (of DGAC and PCC)	0
0+000	7824	Motorcycles	-		5	3	1	48	none	-	Average (of DGAC and PCC)	0
0+000	7824	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+403	7671	Total	-		492	256	111	-	none	-	Average (of DGAC and PCC)	0
0+403	7671	Automobiles	-		467	243	105	48	none	-	Average (of DGAC and PCC)	0
0+403	7671	Medium trucks	-		10	5	2	48	none	-	Average (of DGAC and PCC)	0
0+403	7671	Heavy trucks	-		5	3	1	48	none	-	Average (of DGAC and PCC)	0
0+403	7671	Buses	-		5	3	1	48	none	-	Average (of DGAC and PCC)	0
0+403	7671	Motorcycles	-		5	3	1	48	none	-	Average (of DGAC and PCC)	0
0+403	7671	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+208	-	-	-	-	-	-	-	-	-	-	-	-
Merrill Avenue		Traffic direction:	In entry direction									
0+000	12417	Total	-		797	414	179	-	none	-	Average (of DGAC and PCC)	0
0+000	12417	Automobiles	-		757	393	170	56	none	-	Average (of DGAC and PCC)	0
0+000	12417	Medium trucks	-		16	8	4	56	none	-	Average (of DGAC and PCC)	0
0+000	12417	Heavy trucks	-		8	4	2	56	none	-	Average (of DGAC and PCC)	0
0+000	12417	Buses	-		8	4	2	56	none	-	Average (of DGAC and PCC)	0
0+000	12417	Motorcycles	-		8	4	2	56	none	-	Average (of DGAC and PCC)	0
0+000	12417	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+207	12075	Total	-		775	403	174	-	none	-	Average (of DGAC and PCC)	0
1+207	12075	Automobiles	-		736	383	165	56	none	-	Average (of DGAC and PCC)	0
1+207	12075	Medium trucks	-		16	8	3	56	none	-	Average (of DGAC and PCC)	0
1+207	12075	Heavy trucks	-		8	4	2	56	none	-	Average (of DGAC and PCC)	0
1+207	12075	Buses	-		8	4	2	56	none	-	Average (of DGAC and PCC)	0
1+207	12075	Motorcycles	-		8	4	2	56	none	-	Average (of DGAC and PCC)	0
1+207	12075	Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+818	-	-	-	-	-	-	-	-	-	-	-	-
Cedar Avenue		Traffic direction:	In entry direction									
0+000	26181	Total	-		1680	873	378	-	none	-	Average (of DGAC and PCC)	0

10026 Foothill Central Specific Plan
SoundPLAN Data - Future Noise Contours

0+000	26181 Automobiles	-		1596	829	359	64	none	-	-	Average (of DGAC and PCC)	0
0+000	26181 Medium trucks	-		34	17	8	64	none	-	-	Average (of DGAC and PCC)	0
0+000	26181 Heavy trucks	-		17	9	4	64	none	-	-	Average (of DGAC and PCC)	0
0+000	26181 Buses	-		17	9	4	64	none	-	-	Average (of DGAC and PCC)	0
0+000	26181 Motorcycles	-		17	9	4	64	none	-	-	Average (of DGAC and PCC)	0
0+000	26181 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+709	31572 Total	-		2026	1052	456	-	none	-	-	Average (of DGAC and PCC)	0
0+709	31572 Automobiles	-		1925	999	433	64	none	-	-	Average (of DGAC and PCC)	0
0+709	31572 Medium trucks	-		41	21	9	64	none	-	-	Average (of DGAC and PCC)	0
0+709	31572 Heavy trucks	-		20	11	5	64	none	-	-	Average (of DGAC and PCC)	0
0+709	31572 Buses	-		20	11	5	64	none	-	-	Average (of DGAC and PCC)	0
0+709	31572 Motorcycles	-		20	11	5	64	none	-	-	Average (of DGAC and PCC)	0
0+709	31572 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+513	-	-	-	-	-	-	-	-	-	-	-	-
Cactus Avenue Traffic direction: In entry direction												
0+000	16398 Total	-		1052	547	237	-	none	-	-	Average (of DGAC and PCC)	0
0+000	16398 Automobiles	-		999	520	225	72	none	-	-	Average (of DGAC and PCC)	0
0+000	16398 Medium trucks	-		21	11	5	72	none	-	-	Average (of DGAC and PCC)	0
0+000	16398 Heavy trucks	-		11	5	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	16398 Buses	-		11	5	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	16398 Motorcycles	-		11	5	2	72	none	-	-	Average (of DGAC and PCC)	0
0+000	16398 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+711	17376 Total	-		1115	579	251	-	none	-	-	Average (of DGAC and PCC)	0
0+711	17376 Automobiles	-		1059	550	238	72	none	-	-	Average (of DGAC and PCC)	0
0+711	17376 Medium trucks	-		22	12	5	72	none	-	-	Average (of DGAC and PCC)	0
0+711	17376 Heavy trucks	-		11	6	3	72	none	-	-	Average (of DGAC and PCC)	0
0+711	17376 Buses	-		11	6	3	72	none	-	-	Average (of DGAC and PCC)	0
0+711	17376 Motorcycles	-		11	6	3	72	none	-	-	Average (of DGAC and PCC)	0
0+711	17376 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+510	-	-	-	-	-	-	-	-	-	-	-	-
Willow Avenue Traffic direction: In entry direction												
0+000	9273 Total	-		595	309	134	-	none	-	-	Average (of DGAC and PCC)	0
0+000	9273 Automobiles	-		565	294	127	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9273 Medium trucks	-		12	6	3	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9273 Heavy trucks	-		6	3	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9273 Buses	-		6	3	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9273 Motorcycles	-		6	3	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9273 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+711	10176 Total	-		653	339	147	-	none	-	-	Average (of DGAC and PCC)	0
0+711	10176 Automobiles	-		620	322	140	56	none	-	-	Average (of DGAC and PCC)	0
0+711	10176 Medium trucks	-		13	7	3	56	none	-	-	Average (of DGAC and PCC)	0
0+711	10176 Heavy trucks	-		7	3	1	56	none	-	-	Average (of DGAC and PCC)	0
0+711	10176 Buses	-		7	3	1	56	none	-	-	Average (of DGAC and PCC)	0
0+711	10176 Motorcycles	-		7	3	1	56	none	-	-	Average (of DGAC and PCC)	0
0+711	10176 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+839	-	-	-	-	-	-	-	-	-	-	-	-
Riverside Avenue Traffic direction: In entry direction												
0+000	24933 Total	-		1600	831	360	-	none	-	-	Average (of DGAC and PCC)	0
0+000	24933 Automobiles	-		1520	789	342	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24933 Medium trucks	-		32	17	7	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24933 Heavy trucks	-		16	8	4	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24933 Buses	-		16	8	4	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24933 Motorcycles	-		16	8	4	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24933 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+710	24183 Total	-		1552	806	349	-	none	-	-	Average (of DGAC and PCC)	0
0+710	24183 Automobiles	-		1474	766	332	48	none	-	-	Average (of DGAC and PCC)	0
0+710	24183 Medium trucks	-		31	16	7	48	none	-	-	Average (of DGAC and PCC)	0
0+710	24183 Heavy trucks	-		16	8	3	48	none	-	-	Average (of DGAC and PCC)	0
0+710	24183 Buses	-		16	8	3	48	none	-	-	Average (of DGAC and PCC)	0
0+710	24183 Motorcycles	-		16	8	3	48	none	-	-	Average (of DGAC and PCC)	0
0+710	24183 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+604	25557 Total	-		1640	852	369	-	none	-	-	Average (of DGAC and PCC)	0
1+604	25557 Automobiles	-		1558	809	351	48	none	-	-	Average (of DGAC and PCC)	0
1+604	25557 Medium trucks	-		33	17	7	48	none	-	-	Average (of DGAC and PCC)	0
1+604	25557 Heavy trucks	-		16	9	4	48	none	-	-	Average (of DGAC and PCC)	0
1+604	25557 Buses	-		16	9	4	48	none	-	-	Average (of DGAC and PCC)	0
1+604	25557 Motorcycles	-		16	9	4	48	none	-	-	Average (of DGAC and PCC)	0

10026 Foothill Central Specific Plan
SoundPLAN Data - Future Noise Contours

1+604	25557 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+314	25557 Total	-	1640	852	369	-	none	-	-	Average (of DGAC and PCC)	0
2+314	25557 Automobiles	-	1558	809	351	64	none	-	-	Average (of DGAC and PCC)	0
2+314	25557 Medium trucks	-	33	17	7	64	none	-	-	Average (of DGAC and PCC)	0
2+314	25557 Heavy trucks	-	16	9	4	64	none	-	-	Average (of DGAC and PCC)	0
2+314	25557 Buses	-	16	9	4	64	none	-	-	Average (of DGAC and PCC)	0
2+314	25557 Motorcycles	-	16	9	4	64	none	-	-	Average (of DGAC and PCC)	0
2+314	25557 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+835	-	-	-	-	-	-	-	-	-	-	-
Sycamore Avenue Traffic direction: In entry direction											
0+000	6156 Total	-	395	205	89	-	none	-	-	Average (of DGAC and PCC)	0
0+000	6156 Automobiles	-	375	195	85	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6156 Medium trucks	-	8	4	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6156 Heavy trucks	-	4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6156 Buses	-	4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6156 Motorcycles	-	4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	6156 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+709	10914 Total	-	700	364	158	-	none	-	-	Average (of DGAC and PCC)	0
0+709	10914 Automobiles	-	665	346	150	56	none	-	-	Average (of DGAC and PCC)	0
0+709	10914 Medium trucks	-	14	7	3	56	none	-	-	Average (of DGAC and PCC)	0
0+709	10914 Heavy trucks	-	7	4	2	56	none	-	-	Average (of DGAC and PCC)	0
0+709	10914 Buses	-	7	4	2	56	none	-	-	Average (of DGAC and PCC)	0
0+709	10914 Motorcycles	-	7	4	2	56	none	-	-	Average (of DGAC and PCC)	0
0+709	10914 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+831	-	-	-	-	-	-	-	-	-	-	-
Acacia Avenue Traffic direction: In entry direction											
0+000	3132 Total	-	201	105	45	-	none	-	-	Average (of DGAC and PCC)	0
0+000	3132 Automobiles	-	191	100	43	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3132 Medium trucks	-	4	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3132 Heavy trucks	-	2	1	0	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3132 Buses	-	2	1	0	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3132 Motorcycles	-	2	1	0	56	none	-	-	Average (of DGAC and PCC)	0
0+000	3132 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+714	4833 Total	-	310	161	70	-	none	-	-	Average (of DGAC and PCC)	0
0+714	4833 Automobiles	-	295	153	67	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4833 Medium trucks	-	6	3	1	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4833 Heavy trucks	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4833 Buses	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4833 Motorcycles	-	3	2	1	56	none	-	-	Average (of DGAC and PCC)	0
0+714	4833 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+312	-	-	-	-	-	-	-	-	-	-	-
Eucalyptus Avenue Traffic direction: In entry direction											
0+000	3789 Total	-	243	126	55	-	none	-	-	Average (of DGAC and PCC)	0
0+000	3789 Automobiles	-	231	120	52	64	none	-	-	Average (of DGAC and PCC)	0
0+000	3789 Medium trucks	-	5	3	1	64	none	-	-	Average (of DGAC and PCC)	0
0+000	3789 Heavy trucks	-	2	1	1	64	none	-	-	Average (of DGAC and PCC)	0
0+000	3789 Buses	-	2	1	1	64	none	-	-	Average (of DGAC and PCC)	0
0+000	3789 Motorcycles	-	2	1	1	64	none	-	-	Average (of DGAC and PCC)	0
0+000	3789 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+717	5862 Total	-	376	195	85	-	none	-	-	Average (of DGAC and PCC)	0
0+717	5862 Automobiles	-	357	185	81	64	none	-	-	Average (of DGAC and PCC)	0
0+717	5862 Medium trucks	-	8	4	2	64	none	-	-	Average (of DGAC and PCC)	0
0+717	5862 Heavy trucks	-	4	2	1	64	none	-	-	Average (of DGAC and PCC)	0
0+717	5862 Buses	-	4	2	1	64	none	-	-	Average (of DGAC and PCC)	0
0+717	5862 Motorcycles	-	4	2	1	64	none	-	-	Average (of DGAC and PCC)	0
0+717	5862 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+515	-	-	-	-	-	-	-	-	-	-	-
Pepper Avenue Traffic direction: In entry direction											
0+000	19437 Total	-	1247	648	281	-	none	-	-	Average (of DGAC and PCC)	0
0+000	19437 Automobiles	-	1185	616	267	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19437 Medium trucks	-	25	13	6	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19437 Heavy trucks	-	12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19437 Buses	-	12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19437 Motorcycles	-	12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19437 Auxiliary vehicle	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+710	19080 Total	-	1224	636	276	-	none	-	-	Average (of DGAC and PCC)	0
0+710	19080 Automobiles	-	1163	604	262	64	none	-	-	Average (of DGAC and PCC)	0

10026 Foothill Central Specific Plan
SoundPLAN Data - Future Noise Contours

0+710	19080 Medium trucks	-		24	13	6	64	none	-	-	Average (of DGAC and PCC)	0
0+710	19080 Heavy trucks	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+710	19080 Buses	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+710	19080 Motorcycles	-		12	6	3	64	none	-	-	Average (of DGAC and PCC)	0
0+710	19080 Auxiliary vehicle	-	-	-	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+510	-	-	-	-	-	-	-	-	-	-	-	-

10026 Foothill Central Specific Plan
SoundPLAN Data - Future Noise Contours

Track	Coordinates of track axis			Track	Curve	Multiple	Corrected		
Station	X	Y	Z	type	radius	reflections	Emission level		
km				[dB]	[dB]	[dB]	day	Evening	night
Metrolink	Rail track:	Direction:		Section:	1 Km:	0+000			
Train type	Number of trains			Speed	Length per		Emission level		
	day	Evening	night		train	Max	day	Evening	night
				km/h	m		dB(A)	dB(A)	dB(A)
	0	21	4	9	48	153 yes	62.4	61.2	59.9
0+000	463995.31	3772902.64	-	-	-	-	-	62.4	61.2
4+022	468005.72	3773084.86	-	-	-	-	-	62.4	61.2