



Mission Valley Community Plan Update

*Draft Existing Conditions Report
Mobility Element*

Prepared for
The City of



1010 Second Avenue, Suite 1200
San Diego, CA 92101

Prepared by



3950 Fifth Avenue, Suite 210
San Diego, CA 92103

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CHEN + RYAN

3900 Fifth Avenue, Suite 210
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1.0 Introduction

1.1 Study Background and Purpose

The Mission Valley community plan was last updated in 1985, with over twenty amendments incorporated since its adoption. The Mission Valley community plan update process was initiated in 2015 to provide direction and guidance for future community growth and development. The updated plan also serves to describe the community’s vision and to identify strategies for enhancing community character and managing change.

The Mobility Element is one component of the community plan and directly correlates with the Land Use Element. This relationship supports the ability to plan and provide for a balanced, multimodal transportation network that can meet future community travel demands. Planned transportation networks will be identified in the Mobility Element, developed through an analysis of existing and future travel demands and transportation systems operations, and further shaped by community input.

This Existing Conditions Report is the initial step towards updating the Mobility Element. This report provides an analysis of the existing physical and operational conditions related to the mobility system within the Mission Valley community. The Mission Valley mobility system consists of pedestrian and bicycle facilities, transit routes and stops (bus and light-rail), and roadways. Each mode is discussed throughout the following chapters. This report also includes a description of the methodologies used to analyze each mode.

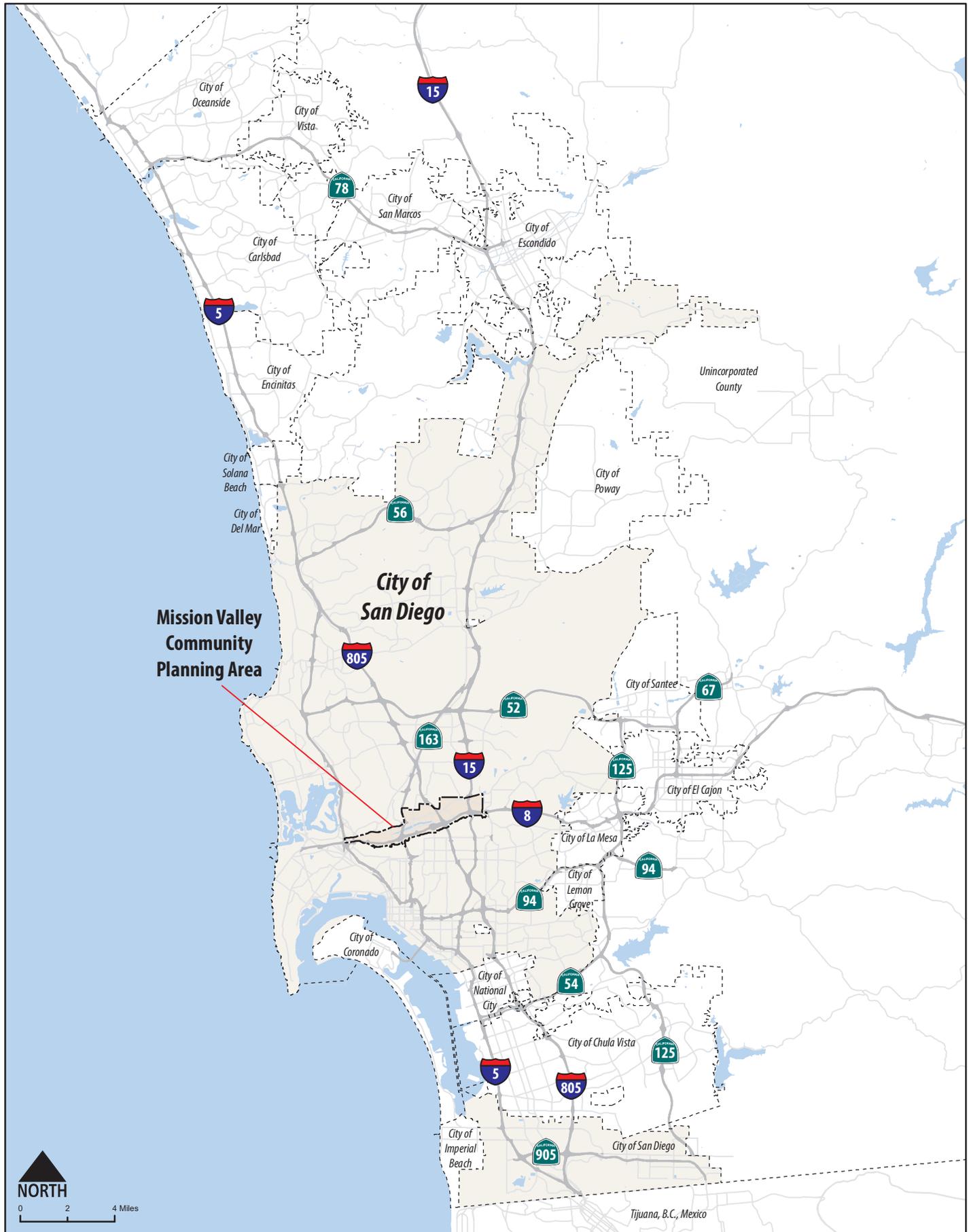


A sign welcomes visitors to Mission Valley on Friars Road (top). The San Diego River Trail introduces nature to this urban community (bottom).

1.2 Study Location

The Mission Valley planning area includes approximately 2,418 acres in the center of the City of San Diego. The community is bounded on the west by Interstate 5 and on the east by the San Diego River and Fairmont Avenue. The northern and southern community boundaries generally follow the valley peaks. **Figure 1-1** displays the Mission Valley community planning area within the San Diego region.

Multiple freeway facilities traverse the community or run adjacent to it, contributing to Mission Valley’s role as a regional destination for shopping and entertainment. These facilities include Interstate 5, State Route 163, Interstate 805, Interstate 15, and Interstate 8. The Green Line Trolley crosses the community east-west parallel to the San Diego River and Interstate 8. Public transportation is further supplemented by bus services. The San Diego River Trail also parallels the San Diego River, providing a multi-use path across the community.



Mission Valley Community Plan Update
 Mobility Element - Existing Conditions Report

Figure 1-1
 Mission Valley within the Region

1.3 Supporting Information

The Mission Valley Mobility Element is part of a larger collection of planning documents used to guide local and regional transportation systems. The following four planning documents were referenced for consistency throughout the planning process:

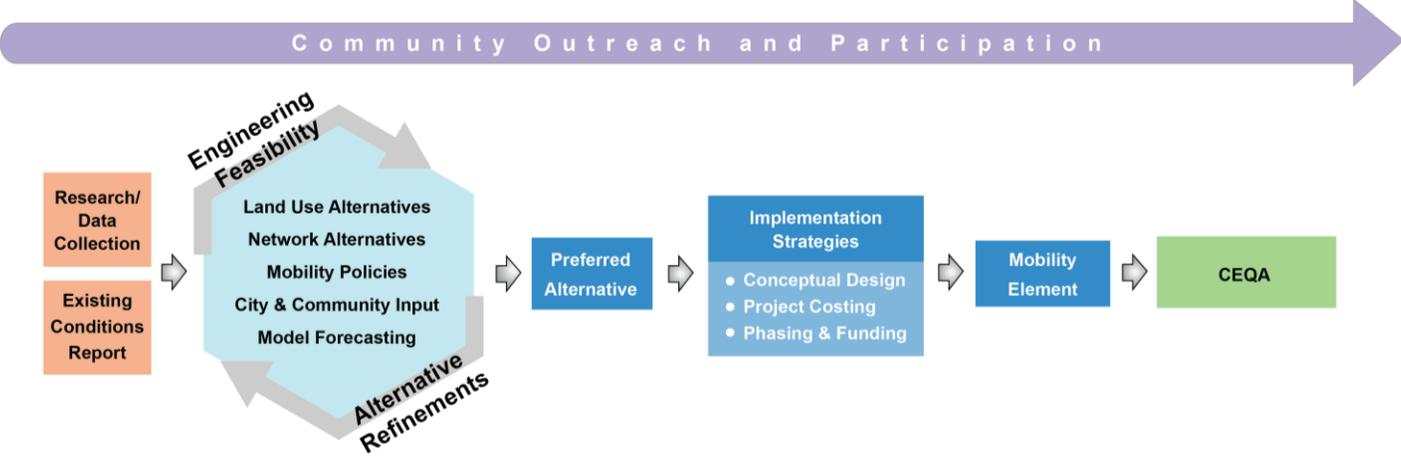
- *San Diego Forward: The Regional Plan (2015)* – The Regional Transportation Plan (RTP) proposes a vision for a regional transportation system that enhances quality of life, promotes sustainability, and offers more mobility options for the movement of people and goods. The RTP includes an integrated, multimodal transportation with transit investments concentrated in strategic areas.
- *City of San Diego Bicycle Master Plan (2011)* – This document provides a framework for making cycling a more practical and convenient transportation option for all users. The plan is comprised of a proposed bicycle network, projects, policies and programs aimed at improving bicycling through 2030 and beyond.
- *San Diego Regional Bike Plan (2010)* – The Regional Bike Plan identifies a vision for a diverse regional bicycle system of interconnected bicycle corridors, support facilities, and programs to make cycling more practical and desirable to a broader range of the population.
- *City of San Diego General Plan (2008)* – The City of San Diego General Plan Mobility Element identifies transportation planning goals and policies related to pedestrian, transit, street and freeway systems, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM), bicycling, parking management, airports, passenger rail, goods movement/freight, and regional coordination and financing.

A more complete synopsis of these documents and their relationship to the Mission Valley community are provided in Chapter 3. Several other previous and on-going planning efforts are also relevant to understanding existing mobility conditions in Mission Valley. The following studies were referenced as part of the preparation of this report and summarized in Chapter 3:

- Interstate 8 Corridor Study (in progress)
- Franklin Ridge Road Community Plan Amendment/EIR (in progress)
- SANDAG San Diego Forward: The Regional Plan (2015)
- Navajo Community Plan – Grantville Focused Plan Amendment/EIR (2015)
- Draft Environmental Impact Report Stadium Reconstruction Project (2015)
- Mission Valley Community Plan (Last Amended May 2013)
- San Diego River Park Master Plan (2013)
- City of San Diego Bicycle Master Plan (2011)
- SANDAG San Diego Regional Bike Plan (2010)
- Friars Road/SR-163 Interchange Project EIR (2009)
- City of San Diego General Plan – Mobility Element (2008)
- Quarry Falls Specific Plan & EIR (2008)
- City of San Diego Pedestrian Master Plan (2006)
- Mission City Bridge EIR (2002)
- First San Diego River Improvement Project Specific Plan (1999)
- Mission City Specific Plan (1998)
- Mission Valley Heights Specific Plan (1987) & Amendment (1996)
- Atlas Specific Plan (1988)
- Levi-Cushman Specific Plan (1987)

1.4 Planning Process

A four-phased planning process is being undertaken for the Mission Valley Mobility Element process as depicted in the flow chart below. The phases include Existing Conditions Assessment (orange, and presented herein), Developing Recommendations (light blue), Plan Development (dark blue), and Environmental Analysis (green). A discussion of each phase is provided.



Existing Conditions Assessment: This comprehensive existing conditions report was prepared for Mission Valley addressing pedestrian, cycling, transit and vehicular systems and associated travel behaviors. Travel demands, deficiencies, opportunities and constraints were extensively analyzed and documented for each mode.

Developing Recommendations: This phase will focus on identifying and crafting a vision for overall mobility in Mission Valley, and then developing policy language and mobility network recommendations to help achieve the vision. This phase will be supported by significant community, City staff, and other key stakeholder’s involvement.

Plan Development and Implementation Strategies: Following the development of a preferred network, the Mobility Element document will be initiated. The Mobility Element will summarize existing conditions and issues for each mode, supporting policies, and plan proposals. Implementation strategies will also be developed at this stage, including conceptual designs, project costing, project phasing and the identification of potential funding sources.

Environmental Analysis: An Environmental Impact Report (EIR) is anticipated for the Community Plan Update. The Transportation Section of the EIR will analyze and disclose potentially significant traffic impacts, as well as mitigation measures to lessen the impacts. The EIR will be circulated for a public review period to receive comments. The project team will provide responses to the comments and identify and disclose any modifications to the Community Plan, if applicable, before being considered by City Council.

1.5 Organization of the Report

Following this introductory chapter, **Chapter 2** describes the methodologies employed to assess the mobility systems; **Chapter 3** summarizes planning documents relevant to the Mission Valley Mobility Element; **Chapter 4** describes the existing conditions for the pedestrian and cycling environments, the transit system, and roadways and freeways. This chapter also touches on Intelligent Transportation

Systems (ITS), Transportation Demand Management (TDM), airports, passenger rail, and the movement of freight. **Chapter 5** concludes with a summary of key mobility needs to be considered as the planning process moves forward.

2.0 Analysis Methodology

This chapter describes the various methodologies utilized to analyze Mission Valley’s mobility network. Since the adoption of the 2008 California Complete Streets Act (AB 1358), the City of San Diego has employed multimodal analysis procedures to assess mobility needs for pedestrians, cyclists and transit users.

Table 2-1 summarizes performance measures for each mode, while the remaining sections of this chapter outline methodologies employed to analyze facility demand, safety, network quality, operations, and connectivity associated with each of the four major modes of travel (pedestrian, bicycle, transit and auto) in Mission Valley.

Table 2-1 Multimodal Performance Measure Matrix

Performance Measure	Pedestrian	Bicycle	Transit	Vehicular System
Demand	Primary: San Diego Pedestrian Priority Model Existing Conditions Only: Travel Survey Data & Peak Period Pedestrian Counts	Primary: San Diego Bicycle Demand Model Existing Conditions Only: Travel Survey Data & Peak Period Bicycle Counts	Primary: Latent Demand at Major Transit Stops* Existing Conditions Only: Boardings and Alightings information from MTS	Existing: Travel Survey Data & Auto Related Counts Future: SANDAG Model Forecast
Safety <i>(Existing Conditions Only)</i>	Historic Pedestrian Collisions (5-Yr)	Historic Bicycle Collisions (5-Yr)	Historic Collisions near Transit Stations/Stops (5-Yr)	Historic Auto Collisions (5-Yr)
Quality	Pedestrian Environment Quality Evaluation (PEQE)	Bicycle Level of Traffic Stress (LTS)	Station Quality – Presence of Amenities; Service Quality – Transit Speeds	Level of Service - Freeway and Roadway Segments, Intersections, and Peak Hour Arterial Analysis
Connectivity	Primary: Travelshed Analysis Existing Conditions Only: Missing Sidewalk	Primary: Low-Stress Connectivity Existing Conditions Only: Mileage of Bicycle Facilities by Facility Type	Quality Walk and Bicycle Ratios from Major Transit Stops*	VMT

Source: Chen Ryan Associates (2016)

Note:

* Major transit stops are defined as stations containing a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15-minutes or less during the peak commute periods.

2.1 Pedestrian

2.1.1 Pedestrian Demand

The Pedestrian Priority Model (PPM) was used to document relative pedestrian demands across the Mission Valley community. The model consists of three submodels – trip attractors, generators, and detractors – reflecting high pedestrian propensity land uses and population concentrations, along with factors indicating potential pedestrian barriers or safety issues. The high pedestrian demand areas identified through the Pedestrian Priority Model evaluation were used to define the Pedestrian Study Area which then becomes the focus of quality and connectivity assessments. Thresholds for high demand/need across the community were established relative to the community itself and not relative to the City as a whole. The Pedestrian Study Area incorporates all pedestrian facilities that meet one or more of the following criteria:

- Areas with a PPM Score that is one standard deviation greater than the community-specific mean PPM score; or
- Areas with two or more pedestrian collisions over the previous 5-year period; or
- Areas within half a mile of major transit stops¹.

Figure 2-1 displays the Pedestrian Study Area corridors.

2.1.2 Pedestrian Safety (Informational, Analyzed for Existing Conditions only)

Historic vehicular-pedestrian collision data was obtained from the City of San Diego for the period from 2008 to 2013. This data was geocoded and mapped to display pedestrian-involved collision locations in Mission Valley. Additional focus will be placed on these locations when considering pedestrian-related improvements. Collision causes were tabulated to further understand pedestrian safety and trends.

2.1.3 Pedestrian Environment Quality Evaluation (PEQE)

The quality of all pedestrian facilities (roadway segments, intersections and mid-block crossings) within the Pedestrian Study Area were evaluated using the Pedestrian Environment Quality Evaluation (PEQE) tool under existing conditions. **Table 2-2** outlines the evaluation scale. The quality of the pedestrian environment quality is categorized as High, Medium or Low, based upon the following scoring system:

<i>Low</i>	< 4 points
<i>Medium</i>	= 4 – 6 points
<i>High</i>	> 6 points

The PEQE analysis results (score and rating) are presented in tabular and mapped formats for each individual pedestrian facility within the Pedestrian Study Area, including Circulation Element roadway segments (both sides of the road), study intersections, and mid-block crossings.

¹ Major transit stops are defined as stations containing a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15-minutes or less during the peak commute periods.

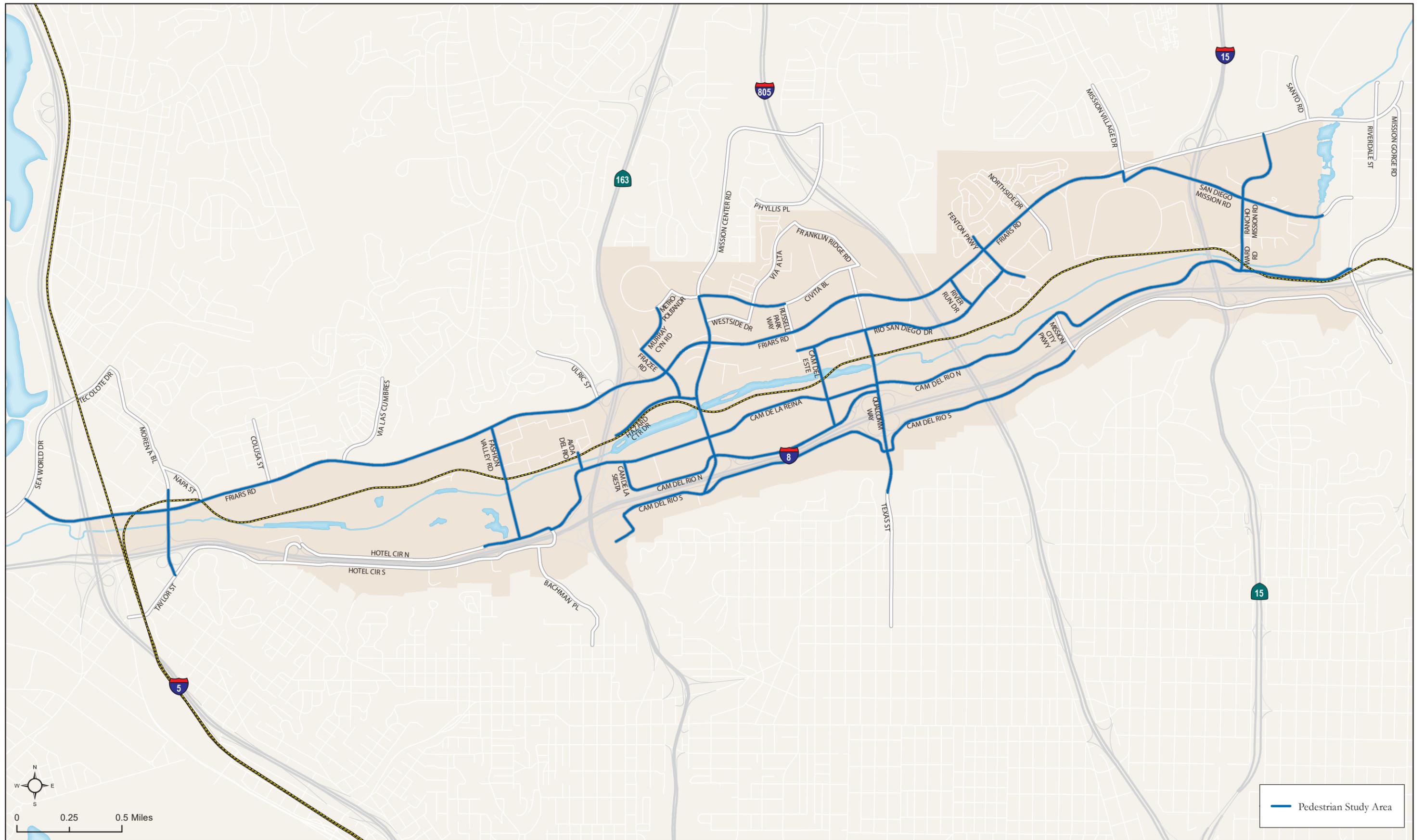


Table 2-2 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment <i>between two intersections</i>	1. Horizontal Buffer	Between the edge of auto travel way and the edge of clear pedestrian zone	0 point: < 6 feet 1 point: 6 - 14 feet 2 points: > 14 feet or vertical buffer
	2. Lighting		0 point: below standard/requirement 1 point: meet standard/requirement 2 points: exceed standard/requirement
	3. Clear Pedestrian Zone	5' minimum	0 point: has obstructions 2 points: no obstruction
	4. Posted Speed Limit		0 point: > 40 mph 1 point: 30 - 40 mph 2 points: < 30 mph
Maximum			8 points
Intersection by Leg	1. Physical Feature	<ul style="list-style-type: none"> Enhanced/High Visibility Crosswalk Raised Crosswalk/Speed Table Advanced Stop Bar Bulb out/Curb Extension 	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	2. Operational Feature	<ul style="list-style-type: none"> Pedestrian Countdown Signal Pedestrian Lead Interval No-Turn On Red Sign/Signal Additional Pedestrian Signage 	0 point: < 1 feature per ped crossing 1 point: 1 – 2 features per ped crossing 2 points: > 2 features per ped crossing
	3. ADA Curb Ramp		0 point: no ramps and no truncated domes 1 point: ramps only, no truncated domes 2 points: meet standard/requirement
	4. Traffic Control		0 point: no control 1 point: stop sign controlled 2 points: signal/roundabout/traffic circle
Maximum			8 points
Mid-block Crossing	1. Visibility		0 point: w/o high visibility crosswalk 2 points: with high visibility crosswalk
	2. Crossing Distance		0 point: no treatment 2 points: with bulb out or median pedestrian refuge
	3. ADA		0 point: no ramps and no truncated domes 1 point: ramps only, no truncated domes 2 points: meet standard/requirement
	4. Traffic Control		0 point: no control 1 point: flashing beacon (In-pavement, RRFB, etc.) 2 points: signal/pedestrian hybrid beacon (HAWK)
Maximum			8 points

Source: Chen Ryan Associates (2016)

2.1.4 Pedestrian Network Connectivity

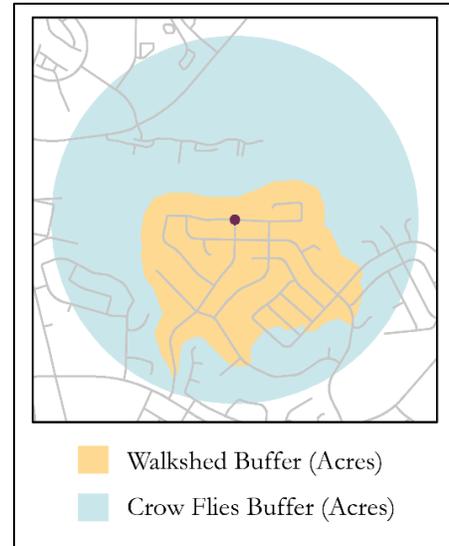
Pedestrian network connectivity was assessed using a two-step process: 1) develop the pedestrian network; and 2) perform a pedestrian travelshed analysis for the network. A description of these steps is provided below.

Developing the Pedestrian Network

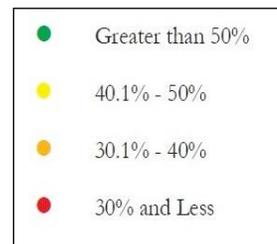
The SANDAG “Roads_All” shapefile is the base network for the pedestrian travelshed analysis. However, since the Roads_All shapefile does not include all pedestrian connections – such as trolley stations where people accessing stations may traverse large parking lots, universities, parks, shopping centers or other large institutions – they were manually added to the shapefile to reflect the actual pedestrian network within Mission Valley, prior to conducting the travelshed analysis. In addition, all roadway segments in the Roads_All shapefile that do not allow pedestrians are removed from the analysis, including freeway segments and freeway ramps.

Travelshed Analysis

The pedestrian travelshed analysis assesses the level of connectivity provided at each study intersection within the Mission Valley pedestrian study area. The travelshed analysis requires first creating a 0.25 mile pedestrian network buffer at each study intersection. That area is then compared to the area of a 0.25 mile as-the-crow-flies buffer (502.7 acres) to develop a Pedestrian Connectivity Ratio for each intersection. The higher the Pedestrian Connectivity Ratio, the better the overall connectivity is at the intersection.



The Pedestrian Connectivity Ratio is presented in a mapped format, displaying results for each intersection. Each intersection is represented by a color-symbolized dot, with the color reflecting the Connectivity Ratio scale shown in the legend to the right².



2.2 Bicycle

2.2.1 Bicycle Demand

The San Diego Bicycle Demand Model (BDM) developed for the City of San Diego Bicycle Master Plan was used to identify high cycling demand segments within Mission Valley. The BDM results are presented on a map.

2.2.2 Bicycle Safety (Informational, Analyzed for Existing Conditions only)

Historic vehicular-bicycle collision data was obtained from the City of San Diego for the period from 2008 to 2013. This data was geocoded and mapped to display bicycle-involved collision locations in

² 65% is typically the highest connectivity ratio that can be achieved in even the most ideal communities (i.e. urban downtown settings with tight street grid networks). Therefore, any community with a connectivity ratio over 50% should be considered ideal.

Mission Valley. Additional focus will be placed on these locations when considering bicycle-related improvements. Collision causes were tabulated to further understand bicycle safety and trends.

2.2.3 Bicycle Facility Quality

The Bicycle Level of Traffic Stress (LTS) tool, as documented in the Mineta Transportation Institute Report entitled “Low Stress Bicycling and Network Connectivity”, was utilized to assess the cycling environment quality. All roadways in Mission Valley were assessed using the LTS tool. Results were tabulated and graphically displayed on a map for every roadway segment.

2.2.4 Bicycle Network Connectivity

Bicycle Connectivity Analysis – Bicycle Ratio

A bicycle travelshed analysis was performed to assess the level of connectivity provided at each intersection within Mission Valley. A Bicycle Connectivity Ratio was calculated by comparing the area of a 0.75 mile bicycle network buffer (using all bikeable roadways plus bike paths) at each intersection within Mission Valley to the area of a 1.0 mile as-the-crow-flies buffer (or 2,010.6 acres). A higher Connectivity Ratio indicates better overall bicycle connectivity from the individual intersection. The Bicycle Connectivity Ratio results for each intersection within Mission Valley are reported for existing conditions and displayed in a mapped format.

Low-Stress Bicycle Connectivity Analysis

This approach integrates demand, safety, connectivity and quality into two composite evaluation metrics. The three steps used in this evaluation process include the following:

Step 1: Identifying Bicycle Land Uses

Table 2-3 presents land use types identified as bicycle trip generators and attractors, as well as land uses that should not be considered in this evaluation. These land uses are consistent with the BDM’s Intra-Community Bicycle Demand submodel, unless noted otherwise.

Table 2-3 Bicycle Land Use Categories

Generators	Attractors	Not Included as Bicycle Land Uses
<ul style="list-style-type: none"> Residential Land Uses¹ 	<ul style="list-style-type: none"> Retail Office² Class I Bike Path Access Points Transit Stations Parks/Recreational Uses/Beaches Schools/College/Universities Neighborhood Civic Uses Inter-community Access Points³ 	<ul style="list-style-type: none"> Retail Catering to Automobiles/Automobile Services (car dealers, service stations, etc.) Passive or Low-Intensity Recreation (Golf Courses, etc.)/Open Space/Preserves Communications/Utilities Infrastructure Industrial/Warehousing/Junkyards/Landfills Agricultural Police/Fire Stations Military Bases

Source: Chen Ryan Associates (2016)

Notes:

1. The Intra-Community Bicycle Demand submodel includes population densities by various types, such as youth, bicycle commuters, and zero-vehicle households. This input has been simplified as “residential land use” for the purposes of the connectivity assessment since having all inputs by TAZs will facilitate GIS analyses.
2. Office land uses were not included in the PPM or the BDM, but were deemed as possibly important at the community level.
3. Inter-community Access Points were not included in the Intra-Community Bicycle Demand submodel since that facet of travel was modeled via the Inter-Community Bicycle Demand submodel. These connection points just outside the community were deemed as important attractions for this community-level connectivity assessment.

All TAZs containing Bicycle Land Uses were evaluated in Steps 2 and 3.

Step 2: Create Shortest Paths between all TAZs with Bicycle Land Uses

An analysis was performed to develop a community-wide network of shortest paths along bikeable roadways to/from all TAZs containing Bicycle Land Uses. These paths are referred to as the “Unconstrained Paths”. Paths less than 0.25 miles were removed since they are likely to be made by foot. These results reflect the total number of potential bicycle trip paths within Mission Valley.

Step 3: Assess the Level of Connectivity and Quality of the Bicycle Paths

This assessment quantifies the connectivity of low stress bicycle facilities (LTS score 1 or 2) between TAZs within Mission Valley. This measure results in each TAZ being assigned a percentage reflecting the number of total TAZ reachable via low stress bicycle facilities within the study area.

The Composite Cycling Evaluation results in the low-stress bicycle connectivity map.

2.3 Transit

2.3.1 Transit Demand

Transit demand was evaluated for all stations/stops within Mission Valley by examining ridership data obtained from MTS and by looking commute mode share as reported in recent US Census Bureau data.

2.3.2 Safety Near a Transit Stop/Station (Informational, Analyzed for Existing Conditions only)

Historic collision data within 500 feet of a transit stop or station was obtained from the City of San Diego for the period from 2008 to 2013. This data was geocoded and mapped to display collision locations in Mission Valley. Additional focus will be placed on these locations when considering improvements near transit stops or stations.

2.3.3 Transit Quality

Station Quality – Presence of Amenities

Each transit station/stop was reviewed for the presence of the following amenities:

- Shelters
- Benches
- Trash Receptacles
- Station Signs
- Maps/Wayfinding
- Lighting
- ADA compliancy

Table 2-4 outlines the standard amenities that should be provided at transit stations/stops based on the projected daily passenger boardings (across all routes), according to MTS.

Table 2-4 Transit Amenity Standards by Ridership Levels

Amenity	Daily Passenger Boardings by Stop/Station				
	< 50	50 - 100	101 - 200	201 – 500	> 500
Sign and Pole	X	X	X	X	
Built-in Sign					X
Expanded Sidewalk			X	X	X
Bench		X	X	X	X
Shelter			X	X	X
Route Designations	X	X	X	X	X
Time Table				X	X
Route Map			X	X	X
System Map					X
Trash Receptacle				X	X
Lighting			X	X	X
ADA Compliant	X	X	X	X	X

Source: Design for Transit, MTS (1993)

Amenities by all stations/stops in the Mission Valley study area are reported in a table, indicating station ridership levels and whether station amenities are sufficient.

Transit Service Quality – Transit Speeds

On-time bus performance can be directly affected by vehicular traffic congestion along roadways serving bus routes. A roadway arterial speed analysis was used to identify locations where on-time performance is currently, or may be impacted under future conditions, due to vehicular traffic congestion. To identify areas where roadway congestions affects transit on-time performance, an HCM arterial speed analysis was performed for all bus route serving roadways.

Existing and future peak hour (AM and PM) arterial speeds and LOS are reported, by direction, for all study roadways serving bus routes. The information is presented in tabular and map formats.

2.3.4 Quality Connections to Transit

The latent demand evaluation described under “Transit Demand” indicates the number of potential transit users (residents and employees) within the vicinity of each major stop/station, using a 0.25 mile pedestrian network walkshed and a 0.75 mile bicycle network travelshed.

The quality connections assessment draws from the quality walking analysis and quality cycling analysis results to identify quality 0.25 mile pedestrian and 0.75 mile bicycle networks surround major transit stations/stops. These distances were defined in based upon information in the San Diego Forward: The Regional Plan, Appendix U4 – SANDAG Regional Transit Oriented Development Strategy, and represent a five-minute travel distance for pedestrians and cyclists.

A Quality Walk Ratio and a Quality Bicycle Ratio was then developed for each major transit station/stop and presented on a map using the following equations:

$$\text{Quality Walk Ratio from Transit} = \frac{\text{Quality Walking Distance from Transit}}{\text{Crow Flies Buffer from Transit}}$$

$$\text{Quality Bicycle Ratio from Transit} = \frac{\text{Quality Cycling Distance from Transit}}{\text{Crow Flies Buffer from Transit}}$$

The resulting Quality Walk Ratio from Transit and Quality Bicycle Ratio from Transit are presented on separate maps, for each major transit station/stop.

2.4 Vehicular System

Freeways and natural topographical barriers were used as general study area boundaries for the purposes of this existing conditions assessment. The primary study area encompasses the Mission Valley Community Planning Area and one segment and intersection beyond, where not separated by freeways and natural barriers, in order to capture potential transportation impacts to the adjacent cities or communities associated with the Mission Valley Community Plan Update.

Roadway Segments: All Circulation Element designated roads, and approximately one segment beyond the community planning area were evaluated for a total of 136 roadway segments.

Intersections: All of the ramp intersections that provide access to the community, and intersections where both streets meet one of the following conditions:

- Four or more lanes;
- 3-lanes roadways carrying more than 15,000 ADT; or
- 2-lane roadways carrying more than 10,000 ADT.

Additional intersections needed to conduct arterial analysis were also included for evaluation for a total of 67 study area intersections.

Freeway Segments: All freeway segments within the Community Planning Area and one interchange beyond (approximately 25 freeway segments).

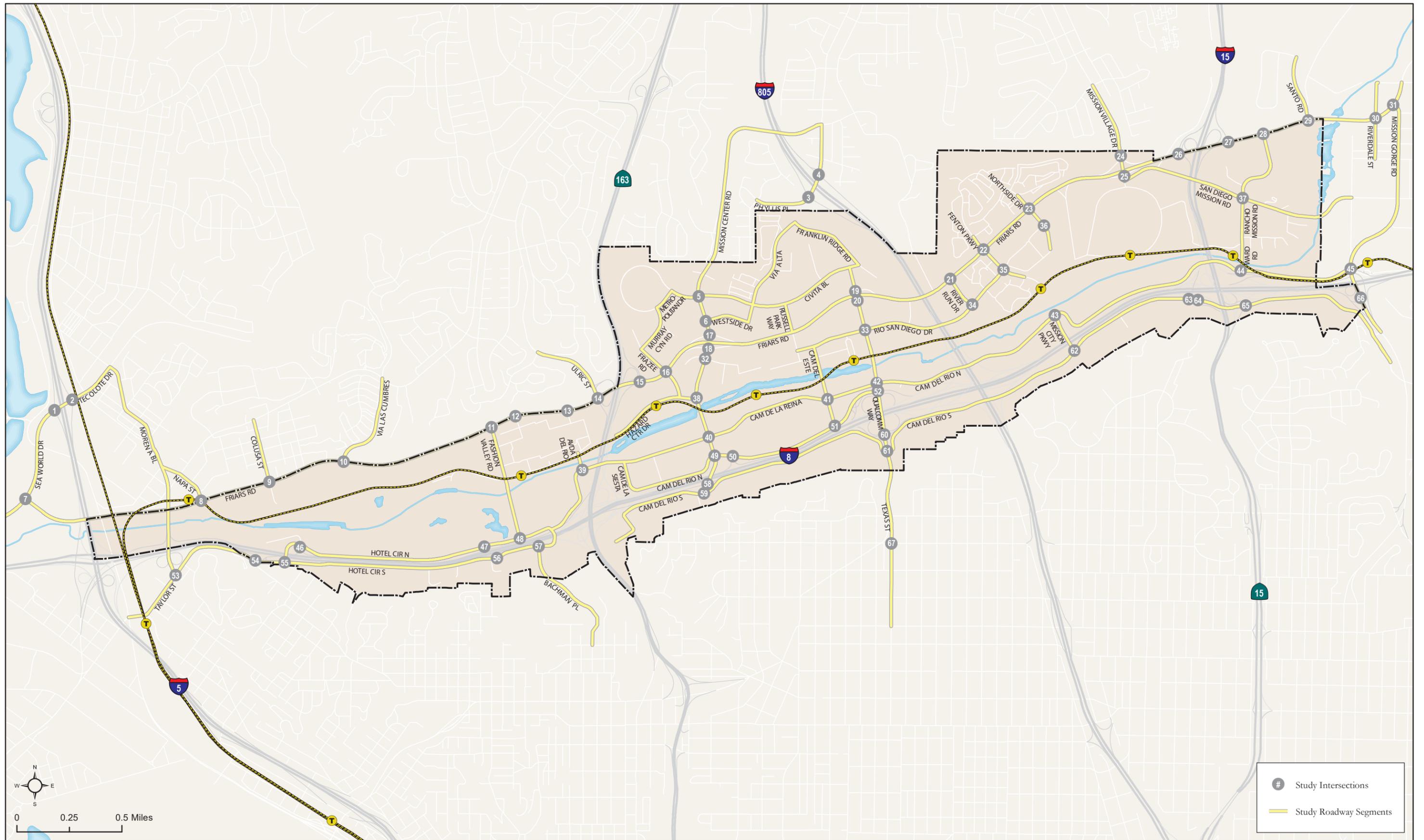
Figure 2-2 displays the study area extent and location of study intersections.

2.4.1 Vehicular Demand

Existing vehicular demand was determined using a combination of Household Travel Survey data obtained from SANDAG and vehicular counts conducted in support of this project. Future vehicular demand is derived from the SANDAG Activity Based Model Series 13 travel forecast, which estimates volumes based on buildout of adopted land uses and planned transportation networks.

2.4.2 Vehicular Safety (Informational, Analyzed for Existing Conditions only)

Historic vehicular collision data was obtained from the City of San Diego for the period from 2008 to 2013. This data was geocoded and mapped to display vehicular collision locations in Mission Valley. Additional focus will be placed on these locations when considering vehicle-related improvements. Collision causes were tabulated to further understand trends in these occurrences.



2.4.3 Vehicular System Operations

Analysis of the vehicular systems – roadways, intersections and freeways – was prepared for this study in accordance with City of San Diego and SANTEC/ITE Traffic Impact Study Guidelines. The vehicular analysis provides an evaluation vehicular operations at intersections and along roadway and freeway segments. A description of the methodologies employed to evaluate vehicular travel is outlined throughout this section. Level of Service (LOS) is a quantitative measure representing the quality of service from the driver’s perspective. LOS A represents optimal conditions for the driver, while LOS F represents the worst. **Table 2-5** describes generalized definitions of auto LOS A through F.

Table 2-5 Vehicular Level of Service Definitions

LOS	Characteristics
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual, Transportation Research Board (2010)

Roadway Segment Analysis

Roadway segment level of service standards and thresholds provided the basis for analysis of arterial roadway segment performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes. **Table 2-6** presents the roadway segment capacity and LOS standards utilized to analyze roadways evaluated in this report.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical and operational attributes. LOS D is considered acceptable for Mobility Element roadway segments in the City of San Diego. Often, a roadway segment that is analyzed to be LOS E or F based on theoretical capacity is found to operate acceptably in practice. In such cases, HCM arterial analysis may be conducted and utilized (or intersection analysis, if arterial analysis is not applicable) to provide a more accurate indication of LOS.

Table 2-6 City of San Diego Roadway Segment Daily Capacity and Level of Service Standards

Roadway Functional Classification	Level of Service				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Collector (4-lane w/ center left-turn lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (3-lane w/ center left-turn lane)	< 7,500	< 10,500	< 15,000	< 19,000	< 22,500
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/ center left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane multi-family)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: City of San Diego Traffic Impact Study Manual (1998)

Note:

Bold numbers indicate the ADT thresholds for acceptable LOS.

Peak Hour Arterial Analysis

The average travel speed is computed from the running time on the arterial segment(s) and the intersection approach delay. Average speed is strongly influenced by the number of signals per mile and the average intersection delay. On a given facility, factors such as inappropriate signal timing, poor progression, and increasing traffic flow can substantially degrade the arterial LOS. **Table 2-7** shows the LOS thresholds used for the arterial speed analysis. The computerized analysis of arterial speed analysis was performed utilizing the *Synchro 8.0 (2010 HCM methodology)* traffic analysis software (by Trafficware, 2011).

Table 2-7 Arterial Analysis Level of Service Thresholds

Arterial Class	I	II	III
Range of Free Flow Speed (mph)	45 to 35	35 to 30	30 to 25
Typical Free Flow Speed (mph)	40 mph	33 mph	27 mph
<i>Level of Service Analysis</i>	<i>Average Travel Speed</i>		
A	35	30	25
B	28	24	19
C	22	18	13
D	17	14	9
E	13	10	7
F	< 13	< 10	< 7

Source: Highway Capacity Manual, Transportation Research Board (2010)

Peak hour arterial analyses were conducted along Friars Road, Mission Center Road, and Qualcomm Way/Texas Street.

Peak Hour Intersection Level of Service Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analysis, for both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- *Pedestrian Calls per Hour*: Obtained from existing pedestrian counts.
- *Heavy Vehicle Factor*: A 2% heavy vehicle factor was assumed for all intersections within the study area. 2% is the standard, default heavy vehicle factor provided in HCM and Synchro 8.0 software. This number was compared with vehicle classification count data collected in support of this project, which demonstrated most segments have a heavy vehicle factor of 2% or less. **Appendix A** includes a graphic displaying the heavy vehicle percentage along segments where vehicle classification data was collected.
- *Peak Hour Factor*: Obtained from existing peak hour counts.
- *Signal Timing*: Obtained from existing signal timing plans (as of September 2015).

Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in *2010 Highway Capacity Manual (HCM)*. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (seconds/vehicle).

The *2010 HCM* methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g. through and right-turn movements sharing the same lane). The LOS criteria used for this technique are described in **Table 2-8**. The computerized analysis of intersection operations was performed utilizing the *Synchro 8.0 (2010 HCM methodology)* traffic analysis software (by Trafficware, 2011).

Table 2-8 Signalized Intersection Level of Service HCM Operational Analysis Method

Average Control Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	LOS A occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	LOS B occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	LOS C occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	LOS D occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	LOS E occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	LOS F occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, Transportation Research Board (2010)

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the 2010 HCM unsignalized intersection analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements. **Table 2-9** summarizes the level of service criteria for unsignalized intersections. Consistent with City policy, LOS E was used in this study as the minimum acceptable LOS for peak hour intersection operations.

Table 2-9 Level of Service Criteria for Stop Controlled Unsignalized Intersections

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: Highway Capacity Manual, Transportation Research Board (2010)

Queuing analysis was also conducted at all of the study area off-ramps, congested and/or closely spaced intersections, and each metered freeway on-ramp during peak hours.

Freeway/State Highway Level of Service Standards and Thresholds

Freeway level of service analysis is based upon procedures developed by Caltrans District 11. The procedure for calculating freeway level of service involves estimating a peak hour volume to capacity (V/C) ratio. Peak hour volumes are estimated from the application of design hour (“K”), directional (“D”)

and truck (“T”) factors to Average Daily Traffic (ADT) volumes. The base capacities were assumed to be 2,350 passenger-car per hour per main lane (pc/h/ln) and 1,410 pc/h/ln for auxiliary lane (60% of main lane capacity), respectively. A 0.95 peak-hour factor (PHF) is utilized for this analysis.

The resulting V/C ratio is then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in **Table 2-10**. The corresponding level of service represents an approximation of existing or anticipated future freeway operating conditions in the peak direction of travel during the peak hour.

LOS D or better is used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

Table 2-10 Caltrans District 11 Freeway Segment Level of Service Thresholds

LOS	V/C	Congestion/Delay	Traffic Description
<i>Used for freeways, expressways and conventional highways</i>			
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
<i>Used for conventional highways</i>			
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.
<i>Used for freeways and expressways</i>			
"F0"	1.01–1.25	Considerable (0-1 hour delay)	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
"F1"	1.26-1.35	Severe (1-2 hour delay)	Very heavy congestion, very long queues.
"F2"	1.36-1.45	Very severe (2-3 hour delay)	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
"F3"	>1.46	Extremely severe (3+ hours of delay)	Gridlock.

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

Ramp Metering Analysis

Ramp metering is a means of controlling the volume of traffic entering the freeway with the goal of improving the traffic operations and flow on the freeway main lanes. Freeway ramp meter analysis estimates the peak hour queues and delays at freeway ramps by comparing existing volumes to the meter rate at the given location.

Meter rates used in the analysis were obtained from Caltrans. Ramp metering analyses to calculate delays at the study area freeway on-ramps were conducted based upon procedures outlined in the *City of San Diego Traffic Impact Study Manual (1998)*.

Ramp metering analysis is conducted at all freeway on-ramps with metering that provide primary freeway outbound access for the community (approximately 11 on-ramps).

2.4.4 Vehicular Connectivity

Senate Bill 743 (SB 743) was signed into law in September 2013, modifying the existing California Environmental Quality Act (CEQA) by removing auto delay, level of service (LOS), parking and other vehicular capacity measures as metrics of transportation system impacts for mixed-use, infill or transit oriented development projects. Vehicle miles travelled (VMT) is considered the new analysis metric used to measure transportation impacts. VMT is a reflection of the type, intensity and location of land uses in relation to the capacity of the vehicular transportation network. It is also influenced by the availability and quality of multimodal facilities, roadway connectivity, and system operations.

3.0 Review of Relevant Local Planning Documents

This chapter describes previous and on-going planning efforts related to Mission Valley, including planning documents within adjacent communities and the region. These planning efforts provide important context for the Mission Valley Community Plan Update effort. The following adopted and ongoing planning documents were referenced:

- Interstate 8 Corridor Study (2016)
- Franklin Ridge Road Community Plan Amendment/EIR (in progress) and Franklin Ridge Road Traffic Impact Study (2015)
- SANDAG San Diego Forward: The Regional Plan (2015)
- Navajo Community Plan – Grantville Focused Plan Amendment/EIR (2015)
- Draft Environmental Impact Report Stadium Reconstruction Project (2015)
- Mission Valley Community Plan (Last Amended May 2013)
- San Diego River Park Master Plan (2013)
- City of San Diego Bicycle Master Plan (2011)
- SANDAG San Diego Regional Bike Plan (2010)
- Friars Road/SR-163 Interchange Project EIR (2009)
- City of San Diego General Plan – Mobility Element (2008)
- Quarry Falls Specific Plan & EIR (2008)
- City of San Diego Pedestrian Master Plan (2006)
- Mission City Bridge EIR (2002)
- First San Diego River Improvement Project Specific Plan (1999)
- Mission City Specific Plan (1998)
- Mission Valley Heights Specific Plan (1987) & Amendment (1996)
- Atlas Specific Plan (1988)
- Levi-Cushman Specific Plan (1987)

Interstate 8 Corridor Study (2016)

SANDAG, in collaboration with Caltrans, the City of San Diego, the Metropolitan Transit System, and other key stakeholders, is developing a multimodal corridor study for Interstate 8 within the City of San Diego. The scope of the study includes:

- Right-of-way constraints
- Transit services
- Freeway interchanges
- Selected local streets and intersections
- Bike and pedestrian access
- Transportation Demand Management
- Transportation Systems Management
- Other strategies to encourage the use of alternative travel modes.

The study discussed existing conditions and future deficiencies, developed multimodal alternatives, as well as proposed future improvements and an implementation strategy.

Franklin Ridge Road Traffic Impact Study (2015)

The study evaluated the impacts of the proposed Franklin Ridge Road connection between the communities of Mission Valley and Serra Mesa, consistent with the Mission Valley Community Plan. This new segment would connect to the Civita development internal public streets – Via Alta and Franklin Ridge Road – and would provide the Mission Valley community with additional freeway access. The TIS demonstrated improved travel times with the proposed connection to key facility types including hospitals, fire departments, schools, libraries, and parks. The proposed connection would

result in a significant impact to seven study roadway segments and eight study intersections under buildout (2035) conditions. Additional significant impacts would occur to six freeway segments.

An Environmental Impact Report (EIR) was prepared for the Serra Mesa Community Plan Amendment Street Connection and the City of San Diego is in the process of addressing public comments.

SANDAG San Diego Forward: The Regional Plan 2050 (2015)

The Regional Transportation Plan (RTP) proposes a vision for a regional transportation system that enhances quality of life, promotes sustainability, and offers more mobility options for the movement of people and goods. The RTP includes an integrated, multimodal transportation with transit investments concentrated in strategic areas. These include identifying a network of planned high quality transit corridors consisting of major transit stops and/or 15-minute peak period services. The corridors generally fall within areas of relatively higher residential, employment and mixed use density. The following roadways are identified as high quality transit corridors within the Mission Valley community:

- State Route 163
- Interstate 15
- Interstate 805
- Interstate 8
- Mission Center Road
- Friars Road
- Morena Boulevard
- Hotel Circle South
- Hotel Circle North

Navajo Community Plan – Grantville Focused Plan Amendment/EIR (2015)

The Navajo Community Plan was adopted by the City Council in 1982 as a long-range policy document to guide the physical development of the Navajo community. The Plan identifies five Community Plan Implementation Overlay Zones (CPIOZ), including one for the Grantville neighborhood. Since adoption, the Plan has undergone nine amendments, the most recent being the Grantville Focused Plan Amendment and EIR in 2015. In regards to mobility, the Amendment encourages transit-oriented developments that emphasize pedestrian orientation and proximity to public transit. Supplemental development regulations reinforce the concept of interconnected development projects and the surrounding public transit system. The Grantville CPIOZ encourages integration of an elaborate pedestrian and bicycle circulation network that links new development to the Grantville Trolley Station.

Draft Environmental Impact Report Stadium Reconstruction Project (2015)

The Draft Environmental Impact Report (EIR) was released for public review August 11, 2015. The project proposes constructing a new 68,000 – 12,000 multi-purpose sports stadium on the existing 166-acre stadium site. The EIR identified the project would result in significant environmental impacts to the following areas: Air Quality and Odor, Hydrology and Water Quality, Land Use, Mobility, Noise, Paleontological Resources, Visual Effects and Neighborhood Character, and Cumulative. Significant mobility impacts are to be mitigated by the following measures:

- *Additional 138 second delay on weekdays during PM peak hour at Rancho Mission Road and Ward Road intersection during major events* – Implement manual all-way stop control to the current two-way stop controlled intersection at Rancho Mission Road and Ward Road on days with major events only.
- *Public Parking Deficiency* – A Transportation Demand Management (TDM) Plan would be prepared by the City of San Diego, setting performance goals and metrics to achieve a modal split that would address the parking deficiency of 1,780 parking spaces by reducing parking demand and/or locating offsite parking locations. The following four TDM goals were developed to create a synergetic approach across transportation modes and parking: trip reduction, reduce onsite parking demand, increase transit ridership, and increase walking and bicycle use.

Mission Valley Community Plan (Last Amended May 2013)

The community plan serves as a long-range planning document to guide the physical development of Mission Valley. Since adoption in 1985, the Mission Valley Community Plan has been amended over twenty times. The adopted community plan includes the following elements: land use, transportation, open space, development intensity, community facilities, conservation, cultural and heritage resources, urban design, and implementation. The main transportation issue identified was congested roadways with the following contributing factors identified: rapid growth of commercial development, increased freeway access, gaps in the surface street system, and seasonal flooding. The following recommendations were proposed in the plan:

- Close gaps and correct other deficiencies in the surface street system.
- Reduce the effects of floods on the transportation network.
- Encourage the use of the surface street system for intra-Valley trips
- Encourage the rapid completion of the total freeway system for which will provide relief to the Mission Valley circulation system.
- Reduce conflicts between vehicles, bicycles and pedestrians.
- Improve traffic control techniques used during events at Qualcomm Stadium.
- Establish alternative methods of transportation capacity stadium crowds, especially now that the seating capacity of Qualcomm Stadium has been expanded.

San Diego River Park Master Plan (2013)

The San Diego River Park Master Plan provides a vision and guidance to restore a relationship between the San Diego River and surrounding communities by creating a river-long park, stretching from the San Diego River headwaters near Julian, to the Pacific Ocean in Ocean Beach. Major components of the Plan include vision, guiding principles, recommendations and an implementation strategy. The Master Plan's recommendations are divided into general recommendations for the entire river park area and specific recommendations for each of the six distinct geographic areas of the river. The Mission Valley community is within the Lower Valley and Confluence geographic areas. General recommendations related to mobility within the Mission Valley community include the following:

- *Establish appropriate corridors for the river, wildlife and people* – The River Corridor Area is measured by the 100-year Floodway, as mapped by FEMA, plus 35 feet on either side of the floodway. The floodway provides a continuous corridor that accommodates the flooding hydrology of the river, while the 35-foot wide area provides an opportunity for native habitat and a multi-use pathway that will accommodate walking, bicycling, sitting and observation.
- *Separate pedestrian/wildlife and vehicular river crossings* – Retrofit existing river crossings to allow grade-separated crossings for wildlife, San Diego River Park users, and vehicles. The bridges should address crossings at all scales, from trails to roads to highways.
- *Create a continuous multi-use San Diego River Pathway from the Pacific Ocean to the City of Santee* – Complete the San Diego River Pathway to be continuous, open to pedestrians and bicycle users, and uninterrupted by conflicts with vehicles, wherever possible, through grade separations.
- *Link the San Diego River Pathway to adjacent canyons and neighborhoods* – Establish connections to existing bicycle and pedestrian trails in Tecolote Canyon Natural Park/Open Space, Navajo Canyon Park/Open Space and Rancho Mission Canyon Park/Open Space.
- *Upgrade and link existing parks into the San Diego River Park system*
- *Integrate pedestrian and bicycle paths along frontage roads* – As frontage roads are improved, assure that there is adequate right-of-way for safe pedestrian and bicycle movement.

The following recommendations are proposed specifically within the Lower Valley and Confluence geographic areas:

- Provide a connection between the San Diego River Pathway and Presidio Park and a kiosk at Presidio Park to identify the San Diego River Pathway. Provide a connection between the Sefton Field to the south of the river and the YMCA to the north.
- Explore options at the Riverwalk Golf Course to extend the San Diego River Pathway along the trolley corridor as a short-term measure until the Riverwalk Golf Course is redeveloped into a multi-use development. When the development occurs, extend the San Diego River Pathway along the River Corridor.
- Construct bike and pedestrian crossings for the existing San Diego River Pathway at FSDRIP at public intersections, including Mission Center Road, Camino Del Este and Qualcomm Way. *A HAWK crossing was implemented at the Mission Center Road crossing since Plan adoption.*
- Create trail connections to the southern canyons of the Lower Valley, including Buchanan and Normal Heights Canyon, and to the northern canyons, including Murray, Murphy and Ruffin Canyons.
- Create the San Diego River Pathway connection from Fenton Parkway (on the south side of Mission Valley Library) to I-15 and pursue opportunities to provide a pedestrian/bicycle connection, over the river, from Qualcomm Way to Mission City Parkway.
- Pursue a Class I path along Rancho Mission Road and Ward Road and coordinate with the California Department of Fish and Wildlife for a San Diego River Pathway connection on the south side of the river just east of Interstate 15.
- Provide for a San Diego River Pathway connection to San Diego Mission Road from the north side of the river at Rancho Mission Road.
- Improve open space and trail connections with Alvarado Canyon and Navajo Canyon.
- Create a connection between the San Diego River Park Pathway and the Mission San Diego de Alcalá.

City of San Diego Bicycle Master Plan (2011)

The City of San Diego Bicycle Master Plan provides a framework for making cycling a more practical and convenient transportation option for all users. The plan is comprised of a proposed bicycle network, projects, policies and programs aimed at improving bicycling through 2030 and beyond. The plan proposes the following bicycle facilities within the Mission Valley community planning area:

- Class I multi-use path at the westernmost boundary of the community, running north-south adjacent to the east side of Interstate-5, and connecting to the Linda Vista community to the north and the Midway Pacific Highway Corridor and Old Town San Diego communities to the south.
- Class I multi-use path extending south of Friars Road at Colusa Street and intersecting with a proposed east-west Class I facility adjacent to the trolley line.
- Class II bike lane along Fashion Valley Road from Friars Road to Hotel Circle North.
- Class I multi-use path extending south of Friars Road at Ulric Street and continuing until intersecting with the San Diego River Path.
- Class I multi-use path running along Camino De La Reina from Avenida Del Rio to Hotel Circle North.
- Class II bike lane along Hotel Circle North from Camino De La Reina to Fashion Valley Road.
- Class I multi-use path connecting the San Diego River Path west of State Route 163 (SR-163) to the San Diego River path east of SR-163. *This segment was built following 2011 Plan adoption.*
- Class III bike route along Camino De La Reina from Camino De La Siesta to Mission Center Road.

- Class III bike route on Mission Center Road from Camino Del Rio South to Camino Del Rio North.
- Class III bike route extending west on Mission Valley Road from Mission Center Road, continuing on Metropolitan Drive until Murray Canyon Road where the route runs south to Frazee Road. The bike route continues south on Frazee Road from Murray Canyon Road to Hazard Center Drive where it then runs east, connecting to Mission Center Road.
- Class I multi-use path running north-south, from Phyllis Place parallel to Via Alta and continuing to Friars Road.
- Class II bike lane along Franklin Ridge Road from Phyllis Place to Civita Boulevard.
- Class II bike lane along Civita Boulevard from Mission Center Road to the Civita Boulevard's eastern terminus.
- Class II bike lane along Russell Park Way from Civita Boulevard to Friars Road.
- Class I multi-use path connecting the proposed Class I multi-use path parallel to Via Alta to the intersection of Gill Village Way and Rio San Diego Drive.
- Class III bike route along Rio San Diego Drive from Qualcomm Way to Fenton Parkway.
- Class I multi-use path connecting Fenton Parkway to Mission City Parkway, across the San Diego River.
- Class III bike route along Mission City Parkway from Camino Del Rio North to Camino Del Rio South.
- Class I multi-use path extending easterly along the San Diego River from Qualcomm Way/Texas Street.
- Class III bike route along Camino Del Rio South from Texas Street to Mission City Parkway, then continuing as either a Class II bike lane or Class III bike route to Fairmount Avenue.

SANDAG San Diego Regional Bike Plan (2010)

The Regional Bike Plan identifies a vision for a diverse regional bicycle system of interconnected bicycle corridors, support facilities, and programs to make cycling more practical and desirable to a broader range of the population. The document includes recommendations and goals that seek to increase bicycle ridership and the frequency of bicycle trips for all purposes. It also encourages the development of Complete Streets, to improve safety for bicyclists, and to increase public awareness and support for bicycling in the region. There are three "high priority" planned regional corridor alignments that fall within the Mission Valley Community, including:

- *I-15 Bikeway* – Runs parallel to I-15 from the northern San Diego County limit to University Avenue.
- *San Diego River Bikeway* – Runs parallel to the San Diego River from the coast to the I-8 Corridor in Santee at Mission Gorge Road.
- *Clairemont-Centre City Corridor* – Connects the Clairemont community to Mission Valley, Uptown, and Downtown San Diego via Genesee Avenue, Linda Vista Road, Ulric Street, Bachman Place, Fourth Avenue and Fifth Avenue.

Friars Road/SR-163 Interchange Project EIR (2009)

The traffic study provides an evaluation of five potential alternatives for the Friars Road/State Route 163 interchange to best accommodate future demands with a horizon year of 2030. The study indicates the interchange operates at poor levels of service due to over-capacity intersections, saturated mainline weaving, substandard weave lengths and queue spillovers in the mainlines. It is also anticipated that future traffic growth will further degrade interchange operations. All alternatives, besides the No Build scenario, were found to meet LOS D or better. The following two alternatives were recommended based on a traffic analysis standpoint:

-
- SB6 – provides an elevated collector-distributor over Friars Road, connecting Interstate 8 west and Hotel Circle. The ramps from Friars Road access this collector-distributor, eliminating the current weave at interchange ramps and freeway mainlines south of Friars Road.
 - SB13 – provides an at-grade collector-distributor under Friars Road, connecting Interstate 8 west and Hotel Circle with an off-ramp separate from the Friars Road off-ramp. Friars Road traffic accesses the collector-distributor from the south side of the Friars Road/Ulric Street intersection. Friars Road traffic headed to SR 163 utilizes an on-ramp from Ulric Street that goes over Friars Road and then touches down to the freeway before the Trolley bridge.

City of San Diego General Plan – Mobility Element (2008)

The City of San Diego General Plan Mobility element identifies transportation planning goals and policies related to pedestrian, transit, street and freeway systems, Intelligent Transportation Systems (ITS), Transportation Demand Management (TDM), bicycling, parking management, airports, passenger rail, goods movement/freight, and regional coordination and financing. The element discusses several key topics related to pedestrian-oriented planning, traffic calming techniques, bicycle network improvements, and transit priorities.

Quarry Falls Specific Plan & EIR (2008)

The Quarry Falls Specific Plan serves to guide development for Quarry Falls, located north of Friars Road between Mission Center Road and Interstate 805. The development takes place on an approximately 230.5 acre site and will include approximately 4,780 residential units; 603,000 square feet of retail space, 620,000 square feet of office/business park uses; and 31.8 acres of public and private parks, civic uses, open space and trails, and an optional school site. Traffic generated from the project will result in significant direct and cumulative impacts to the circulation system. The Program EIR identifies approximately 30 mitigation measures to address impacts caused by the development. However, traffic impact mitigation measures will not fully mitigate the project's traffic circulation impacts to freeway segments and ramps.

City of San Diego Pedestrian Master Plan (2006)

The Pedestrian Master Plan provides guidance for the implementation of pedestrian projects. The document also includes a prioritization process used to identify high priority pedestrian routes within community planning areas and a methodology to determine potential pedestrian improvement projects along identified routes. The Pedestrian Master Plan concludes with "Phase 2 Guidance" providing direction for community-level Pedestrian Master Plans (CPMP). The guidance aims to establish a level of consistency among the plans and analysis methodologies utilized.

Mission City Parkway Bridge EIR (2002)

The Mission City Parkway Bridge EIR provides environmental documentation for the construction of a two-lane collector bridge, extending north from the northern terminus of Mission City Parkway at Camino del Rio North, across the San Diego River and connecting to what is now the southern terminus of Fenton Parkway. The project is consistent with the currently adopted Mission Valley Community Plan and would provide an alternative all-weather surface crossing over the San Diego River. The project would also realign Camino del Rio North just east of Mission City Parkway, to remove the existing "S" curve and to widen the roadway to a four lane collector. The bridge would include a 6' wide bike lane and a 5.5' sidewalk along each side to accommodate cyclists and pedestrians. The project also calls for an extension of "I" Street as a two-lane collector, from Mission City Parkway eastward to the existing Qualcomm Stadium parking lot, south of the existing trolley tracks. "I" Streets would include 8' wide bike lanes and a 7.5' wide sidewalk along the north side of the street.

First San Diego River Improvement Project Specific Plan (1999)

The Specific Plan project area encompasses approximately 261 acres within Mission Valley, bounded by State Route 163 on the west, 700 feet east of Interstate 805 on the east, Camino de la Reina and Camino del Rio North on the south, and Friars Road on the north. The Specific Plan consists of three basic elements: the River Improvement Element consisting of improvements within the proposed floodway zone; Private Improvement Element identifying four major private developments; and the Public Facilities and Services Element describing the public improvements associated with the private developments. Related to mobility, the Specific Plan makes extensive recommendations for pedestrian and bikeway areas along the River Corridor and other pedestrian linkages into the river area from the private development areas. General guidelines and considerations include:

- Providing pedestrian and/or bikeway access along the length of the river where feasible
- Recommended pedestrian and bicycle facility widths
- Minimized driveway entrances into parking areas to reduce sidewalk interruption
- Landscaping within parking areas
- Consideration should be given to an exclusive bus lane along Camino de la Reina
- Bus stops placed at ½ mile intervals and integrated into building or pedestrian areas and plazas
- Public signing for river and parking access

Mission City Specific Plan (1998)

The Mission City Specific Plan guides development for approximately 225.2 acres, located between I-15 and I-805 and north of I-8. The Specific Plan includes a range of residential, commercial, and office land uses. Mobility within the project area is provided by Friars Road, “A” Street (Fenton Parkway), Northside Drive, Rio San Diego Drive, local streets, the light rail transit line, local Bus service, and a network of sidewalks and bicycle facilities. The project includes a pedestrian connection under Friars Road, between Fenton Parkway and Northside Drive, connecting residential uses north of Friars Road to commercial and office uses and the light rail station south of Friars Road. The traffic study prepared in support of the plan projects full build out to result in less than 40,040 ADT, which will not lower the level of service at study intersections. The Specific Plan identifies 9 planning areas, and proposes development and density transfers between the Mission City planning areas to allow flexibility for future development.

Mission Valley Heights Specific Plan (1987) & Amendment (1996)

The Mission Valley Heights Specific Plan area consists of approximately 67.8 acres, bound by SR 163 on the west, Mission Center Road on the east, existing residential development at the top of the mesa to the north, and by Friars Road on the south. The Specific Plan land uses consist of industrial, office, commercial visitor/hotel, and commercial/retail. The following transportation related improvements were identified as requirements of the proposed projects:

- Friars Road between SR 163 and Mission Center Road
 - Widening of Friars Road to provide a right-turn lane to Frazee Road and four lanes in each direction
 - Dual left-turn lanes from Friars Road to Frazee Road from both directions
 - Modification of the Friars Road and Frazee Road traffic signal
 - Pedestrian barriers to prohibit surface pedestrian crossing
 - Signalize the Friars Road westbound on-ramp from Mission Center Road
 - Enhanced pedestrian under-crossing of Friars Road at Mission Center Road
 - A median barrier in Friars Road
- Frazee Road adjacent to Friars-Mission Center

-
- Developer will improve Frazee Road adjacent to the project to high volume collector, with a 98' R.O.W, including dual southbound left-turn lanes.

Atlas Specific Plan (1988)

The Specific Plan guides development for seven sites within Mission Valley, consolidated into a single 86 acre Specific Plan area. The project area is located between SR-163 and I-5 in the Hotel Circle Area of Mission Valley. The proposed circulation system under the Specific Plan's cumulative development scenario maintains levels of service as anticipated in the Community Plan. The Mission Valley Community Plan allocates 29,965 trips to the Specific Plan area. The Atlas Specific Plan would generate 30,870 daily trips, approximately 3% greater than anticipated by the Community Plan. However, a 2% adjustment in trip generation for the LRT facilities (implemented following Atlas Specific Plan adoption) combined with a 1% adjustment in trip generation for a proposed intra-valley shuttle results in approximately the same traffic generation estimated by the Community Plan.

Levi-Cushman Specific Plan (1987)

This Specific Plan proposes a mixed-use development on 200 acres of land in Mission Valley, bound by Fashion Valley Road on the east, Friars Road on the North, Hotel Circle North on the south, and generally by the Courtyard multi-family development at Fresno Street on the west. Major themes of the Specific Plan include:

- Mixed Use – Incorporating a mix of residential retail commercial, office, hotel and recreational uses.
- River Focus – The San Diego River will act as the visual focus of development.
- Uniform Design Standards and Guidelines – Consistent and compatible design standards and guidelines will apply throughout the Specific Plan area.
- Traffic Generation – Traffic generated by on-site development will not exceed 67,000 ADT, per the Mission Valley Community Plan.

The Specific Plan project trip generation is estimated at 66,954 ADT, almost equal to the 66,880 ADT permitted by the Community Plan, therefore cumulative impacts and mitigation measures identified in the Community Plan will be applicable.

4.0 Existing Conditions

This chapter describes activity patterns, performance and facility evaluations for all modes of travel in Mission Valley, including pedestrian, bicycle, transit, and vehicular. The chapter also summarizes services associated with passenger rail, airports, goods movement, intelligent transportation systems (ITS), and travel demand management (TDM) strategies.

4.1 Pedestrian Mobility

Every trip starts and ends with a pedestrian. Ensuring adequate pedestrian access and quality facilities helps contribute to a safe and comfortable walking environment. The degree to which people walk for transportation and leisure is influenced by the comfort, safety and convenience of their walking experience. Comfort is influenced by separation from traffic, topography, the presence of sidewalks, and climate. Safety is influenced by the speed and volume of vehicular traffic, crossing distances and street widths, traffic control, number of conflict points, and infrastructure design. Convenience is influenced by distance and directness of travel. As connectivity increase, travel distances decrease.

2008 City of San Diego General Plan Mobility Element – Walkability Goals:

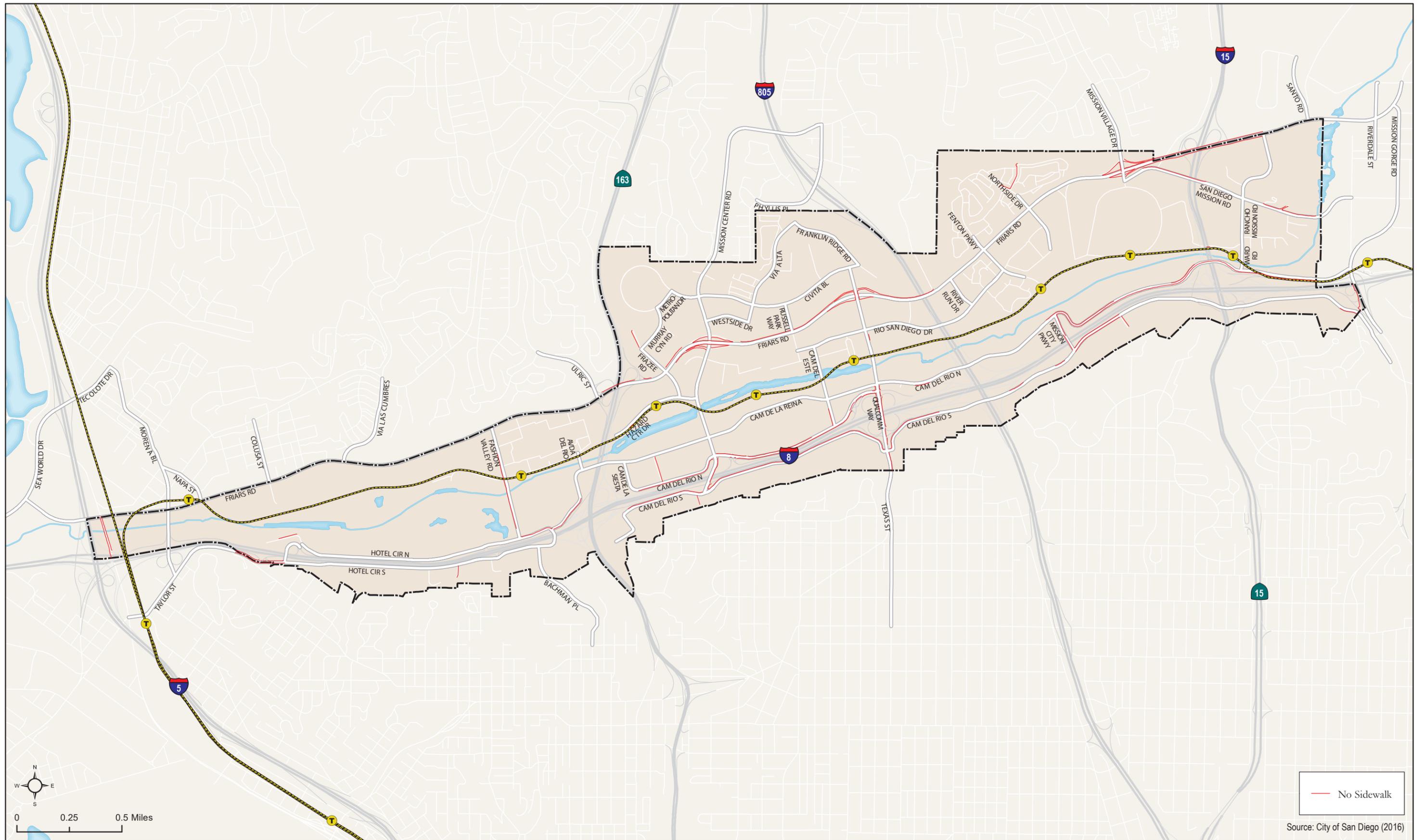
- *A city where walking is a viable travel choice, particularly for trips of less than one-half mile.*
- *A safe and comfortable pedestrian environment.*
- *A complete, functional, and interconnected pedestrian network, that is accessible to pedestrians of all abilities.*
- *Greater walkability achieved through pedestrian friendly streets, sites and building design.*

Figure 4-1 displays the location of missing sidewalks along study area roadway segments. As shown, multiple roadways throughout the community are sidewalk deficient on one or both sides of the street. Missing sidewalks are common along Hotel Circle North and South, as well as Camino Del Rio North and South. These roadways, along with Friars Road are the only pedestrian accessible roads traversing the community east-west.

Figure 4-2 identifies existing permitted and prohibited pedestrian crossings at all study intersections. As shown in Figures 4-1 and 4-2, traversing Interstate 15 may be difficult for pedestrians due to the lack of existing east-west sidewalks and pedestrian crossings across the freeway. Four roadways provide mobility across Interstate 15 (Friars Road, San Diego Mission Road, Camino Del Rio North, and Camino Del Rio South), however, only the south side of San Diego Mission Road and the south side of Camino Del Rio South provide a continuous sidewalk traversing the freeway.

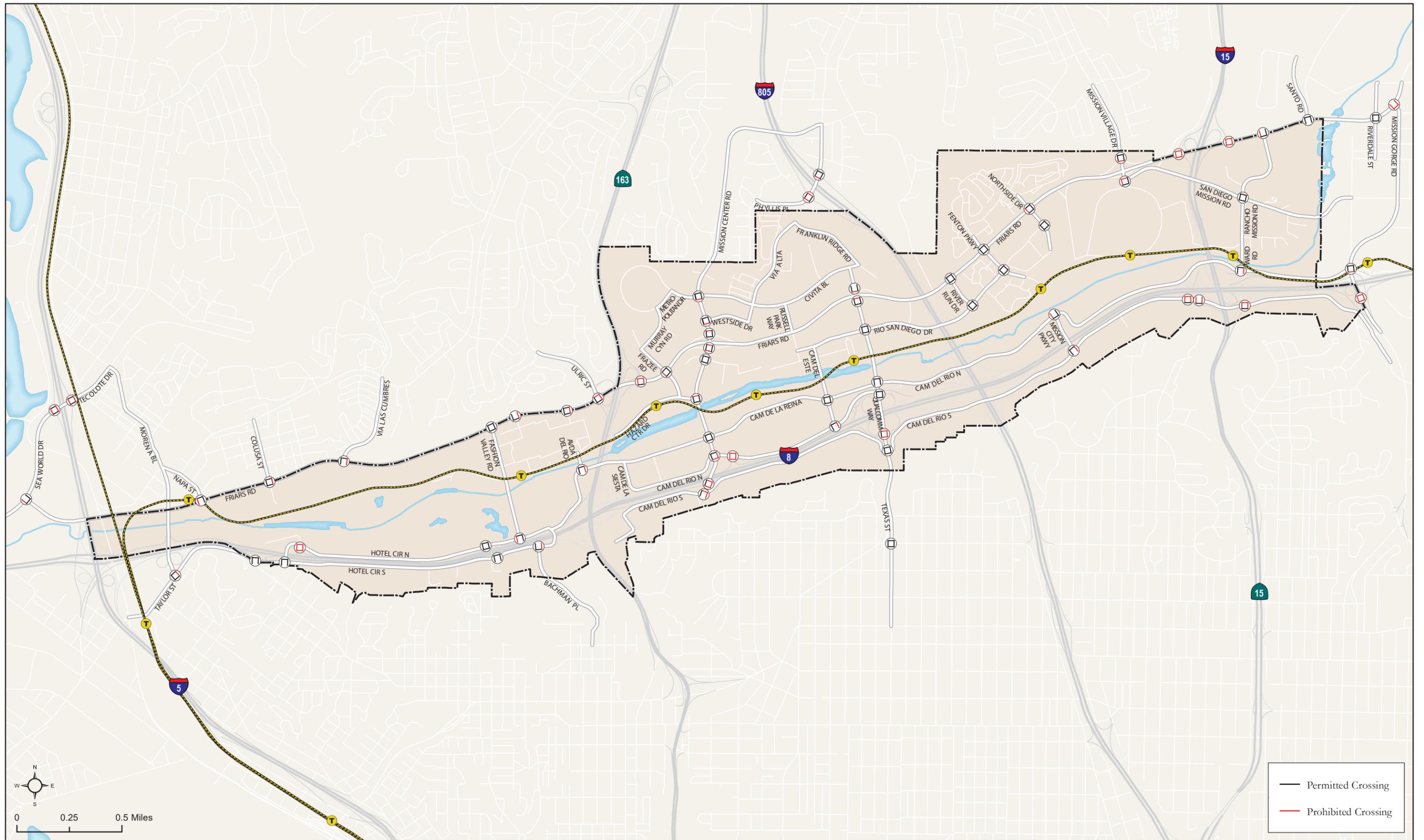


Sidewalk terminus along westbound Friars Road approaching Interstate 15



Source: City of San Diego (2016)

Figure 4-1
 Locations with No Sidewalk



4.1.1 Pedestrian Demand

Pedestrian demand was evaluated using the City of San Diego Pedestrian Priority Model, US Census Bureau data, and peak period pedestrian counts.

Figure 4-3 displays the Pedestrian Priority Model results for Mission Valley relative to the City of San Diego as a whole. The model is a composite of three submodels, including trip attractors, trip generators, and trip detractors. Higher levels of pedestrian attractors and generators, combined with higher levels of trip detractors, signify greater existing and/or latent demand for walking. However, these areas are also higher in deficiency due to vehicular volumes and speeds and pedestrian collision locations.

Relatively higher demand is shown in central Mission Valley, approximately bordered by Friars Road to the north, Camino Del Rio South to the south, I-805 to the east, and SR-163 to the west. Additional high demand areas surround the Fashion Valley Transit Station and Mall, as well as just east of I-15 to the community boundary. Lower demand is shown surrounding Qualcomm Stadium, and the Riverwalk Golf Course.

Table 4-1 draws from the US Census American Community Survey 2013 5-year estimates to compare pedestrian commute mode shares between Mission Valley, the City of San Diego, and San Diego County as a whole. Mission Valley has the lowest reported pedestrian commute mode share of all three geographies at 0.8%, compared to 3.1% for the City of San Diego, and 2.8% for San Diego County. The topography surrounding Mission Valley may be a factor contributing to the lower pedestrian commute mode share.

Table 4-1 Pedestrian Commute Mode Share Comparison

	Mission Valley	City of San Diego	San Diego County
Total Pedestrian Commuters	92	19,661	39,916
Total Workers	11,813	641,412	1,436,094
Pedestrian Commute Mode Share	0.8%	3.1%	2.8%

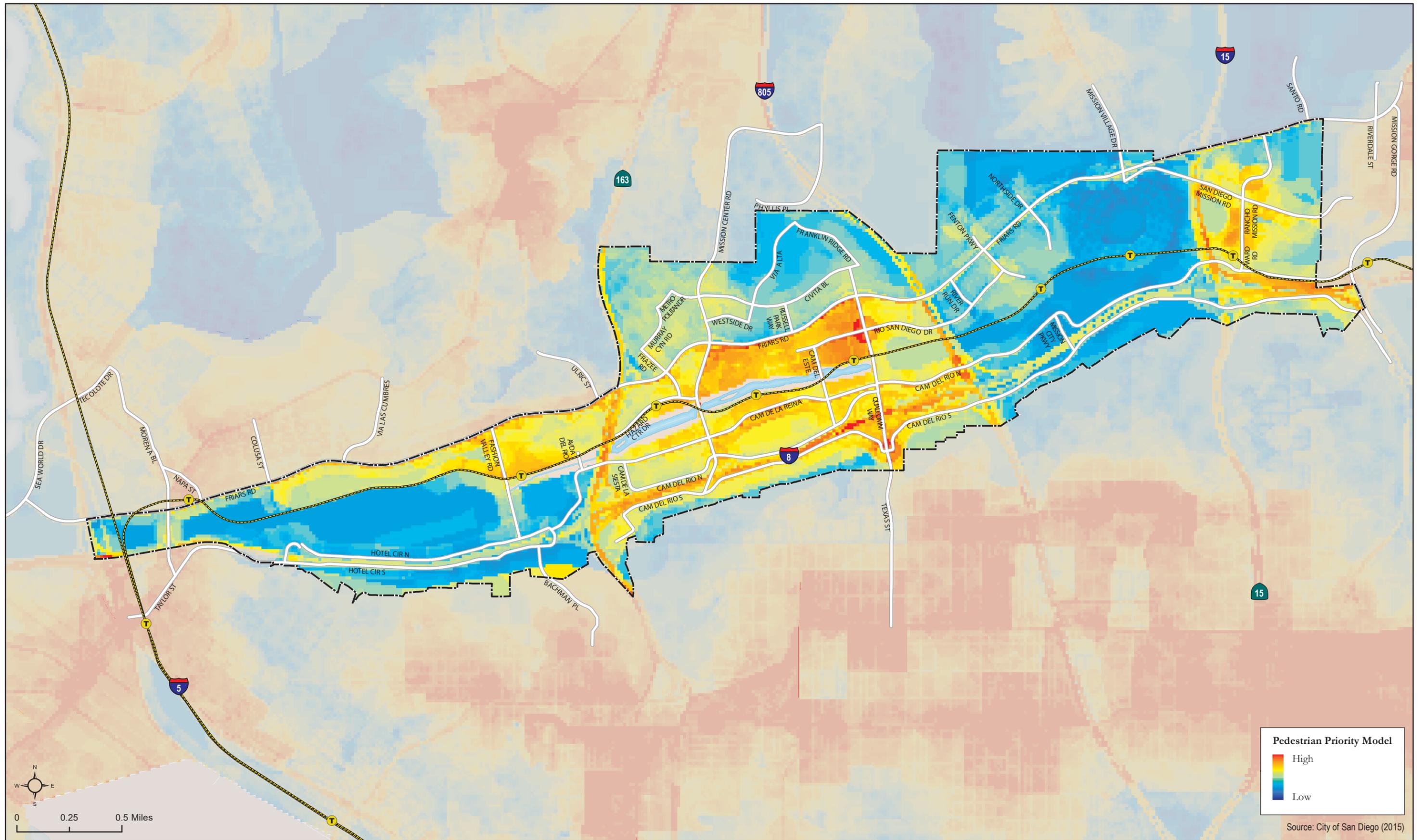
Source: US Census, American Community Survey 2013 5-Year Estimates (2016); Chen Ryan Associates (2016)

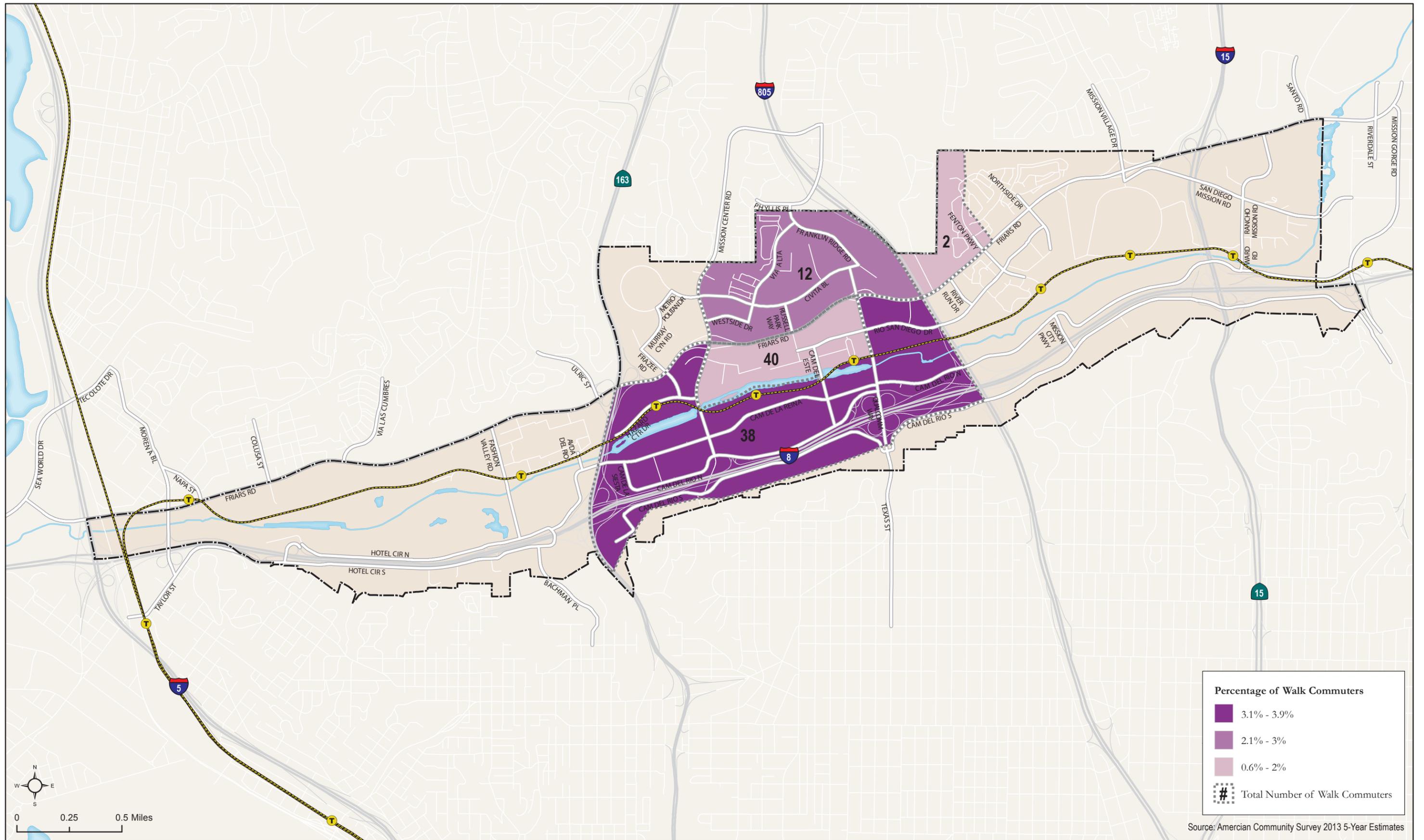
Figure 4-4 displays pedestrian commute rates by census block group throughout Mission Valley. As shown, the greatest pedestrian commute mode share can be found in the center of the community, between the SR-163 and I-805 freeways. This is consistent with the high pedestrian demand areas identified by the Pedestrian Priority Model in Figure 4-3.

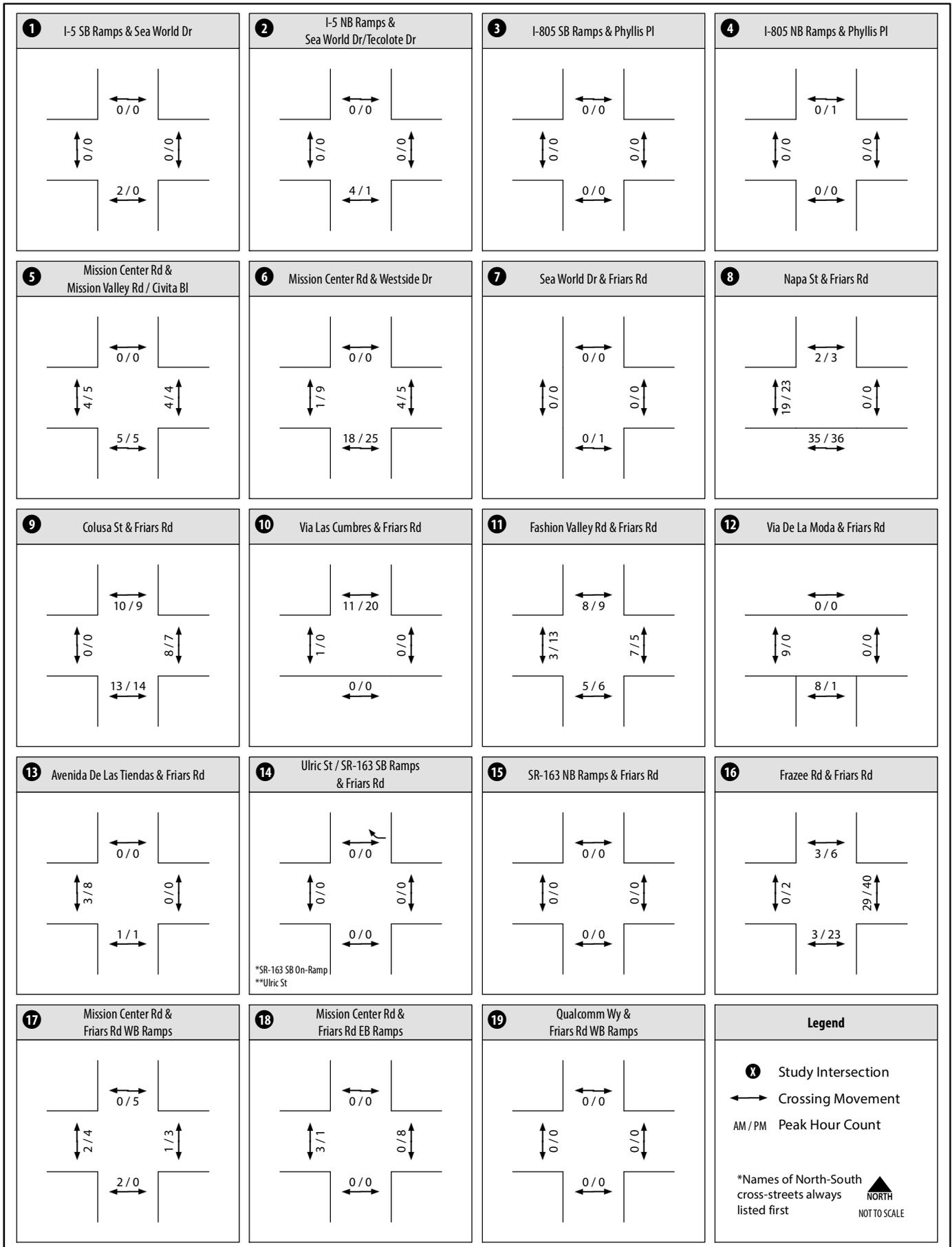
Figure 4-5 displays AM and PM peak hour pedestrian movements observed at study intersections. Counts were conducted on Thursday, 9/10/2015 or Thursday, 9/17/2015. Individual intersection count sheets are provided in **Appendix B**.

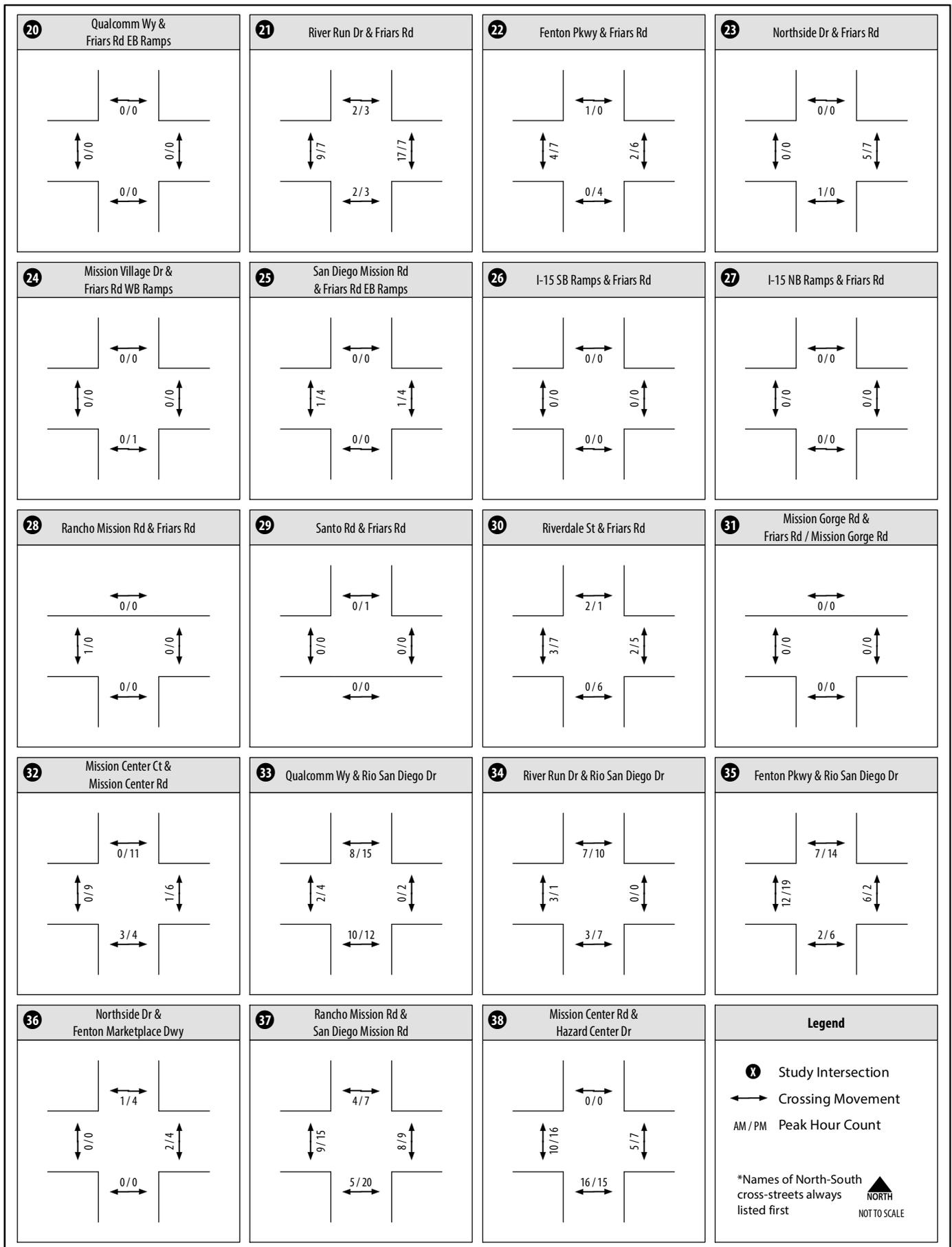
Table 4-2 presents the AM and PM peak hour pedestrian volumes at study intersections. As shown, the five intersections with the greatest observed combined AM and PM pedestrian volumes include:

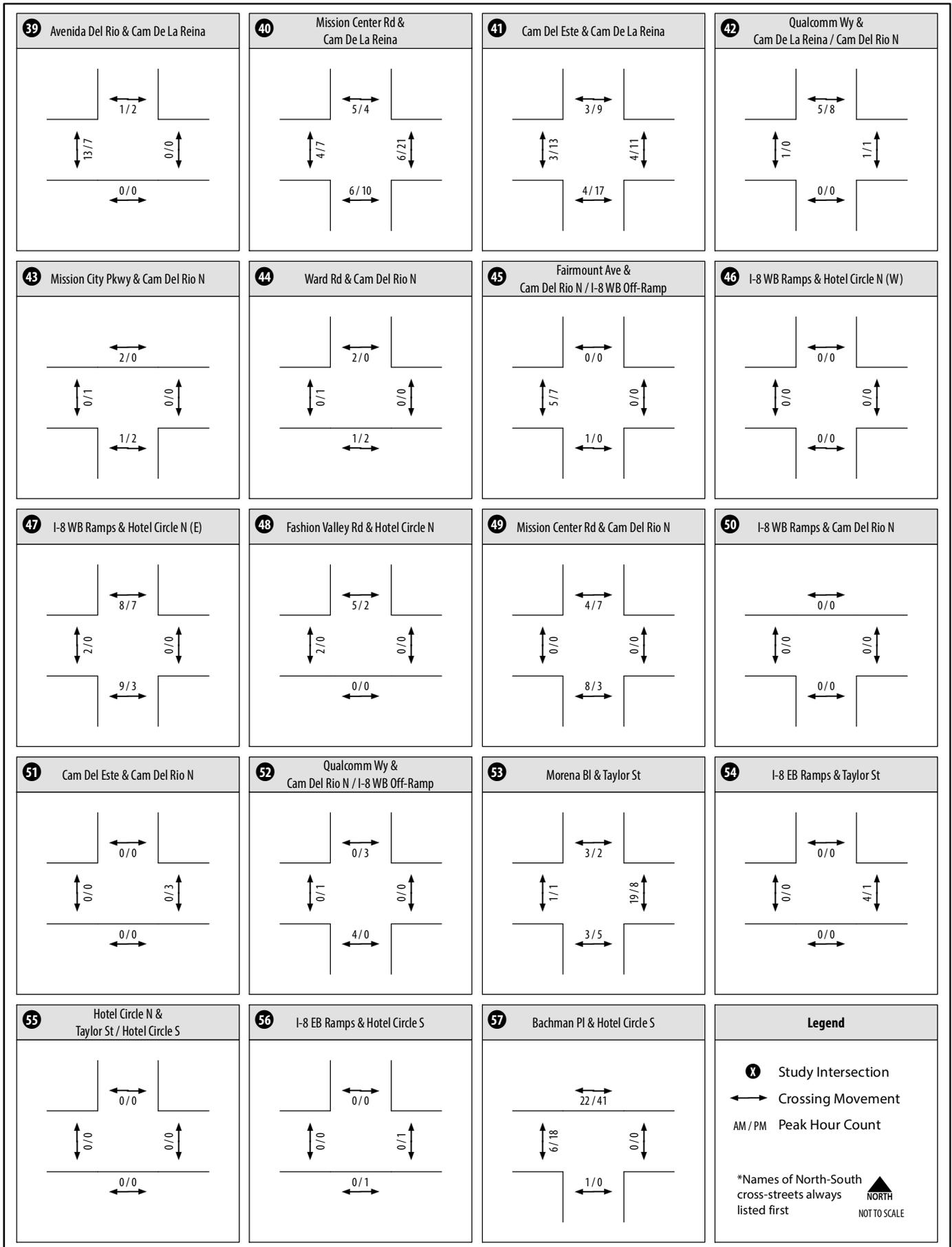
- Napa Street / Friars Road (118)
- Frazee Rad / Friars Road (106)
- Bachman Place / Hotel Circle South (88)
- Rancho Mission Road / San Diego Mission Road (77)
- Fenton Parkway / Rio San Diego Drive (69)











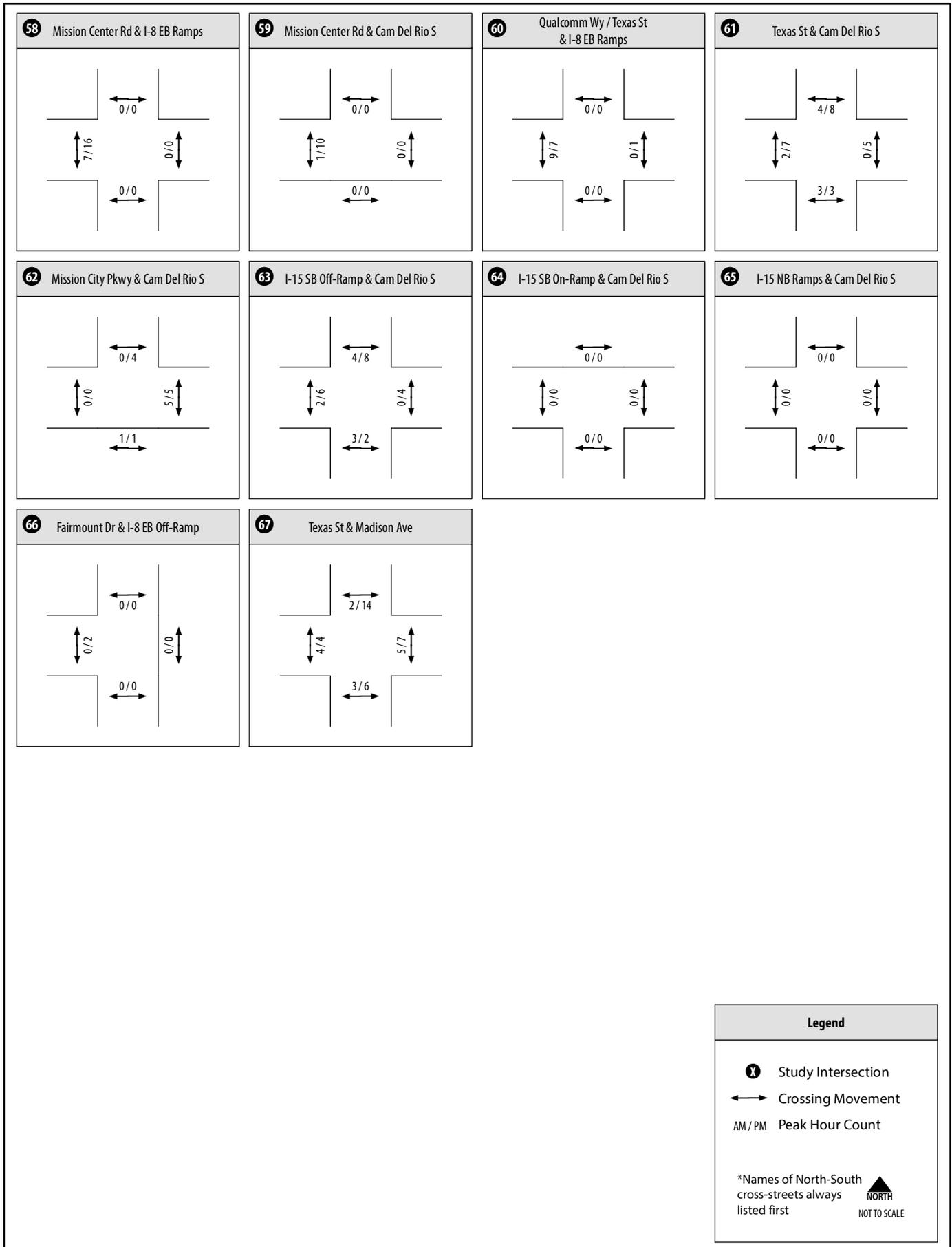


Figure 4-5
 Existing AM/PM Peak Hour Pedestrian Counts
 (Intersections 58-67)

Table 4-2 Existing AM / PM Peak Hour Pedestrian Counts

Intersection	AM Volume	PM Volume	Total
1: I-5 SB Ramps / Sea World Drive	2	0	2
2: I-5 NB Ramps / Sea World Drive/Tecolote Road	4	1	5
3: I-805 SB Ramps / Phyllis Place	0	0	0
4: I-805 NB Ramps / Phyllis Place	0	1	1
5: Mission Center Road / Mission Valley Road/Civita Boulevard	13	14	27
6: Mission Center Road / Westside Drive	23	39	62
7: Sea World Drive / Friars Road	0	1	1
8: Napa Street / Friars Road	56	62	118
9: Colusa Street / Friars Road	31	30	61
10: Via Las Cumbres / Friars Road	12	20	32
11: Fashion Valley Road / Friars Road	23	33	56
12: Via De La Moda / Friars Road	17	1	18
13: Avenida De Las Tiendas / Friars Road	4	9	13
14: Ulric Street/SR-163 SB Ramps / Friars Road	1	2	3
15: SR-163 NB Ramps / Friars Road	0	0	0
16: Frazee Road / Friars Road	35	71	106
17: Mission Center Road / Friars Road WB Ramps	5	12	17
18: Mission Center Road / Friars Road EB Ramps	3	9	12
19: Qualcomm Way / Friars Road WB Ramps	0	0	0
20: Qualcomm Way / Friars Road EB Ramps	0	0	0
21: River Run Drive / Friars Road	30	20	50
22: Fenton Parkway / Friars Road	7	17	24
23: Northside Drive / Friars Road	6	7	13
24: Mission Village Drive / Friars Road WB Ramps	0	1	1
25: Mission Village Drive / Friars Road EB Ramps	2	8	10
26: I-15 SB Ramps / Friars Road	0	0	0
27: I-15 NB Ramps / Friars Road	0	0	0
28: Rancho Mission Road / Friars Road	1	0	1
29: Santo Road / Friars Road	0	1	1
30: Riverdale Street / Friars Road	7	19	26
31: Mission Gorge Road / Friars Road	0	0	0
32: Mission Center Road / Mission Center Court	4	30	34
33: Qualcomm Way / Rio San Diego Drive	20	33	53
34: River Run Drive / Rio San Diego Drive	13	18	31
35: Fenton Parkway / Rio San Diego Drive	27	41	68
36: Northside Drive / Rio San Diego Drive	3	8	11
37: Rancho Mission Road / San Diego Mission Road	26	51	77
38: Mission Center Road / Hazard Center Drive	31	38	69
39: Avenida Del Rio / Camino De La Reina	14	9	23
40: Mission Center Road / Camino De La Reina	21	42	63
41: Camino Del Este / Camino De La Reina	14	50	64

Table 4-2 Existing AM / PM Peak Hour Pedestrian Counts

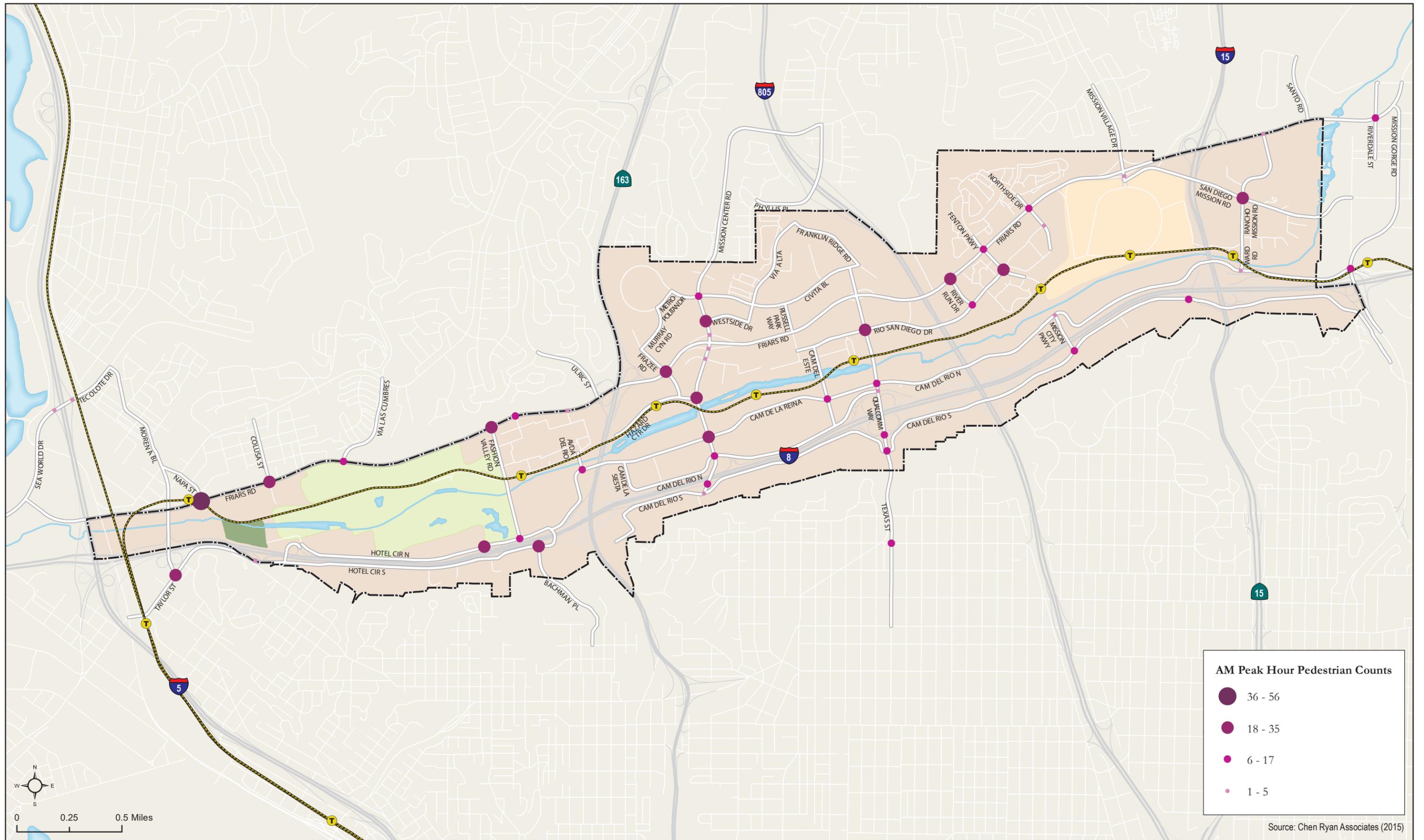
Intersection	AM Volume	PM Volume	Total
42: Qualcomm Way / Camino De La Reina	7	9	16
43: Mission City Parkway / Camino Del Rio North	3	3	6
44: Ward Road / Camino Del Rio North	3	3	6
45: Fairmount Avenue / Camino Del Rio North/I-8 WB Off-Ramp	6	7	13
46: I-8 WB Ramps / Hotel Circle North (W)	0	0	0
47: I-8 WB Ramps/Handlery Driveway / Hotel Circle North (E)	19	10	29
48: Fashion Valley Road / Hotel Circle North	7	2	9
49: Mission Center Road / Camino Del Rio North	12	10	22
50: I-8 WB Ramps/Mission Valley Mall Driveway / Camino Del Rio North	0	0	0
51: Camino Del Este / Camino Del Rio North	0	3	3
52: Qualcomm Way / Camino Del Rio N/I-8 WB Ramps	4	4	8
53: Morena Boulevard / Taylor Street	26	16	42
54: I-8 EB Ramps / Taylor Street	4	1	5
55: Hotel Circle North / Taylor Street/Hotel Circle South	5	1	6
56: I-8 EB Ramps / Hotel Circle South	0	2	2
57: Bachman Place / Hotel Circle South	29	59	88
58: Mission Center Road / I-8 EB Ramps	7	16	23
59: Mission Center Road / Camino Del Rio South	1	10	11
60: Qualcomm Way/Texas Street / I-8 EB Ramps	9	8	17
61: Texas Street / Camino Del Rio South	9	23	32
62: Mission City Parkway / Camino Del Rio South	6	10	16
63: I-15 SB Off-Ramp / Camino Del Rio South	9	20	29
64: I-15 SB On-Ramp / Camino Del Rio South	0	0	0
65: I-15 NB Ramps / Camino Del Rio South	0	0	0
66: Mission Gorge Road/Fairmount Avenue / I-8 EB Off-Ramp	0	2	2
67: Texas Street / Madison Avenue	14	31	45

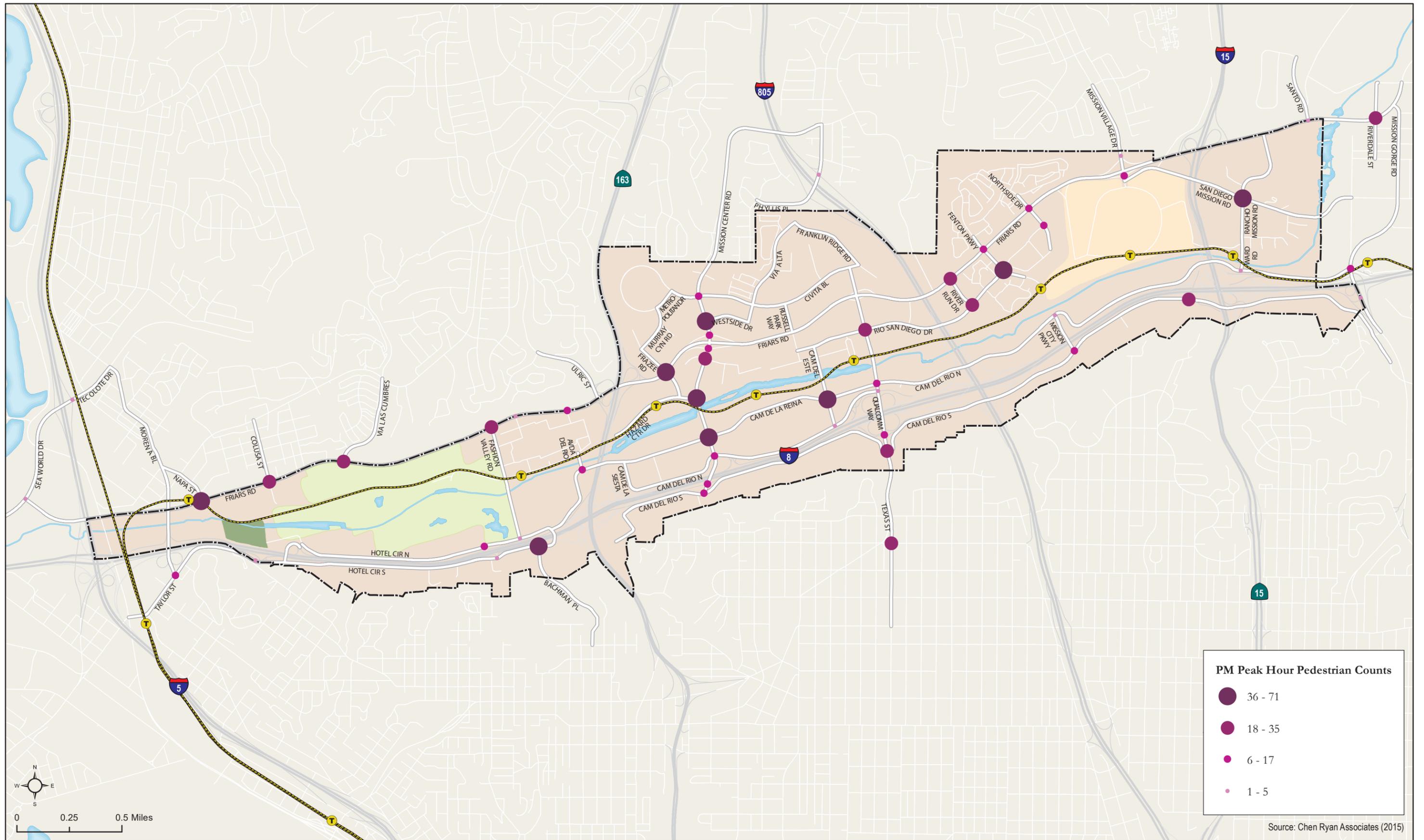
Source: Chen Ryan Associates (2016)

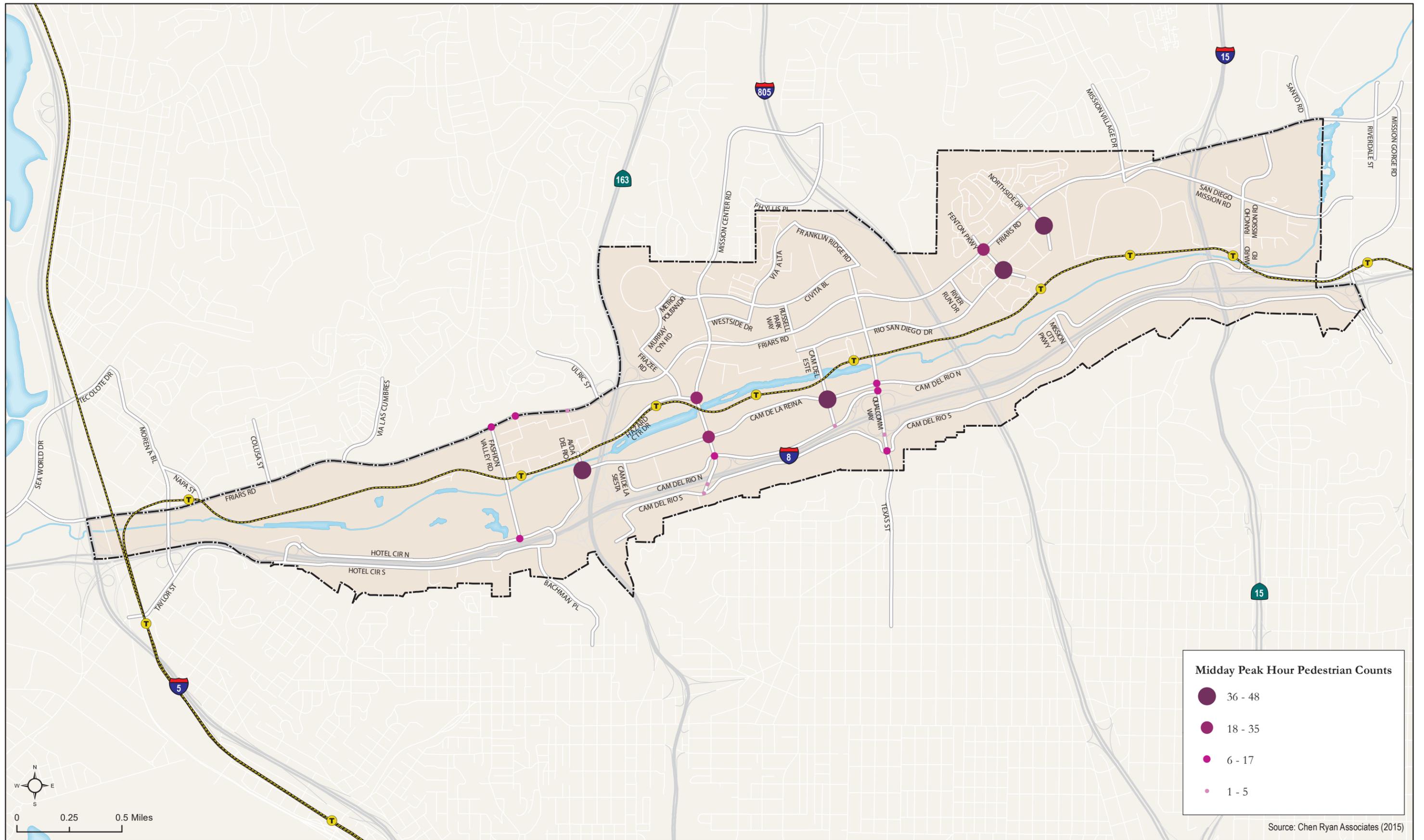
Figure 4-6a, 4-6b, and 4-6c display the distribution of pedestrian volumes during the AM, PM, and midday peak hours, respectively. Midday counts were only performed along select roadways. Generally, greater pedestrian volumes were observed at study intersections during the PM peak hour throughout the community. Consistent with the pedestrian commute rates displayed in Figure 4-4, greater pedestrian volumes were generally observed at study intersection located in central Mission Valley, between SR-163 and I-15. Exceptions include the intersections of Napa Street and Friars Road, Bachman Place and Hotel Circle South, and Rancho Mission Road and San Diego Mission Road.

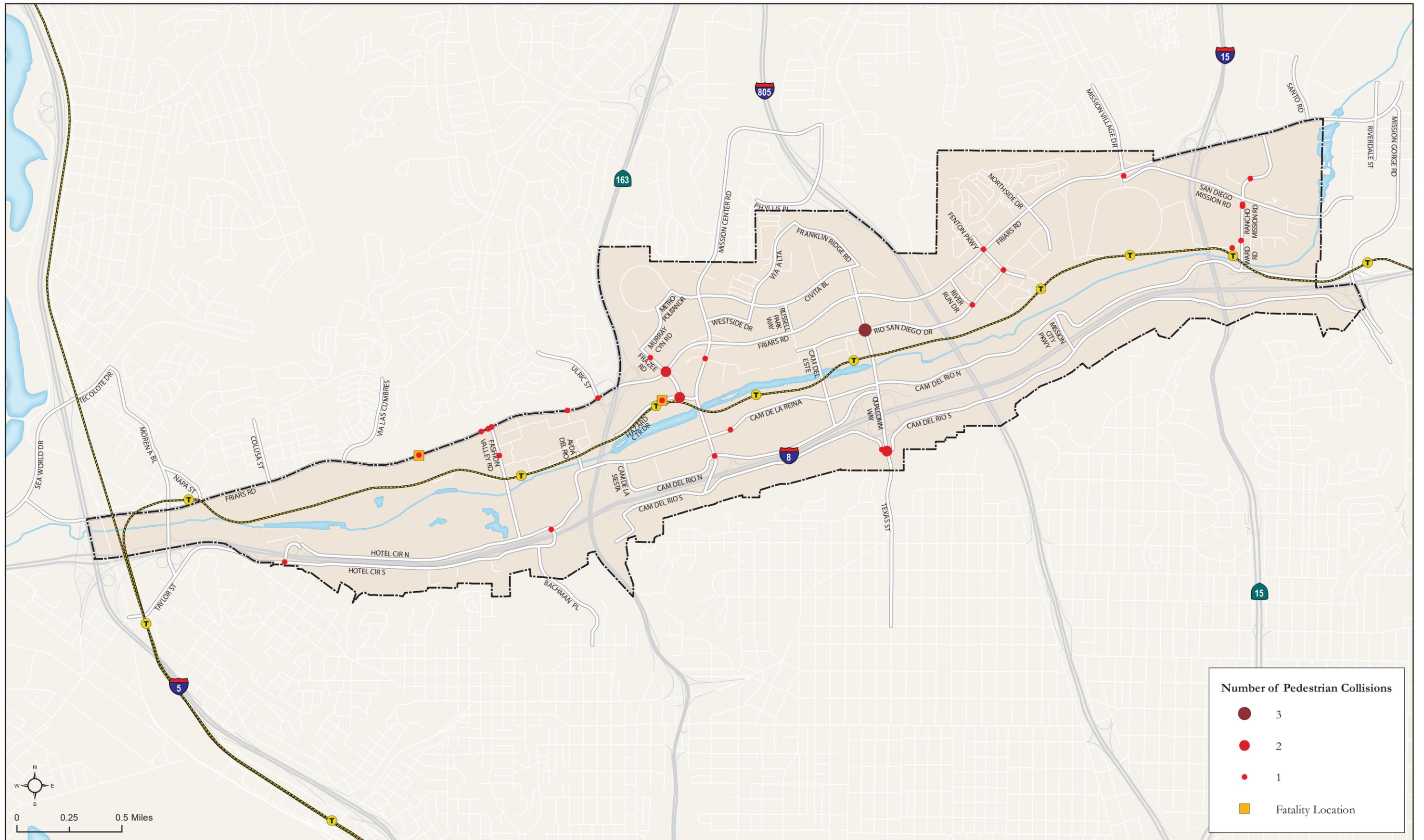
4.1.2 Pedestrian Safety

Pedestrian safety was evaluated using collision data obtained from the City of San Diego for the period from October 2008 through October 2013. A total of 33 pedestrian-involved collisions were reported during this five-year period. **Figure 4-7** displays the distribution of the pedestrian-involved collisions across the Mission Valley community, while **Table 4-3** identifies the four intersections where multiple collisions were reported.









**Table 4-3 Most Frequent Pedestrian Collision Locations
(October 2008 – October 2013)**

Rank	Intersection	Collisions
1	Qualcomm Way & Rio San Diego Drive	3
2	Frazer Road & Friars Road	2
3	Frazer Road & Hazard Center Drive	2
4	Texas Street & Camino Del Rio South	2

Source: City of San Diego (2016)

Collision locations are summarized in **Table 4-4**, differentiating between intersection, mid-block, and approach locations. The majority of pedestrian-involved collisions occurred at intersections, accounting for approximately 66%.

**Table 4-4 Pedestrian Collision Locations
(October 2008 – October 2013)**

Collision Location	Collisions	Percent
Intersection	22	66.7%
Mid-block	10	30.3%
Approaching	1	3.0%
Total	33	100.0%

Source: City of San Diego (2016)

Table 4-5 identifies the primary collision cause reported for the 33 pedestrian-involved collisions in Mission Valley. Collisions caused by the vehicle violating the pedestrian’s right-of-way were reported as the leading cause, accounting for 39.5% of total collisions, followed by unknown causes at 21.2%

**Table 4-5 Primary Pedestrian Collision Cause
(October 2008 – October 2013)**

Primary Collision Cause	Collisions	Percent
Violated Pedestrian’s Right-of-Way	13	39.5%
Unknown	7	21.2%
Violated Vehicle’s Right-of-Way	3	9.1%
D.U.I. or N/A	2	6.1%
Pedestrian at Fault	2	6.1%
Didn’t Yield	1	3.0%
Left Place of Safety	1	3.0%
Other Causes	1	3.0%
Unsafe Movement – Right Turn	1	3.0%
Visibility Issue	1	3.0%
Yield To Party in Intersection	1	3.0%
Total	33	100.0%

Source: City of San Diego (2016)

Table 4-6 reports pedestrian-involved collisions by party-at-fault. As shown, the driver was reported as at-fault in nearly 70% of the collisions, with the pedestrian was at-fault for the remaining 30% of collisions.

Table 4-6 Pedestrian Collisions by Party-At-Fault (October 2008 – October 2013)

Collision Location	Collisions	Percent
Driver	23	69.7%
Pedestrian	10	30.3%
Total	33	100.0%

Source: City of San Diego (2016)

4.1.3 Pedestrian Environment Quality Evaluation (PEQE)

The Pedestrian Environment Quality Evaluation (PEQE) provides an assessment of pedestrian facilities within the Pedestrian Study Area, including roadway segments, intersections, and mid-block crossings. The evaluation incorporates a variety of different measures for each pedestrian facility type. The segment analysis considers horizontal buffer, lighting, a clear pedestrian zone, and the posted speed limit. Intersection analyses look at physical features that serve as safety mechanisms (enhanced crosswalk, raised crosswalk, curb bulb out, advanced stop bar), operational features (pedestrian countdown signal, pedestrian lead interval, no-turn on red sign/signal, additional pedestrian signage), ADA standard curb ramps, and traffic control. Mid-block crossing evaluations consider crosswalk visibility, crossing distance, adheres to ADA requirements, and traffic control. An overview of the inputs and scoring used in the PEQE are provided in Chapter 2.

The PEQE results are graphically displayed in **Figure 4-8**. As shown, segments exhibiting “Low” pedestrian conditions were identified along the community periphery, while a mixture of High, Medium, and Low pedestrian environments are concentrated in the center of the community. PEQE calculation worksheets are provided in **Appendix C**.

The PEQE analysis results for roadway segments are presented in **Table 4-7a**. The presence of lighting was common among all environment qualities, as was a clear pedestrian zone. “High” grade categories commonly included a physical horizontal buffer, as well as posted speed limits of 25 MPH. Posted speed limits of 30 to 40 MPH were common among “Medium” grades. “Low” grade segments generally had a posted speed limit of 45 MPH or greater.

Intersection PEQE analysis results are provided in **Table 4-7b**. Signals were common in both “Medium” and “Low” environments. “Medium” grade environments generally included ADA standard curb ramps and occasionally had either one physical or one operational feature. Curb ramps were common at “Low” grade intersection environments, however, they were not to ADA standards (truncated dome).

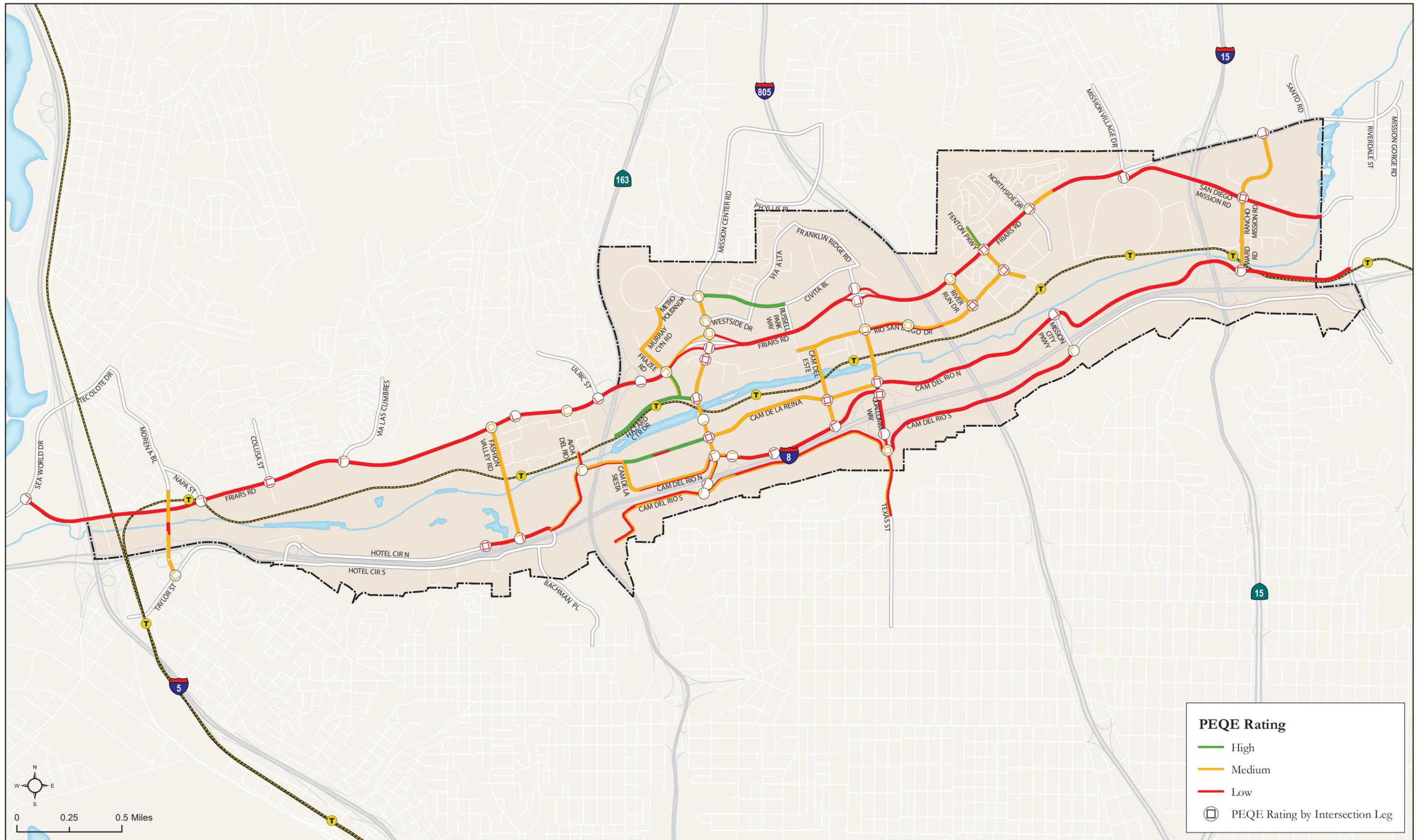


Table 4-7a PEQE Roadway Segment Analysis Results

#	Roadway	From	To	North/East		South/West		Pedestrian Route Type
				Score	Grade	Score	Grade	
1	Civita Boulevard	Mission Center Road	Via Alta	7	High	7	High	Connector
2	Civita Boulevard	Via Alta	Russell Park Way	7	High	7	High	Connector
3	Friars Road	Sea World Drive	Napa Street	3	Low	3	Low	Connector
4	Friars Road	Napa Street	Colusa Street	3	Low	3	Low	Connector
5	Friars Road	Colusa Street	Donahue Street	3	Low	3	Low	Connector
6	Friars Road	Donahue Street	Fresno Street	3	Low	3	Low	Connector
7	Friars Road	Fresno Street	Goshen Street	3	Low	3	Low	Connector
8	Friars Road	Goshen Street	Gaines Street	3	Low	3	Low	Connector
9	Friars Road	Gaines Street	Via Las Cumbres	3	Low	3	Low	Connector
10	Friars Road	Via Las Cumbres	Fashion Valley Road	3	Low	3	Low	Connector
11	Friars Road	Fashion Valley Road	Via De La Moda	3	Low	3	Low	Connector
12	Friars Road	Via De La Moda	Fashion Valley Driveway	3	Low	3	Low	Connector
13	Friars Road	Fashion Valley Driveway	Avenida De Las Tiendas	5	Medium	3	Low	Connector
14	Friars Road	Avenida De Las Tiendas	Fashion Valley Driveway	5	Medium	3	Low	Connector
15	Friars Road	Fashion Valley Driveway	Ulric Street/SR-163 SB Ramps	3	Low	3	Low	Connector
16	Friars Road	Ulric Street/SR-163 SB Ramps	SR-163 NB Ramps	0	Low	2	Low	Connector
17	Friars Road	SR-163 NB Ramps	Frazee Road	3	Low	3	Low	Connector
18	Friars Road	Frazee Road	Mission Center Road	5	Medium	3	Low	Connector
19	Friars Road	Mission Center Road	Gill Village Way	1	Low	3	Low	Connector
20	Friars Road	Gill Village Way	Qualcomm Way	0	Low	3	Low	Connector
21	Friars Road	Qualcomm Way	Rio Bonito Way	0	Low	3	Low	Connector
22	Friars Road	Rio Bonito Way	River Run Drive	1	Low	3	Low	Connector
23	Friars Road	River Run Drive	Fenton Parkway	3	Low	3	Low	Connector
24	Friars Road	Fenton Parkway	Northside Drive	3	Low	3	Low	Connector
25	Hazard Center Drive	Western Terminus	Hazard Center West Driveway	7	Medium	5	Medium	Connector
26	Hazard Center Drive	Hazard Center West Driveway	Hazard Center East Driveway	5	Low	1	Low	Connector
27	Hazard Center Drive	Hazard Center East Driveway	Frazee Road	7	High	5	Medium	Connector
28	Hazard Center Drive	Frazee Road	Mission Center Road	7	Medium	7	High	Connector

Table 4-7a PEQE Roadway Segment Analysis Results

#	Roadway	From	To	North/East		South/West		Pedestrian Route Type
				Score	Grade	Score	Grade	
29	Rio San Diego Drive	Gill Village Way	Camino Del Este	6	High	7	High	Connector
30	Rio San Diego Drive	Camino Del Este	Station Village Way	6	High	7	High	Connector
31	Rio San Diego Drive	Station Village Way	Qualcomm Way	6	Medium	6	Medium	Connector
32	Rio San Diego Drive	Qualcomm Way	Rio Bonito Way	4	Medium	6	Medium	Connector
33	Rio San Diego Drive	Rio Bonito Way	River Run Drive	4	Medium	6	Medium	Connector
34	Rio San Diego Drive	River Run Drive	Fenton Parkway	4	Medium	4	Medium	Connector
35	San Diego Mission Road	Friars Road EB Ramps	Rancho Mission Road	2	Medium	4	Medium	Connector
36	San Diego Mission Road	Rancho Mission Road	Fairmount Avenue	1	Medium	4	Medium	Connector
37	Hotel Circle North	I-8 WB Ramps	Fashion Valley Road	5	Low	2	Low	Connector
38	Hotel Circle North	Fashion Valley Road	Camino De La Reina	1	Low	2	Low	Connector
39	Camino De La Reina	Hotel Circle North	Avenida Del Rio	5	Medium	1	Low	Connector
40	Camino De La Reina	Avenida Del Rio	Camino De La Siesta	5	Low	1	Low	Connector
41	Camino De La Reina	Camino De La Siesta	Camino Del Arroyo	8	Medium	3	Low	Connector
42	Camino De La Reina	Camino Del Arroyo	Mission Valley West Driveway	8	Medium	3	Low	Connector
43	Camino De La Reina	Mission Valley West Driveway	Mission Center Road	8	High	6	Medium	Connector
44	Camino De La Reina	Mission Center Road	Park in the Valley Driveway	6	High	8	High	Connector
45	Camino De La Reina	Park in the Valley Driveway	Camino Del Este	6	High	8	High	Connector
46	Camino De La Reina	Camino Del Este	Qualcomm Way	6	Medium	6	Medium	Connector
47	Camino Del Rio North	Camino De La Siesta	Camino del Arroyo	4	Medium	6	Medium	Connector
48	Camino Del Rio North	Camino del Arroyo	Mission Center Road	4	Medium	6	Medium	Connector
49	Camino Del Rio North	Mission Center Road	I-8 WB Ramps	4	Medium	0	Low	Connector
50	Camino Del Rio North	I-8 WB Ramps	Theater Driveway	0	Medium	0	Low	Connector
51	Camino Del Rio North	Theater Driveway	Camino Del Este	0	Medium	0	Low	Connector
52	Camino Del Rio North	Camino Del Este	I-8 WB Ramps	2	Low	0	Low	Connector
53	Camino Del Rio North	I-8 WB Ramps	Qualcomm Way	0	Low	0	Low	Connector
54	Camino Del Rio North	Qualcomm Way	Mission City Parkway	3	Low	0	Low	Connector
55	Camino Del Rio North	Mission City Parkway	Ward Road	0	Low	0	Low	Connector
56	Camino Del Rio North	Ward Road	Fairmount Avenue	3	Low	3	Low	Connector

Table 4-7a PEQE Roadway Segment Analysis Results

#	Roadway	From	To	North/East		South/West		Pedestrian Route Type
				Score	Grade	Score	Grade	
57	Camino Del Rio South	Western Terminus	Mission Center Road	3	Low	0	Low	Connector
58	Camino Del Rio South	Mission Center Road	Texas Street	1	Low	0	Low	Connector
59	Camino Del Rio South	Texas Street	Mission City Parkway	1	Low	5	Medium	Connector
60	Morena Boulevard	Linda Vista Road	I-8 WB Offramp	4	Low	4	Medium	Connector
61	Morena Boulevard	I-8 EB Offramp	Taylor Street	4	Low	1	Low	Connector
62	Fashion Valley Road	Friars Road	Riverwalk Place	4	Medium	4	Medium	Connector
63	Fashion Valley Road	Riverwalk Place	Hotel Circle North	4	Medium	4	Medium	Connector
64	Avenida Del Rio	Fashion Valley Parking Lot	Camino De La Reina	2	Medium	2	Low	Connector
65	Camino De La Siesta	Camino De La Reina	Camino Del Rio North	6	Medium	2	Low	Connector
66	Murray Canyon Road	Metropolitan Drive	Mission Heights	5	Low	4	Medium	Connector
67	Murray Canyon Road	Mission Heights Road	Frazee Road	5	Medium	5	Medium	Connector
68	Frazee Road	Murray Canyon Road	Ralph's Driveway	5	Medium	5	Medium	Corridor
69	Frazee Road	Ralph's Driveway	Friars Road	5	Medium	5	Medium	Corridor
70	Frazee Road	Friars Road	Hazard Center Driveway	7	Medium	5	Medium	Corridor
71	Frazee Road	Hazard Center Driveway	Hazard Center Drive	7	Medium	5	Medium	Corridor
72	Mission Center Road	Mission Valley Road	Westside Drive	6	High	5	Medium	Connector
73	Mission Center Road	Westside Drive	Friars Road WB Ramps	6	High	7	High	Connector
74	Mission Center Road	Friars Road WB Ramps	Friars Road EB Ramps	4	Medium	4	Medium	Connector
75	Mission Center Road	Friars Road EB Ramps	Mission Center Court	4	Medium	4	Medium	Connector
76	Mission Center Road	Mission Center Court	Hazard Center Drive	4	Medium	4	Medium	Connector
77	Mission Center Road	Hazard Center Drive	Camino Del La Reina	4	Medium	4	Medium	Corridor
78	Mission Center Road	Camino De La Reina	Camino Del Rio North	6	Medium	4	Medium	Corridor
79	Auto Circle	Camino Del Rio North	I-8 EB Ramps	1	Medium	4	Medium	Connector
80	Auto Circle	I-8 EB Ramps	Camino del Rio South	1	Medium	4	Medium	Connector
81	Camino Del Este	Rio San Diego Drive	Station Village Lane	6	Medium	6	Medium	Connector
82	Camino Del Este	Station Village Lane	Camino De La Reina	4	Low	6	Medium	Connector
83	Camino Del Este	Camino De La Reina	Camino Del Rio North	5	Low	6	Medium	Connector
84	Qualcomm Way	Rio San Diego Drive	Camino Del Rio North	4	Medium	6	Medium	Connector

Table 4-7a PEQE Roadway Segment Analysis Results

#	Roadway	From	To	North/East		South/West		Pedestrian Route Type
				Score	Grade	Score	Grade	
85	Qualcomm Way	Camino Del Rio North	I-8 WB Ramps	1	Medium	4	Medium	Connector
86	Qualcomm Way	I-8 WB Ramps	I-8 EB Ramps	1	Medium	5	Medium	Connector
87	Qualcomm Way	I-8 EB Ramps	Camino Del Rio South	2	Medium	4	Medium	Connector
88	Texas Street	Camino Del Rio South	Madison Avenue	1	Low	1	Low	Connector
89	River Run Drive	Friars Road	Rio San Diego Drive	4	Low	2	Low	Connector
90	Fenton Parkway	Portofino Driveway	Friars Road	7	Low	4	Medium	Connector
91	Fenton Parkway	Friars Road	Rio San Diego Drive	5	Low	4	Medium	Corridor
92	Fenton Parkway	Rio San Diego Drive	Del Rio Apartments Driveway	5	Medium	4	Medium	Corridor
93	Rancho Mission Road	Friars Road	Caminito Cuervo	4	High	5	Medium	Connector
94	Rancho Mission Road	Caminito Cuervo	San Diego Mission Road	4	Medium	5	Medium	Connector
95	Ward Road	San Diego Mission Road	Camino Del Rio North	4	Medium	5	Medium	Corridor

Source: Chen Ryan Associates (2016)

Table 4-7b PEQE Intersection Analysis Results

#	Intersection	North Leg		South Leg		East Leg		West Leg	
		Score	Grade	Score	Grade	Score	Grade	Score	Grade
1	Mission Center Road and Civita Boulevard	5	Med.	N/A	N/A	5	Med.	5	Med.
2	Sea World Drive and Friars Road	2	Low	N/A	N/A	2	Low	N/A	N/A
3	Napa Street and Friars Road	4	Med.	N/A	N/A	2	Low	N/A	N/A
4	Colusa Street and Friars Road	2	Low	2	Low	N/A	N/A	2	Low
5	Via Las Cumbres and Friars Road	5	Med.	N/A	N/A	N/A	N/A	2	Low
6	Fashion Valley Road and Friars Road	5	Med.	5	Med.	5	Med.	6	Med.
7	Via de la Moda and Friars Road	N/A	N/A	2	Low	N/A	N/A	2	Low
8	Ave de las Tiendas and Friars Road	4	Med.	4	Med.	N/A	N/A	4	Med.
9	Ulric Street/SR163 SB Ramps and Friars Road	N/A	N/A	2	Low	N/A	N/A	2	Low
10	SR163 NB Ramps and Friars Road	N/A	N/A	0	Low	N/A	N/A	N/A	N/A
11	Frazer Road and Friars Road	4	Med.	4	Med.	4	Med.	N/A	N/A
12	Mission Center Road and Friars Road WB Ramps	N/A	N/A	5	Med.	5	Med.	5	Med.
13	Mission Center Road and Friars Road EB Ramps	N/A	N/A	N/A	N/A	2	Low	2	Low
14	Qualcomm Way and Friars Road WB	N/A	N/A	N/A	N/A	4	Med.	2	Low
15	Qualcomm Way and Friars Road EB	N/A	N/A	2	Low	2	Low	4	Med.
16	River Run Drive and Friars Road	4	Med.	5	Med.	4	Med.	5	Med.
17	Fenton Parkway and Friars Road	2	Low	4	Med.	3	Low	3	Low
18	Northside Drive and Friars Road	4	Med.	2	Low	2	Low	N/A	N/A
19	Mission Center Road and Hazard Center Drive	N/A	N/A	2	Low	2	Low	2	Low
20	Qualcomm Way and Rio San Diego Drive	4	Med.	2	Low	4	Med.	4	Med.
21	River Run Drive and Rio San Diego Drive	3	Low	1	Low	1	Low	1	Low
22	Fenton Parkway and Rio San Diego Drive	2	Low	2	Low	2	Low	4	Med.
23	Mission Village Drive and Friars Road EB Ramps	N/A	N/A	N/A	N/A	2	Low	3	Low
24	Rancho Mission Road and San Diego Mission Road	2	Low	2	Low	2	Low	2	Low
25	I-8 WB Ramps and Hotel Circle N	1	Low	1	Low	1	Low	1	Low
26	Fashion Valley Road and Hotel Circle N	4	Med.	N/A	N/A	2	Low	N/A	N/A
27	Ave del Rio and Camino de la Reina	4	Med.	N/A	N/A	N/A	N/A	4	Med.
28	Mission Center Road and Camino de la Reina	2	Low	2	Low	2	Low	2	Low
29	Camino del Este and Camino de la Reina	2	Low	2	Low	2	Low	2	Low
30	Qualcomm Way and Camino de la Reina	2	Low	N/A	N/A	2	Low	2	Low
31	Mission Center Road and Camino del Rio North	4	Med.	N/A	N/A	N/A	N/A	2	Low
32	I-8 WB Ramps and Camino del Rio North	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
33	Camino del Este and Camino del Rio North	2	Low	N/A	N/A	N/A	N/A	2	Low
34	Qualcomm Way and Camino del Rio North	2	Low	2	Low	2	Low	2	Low
35	Mission City Parkway and Camino del Rio North	N/A	N/A	2	Low	2	Low	N/A	N/A
36	Ward Road and Camino del Rio North	2	Low	N/A	N/A	N/A	N/A	2	Low
37	Auto Circle and Camino del Rio South	N/A	N/A	N/A	N/A	N/A	N/A	4	Med.
38	Texas Street and Camino del Rio South	4	Med.	4	Med.	4	Med.	4	Med.
39	Mission City Parkway and Camino del Rio South	4	Med.	N/A	N/A	N/A	N/A	4	Med.
40	Mission Center Road and Westside Drive	5	Med.	N/A	N/A	5	Med.	5	Med.
41	Mission Center Road and Mission Center Court	2	Low	2	Low	2	Low	2	Low
42	Auto Circle and I-8 EB Ramps	N/A	N/A	N/A	N/A	N/A	N/A	2	Low

Table 4-7b PEQE Intersection Analysis Results

#	Intersection	North Leg		South Leg		East Leg		West Leg	
		Score	Grade	Score	Grade	Score	Grade	Score	Grade
43	Qualcomm Way and I-8 EB Ramps	N/A	N/A	N/A	N/A	N/A	N/A	2	Low
44	Rancho Mission Road and Friars	N/A	N/A	2	Low	2	Low	N/A	N/A

Source: Chen Ryan Associates (2016)

Table 4-7c displays the analysis results for the Mission Center Road HAWK Beacon, the only legal mid-block crossing identified within the Pedestrian Study Area. The Mission Center Road HAWK Beacon was determined to provide a “High” pedestrian environment using the mid-block analysis approach.

Table 4-7c PEQE Mid-Block Crossing Analysis Results

#	Intersection	Score	Grade
1	Mission Center Road HAWK Beacon	8	High

Source: Chen Ryan Associates (2016)

Table 4-7d displays the PEQE analysis results by linear feet for each of the three pedestrian environment categories. The “Low” category accounted for over 59% of linear feet, followed by “Medium” at 34.7%.

Table 4-7d PEQE Roadway Segment Analysis Results by Linear Foot

Grade	Linear Feet	Percent
High	14,238	6.0%
Medium	82,687	34.7%
Low	141,167	59.3%
TOTAL LINEAR FEET	238,092	100.0%

Source: Chen Ryan Associates (2016)

Table 4-7e summarizes the PEQE analysis results by the number of approaches identified for each grade. The majority of approaches, 74, fell into the “Low” grade. The remaining 44 approaches were categorized as “Medium”.

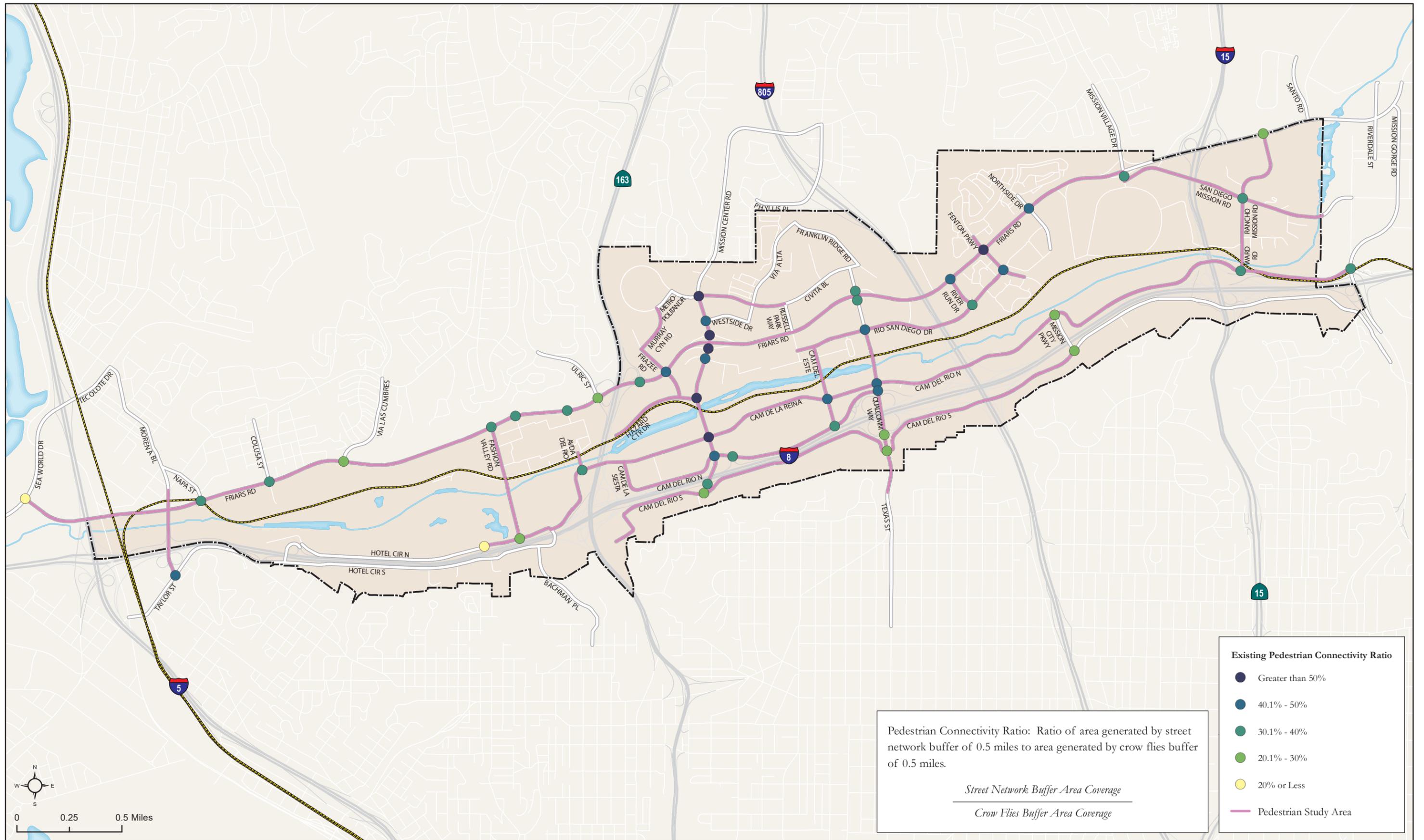
Table 4-7e PEQE Intersection Analysis Results by Grade

Grade	Number of Approaches
High	0
Medium	44
Low	74
TOTAL APPROACHES	118

Source: Chen Ryan Associates (2016)

4.1.4 Pedestrian Connectivity Ratio

A pedestrian travelshed analysis was used to assess the level of connectivity provided at each intersection within Mission Valley, using the methodology described in Chapter 2. **Figure 4-9** displays the Pedestrian Connectivity Ratio results. The higher the ratio, the better the overall connectivity is at the intersection. Greater pedestrian connectivity was generally identified in the center of the community, as well as the eastern third of the community, north of the San Diego River.



4.2 Bicycle Mobility

Bicycling is becoming a more popular and practical form of transportation. Both commuter and recreational bicycle use continue to grow, and it is increasingly viewed as one potential solution to many of the issues facing urban environments, such as traffic congestion, greenhouse gas emissions, public health, and transportation costs. Providing a safe and well-connected bicycle network helps to promote bicycling as a viable transportation option.

2008 City of San Diego General Plan Mobility Element – Bicycling Goals:

- *A city where bicycling is a viable travel choice, particularly for trips of less than five miles.*
- *A safe and comprehensive local and regional bikeway network.*
- *Environmental quality, public health, recreation and mobility benefits through increased bicycling.*

Figure 4-10 displays the location of existing bicycle facilities within the Mission Valley community. The network is comprised of Class I multi-use paths, Class II bike lanes, Class III bike routes, and a Class IV cycle track (two-way). A description and image of each of these facility types is provided in **Table 4-8**. Table 4-8 also summarizes the mileage of each classification. Class II bicycle lanes are the most common facility type in Mission Valley. There is also a large presence of separated bicycle facilities (Class I and Class IV) which provide the greatest levels of comfort and safety for cyclists. Approximately 0.8 miles of roadway are split between Class II and Class III facilities, with one facility type in each direction.

As shown, the existing bicycle network is extensive throughout the community, providing for both inter- and intra-community travel with minor fragmenting. The network also offers direct access to the Green Line Trolley, creating first- and last-mile connections.

Barriers to bicycle travel are natural and manmade. The San Diego River and the topography shaping the valley create barriers to cycling and other transportation modes. The freeways also limit bicycle mobility. Interstate 8 spans the length of Mission Valley east to west, limiting north-south access across the community. State Route 163, Interstate 5, Interstate 805, and Interstate 15 impact bicycle mobility less due to multiple connections traversing the freeways, and the freeway elevation. However, the presence of multiple freeway on- and off-ramps may discourage bicycle use.



Tandem cyclists ride along the Friars Road bicycle lane.

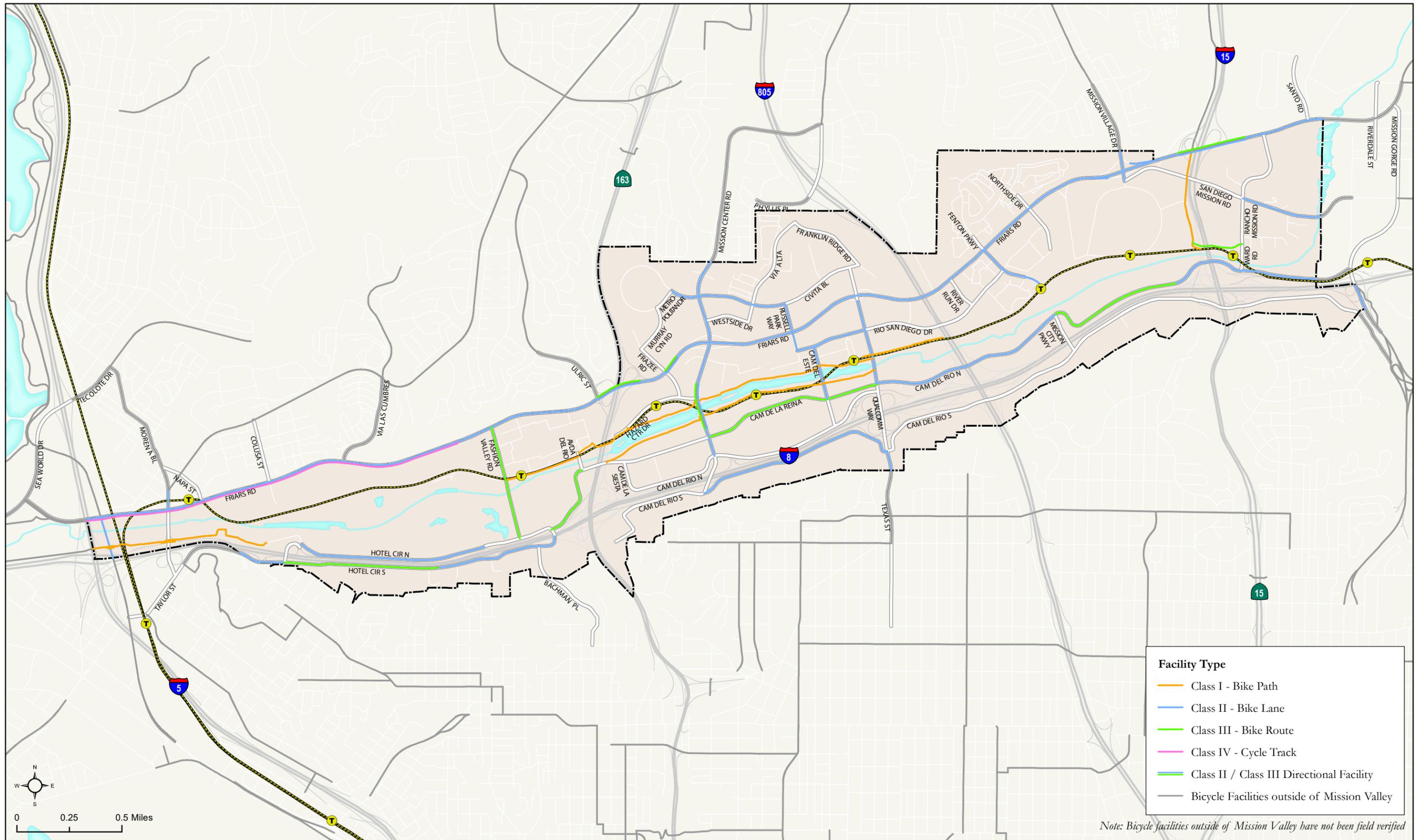


Table 4-8 Bicycle Facility Classifications and Existing Network Mileage

Class Description	Example	Existing Mileage
<p>Class I Multi-Use Path – Also referred to as a bike paths or shared-use paths, Class I facilities provide a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Multi-use paths can provide connections where roadways are non-existent or unable to support bicycle travel. The minimum paved width for a two-way multi-use path is considered to be eight-feet, with a two-foot wide graded area adjacent to the pavement.</p>	 <p><i>San Diego River Trail</i></p>	<p>5.3 miles</p>
<p>Class II Bike Lane – Provides a striped lane designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited. Bike lanes are one-way facilities located on either side of a roadway. Pedestrian and motorist crossflows are permitted. Additional enhancements such as painted buffers and signage may be applied. The minimum bike lane width is considered to be five-feet.</p>	 <p><i>Friars Road</i></p>	<p>14.2 miles</p>
<p>Class III Bike Route – Provides shared use of traffic lanes with cyclists and motor vehicles, identified by signage and/or street markings such as “sharrows”. Bike routes are best suited for low-speed, low-volume roadways with an outside lane of 14 feet or greater. Bike routes provide network continuity or designate preferred routes through corridors with high demand.</p>	 <p><i>Camino De La Reina</i></p>	<p>3.4 miles</p>
<p>Class IV Cycle Track – Also referred to as separated or protected bikeways, cycle tracks provide a right-of-way designated exclusively for bicycle travel within the roadway and physically protected from vehicular traffic. Cycle tracks can provide for one-way or two-way travel. Types of separation include, but are not limited to, grade separation, flexible posts, or on-street parking.</p>	 <p><i>Friars Road</i></p>	<p>1.8 miles</p>
<p>TOTAL MILEAGE (including 0.8 miles of split Class II/III facility)</p>		<p>25.5 miles</p>

4.2.1 Bicycle Demand

Bicycle demand was evaluated using the City of San Diego Bicycle Demand Model, US Census Bureau data, and peak period bicycle counts performed in support of this project.

The Bicycle Demand Model is used to estimate relative demand for bicycle travel throughout the City of San Diego based on population characteristics (population density, employment density, bicycle commuter, zero-vehicle households) and proximity to land uses associated with higher rates of bicycling activity, such as schools, universities, parks and recreation, commercial, retail, and civic land uses.

Figure 4-11 displays the Bicycle Demand Model results for Mission Valley.

As shown, the Bicycle Demand Model results indicate higher demands in areas similar to the Pedestrian Priority Model with higher demand identified in central Mission Valley, as well as the eastern third of the community north of the San Diego River.

Table 4-9 presents the bicycle commute mode share as reported in the US Census American Community Survey 2013 5-year estimates, comparing the Mission Valley community to the City of San Diego and San Diego County as a whole. Bicycle commute mode share in Mission Valley is by far the lowest of all three geographies at 0.1% of Mission Valley commuters.

Table 4-9 Bicycle Commute Mode Share Comparison

	Mission Valley	City of San Diego	San Diego County
Total Bicycle Commuters	11	5,966	9,996
Total Workers	11,813	641,412	1,436,094
Bicycle Commute Mode Share	0.1%	0.9%	0.7%

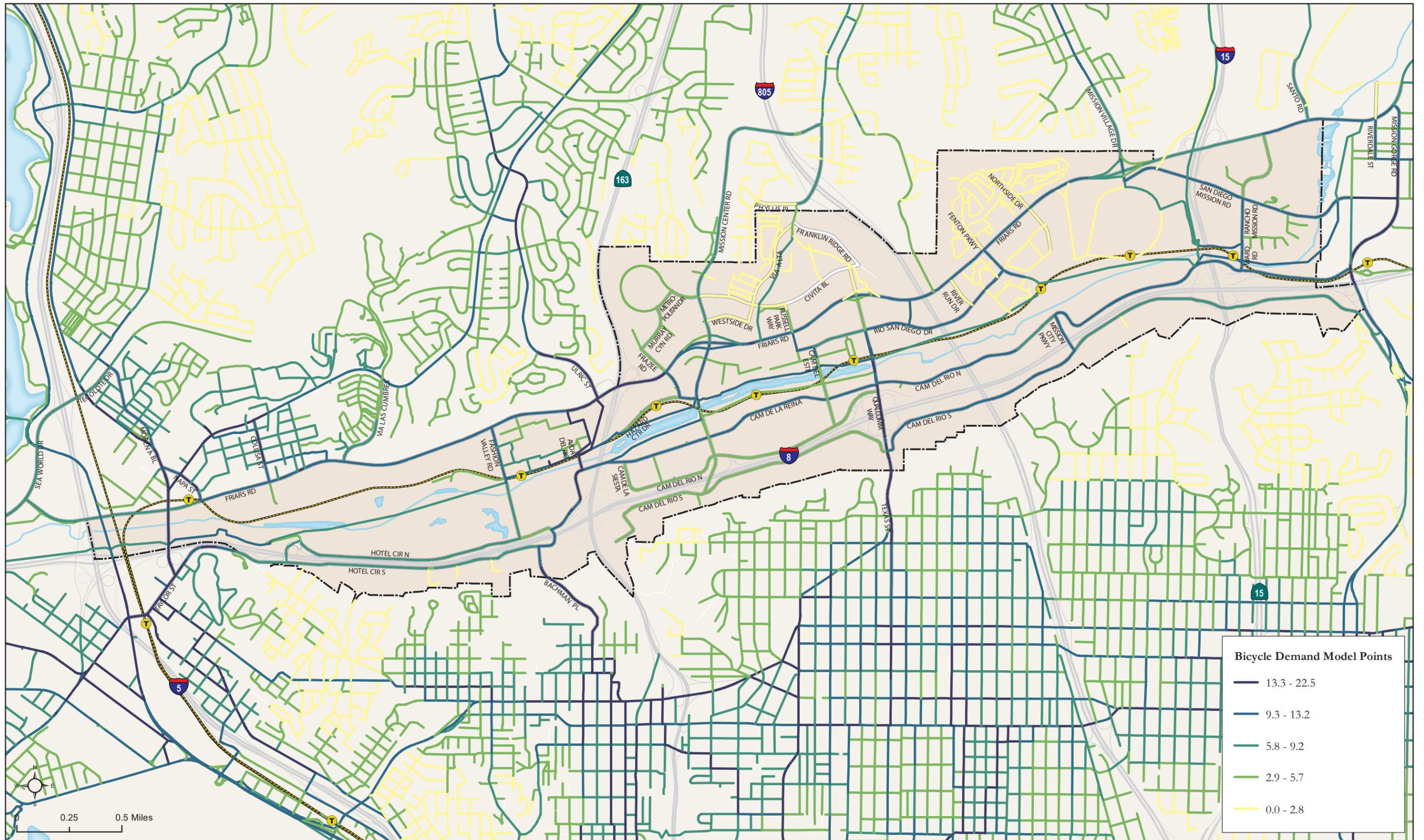
Source: US Census, American Community Survey 2013 5-Year Estimates (2016); Chen Ryan Associates (2016)

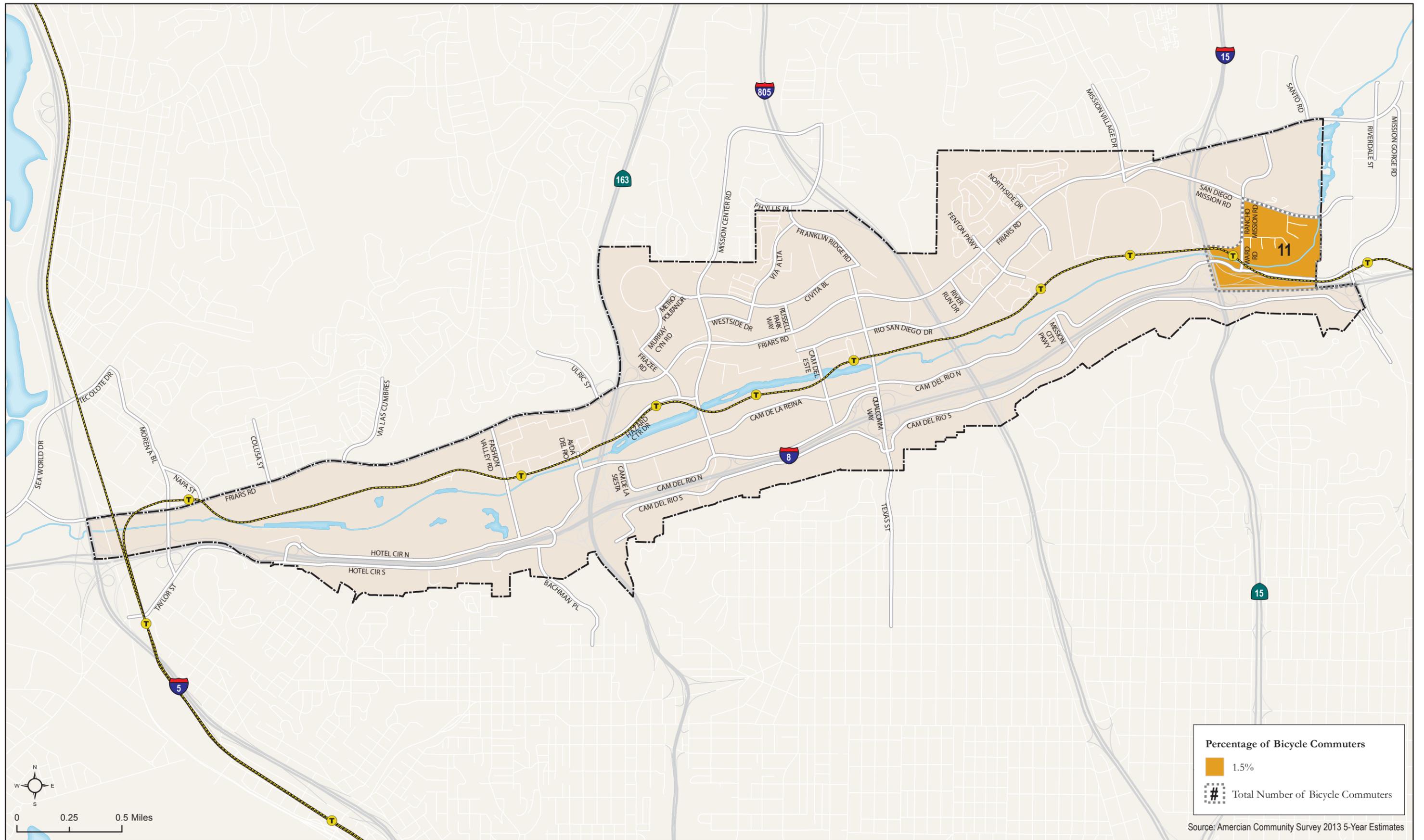
Figure 4-12 displays bicycle commute rates and the total number of bicycle commuters by census block group. As shown, all 11 of the reported bicycle commuters are concentrated within the easternmost census block group of Mission Valley.

Figure 4-13 displays AM and PM peak hour bicycle movements observed at study intersections. Counts were conducted on Thursday, 9/10/2015 or Thursday, 9/17/2015. Individual intersection count sheets are provided in **Appendix D**.

Table 4-10 presents the AM and PM peak hour bicycle volumes at study intersections. As shown, the five intersections with the greatest observed combined AM and PM bicycle volumes include:

- Via De La Moda and Friars Road (4)
- Napa Street and Friars Road (37)
- Avenida De Las Tiendas and Friars Road (32)
- Texas Street and Madison Avenue (29)
- Fairmount Avenue and Camino Del Rio North/I-8 WB Off Ramp (28)





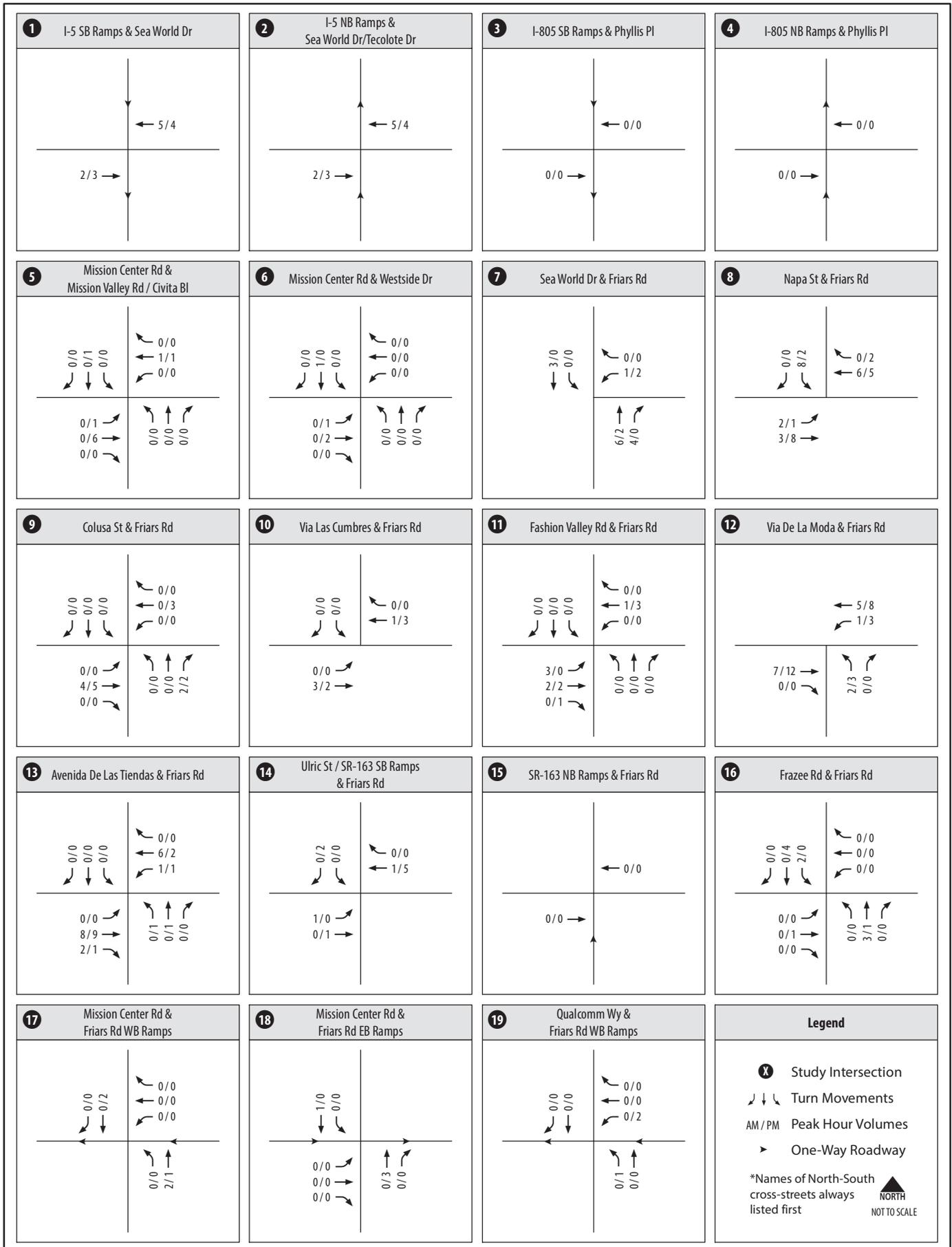
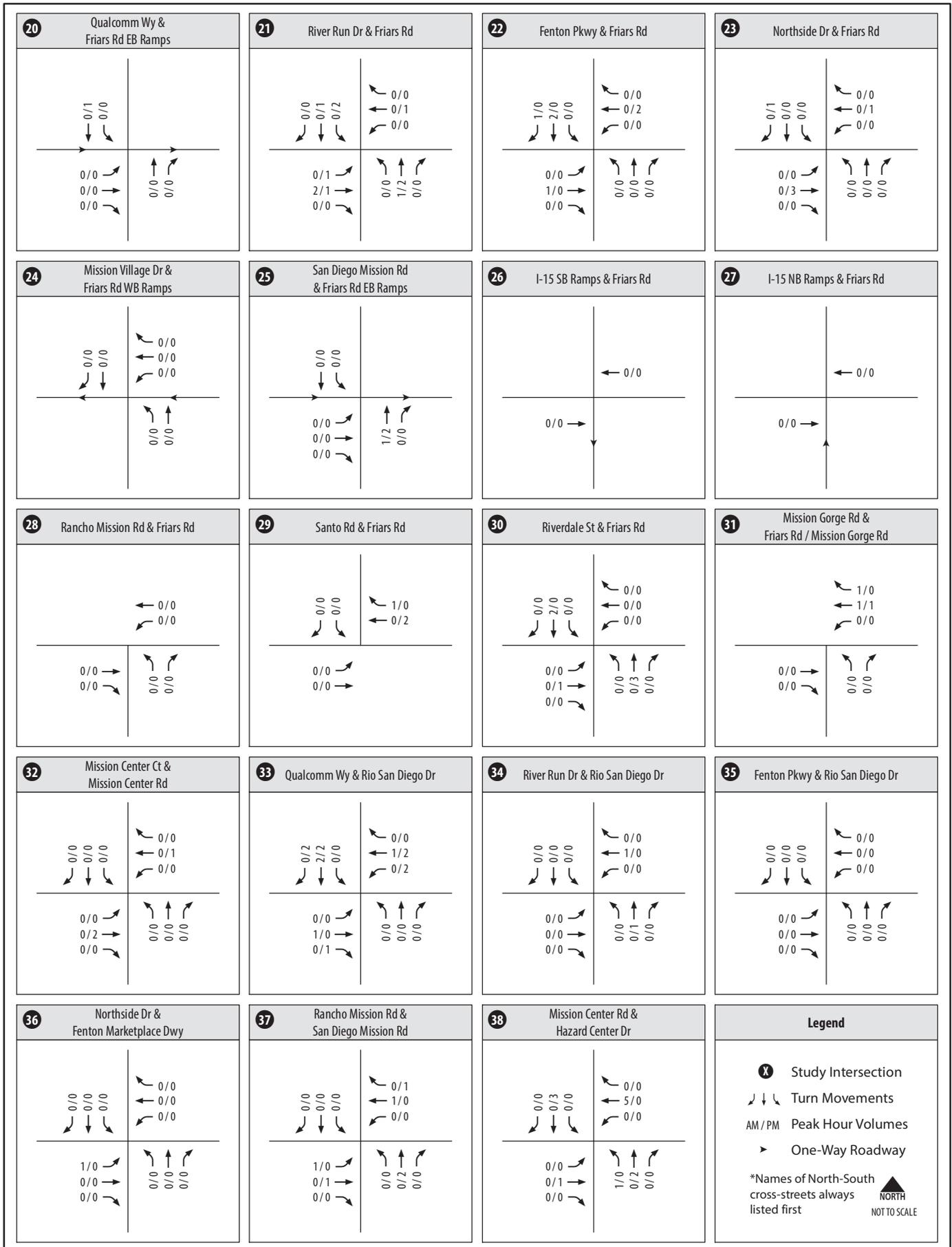
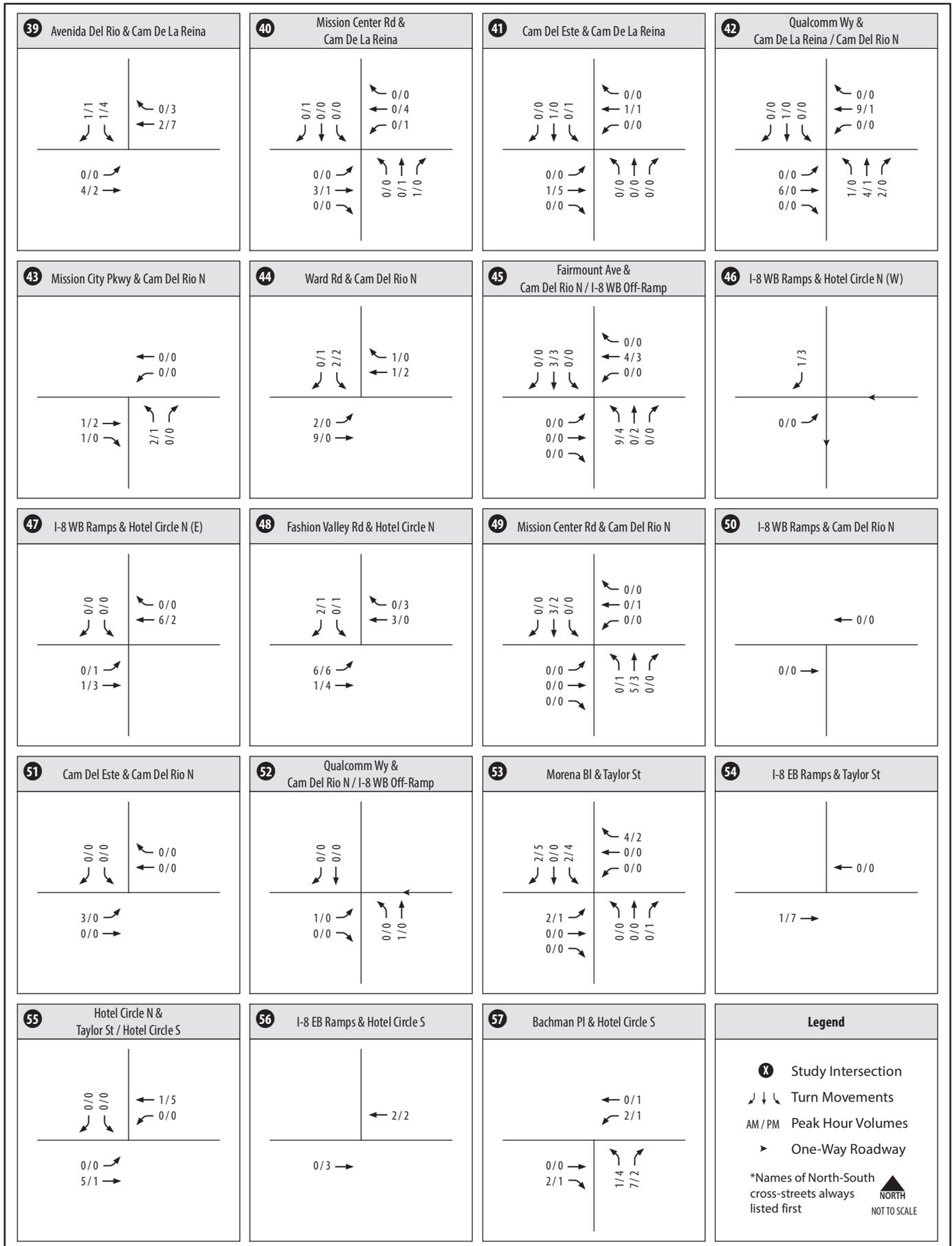


Figure 4-13
 Existing AM/PM Peak Hour Bike Counts
 (Intersections 1-19)





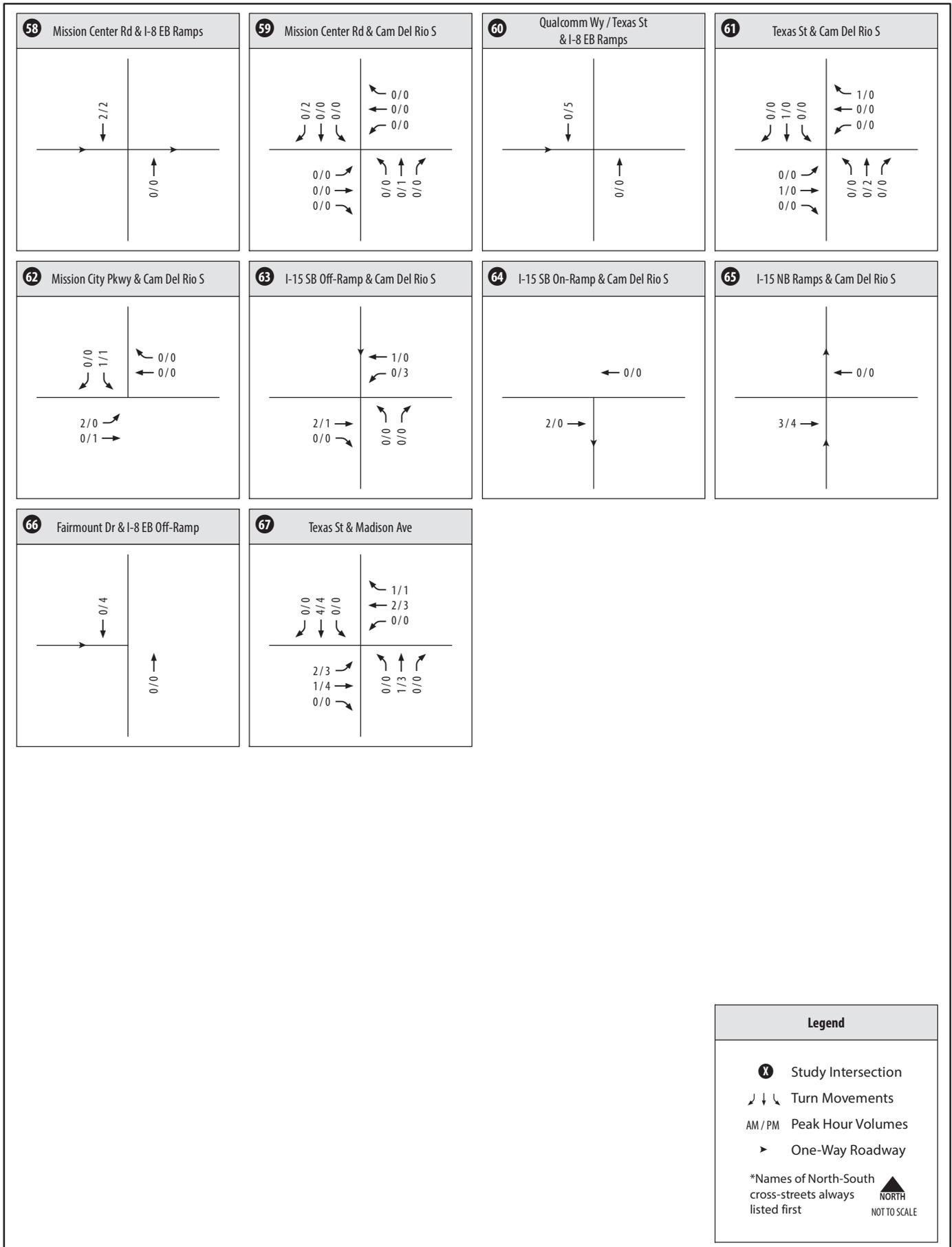


Table 4-10 Existing AM / PM Peak Hour Bicycle Counts

Intersection	AM Volume	PM Volume	Total
1: I-5 SB Ramps / Sea World Drive	7	7	14
2: I-5 NB Ramps / Sea World Drive/Tecolote Road	7	7	14
3: I-805 SB Ramps / Phyllis Place	0	0	0
4: I-805 NB Ramps / Phyllis Place	0	0	0
5: Mission Center Road / Mission Valley Road/Civita Boulevard	1	9	10
6: Mission Center Road / Westside Drive	1	3	4
7: Sea World Drive / Friars Road	14	4	18
8: Napa Street / Friars Road	19	18	37
9: Colusa Street / Friars Road	6	10	16
10: Via Las Cumbres / Friars Road	4	5	9
11: Fashion Valley Road / Friars Road	6	6	12
12: Via De La Moda / Friars Road	15	26	41
13: Avenida De Las Tiendas / Friars Road	17	15	32
14: Ulric Street/SR-163 SB Ramps / Friars Road	2	8	10
15: SR-163 NB Ramps / Friars Road	0	0	0
16: Frazee Road / Friars Road	5	6	11
17: Mission Center Road / Friars Road WB Ramps	2	3	5
18: Mission Center Road / Friars Road EB Ramps	1	3	4
19: Qualcomm Way / Friars Road WB Ramps	0	3	3
20: Qualcomm Way / Friars Road EB Ramps	0	1	1
21: River Run Drive / Friars Road	3	8	11
22: Fenton Parkway / Friars Road	4	2	6
23: Northside Drive / Friars Road	0	5	5
24: Mission Village Drive / Friars Road WB Ramps	0	0	0
25: Mission Village Drive / Friars Road EB Ramps	1	2	3
26: I-15 SB Ramps / Friars Road	0	0	0
27: I-15 NB Ramps / Friars Road	0	0	0
28: Rancho Mission Road / Friars Road	0	0	0
29: Santo Road / Friars Road	1	2	3
30: Riverdale Street / Friars Road	2	4	6
31: Mission Gorge Road / Friars Road	2	1	3
32: Mission Center Road / Mission Center Court	0	3	3
33: Qualcomm Way / Rio San Diego Drive	4	9	13
34: River Run Drive / Rio San Diego Drive	1	1	2
35: Fenton Parkway / Rio San Diego Drive	0	0	0
36: Northside Drive / Rio San Diego Drive	1	0	1
37: Rancho Mission Road / San Diego Mission Road	2	4	6
38: Mission Center Road / Hazard Center Drive	6	6	12
39: Avenida Del Rio / Camino De La Reina	8	17	25
40: Mission Center Road / Camino De La Reina	4	8	12

Table 4-10 Existing AM / PM Peak Hour Bicycle Counts

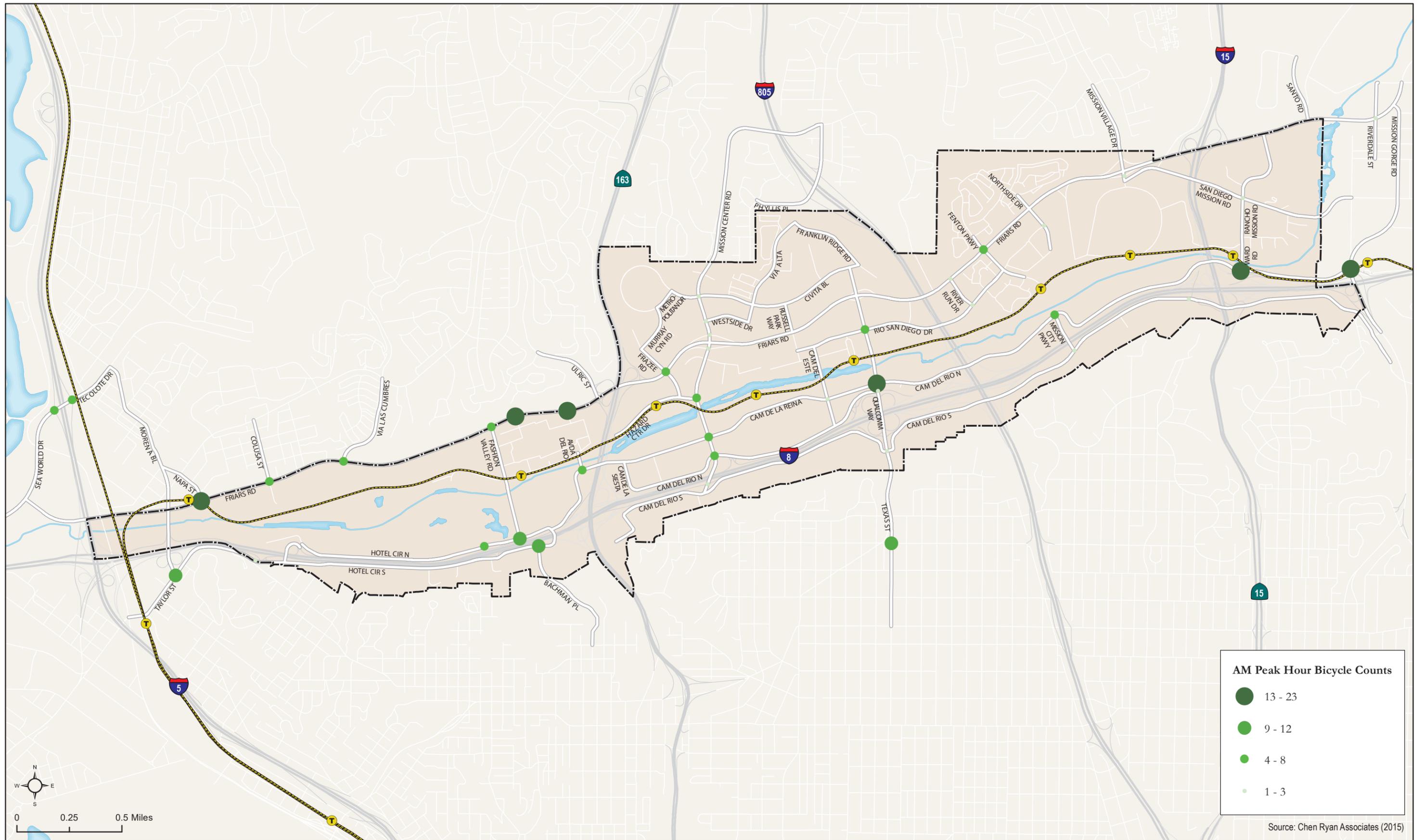
Intersection	AM Volume	PM Volume	Total
41: Camino Del Este / Camino De La Reina	3	7	10
42: Qualcomm Way / Camino De La Reina	23	2	25
43: Mission City Parkway / Camino Del Rio North	4	3	7
44: Ward Road / Camino Del Rio North	15	5	20
45: Fairmount Avenue / Camino Del Rio North/I-8 WB Off-Ramp	16	12	28
46: I-8 WB Ramps / Hotel Circle North (W)	1	3	4
47: I-8 WB Ramps/Handlery Driveway / Hotel Circle North (E)	7	6	13
48: Fashion Valley Road / Hotel Circle North	12	15	27
49: Mission Center Road / Camino Del Rio North	8	7	15
50: I-8 WB Ramps/Mission Valley Mall Driveway / Camino Del Rio North	0	0	0
51: Camino Del Este / Camino Del Rio North	3	0	3
52: Qualcomm Way / Camino Del Rio N/I-8 WB Ramps	2	0	2
53: Morena Boulevard / Taylor Street	10	13	23
54: I-8 EB Ramps / Taylor Street	1	7	8
55: Hotel Circle North / Taylor Street/Hotel Circle South	6	6	12
56: I-8 EB Ramps / Hotel Circle South	2	5	7
57: Bachman Place / Hotel Circle South	12	9	21
58: Mission Center Road / I-8 EB Ramps	2	2	4
59: Mission Center Road / Camino Del Rio South	0	3	3
60: Qualcomm Way/Texas Street / I-8 EB Ramps	0	5	5
61: Texas Street / Camino Del Rio South	3	2	5
62: Mission City Parkway / Camino Del Rio South	3	2	5
63: I-15 SB Off-Ramp / Camino Del Rio South	3	4	7
64: I-15 SB On-Ramp / Camino Del Rio South	2	0	2
65: I-15 NB Ramps / Camino Del Rio South	3	4	7
66: Mission Gorge Road/Fairmount Avenue / I-8 EB Off-Ramp	0	4	4
67: Texas Street / Madison Avenue	11	18	29

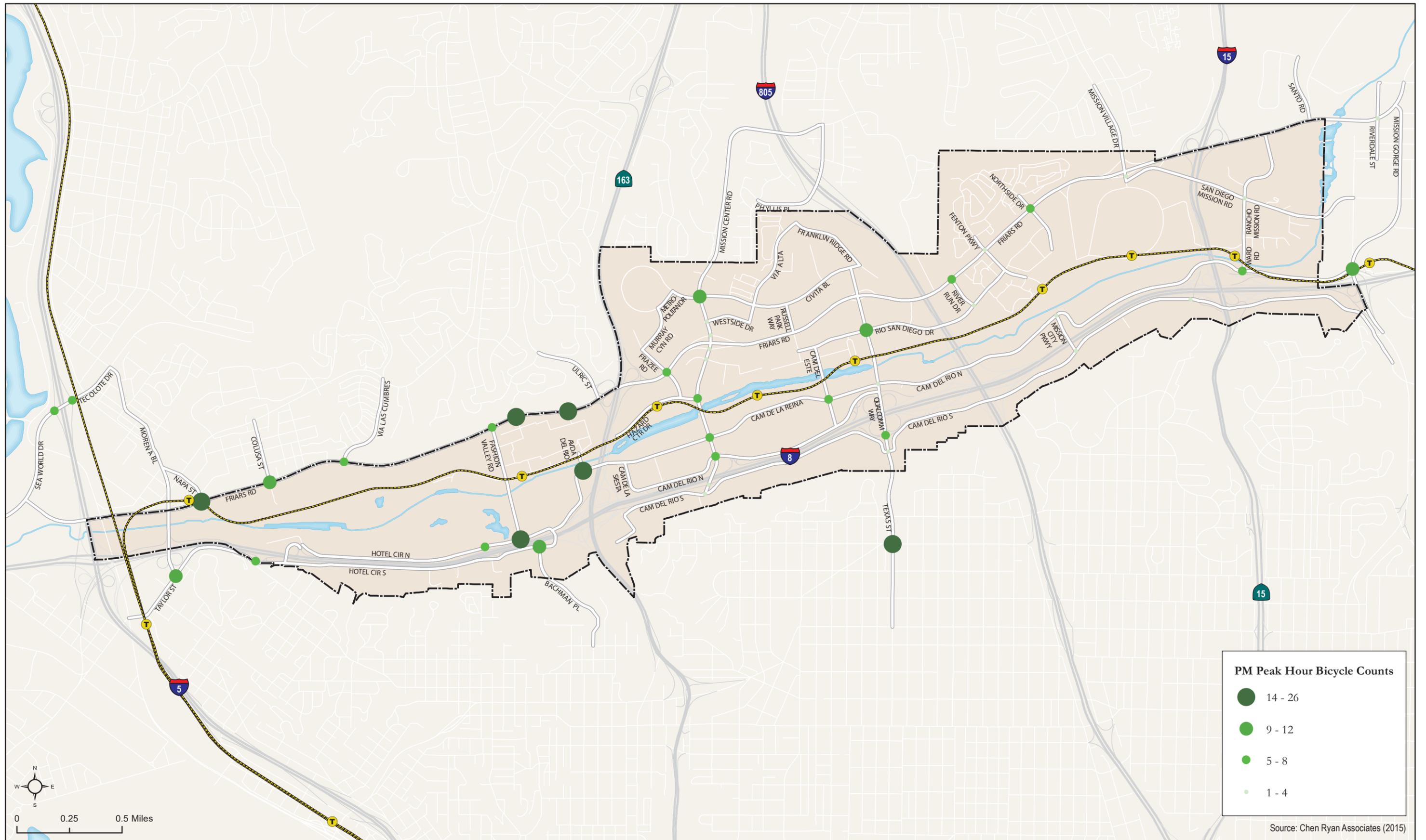
Source: Chen Ryan Associates (2016)

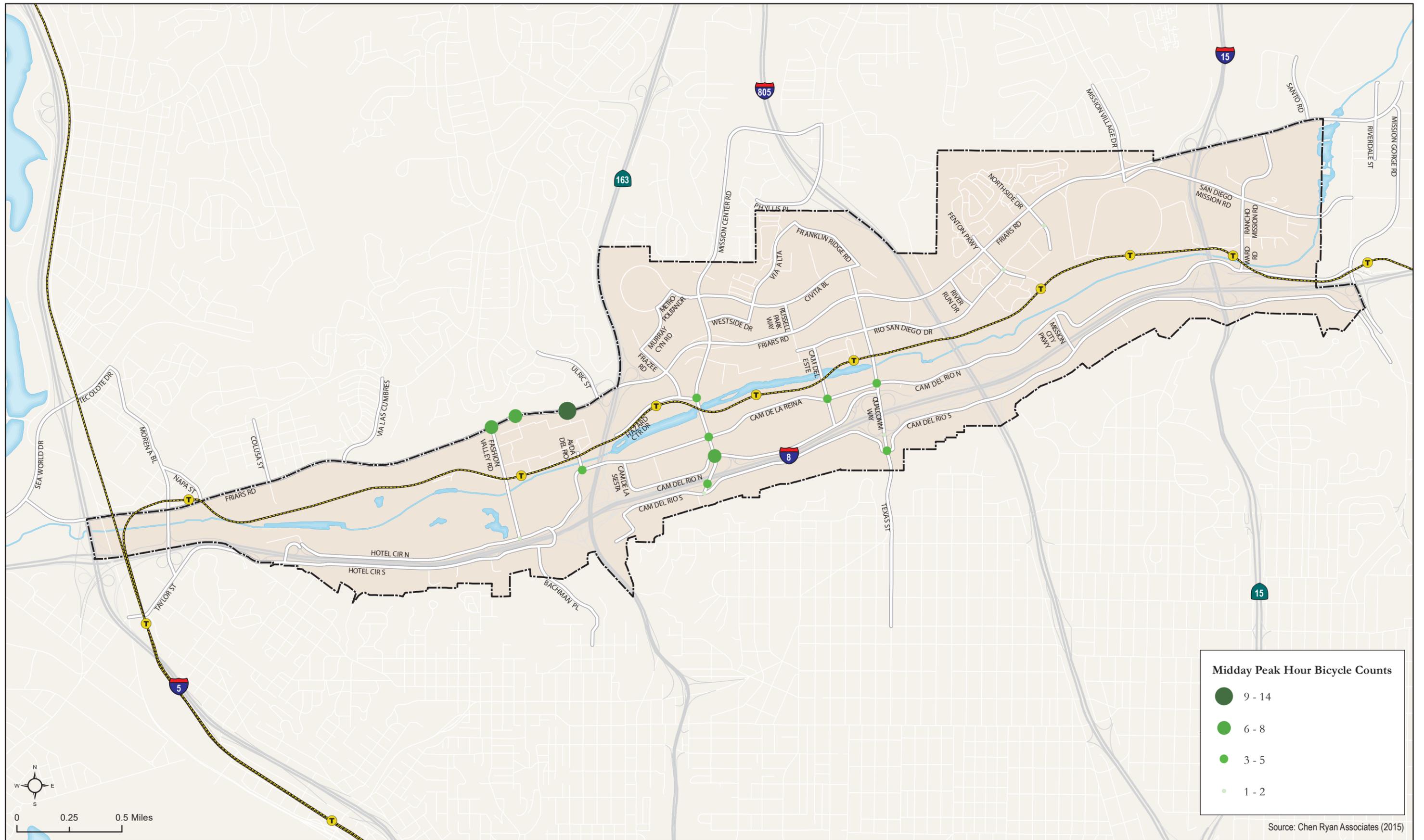
Figure 4-14a, 4-14b, and 4-14c display the distribution of bicycle volumes during the AM, PM, and midday peak hours, respectively. Midday counts were only conducted along select roadways. Generally, greater bicycle volumes were observed at study intersections during the PM peak hour. Exceptions to this were found along Camino Del Rio North, including the intersections of Qualcomm Way and Camino De La Reina/Camino Del Rio North, Ward Road and Camino Del Rio North, and Mission Gorge Road and Camino Del Rio North, which is located just outside of the Mission Valley community boundary.

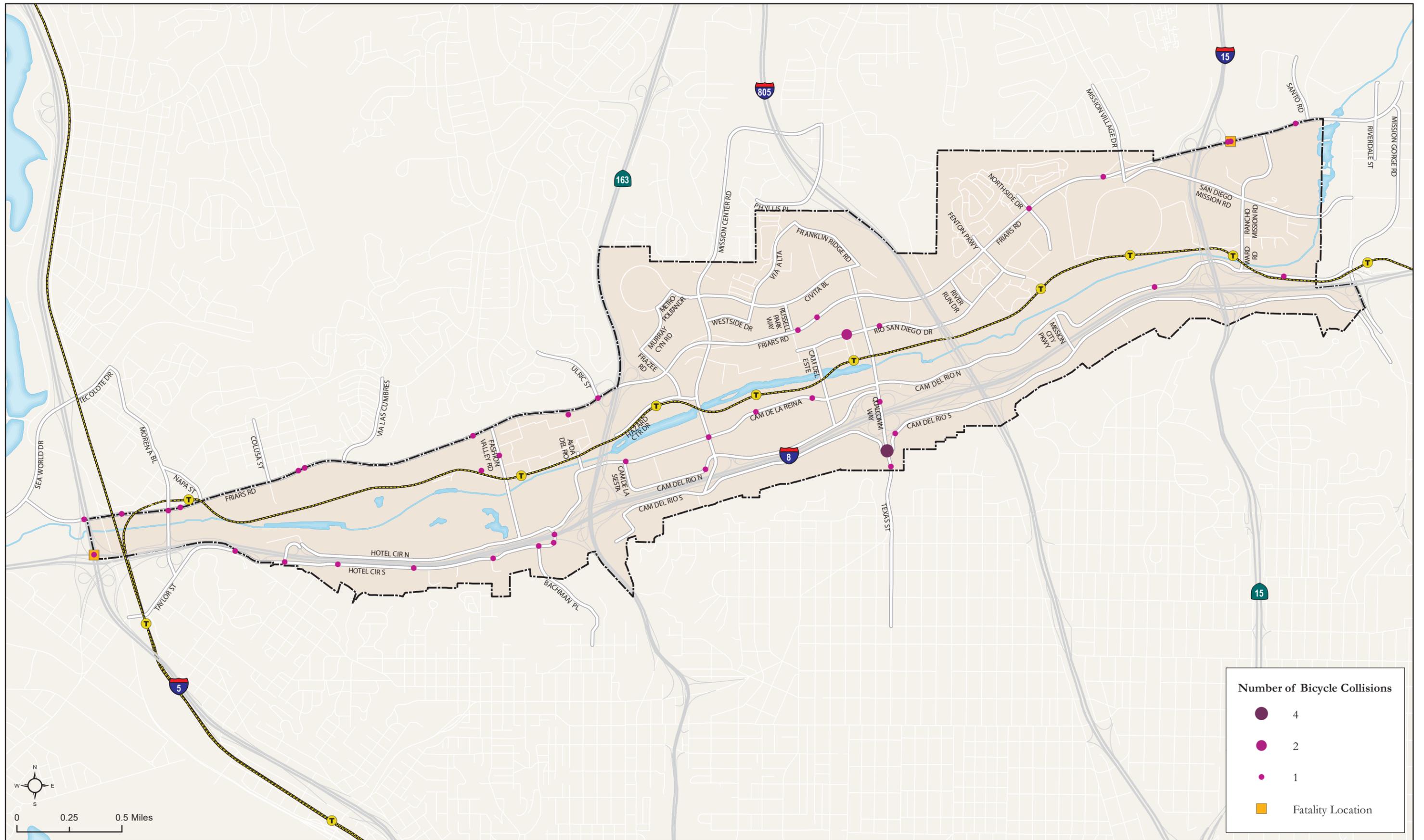
4.2.2 Bicycle Safety

Bicycle safety was evaluated using collision data obtained from the City of San Diego for the period from October 2008 through October 2013. A total of 44 bicycle-involved collisions were reported during this five-year period within Mission Valley. **Figure 4-15** displays the distribution of the bicycle-involved collisions across the Mission Valley community, while **Table 4-11** identifies intersections where multiple bicycle collisions were reported.









As shown, only two intersections experienced multiple bicycle-involved collisions, however, other collisions occurred within close proximity to one another. One fatal bicycle-involved collision occurred along westbound Friars Road at the Interstate 15 on-ramp, and there was another collision just to the west of the on-ramp. The second fatality displayed in Figure 4-15 is located on the Class I multi-use path, and occurred when a cyclist was riding along the San Diego River Trail and lost control and ran off the path.

**Table 4-11 Most Frequent Bicycle Collision Locations
(October 2008 – October 2013)**

Rank	Intersection	Collisions
1	Qualcomm Way/Texas Street & Camino Del Rio South	4
2	Station Village Way & Rio San Diego South	2

Source: City of San Diego (2016)

Bicycle-involved collision locations are summarized in **Table 4-12**, differentiating between intersection, mid-block, and approach locations. The majority of bicycle-involved collisions occurred at mid-block locations, compared to pedestrian-involved collisions which were more common at intersections.

**Table 4-12 Bicycle Collision Locations
(October 2008 – October 2013)**

Collision Location	Collisions	Percent of Total
Mid-block	31	70.4%
Intersection	12	27.3%
Approaching	1	2.3%
Total	44	100.0%

Source: City of San Diego (2016)

Table 4-13 identifies the party-at-fault for each of the 44 bicycle-involved collision. The bicyclist was reported at-fault for over 70% of collisions.

**Table 4-13 Bicycle Collisions by Party-At-Fault
(October 2008 – October 2013)**

Party-At-Fault	Collisions	Percent of Total
Bicyclist	31	70.5%
Driver	13	29.5%
Total	44	100.0%

Source: City of San Diego (2016)

Table 4-14 identifies the primary collision cause reported for the 44 bicycle-involved collisions in Mission Valley. The leading cause was attributed to “Speed Too Fast for Conditions” followed by “Fell Out/Off Vehicle” (Bicyclist) and “Not Paying Attention”.

**Table 4-14 Primary Bicycle Collision Cause
(October 2008 – October 2013)**

Collision Type	Collisions	Percent of Total
Speed Too Fast for Conditions	7	15.9%
Fell Out/Off Vehicle (Bicyclist)	6	13.6%
Not Paying Attention	6	13.6%
Violated Vehicle's Right-of-Way	5	11.3%
Ran Traffic Signal	3	6.8%
Unknown	3	6.8%
Visibility Issue	2	4.5%
Wrong Way	2	4.5%
D.U.I. or N/A	1	2.3%
Distraction in Vehicle	1	2.3%
Improper Start	1	2.3%
Lost Control of Vehicle	1	2.3%
Parked or Stopped in Right-of-Way Illegal	1	2.3%
Ran Stop Sign	1	2.3%
Unsafe Movement – Right Turn	1	2.3%
Violation of Signs	1	2.3%
Wrong Side of Road	1	2.3%
Yield to Party in Intersection	1	2.3%
Total	44	100.0%

Source: City of San Diego (2016)

4.2.3 Bicycle Facility Quality

Bicycle Level of Traffic Stress (LTS) classifies the street network into categories according to the level of stress the environment causes cyclists. The assessment considers physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with dedicated right-turn lanes and unsignalized crossings.

Table 4-15 identifies the four LTS categories and provides a description of the traffic stress experienced by the cyclist and the environmental characteristics consistent with the category. LTS scores range from 1 (lowest stress) to 4 (highest stress), and correspond to roadways offering varying quality environments to cyclists considering their stress tolerance. Each LTS classification is associated with a cyclist's tolerance for traffic as identified by Portland Bicycle Coordinator Roger Gellar in a Portland Bureau of Transportation titled "Four Types of Cyclists".

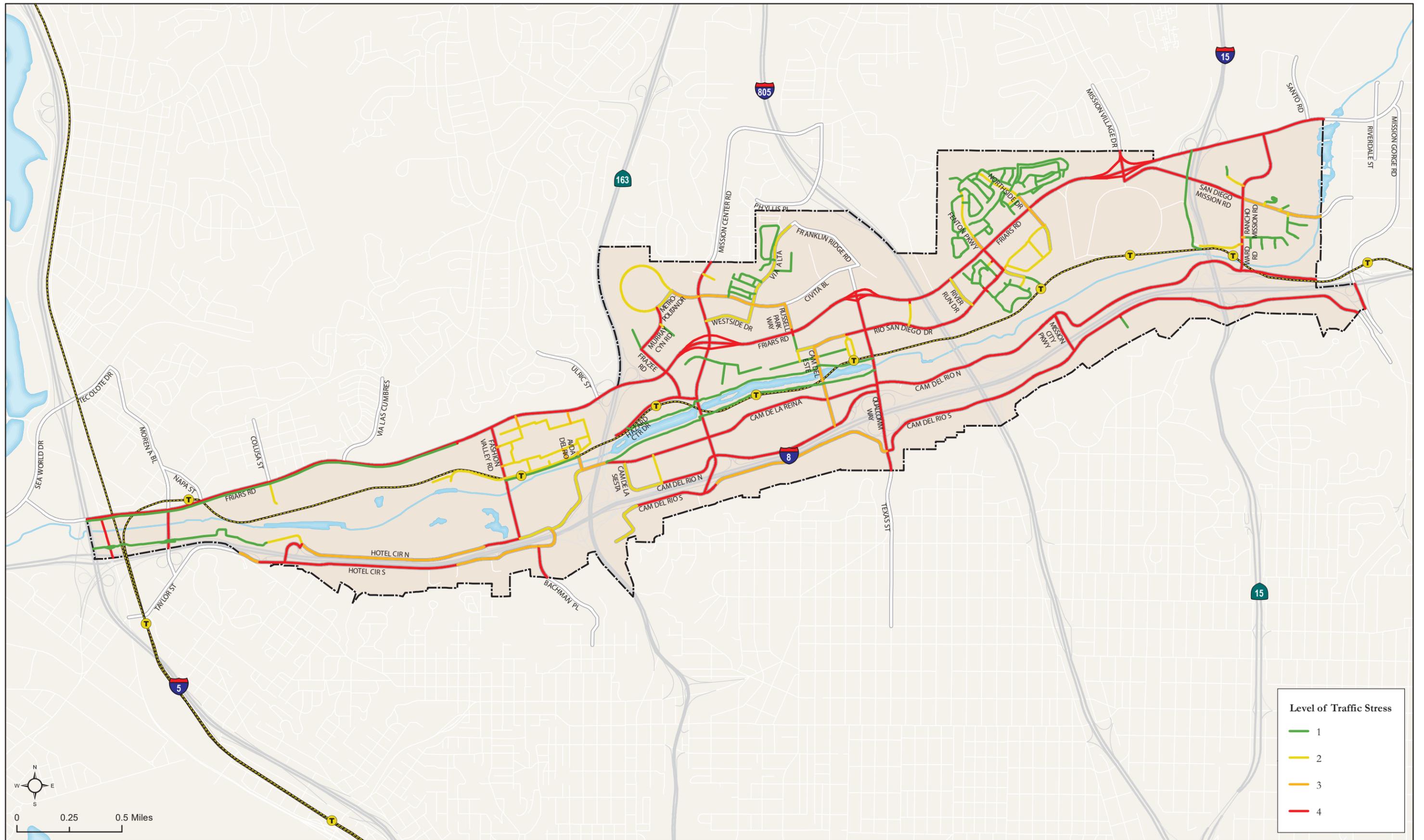
Figure 4-16 displays the results of the bicycle LTS analysis for all bikeable roadways within Mission Valley. **Appendix E** includes the input values used to produce the analysis results. LTS 1 and LTS 2 classified roadways primarily consist of local roads that provide internal neighborhood circulation. The San Diego River Trail segments and the two-way cycle track along Friars Road in northwestern Mission Valley were also identified as exhibiting LTS 1 characteristics due to the separation from vehicular traffic. The San Diego River Trail is of particular importance due to the multiple transit stations it provides access to and being located in the center of the community, which was identified as having relatively greater bicycle demand. The majority of roadways providing mobility across the community and

connections to adjacent communities were classified as LTS 4, including Pacific Highway, Morena Boulevard, Mission Center Road, Qualcomm Way/Texas Street, Friars Road (east of Fashion Valley Road), Camino De La Reina, Camino Del Rio North, Camino Del Rio South, Mission Center Road, and Qualcomm Way.

Table 4-15 Level of Traffic Stress Classifications and Descriptions

Level of Stress Category	Level of Stress Description	Collisions	Baseline Acceptability to Populations
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections.	<ul style="list-style-type: none"> ▪ Facility that is physically separated from traffic or an exclusive cycling zone next to a slow traffic stream with no more than one lane per direction ▪ A shared roadway where cyclists only interact with the occasional motor vehicle with a low speed differential ▪ Ample space for cyclist when alongside a parking lane ▪ Intersections are easy to approach and cross 	Interested but Concerned – Vulnerable Populations
LTS 2	Presenting little traffic stress but demanding more attention that might be expected from children.	<ul style="list-style-type: none"> ▪ Facility that is physically separated from traffic or an exclusive cycling zone next to a well-confined traffic stream with adequate clearance from parking lanes ▪ A shared roadway where cyclists only interact with the occasional motor vehicle (as opposed to a stream of traffic) with a low speed differential ▪ Unambiguous priority to the cyclist where cars must cross bike lanes (e.g. at dedicated right-turn lanes); design speed for right-turn lanes comparable to bicycling speeds ▪ Crossings not difficult for most adults 	Interested but Concerned – Mainstream Adult Populations
LTS 3	Presenting enough traffic stress to deter the Interested but Concerned demographic	<ul style="list-style-type: none"> ▪ An exclusive cyclin zone (lane) next to moderate-speed vehicular traffic ▪ A shared roadway that is not multilane and has moderately low automobile travel speeds ▪ Crossings may be longer or across higher-speed roadways than allowed by LTS 2, but are still considered acceptably safe to most adult pedestrians 	Enthused & Confident
LTS 4	Presenting enough traffic stress to deter all but the Strong & Fearless demographic	<ul style="list-style-type: none"> ▪ An exclusive cycling zone (lane) next to high-speed and multilane vehicular traffic ▪ A shared roadway with multiple lanes per direction with high traffic speeds ▪ Cyclist must maneuver through dedicated right-turn lanes containing no dedicated bicycling space and designed for turning speeds faster than bicycling speeds 	Strong & Fearless

Source: Mekuria, et al. (2012)



4.2.4 Bicycle Network Connectivity

Bicycle connectivity was examined using two metrics, a Bikeshed Ratio and a Low-Stress Bicycle Connectivity Analysis. The methodology used for these analyses are described in Chapter 2.

Bikeshed Ratio

A bicycle travelshed analysis was performed at each study intersection to assess the level of connectivity. A higher intersection connectivity ratio or Bikeshed Ratio indicates better overall bicycle connectivity from the individual intersection. **Figure 4-17** displays the intersection connectivity analysis results.

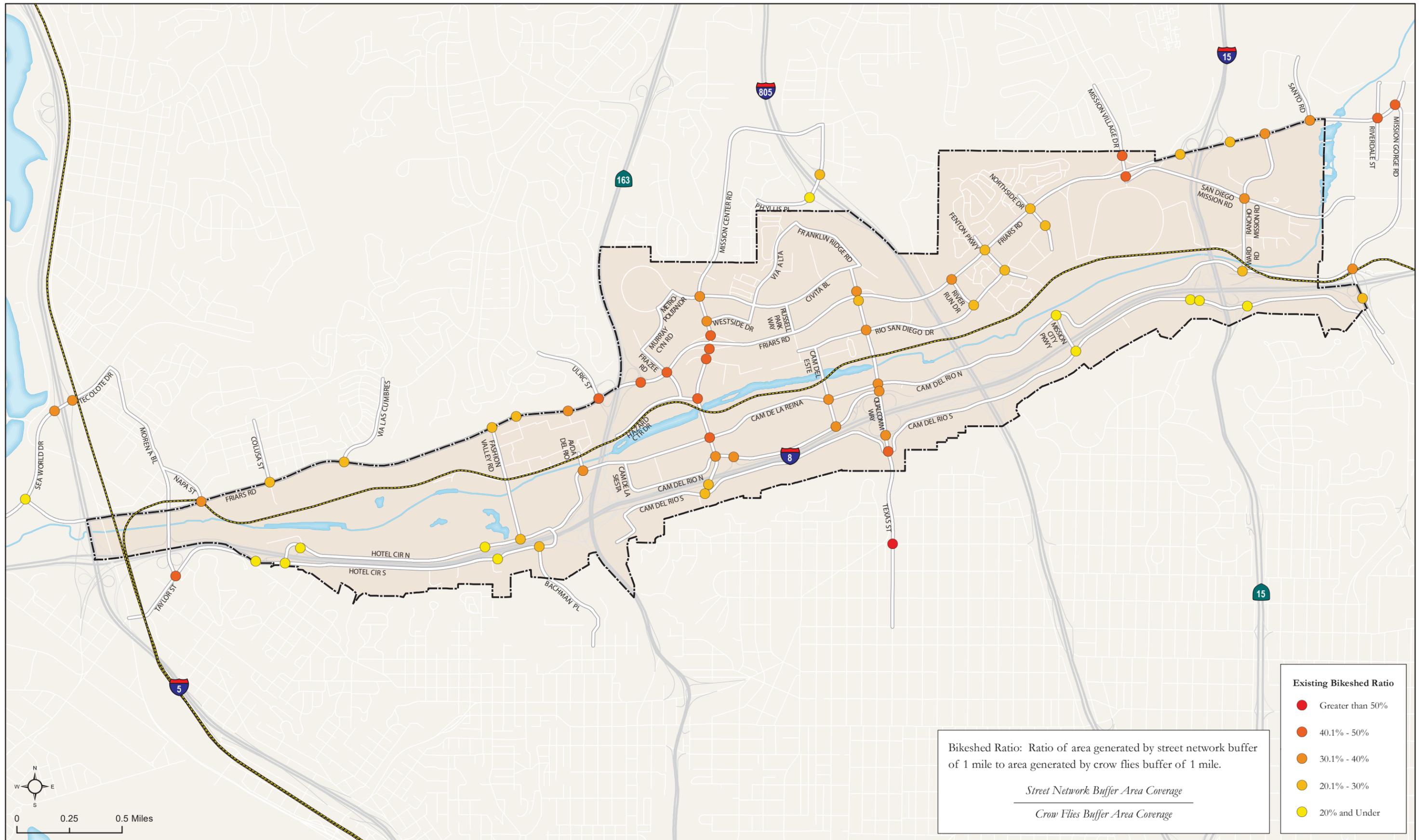
Greater connectivity was generally identified in the center of the community where more intersecting roadways are present. Intersections with lower connectivity were identified south of the San Diego River in both the western and eastern portions of the community. The lower Bikeshed Ratio can be largely attributed to environmental constraints such as the San Diego River and the valley slopes.

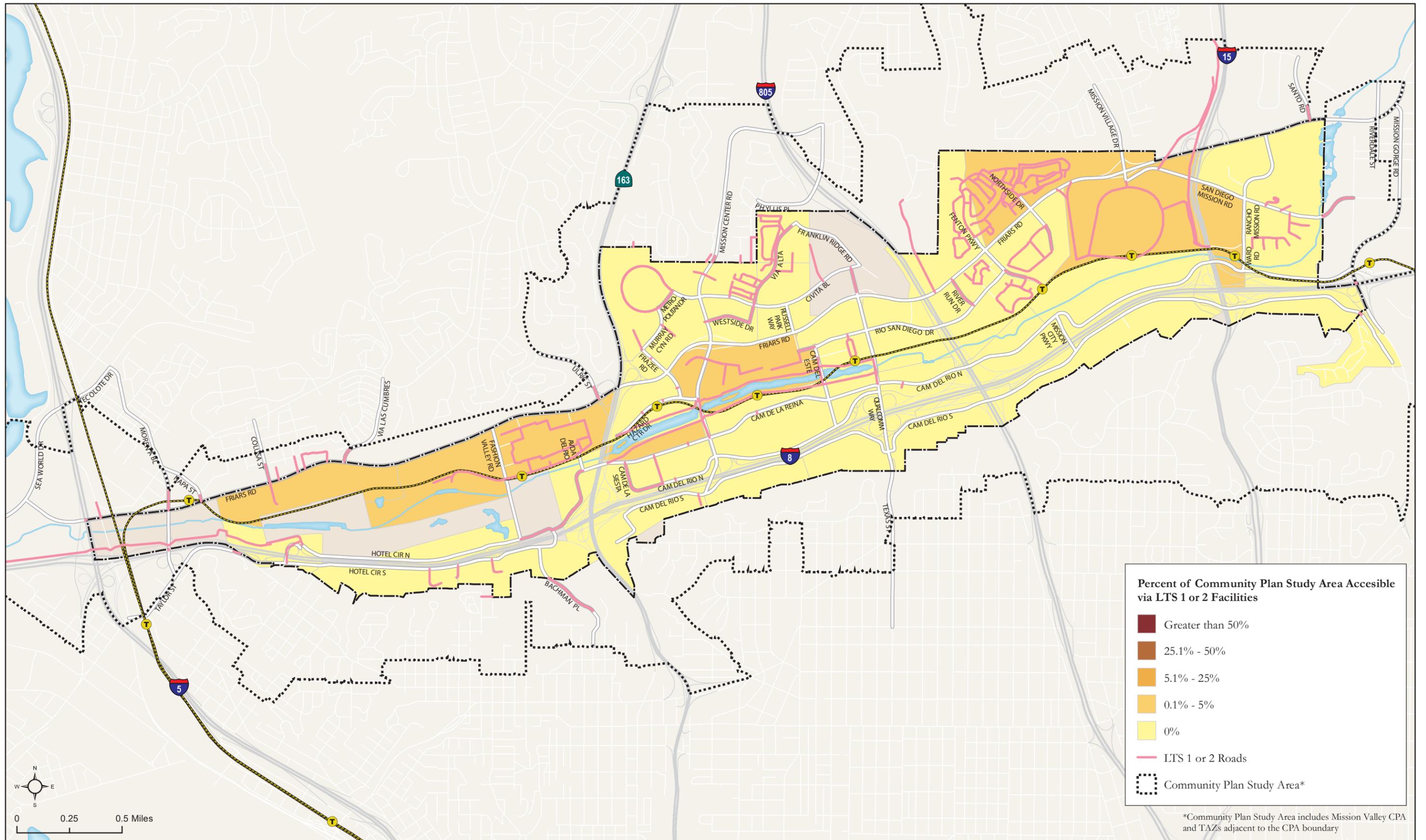
Low-Stress Bicycle Connectivity Analysis

The Low-Stress Bicycle Connectivity Analysis is a composite of two metrics – a Bicycle Path Connectivity Ratio and a TAZ-level Bicycle Accessibility Ratio. The Bicycle Path Connectivity Ratio is calculated as the percent of Unconstrained Paths, characterized as LTS score 1 or 2. The TAZ-level Bicycle Accessibility Ratio assigns each TAZ with bicycle land uses (shown in Table 2-2) a percentage reflecting its level of connectedness to other bicycle land uses within the study area.

Figure 4-18 presents the Low-Stress Bicycle Connectivity Analysis results, identifying facilities classified as LTS 1 or 2 and the percent of the Mission Valley Community Plan Study Area accessible via the LTS 1 or 2 facilities. As shown, the majority of the community is not connected using LTS 1 or 2 facilities. Relatively greater low-stress connectivity was identified in three clusters:

- Between Napa Street, SR-163, Friars Road, and the San Diego River
- Between SR-163, Camino Del Este, Friars Road, and Camino De La Reina
- Between Fenton Parkway, Ward Road/Rancho Mission Road, northern community boundary, and the trolley line





4.3 Transit Mobility

Public transportation can provide many societal benefits, such as improved mobility, reduced roadway congestion and reduced greenhouse gas emissions. However, many variables must align to fully actualize transit benefits, such as efficient and well-connected service, surrounding land use patterns and density. Transit is planned, designed, and built by SANDAG due to its regional importance. Transit service in Mission Valley is operated by the Metropolitan Transit System (MTS), consisting of bus and Light Rail Trolley services.

2008 City of San Diego General Plan Mobility Element – Transit Goals:

- *An attractive and convenient transit system that is the first choice of travel for many of the trips made in the City.*
- *Increased transit ridership.*

The City of San Diego recently put an increased emphasis on the future role of transit with the adoption of the Climate Action Plan (CAP) in December 2015. The CAP set a target to “achieve mass transit mode share of 12% by 2020 and 25% by 2035 in Transit Priority Areas.” Transit Priority Areas, within the context of Mission Valley, include areas within one-half mile of trolley stations or the intersection of two or more major bus routes, each having a frequency of service of 15 minutes or less during the morning and afternoon peak commute periods. Nearly all of Mission Valley falls within a Transit Priority Area when considering the community’s linear shape and the Trolley alignment.

Figure 4-19 displays the existing public transportation routes within Mission Valley and the surrounding communities. Transit stops are displayed only within the Mission Valley community. As shown, the majority of the community is in close proximity to the Green Line Trolley, which is supplemented by nine bus routes with stops throughout the community.

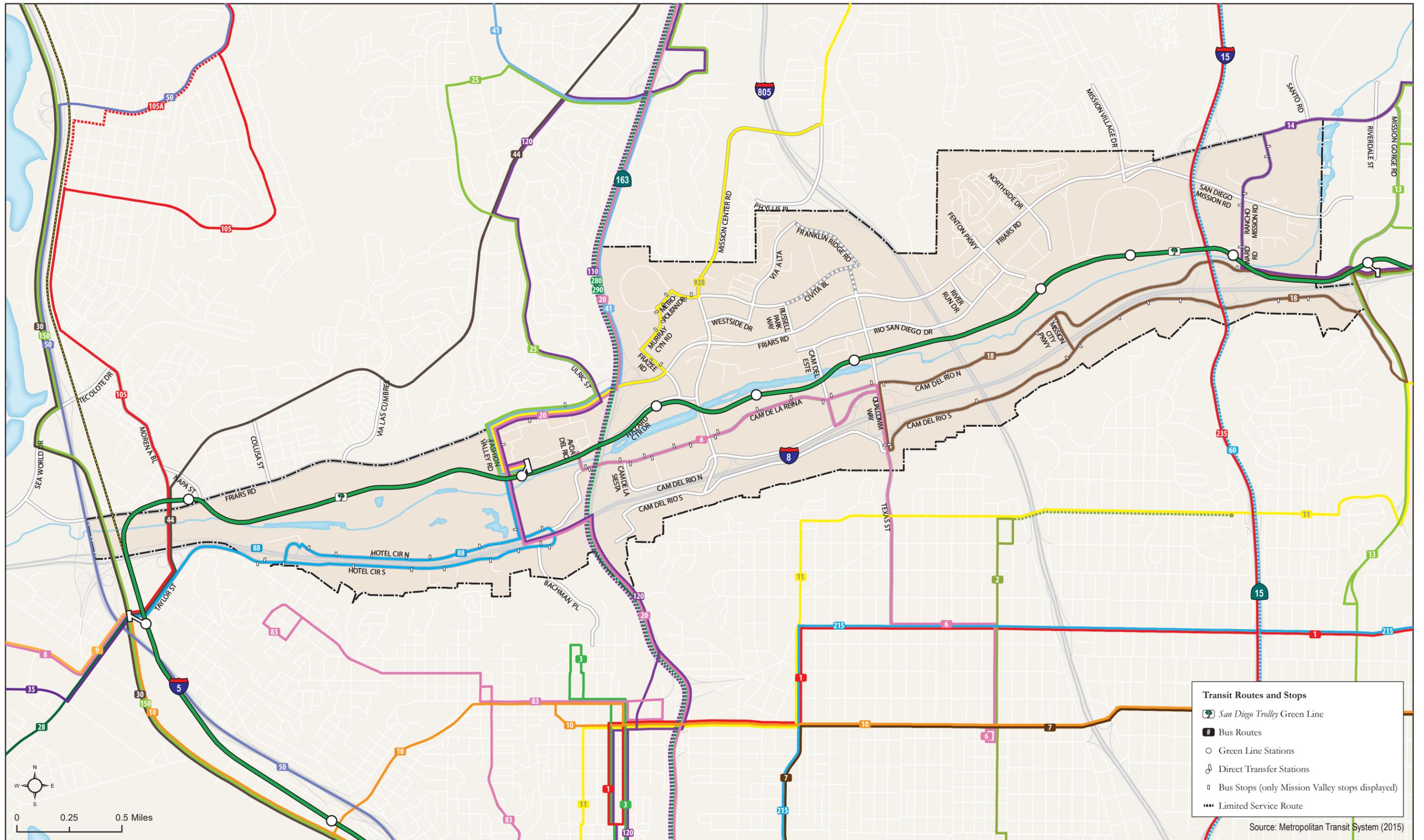
The Fashion Valley Transit Center serves as a convergence point for the Green Line Trolley and seven bus routes, including Route 6, 20, 25, 41, 88, 120, and 928. Access to the Fashion Valley Transit Center is provided via the local roadway network, an abundance of parking, the San Diego River Trail, and a pedestrian bridge crossing the San Diego River. Transfers between the Trolley and bus routes are possible at other locations, however, they are not facilitated as seamlessly as the Fashion Valley Transit Center due to required street crossings and/or distance between the stops.



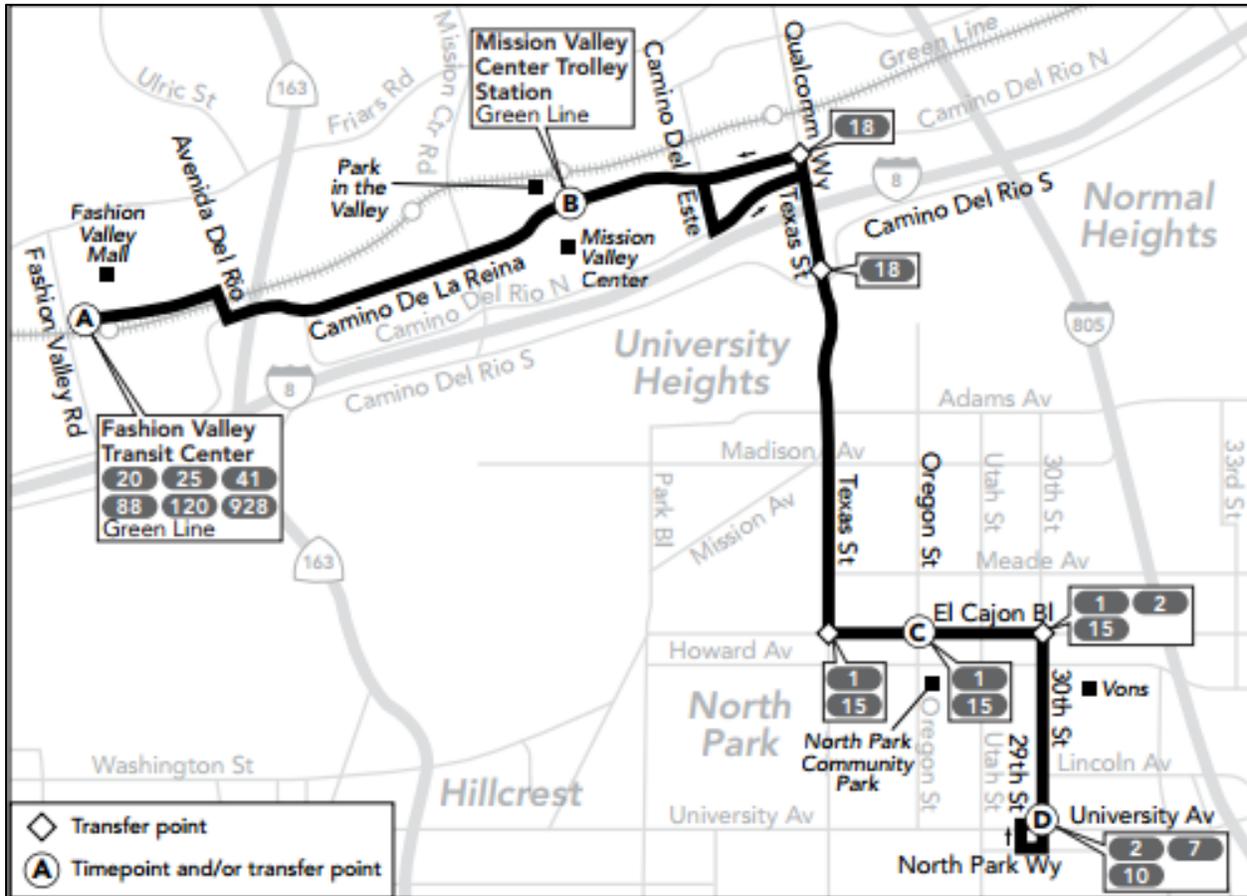
The Fashion Valley Transit Center provides a direct connection between bus and light rail via a bridge.

Bus Routes

Nine bus routes currently serve Mission Valley, accessible through 82 stops, including Route 6, 14, 18, 20, 25, 41, 88, 120, and 920. Additional bus routes pass through the community but do not have stops within Mission Valley, including Route 13, 44, and 105. These routes have stops just outside of the community that are accessible from Mission Valley. A description and individual route map are provided for each bus route.

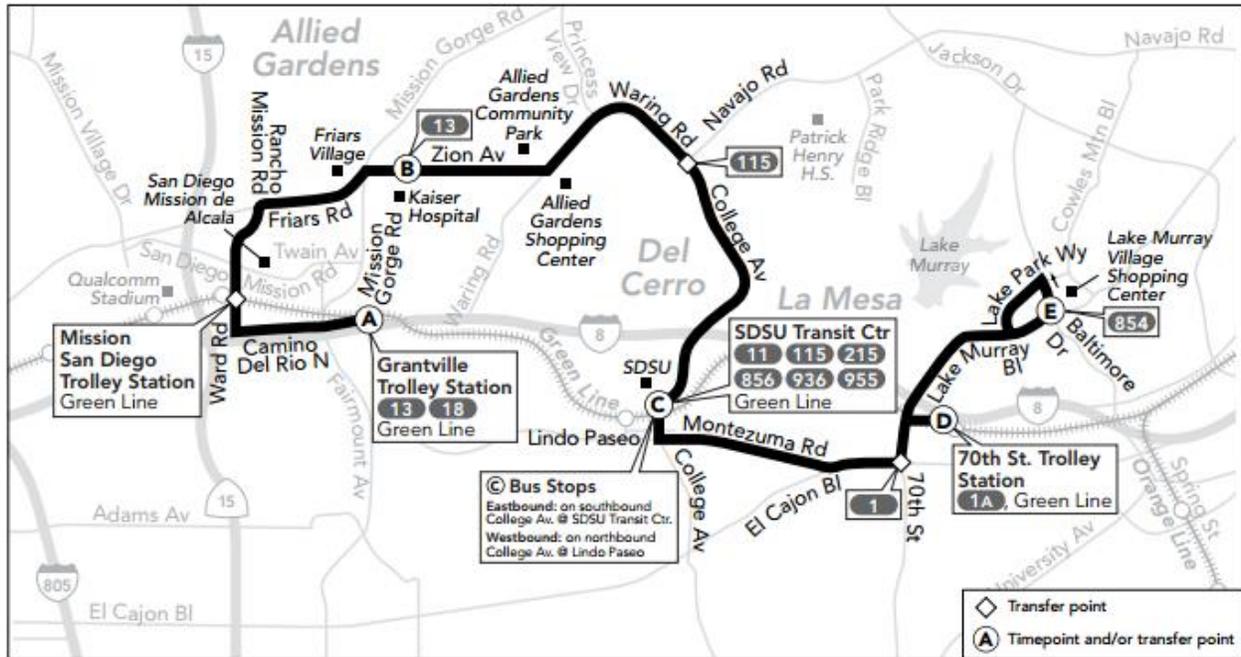


Route 6 runs east-west between Fashion Valley Transit Center and Qualcomm Way in Mission Valley and north-south between Camino Del Rio South and the 30th Street/University Avenue bus stop in North Park. Route 6 runs along Riverwalk Drive, Avenida Del Rio, Camino De La Reina, Camino Del Este, Texas Street, El Cajon Boulevard, and 30th Street. Route 6 currently operates between 5:22 AM to 11:23 PM during weekdays, between 6:30 AM and 10:25 PM during Saturdays, and between 8:14 AM and 8:33 PM during Sundays. Route 6 operates with either the Saturday or Sunday schedule during certain holidays. Route 6 operates with 15 minute headways throughout the day and 30 minute headways towards the end of the day in both the east/south and north/west direction during weekdays and 30 minute headways during Sundays.



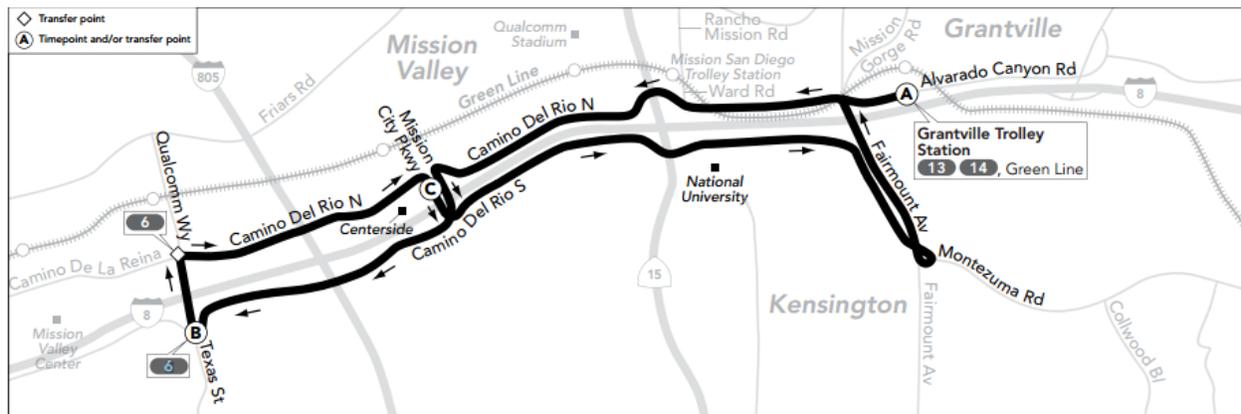
Source: MTS (2015)

Route 14 runs east-west between the Grantville Trolley Station and the Baltimore Drive/Lake Murray Boulevard bus stop in the City of La Mesa. Route 14 runs along Camino Del Rio North, Ward Road, Rancho Mission Road, Friars Road, Zion Avenue, Waring Road, College Avenue, Montezuma Road, El Cajon Boulevard, 70th Street, Lake Murray Boulevard, and Baltimore Drive. Route 14 currently operates only during weekdays between 5:45 AM and 7:24 PM. Route 14 operates with 1 hour headways throughout the day in both the eastbound and westbound directions.



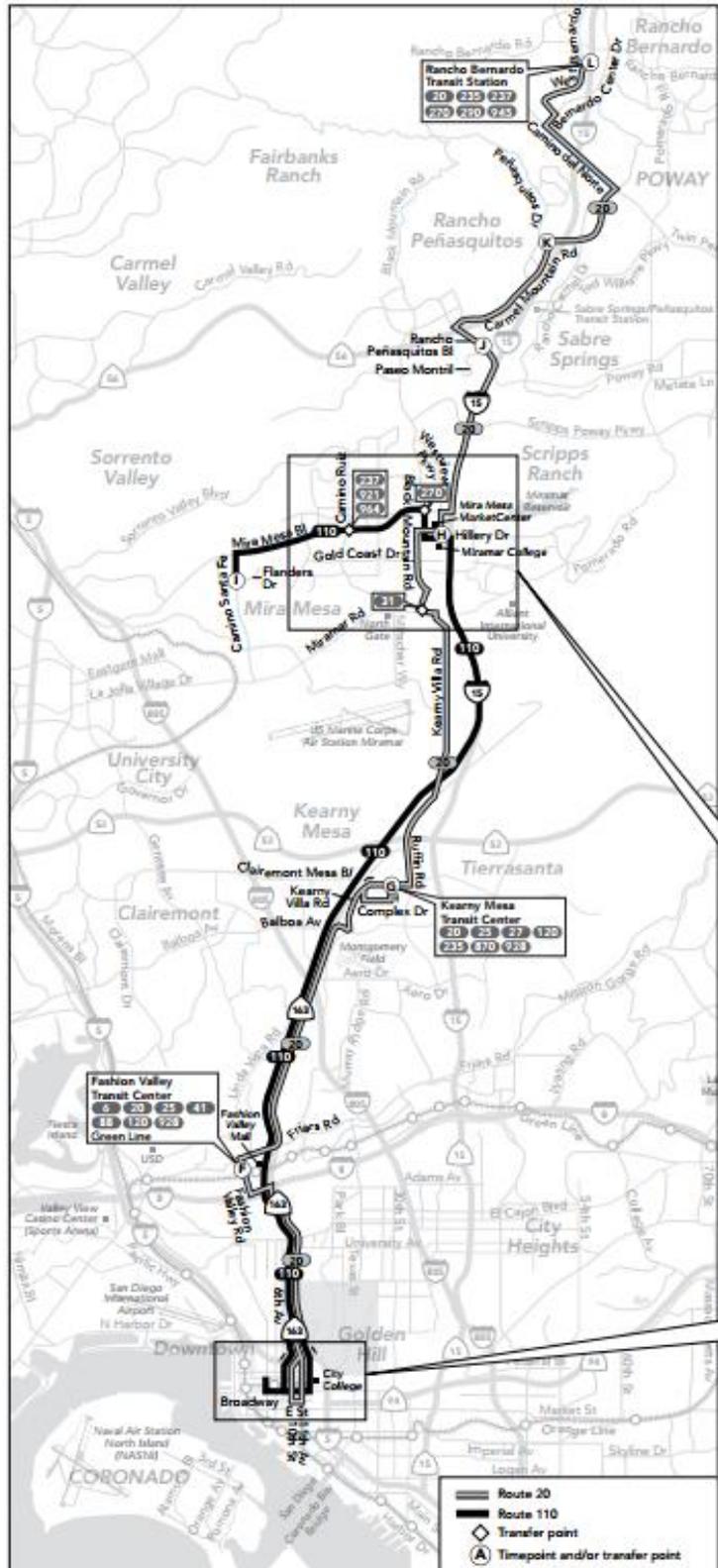
Source: MTS (2015)

Route 18 runs a loop in the east-west direction between the Grantville Trolley Station, the Texas Street/Camino del Rio South bus stop, and back to the Grantville Trolley Station. Route 18 runs along Camino Del Rio North, Mission City Parkway, Camino Del Rio South, Texas Street. Route 18 currently operates only during weekdays between 6:38 AM and 6:00 PM. Route 18 operates with 30 minute headways throughout the day.



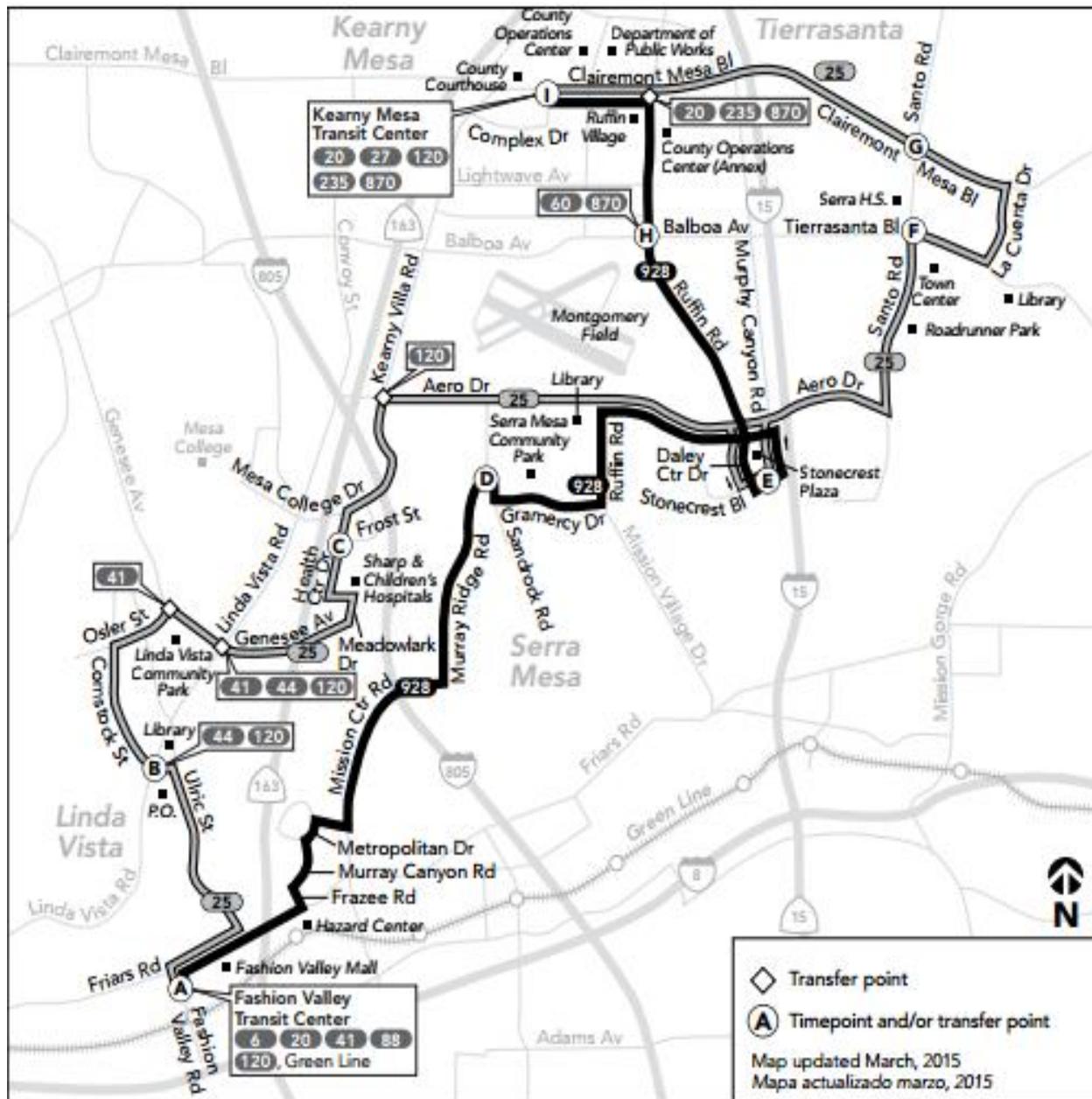
Source: MTS (2015)

Route 20 runs north-south between the 10th Avenue/Broadway bus stop in downtown San Diego and the Rancho Bernardo Transit Station in Rancho Bernardo. Route 20 runs along 10th Avenue, E Street, 11th Avenue, SR-163, Camino De La Reina, Fashion Valley Road, Friars Road, SR-163, Clairemont Mesa Boulevard, Complex Drive, Clairemont Mesa Boulevard, Ruffin Road, Kearny Villa Road, Black Mountain Road, Mira Mesa Boulevard, I-15, Rancho Penasquitos Boulevard, Carmel Mountain Road, Camino Del Norte, Bernardo Center, and West Bernardo Drive. Route 20 currently operates between 4:55 AM and 11:26 PM during weekdays, between 5:07 AM and 9:17 PM during Saturdays, and between 6:07 AM and 8:36 PM during Sundays. Route 20 operates with either the Saturday or Sunday schedule during certain holidays. Route 20 operates, in both northbound and southbound directions, with 15 and 30 minute headways throughout the day and 1 hour headways towards the end of the day during weekdays, 30 minute and 1 hour headways during Saturdays, and 1 hour headways during Sundays.



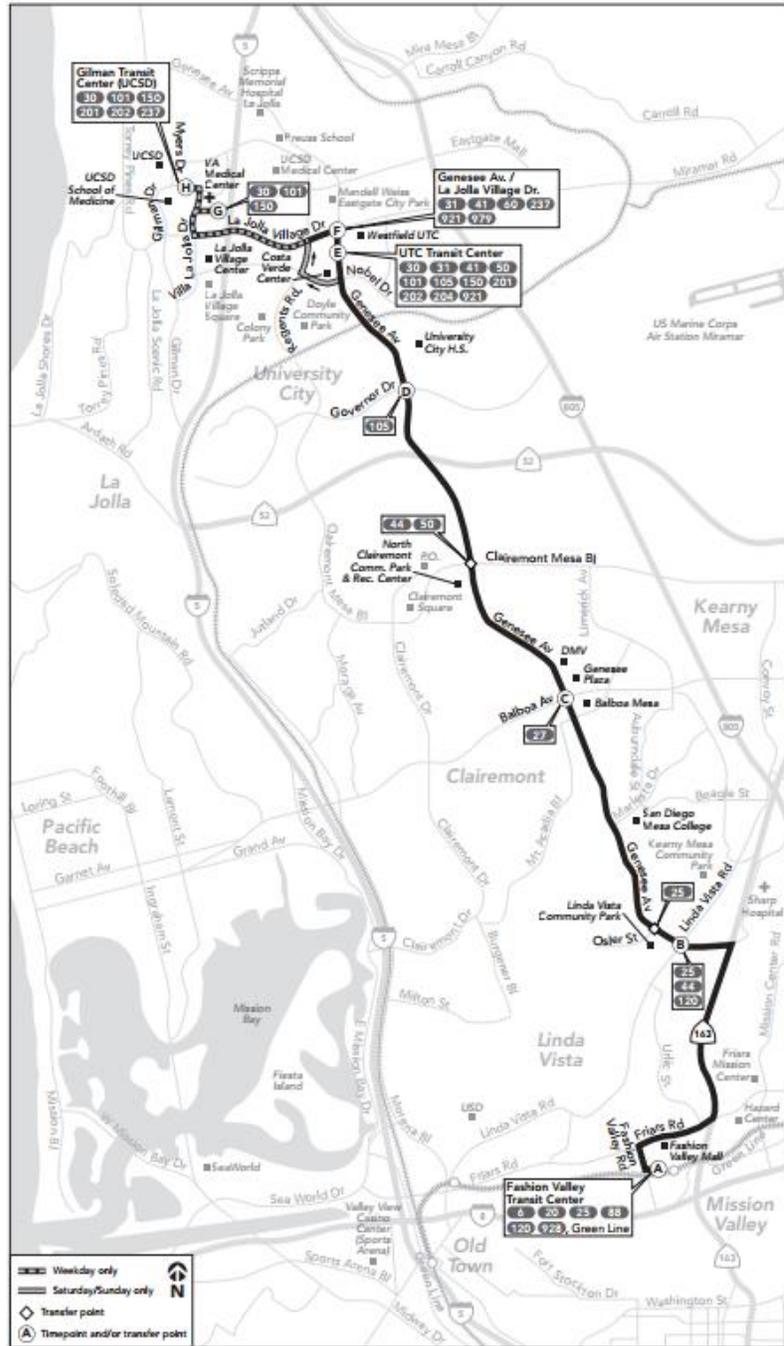
Source: MTS (2015)

Route 25 runs north-south between Fashion Valley Transit Center in Linda Vista and Kearny Mesa Transit Center in Kearny Mesa. Route 25 runs along Fashion Valley Road, Friars Road, Ulric Street, Comstock Street, Osler Street, Genesee Avenue, Meadow Lark Drive, Vista Hill Avenue, Health Center Drive, Mesa College Drive, Kearny Villa Road, Aero Drive, Santo Road, Tierrasanta Boulevard, La Cuenta Drive, and Clairemont Mesa Boulevard. Route 25 currently operates between 6:21 AM and 7:09 PM during weekdays. Route 25 does not operate on weekends or holidays. Route 25 operates, in both northbound and southbound directions, with 30 minute headways throughout the day and 1 hour headways towards the end of the day during weekdays.



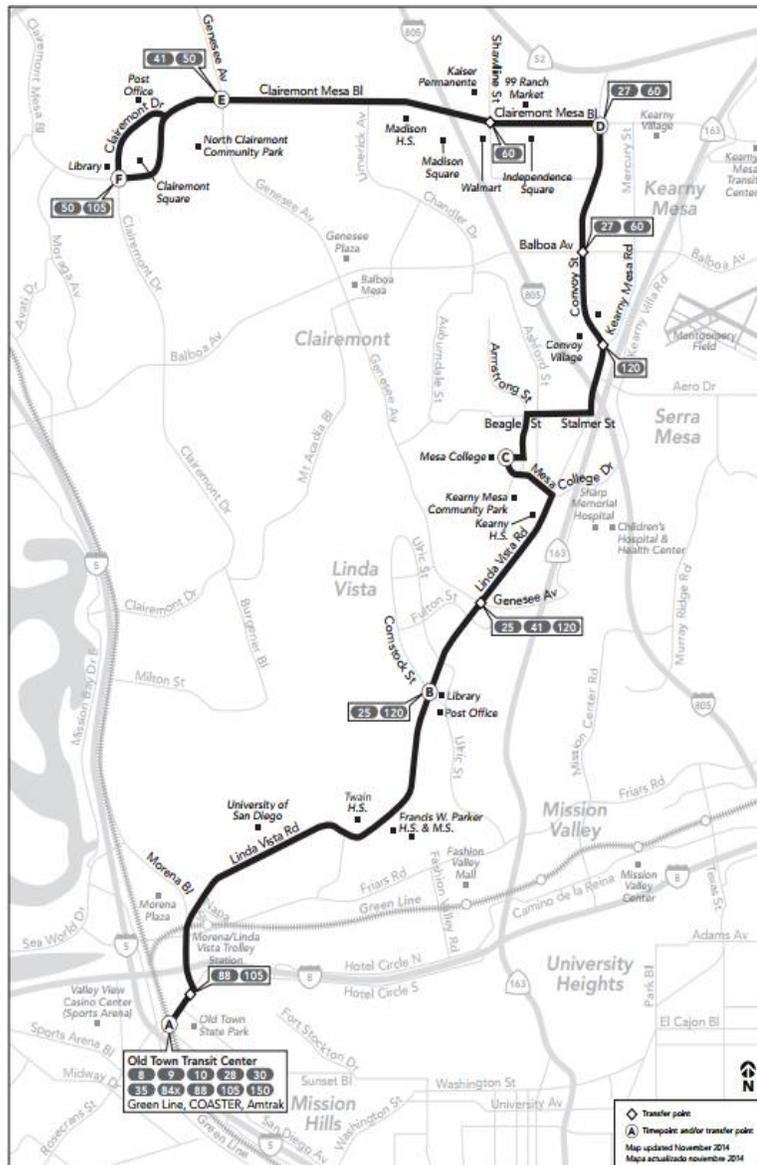
Source: MTS (2015)

Route 41 runs north-south between Fashion Valley Transit Center in Linda Vista and Gilman Transit Center (UCSD) in La Jolla. Route 41 runs along Fashion Valley Road, Friars Road, SR-163, Genesee Avenue, La Jolla Village Drive, Villa La Jolla Drive, and Gilman Drive. Route 41 currently operates between 5:21 AM and 11:44 PM during weekdays, between 6:07 AM and 10:40 PM during Saturdays, and between 6:39 AM and 9:53 PM during Sundays. Route 41 operates with either the Saturday or Sunday schedule during certain holidays. Route 41 operates, in both northbound and southbound directions, with 15 and 30 minute headways during weekdays and 30 minute headways during the weekend.



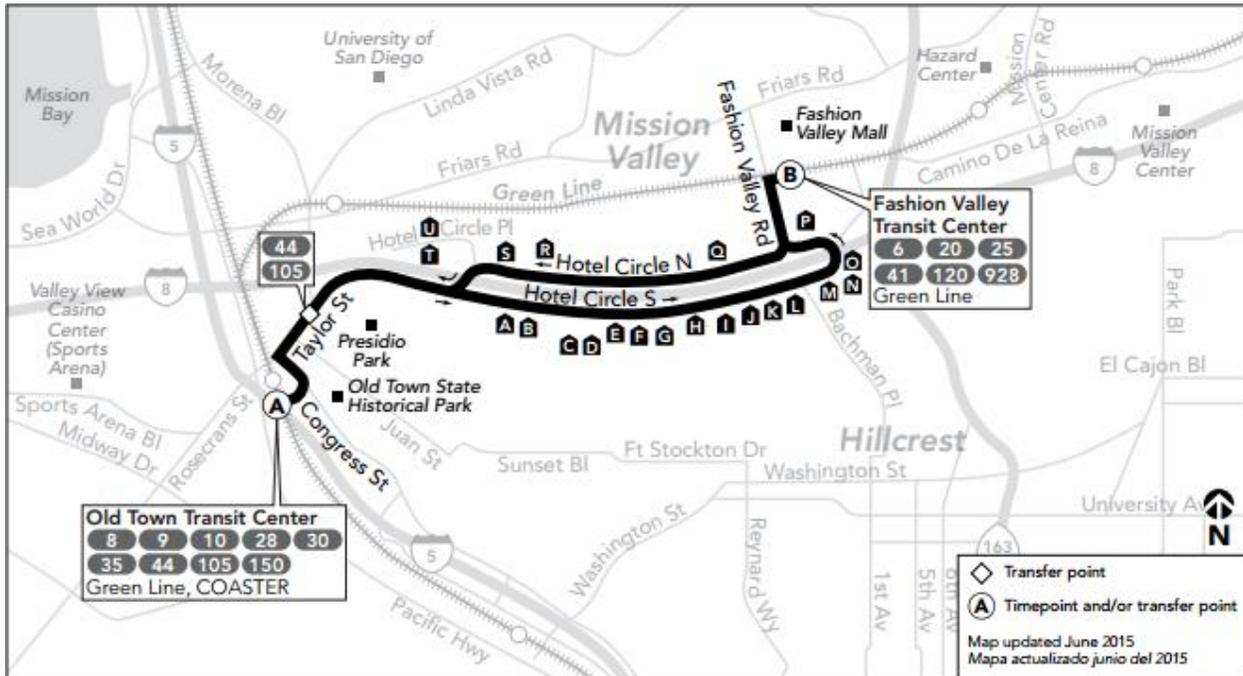
Source: MTS (2015)

Route 44 runs north-south across Mission Valley, Linda Vista, Clairemont, and Serra Mesa, connecting Old Town Transit Center and the Clairemont Mesa Boulevard/Convoy Street bus stop, and then it runs east-west in Clairemont between the Clairemont Mesa Boulevard/Convoy Street bus stop and the Clairemont Drive/Clairemont Mesa Boulevard bus stop. Route 44 runs along Taylor Street, Morena Boulevard, Linda Vista Road, Mesa College Drive, Armstrong Place, Armstrong Street, Stalmer Street, Linda Vista Road, Convoy Street, and Clairemont Mesa Boulevard. Route 44 currently operates between 4:22 AM and 11:01 PM during weekdays, between 5:52 AM and 11:49 PM during Saturdays, and between 6:30 AM and 10:06 PM during Sundays. Route 44 operates with either the Saturday or Sunday schedule during certain holidays. Route 44 operates, in both north/west and south/east directions, with 15 and 30 minute headways during weekdays and 30 minute and 1 hour headways during the weekend.



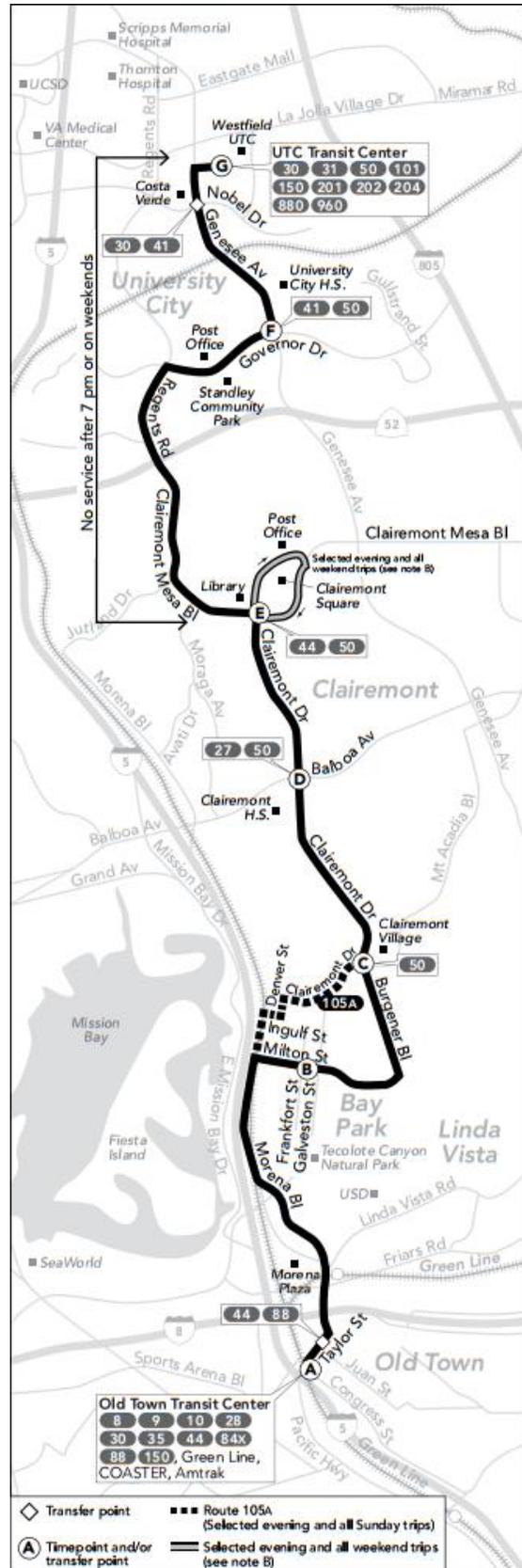
Source: MTS (2015)

Route 88 runs a loop in the east-west direction between the Old Town Transit Center, Fashion Valley Transit Center, and back to Old Town Transit Center. Route 88 runs along Taylor Street, Hotel Circle South, Hotel Circle North, Fashion Valley Road, Hotel Circle North, and Taylor Street. Route 88 currently operates between 5:40 AM and 9:21 PM during weekdays and between 5:40 AM and 8:37 PM during Saturdays. Route 88 does not operate on Sunday or holidays. Route 88 operates with 30 minute headways during weekdays and Saturday in both the eastbound and westbound direction.



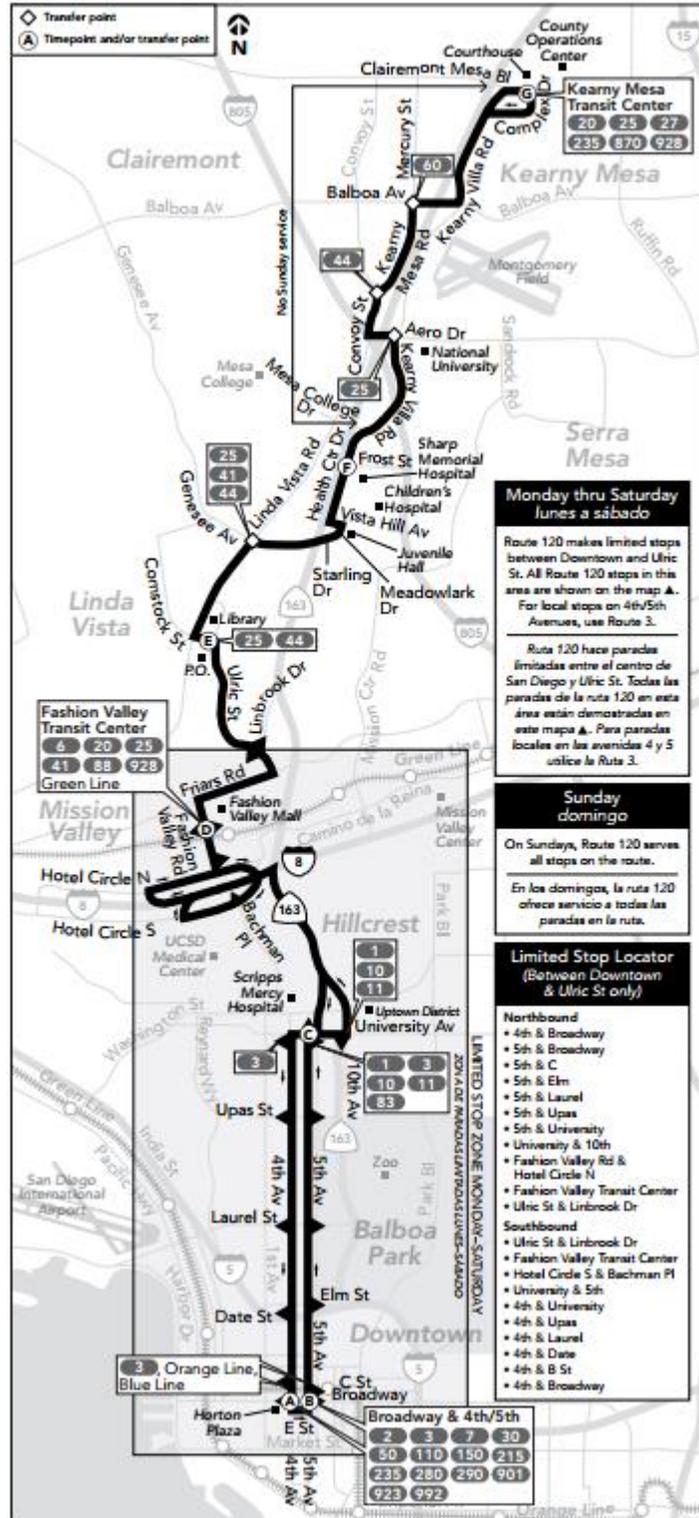
Source: MTS (2015)

Route 105 runs north-south between the Old Town Transit Center and UTC Transit Center in University City. Route 105 runs along Taylor Street, Morena Boulevard, Milton Street, Burgener Boulevard, Clairemont Drive, Clairemont Mesa Boulevard, Regents Road, Governor Drive, and Genesee Avenue. Route 105 currently operates between 5:11 AM and 10:30 PM during weekdays, between 6:14 AM and 8:47 PM during Saturdays, and between 6:59 AM and 8:47 PM during Sundays. Route 105 operates with either the Saturday or Sunday schedule during certain holidays. Route 105 operates, in both the northbound and southbound directions, with 30 minute headways throughout the day and 1 hour headways towards the end of the day during weekdays and 1 hour headways during weekends.



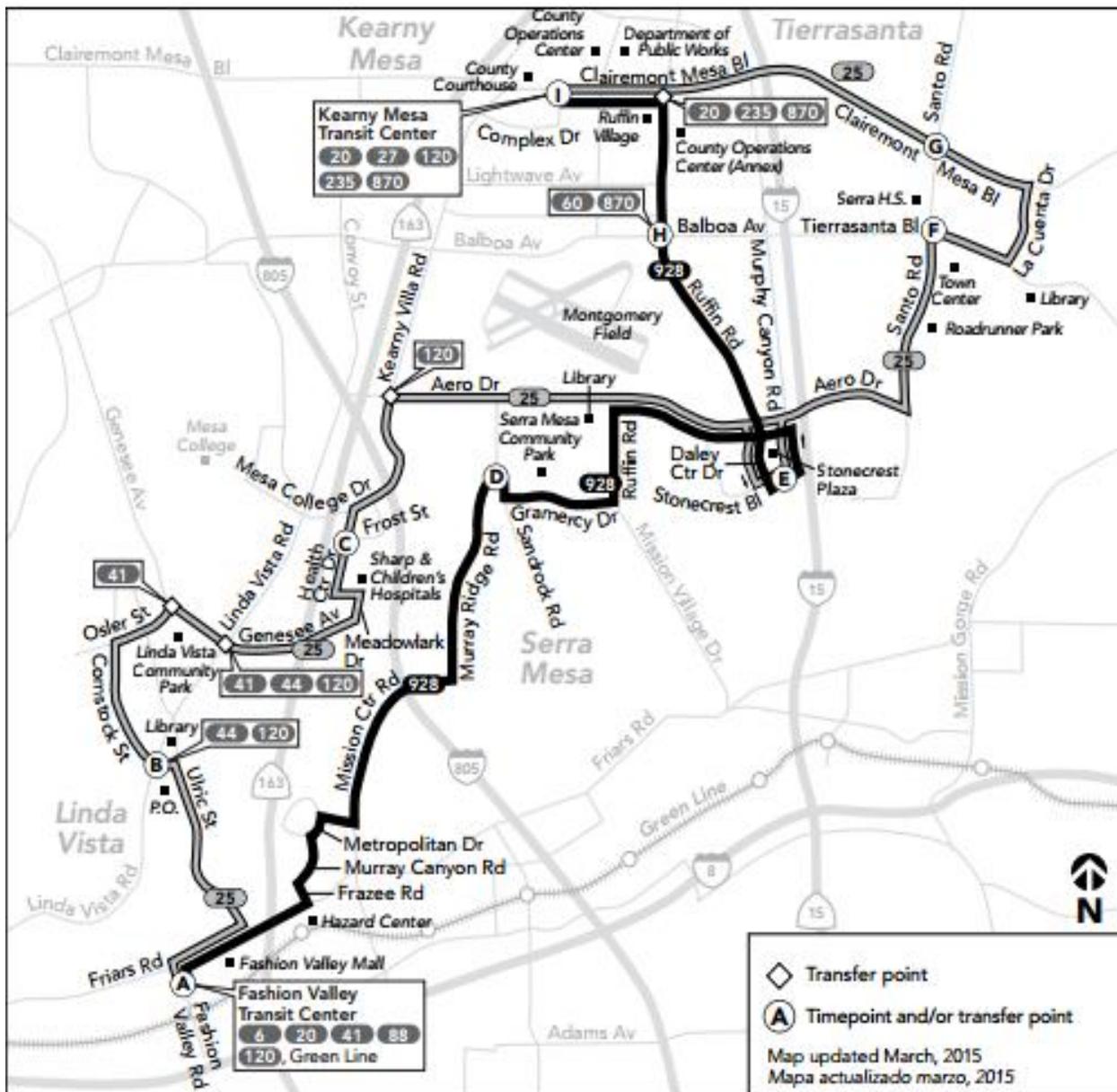
Source: MTS (2015)

Route 120 runs north-south between the 4th Avenue/Broadway bus stop in downtown San Diego and the Kearny Mesa Transit Center. Route 120 runs along Broadway, 5th Avenue, University Avenue, 10th Avenue, SR-163, Hotel Circle North, Hotel Circle South, Fashion Valley Road, Friars Road, Ulric Street, Comstock Street, Linda Vista Road, Genesee Avenue, Starling Drive, Meadow Lark Drive, Vista Hill Avenue, Health Center Drive, Kearny Villa Road, Aero Drive, Convoy Street, Kearny Mesa Road, Balboa Avenue, Kearny Villa Road, and Clairemont Mesa Boulevard. Route 120 currently operates between 5:01 AM and 11:50 PM during weekdays, between 5:44 AM and 10:30 PM during Saturdays, and between 6:13 AM and 9:53 PM during Sundays. Route 120 operates with either the Saturday or Sunday schedule during certain holidays. Route 120 operates, in both the northbound and southbound directions, with 15 and 30 minute headways throughout the day and 1 hour headways towards the end of the day during weekdays and 30 minute and 1 hour headways during weekends.



Source: MTS (2015)

Route 928 runs north-south between Fashion Valley Transit Center and Kearny Mesa Transit Center. Route 928 runs along Fashion Valley Road, Friars Road, Frazee Road, Murray Canyon Road, Metropolitan Drive, Mission Valley Road, Mission Center Road, Murray Ridge Road, Sandrock Road, Gramercy Drive, Mission Village Drive, Ruffin Road, Aero Drive, Daley Center Drive, Stonecrest Boulevard, Murphy Canyon Road, Aero Drive, Ruffin Road, and Clairemont Mesa Boulevard. Route 928 currently operates between 4:47 AM and 10:00 PM during weekdays, between 6:30 AM and 9:27 PM during Saturdays, and between 8:30 AM and 6:29 PM during Sundays. Route 928 operates with either the Saturday or Sunday schedule during certain holidays. Route 928 operates, in both northbound and southbound directions, with 30 minute headways throughout the day and 1 hour headways towards the end of the day during weekdays and 1 hour headways during the weekend.



Source: MTS (2015)

Light Rail Trolley Alignment

Green Line – Mission Valley is served by the San Diego Trolley (LRT) Green Line, with 7 stations within the Mission valley community located at Mission San Diego, Qualcomm Stadium, Fenton Parkway, Rio Vista, Mission Valley Center, Hazard Center, and Fashion Valley.

The Green Line is the third line in the San Diego Trolley system. Service began in 2005 upon the completion and opening of the 5.9-mile Mission Valley East extension. The Green Line covers 23.6 miles, with 15-minute service Mondays through Saturdays and 30-minute service during the late-evenings, weekend mornings, and Sundays. The Green Line serves a total of 27 stations.



Source: MTS (2015)

4.3.1 Transit Demand

Transit demand was evaluated using stop boarding and alighting data and US Census Bureau data.

Table 4-16 presents the average daily boardings and alightings by route for each transit stop. Most routes are bidirectional as opposed to circuitous, in which case two separate route stop summaries were created. The three bus stops with the greatest total average daily boardings and alightings in FY2014 were all part of the Fashion Valley Transit Center, including the following:

- Stop ID 94046 – Fashion Valley Transit Center – Route 25/41 (1,219)
- Stop ID 94045 – Fashion Valley Transit Center – Route 6 (963)
- Stop ID 94040 – Fashion Valley Transit Center – Route 928 (893)

The three Trolley stops with the greatest total average daily boardings and alightings include the following:

- Stop ID 75046 – Fashion Valley Transit Center Westbound – Green Line (3,037)
- Stop ID 75047 – Fashion Valley Transit Center Eastbound – Green Line (3,016)
- Stop ID 75050 – Mission Valley Center Station Eastbound – Green Line (1,120)

Table 4-16 Average Daily Boardings and Alightings by Route (FY2014)

Route and Location	Stop ID	Direction	Boardings	Alightings	Total
Route 6 – Fashion Valley Transit Center to 30th St & University Avenue					
Fashion Valley Transit Center	94045	EB	542	2	544
Camino De La Reina & Avenida Del Rio	13392	EB	13	4	17
Camino De La Reina & Camino De La Siesta	10479	EB	7	10	17
Camino De La Reina & Camino Del Arroyo	10100	EB	1	5	6
Camino De La Reina & Mission Valley West	13036	EB	24	22	46
Camino De La Reina & Mission Center Rd	10485	EB	48	16	64
Camino De La Reina & Westfield Drwy	13037	EB	185	51	236
Camino De La Reina & Michaels	10500	EB	27	9	36
Camino De La Reina & Camino Del Este	10505	EB	41	15	56
Texas St & Camino Del Rio South	11687	SB	16	3	19
Route 6 – 30th St & University Avenue to Fashion Valley Transit Center					
Texas St & Camino Del Rio S	12813	WB	57	47	104
Camino De La Reina & Qualcomm Wy	11276	WB	4	42	46
Camino De La Reina & Camino Del Este	10879	WB	15	32	47
Camino De La Reina & Saks 5th Ave	99380	WB	6	39	45
Camino De La Reina & Park In the Valley Drwy	13102	WB	40	186	226
Camino De La Reina & Mission Center Rd	10860	WB	9	48	57
Camino De La Reina & Mission Valley West	13001	WB	17	22	39
Camino De La Reina & Camino Del Arroyo	11248	WB	4	2	6
Camino De La Reina & Camino De La Siesta	11242	WB	7	5	12
Camino De La Reina & Avenida Del Rio	13393	WB	0	18	18
Fashion Valley Transit Center	94045	EB	1	418	419
Route 14 – Grantville Trolley Station to Baltimore Dr & Lake Murray Blvd					
Ward Rd & Mission San Diego Trolley	13397	NB	12	0	12
Rancho Mission Rd & San Diego Mission Rd	13398	NB	7	1	8
Rancho Mission Rd & Friars Rd	10968	NB	3	11	14
Route 14 – Baltimore Dr & Lake Murray Blvd to Grantville Trolley Station					

Table 4-16 Average Daily Boardings and Alightings by Route (FY2014)

Route and Location	Stop ID	Direction	Boardings	Alightings	Total
Rancho Mission Rd & Friars Rd	10588	SB	9	5	14
Rancho Mission Rd & San Diego Mission Rd	13404	SB	1	4	5
Ward Rd & Mission San Diego Trolley	13405	SB	1	18	19
Route 18 – From Grantville Trolley Station to Grantville Trolley Station					
Camino Del Rio North & Ward Rd	99449	WB	5	0	5
Camino Del Rio N & 3456	99260	WB	3	6	9
Mission City Pkwy & Camino Del Rio N	99261	WB	3	8	11
Camino Del Rio S & 3160	99262	WB	7	1	8
Camino Del Rio S & 2828	99263	WB	28	36	64
Texas St & Camino Del Rio S	12813	WB	15	18	33
Camino Del Rio N & Qualcomm Wy	99864	WB	5	8	13
Camino Del Rio N & 2655	13040	EB	3	9	12
Camino Del Rio N & Mission City Pkwy	10182	EB	8	9	17
Camino Del Rio S & Mission City Pkwy	10556	EB	3	3	6
Camino Del Rio S & Scheidler Wy	10194	EB	9	8	17
Camino Del Rio S & 3505	13009	EB	12	9	21
Camino Del Rio S & 3661	10210	EB	6	8	14
Camino Del Rio S & Point Loma Nazarene	13043	EB	0	2	2
Camino Del Rio S & 4141	13079	EB	1	1	2
Route 20 – 10th Avenue and Broadway to Rancho Bernardo Transit Station					
Fashion Valley Transit Center	94048	NB	439	231	670
Route 20 – Rancho Bernardo Transit Station to 10th Avenue and Broadway					
Fashion Valley Transit Center	94042	SB	169	347	516
Hotel Circle South & Bachman Pl	13510	WB	10	6	16
Route 25 – Fashion Valley Transit Center to Kearny Mesa Transit Center					
Fashion Valley Transit Center	94046	NB	110	0	110
Fashion Valley Rd & Friars Rd	12400	NB	3	0	3
Friars Rd & Via De La Moda	13390	EB	0	1	1
Route 25 – Kearny Mesa Transit Center to Fashion Valley Transit Center					
Friars Rd & Avenida De Las Tiendas	13389	WB	0	12	12
Fashion Valley Rd & Friars Rd	11995	SB	0	0	0
Fashion Valley Transit Center	94046	SB	0	87	87
Route 41 – Fashion Valley Transit Center to Gilman & Myers (UCSD)					

Table 4-16 Average Daily Boardings and Alightings by Route (FY2014)

Route and Location	Stop ID	Direction	Boardings	Alightings	Total
Fashion Valley Transit Center	8	NB	1020	2	1022
Fashion Valley Rd & Friars Rd	12400	NB	7	2	9
Friars Rd & Via De La Moda	13390	EB	13	2	15
Route 41 – Gilman & Myers (UCSD) to Fashion Valley Transit Center					
Friars Rd & Avenida De Las Tiendas	13389	WB	2	23	25
Fashion Valley Rd & Friars Rd	11995	SB	2	16	18
Fashion Valley Transit Center	94038	SB	2	848	850
Route 88 – Old Town Transit Center to Fashion Valley Transit Center					
Taylor St & I-8 East (Ramp)	10064	EB	0	0	0
Hotel Circle S & I-8 West (Ramp)	10433	EB	4	13	17
Hotel Circle S & 2201	13030	EB	28	22	50
Hotel Circle S & 1605	12998	EB	36	43	79
Hotel Circle S & 1333	13032	EB	27	18	45
Hotel Circle S & Mission Valley Resort	12999	EB	10	17	27
Hotel Circle S & 625	13033	EB	7	10	17
Hotel Circle S & Bachman Pl	13034	EB	4	13	17
Hotel Circle N & Camino De La Reina	99379	WB	0	4	4
Fashion Valley Rd & Hotel Circle N	11225	NB	1	7	8
Fashion Valley Transit Center	94044	WB	0	131	131
Route 88 – Fashion Valley Transit Center to Old Town Transit Center					
Fashion Valley Transit Center	94044	WB	87	0	87
Fashion Valley Rd & Hotel Circle N	11623	SB	0	3	3
Hotel Circle N & 950	13098	WB	3	4	7
Hotel Circle N & 1550	13067	WB	8	8	16
Hotel Circle N & 1650	13096	WB	8	15	23
Hotel Circle N & 1904	13066	WB	13	6	19
Hotel Circle N & 2270	13095	WB	2	3	5
Hotel Circle N & Hotel Circle Pl	10818	WB	12	9	21
Taylor St & I-8 East (Ramp)	10816	WB	0	1	1
Route 120 – 4th Ave & Broadway to Kearny Mesa Transit Center					
Fashion Valley Rd & Hotel Circle N	11225	NB	1	15	16
Fashion Valley Transit Center	94037	NB	353	402	755
Route 120 – Kearny Mesa Transit Center to 4th Ave & Broadway					

Table 4-16 Average Daily Boardings and Alightings by Route (FY2014)

Route and Location	Stop ID	Direction	Boardings	Alightings	Total
Fashion Valley Transit Center	94041	SB	537	347	884
Hotel Circle South & Bachman Pl	13510	WB	29	22	51
Route 928 Fashion Valley Transit Center to Kearny Mesa Transit Center					
Fashion Valley Transit Center	94040	SB	477	0	477
Fashion Valley Rd & Friars Rd	12400	NB	2	1	3
Friars Rd & Via De La Moda	13390	EB	2	2	4
Frazer Rd & Friars Rd	12778	NB	19	14	33
Murray Canyon Rd & Mission Heights Rd	10483	NB	3	4	7
Metropolitan Dr & Murray Canyon Rd	10475	NB	6	25	31
Mission Valley Rd & Mission Center Rd	91130	NB	7	27	34
Mission Center Rd & Sevan Ct	60741	NB	1	2	3
Route 928 – Kearny Mesa transit Center to Fashion Valley Transit Center					
Mission Center Rd & Sevan Ct	12069	SN	4	1	5
Mission Valley Rd & Mission Center Road	91312	SB	17	7	24
Metropolitan Dr & Mission Valley Rd	10471	SB	12	4	16
Murray Canyon Rd & Metropolitan Dr	91133	SB	17	1	18
Murray Canyon Rd & Mission Heights Rd	11250	SB	5	5	10
Frazer Rd & Friars Rd	11652	SB	7	14	21
Friars Rd & Avenida De Las Tiendas	13389	WB	1	5	6
Fashion Valley Rd & Friars Rd	11995	SB	2	3	5
Fashion Valley Transit Center	94040	NB	0	416	416
Green Line Trolley – 12th & Imperial to Santee					
Fashion Valley Transit Center	75047	EB	1370	1646	3016
Hazard Center Station	75048	EB	350	576	926
Mission Valley Center Station	75050	EB	505	615	1120
Rio Vista Station	75053	EB	278	383	661
Fenton Parkway Station	75055	EB	255	430	685
Qualcomm Stadium Station	75056	EB	100	161	261
Mission San Diego Station	75059	EB	165	267	432
Green Line Trolley – Santee to 12th & Imperial					
Mission San Diego Station	75058	WB	315	150	465
Qualcomm Stadium Station	75057	WB	164	86	250
Fenton Parkway Station	75054	WB	445	265	710

Table 4-16 Average Daily Boardings and Alightings by Route (FY2014)

Route and Location	Stop ID	Direction	Boardings	Alightings	Total
Rio Vista Station	75052	WB	408	274	682
Mission Valley Center Station	75051	WB	594	496	1090
Hazard Center Station	75049	WB	566	350	916
Fashion Valley Transit Center	75046	WB	1538	1499	3037

Source: FY2014 SANDAG Passenger Counting Program (2015); Chen Ryan Associates (2016)

Table 4-17 displays the public transportation mode share as reported in the US Census Community Survey 2013 5-year estimates, comparing the Mission Valley community to the City of San Diego and San Diego County as a whole. Transit commute mode share in Mission Valley was reported to be slightly lower than the City of San Diego, and comparable to San Diego County.

Table 4-17 Public Transportation Commute Mode Share Comparison

	Mission Valley	City of San Diego	San Diego County
Total Public Transportation Commuters	383	25,789	44,193
Total Workers	11,813	641,412	1,436,094
Public Transportation Commute Mode Share	3.2%	4.0%	3.1%

Source: US Census, American Community Survey 2013 5-Year Estimates (2016); Chen Ryan Associates (2016)

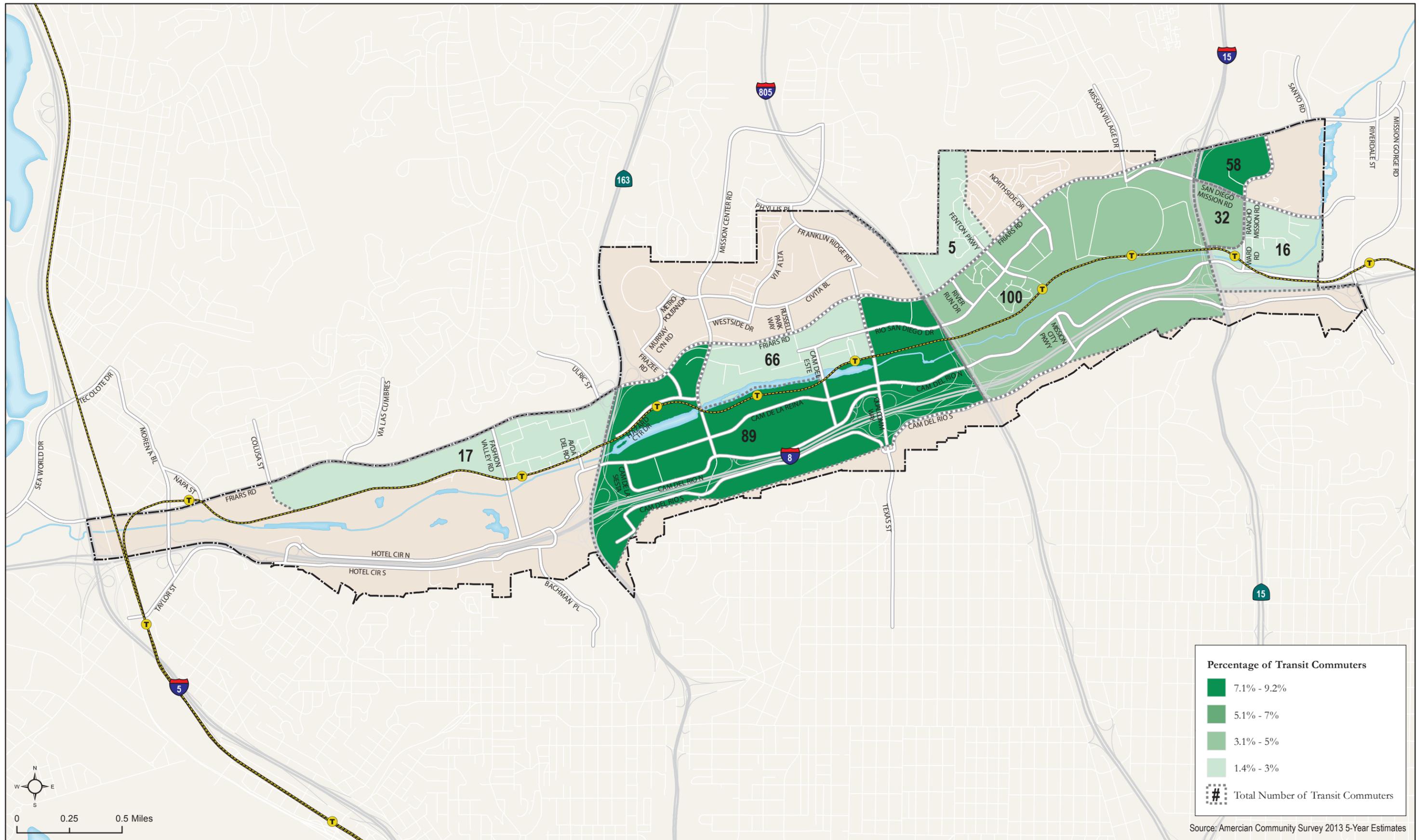
Figure 4-20 displays transit commute rates and the total number of transit commuters by census block group. As shown, the census block group in the center of the community was reported as having the greatest transit commuter mode share, and includes access to three Green Line Trolley stops.

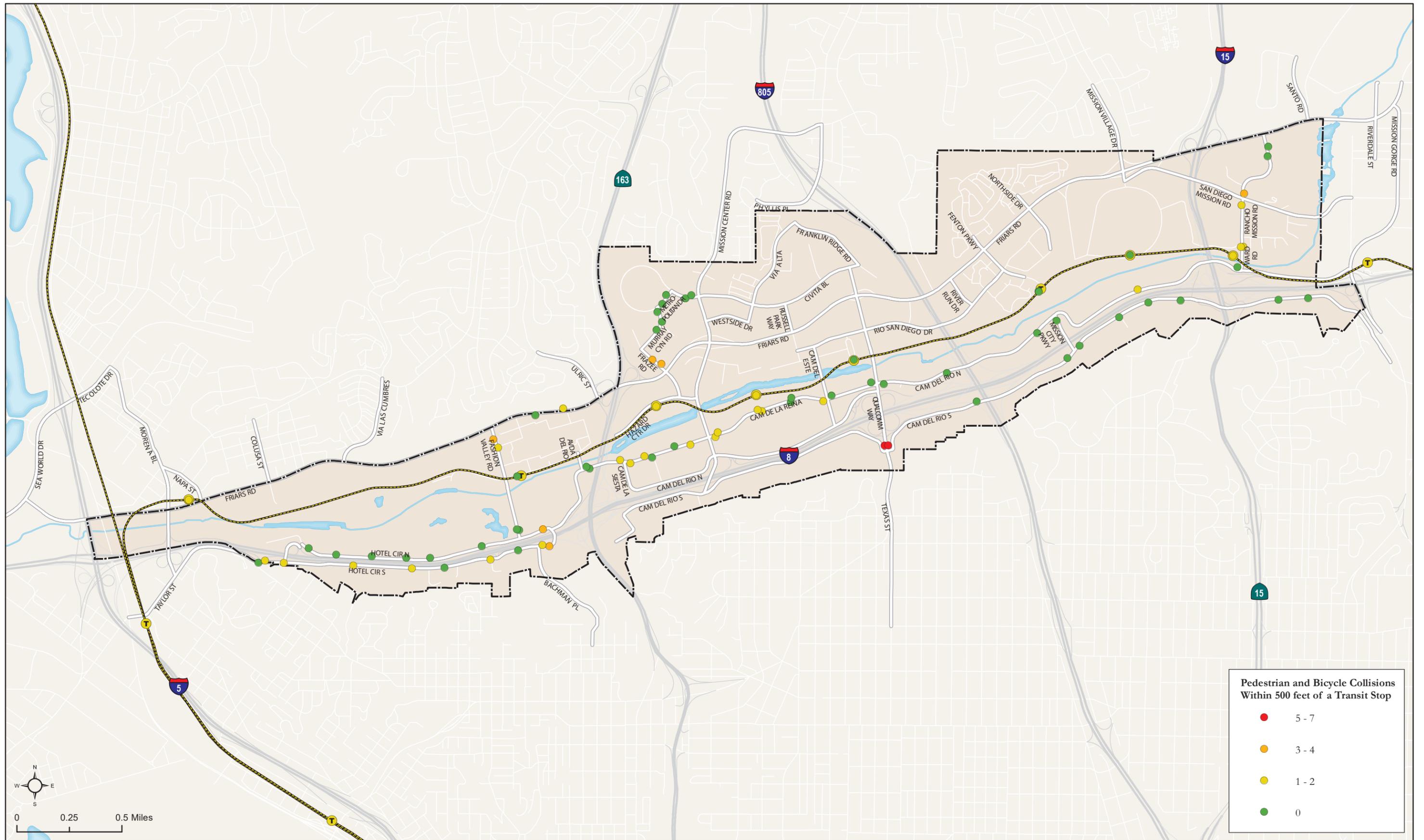
4.3.2 Safety near a Transit Stop/Station

Safety near transit stops/stations was evaluated using pedestrian- and bicycle-involved collision data within 500 feet of transit stop/station, obtained from the City of San Diego for the period from October 2008 through October 2013. A total of 38 collisions were reported during this five-year period, including 19 pedestrian- and 19 bicycle-involved collisions. **Figure 4-21** displays the distribution of the pedestrian- and bicycle-involved collisions within 500 feet of a transit stop or station across the Mission Valley community. It is important to note that some collisions may be double counted on the map if they fall within a 500 foot distance of more than one transit stop/station.

As shown, the transit stops with the most collisions within 500 feet were found along each side of Texas Street, just north of Camino Del Rio South (5 – 7 collisions). Additional locations with higher collision occurrences in close proximity include:

- Frazee Road, just north of Friars Road (3 – 4 collisions)
- Hotel Circle North and Hotel Circle South, west of Camino De La Reina (3 – 4 collisions)
- Fashion Valley Road, south of Friars Road (3 – 4 collisions)
- Rancho Mission Road, north of San Diego Mission Road (3 – 4 collisions)





4.3.3 Transit Station Quality

Table 4-18 identifies the amenities provided and the FY2014 average daily boardings and alightings at each stop. The MTS Designing for Transit Manual (1993) was referenced to identify required amenities based on average daily boardings and determine any deficiencies. As shown, the only station amenity deficiency was found to be “ADA Compliant” at the following six bus stops:

- 10064 – Taylor St and I-8 East (Ramp)
- 10433 – Hotel Circle S and I-8 West (Ramp)
- 11248 – Camino De La Reina and Camino Del Arroyo
- 13510 – Hotel Circle South and Bachman Place
- 60741 – Mission Center Road and Sevan Court
- 99379 – Hotel Circle North and Camino De La Reina

At five of the six locations (stop IDs 10064, 10433, 13510, 60741, and 99379) a non-existent sidewalk prevents the bus from deploying a loading ramp, resulting in the ADA compliance deficiency.

4.3.4 Quality Connections from Major Transit Stations

Quality connections to light rail stations were identified for both pedestrian and cyclists. The quality connections assessment draws from the quality walking analysis and quality cycling analysis results to identify quality 0.25 mile pedestrian and 0.75 mile bicycle networks surround major transit stations/stops. These distances were obtained from San Diego Forward: The Regional Plan, Appendix U4 – SANDAG Regional Transit Oriented Development Strategy, and represent a five minute travel distance for pedestrians and cyclists. The analysis results assign a percentage to each light rail station within the Mission Valley community, representing the ratio of quality facilities within the identified distance for each respective mode.

Figure 4-22 displays the results of the Quality Walkshed Ratio from Major Transit Stations analysis. The Fashion Valley Transit Center and the Rio Vista Station were found to have the highest existing quality walking ratio, while the Fenton Parkway Station was found to have the lowest.

Figure 4-23 displays the results of the Quality Bikeshed Ratio from Major Transit Stations analysis. The Hazard Center Station was determined to have the highest existing quality bicycling ratio. The Mission Valley Center Station and the Mission San Diego Station were found to have the lowest ratios in the Mission Valley community.

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
10064	Taylor St & I-8 East (Ramp)	EB	N	88	0	0	0	✓		✓			✓					S	
10100	Camino De La Reina & Camino Del Arroyo	EB	N	6	1	5	6	✓		✓			✓				✓	✓	✓
10182	Camino Del Rio N & Mission City Pkwy	EB	N	18	8	9	17	✓		✓	✓		✓					S	✓
10194	Camino Del Rio S & Scheidler Wy	EB	N	18	9	8	17	✓			✓		✓					S	✓
10210	Camino Del Rio S & 3661	EB	N	18	6	8	14	✓					✓						✓
10433	Hotel Circle S & I-8 West (Ramp)	EB	N	88	4	13	17	✓		✓			✓					S	
10471	Metropolitan Dr & Mission Valley Rd	SB	F	928	12	4	16	✓		✓	✓		✓						✓
10475	Metropolitan Dr & Murray Canyon Rd	NB	F	928	6	25	31	✓		✓			✓					S	✓
10479	Camino De La Reina & Camino De La Siesta	EB	F	6	7	10	17	✓		✓	✓		✓					S	✓

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
10483	Murray Canyon Rd & Mission Heights Rd	NB	F	928	3	4	7	✓			✓		✓					S	✓
10485	Camino De La Reina & Mission Center Rd	EB	F	6	48	16	64	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
10500	Camino De La Reina & Michaels	EB	F	6	27	9	36	✓		✓	✓		✓				✓		✓
10505	Camino De La Reina & Camino Del Este	EB	N	6	41	15	56	✓			✓		✓					S	✓
10556	Camino Del Rio S & Mission City Pkwy	EB	F	18	3	3	6	✓		✓			✓					S	✓
10588	Rancho Mission Rd & Friars Rd	SB	F	14	9	5	14	✓		✓	✓		✓						✓
10816	Taylor St & I-8 East (Ramp)	WB	N	88	0	1	1	✓		✓	✓		✓					S	✓
10818	Hotel Circle N & Hotel Circle Pl	WB	N	88	12	9	21	✓		✓	✓		✓				✓	S	✓
10860	Camino De La Reina & Mission Center Rd	WB	N	6	9	48	57	✓		✓	✓		✓						✓

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
10879	Camino De La Reina & Camino Del Este	WB	N	6	15	32	47	✓		✓	✓	✓	✓				✓	S	✓
10968	Rancho Mission Rd & Friars Rd	NB	N	14	3	11	14	✓		✓			✓					S	✓
11225	Fashion Valley Rd & Hotel Circle N	NB	F	120, 88	2	22	24	✓		✓	✓		✓					S	✓
11242	Camino De La Reina & Camino De La Siesta	WB	F	6	7	5	12	✓					✓					S	✓
11248	Camino De La Reina & Camino Del Arroyo	WB	F	6	4	2	6	✓		✓			✓					S	
11250	Murray Canyon Rd & Mission Heights Rd	SB	F	928	5	5	10	✓		✓	✓		✓						✓
11276	Camino De La Reina & Qualcomm Wy	WB	F	6	4	42	46	✓		✓			✓					S	✓
11623	Fashion Valley Rd & Hotel Circle N	SB	N	88	0	3	3	✓		✓	✓		✓						✓

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
11652	Frazee Rd & Friars Rd	SB	N	928	7	14	21	✓		✓	✓		✓					S	✓
11687	Texas St & Camino Del Rio South	SB	N	6	16	3	19	✓		✓	✓		✓					S	✓
11995	Fashion Valley Rd & Friars Rd	SB	F	25, 928, 41	4	19	23	✓		✓			✓					S	✓
12069	Mission Center & Sevan Ct	SB	F	928	4	1	5	✓		✓	✓		✓					S	✓
12400	Fashion Valley Rd & Friars Rd	NB	N	25, 928, 41	12	3	15	✓		✓	✓		✓					S	✓
12778	Frazee Rd & Friars Rd	NB	F	928	19	14	33	✓		✓	✓		✓					S	✓
12813	Texas St & Camino Del Rio S	WB	F	6, 18	72	65	137	✓			✓		✓					S	✓
12998	Hotel Circle S & 1605	EB	N	88	36	43	79	✓		✓	✓		✓					S	✓
12999	Hotel Circle S & Mission Valley Resort	EB	N	88	10	17	27	✓		✓			✓					S	✓

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
13001	Camino De La Reina & Mission Valley West	WB	N	6	17	22	39	✓		✓	✓	✓	✓				✓		✓
13009	Camino Del Rio S & 3505	EB	N	18	12	9	21	✓					✓						✓
13030	Hotel Circle S & 2201	EB	N	88	28	22	50	✓		✓	✓		✓					S	✓
13032	Hotel Circle S & 1333	EB	N	88	27	18	45	✓		✓	✓		✓					S	✓
13033	Hotel Circle S & 625	EB	N	88	7	10	17	✓		✓			✓					S	✓
13034	Hotel Circle S & Bachman Pl	EB	F	88	4	13	17	✓		✓	✓		✓					✓	✓
13036	Camino De La Reina & Mission Valley West	EB	F	6	24	22	46	✓		✓	✓	✓	✓	✓	✓		✓	S	✓
13037	Camino De La Reina & Westfield Drwy	EB	F	6	185	51	236	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
13040	Camino Del Rio N & 2655	EB	F	18	3	9	12	✓		✓			✓						✓

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
13043	Camino Del Rio S & Point Loma Nazarene	EB	F	18	0	2	2	✓		✓	✓		✓						✓
13066	Hotel Circle N & 1904	WB	N	88	13	6	19	✓		✓	✓		✓					S	✓
13067	Hotel Circle N & 1550	WB	F	88	8	8	16	✓		✓	✓		✓					S	✓
13079	Camino Del Rio S & 4141	EB	F	18	1	1	2	✓		✓	✓		✓						✓
13095	Hotel Circle N & 2270	WB	F	88	2	3	5	✓		✓	✓		✓					S	✓
13096	Hotel Circle N & 1650	WB	F	88	8	15	23	✓		✓	✓		✓					S	✓
13098	Hotel Circle N & 950	WB	N	88	3	4	7	✓		✓	✓		✓					S	✓
13102	Camino De La Reina & Park In The Valley Drwy	WB	N	6	40	186	226	✓		✓	✓	✓	✓	✓	✓			✓	✓
13389	Friars Rd & Avenida De Las Tiendas	WB	F	25, 928, 41	3	40	43	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
13390	Friars Rd & Via De La Moda	EB	F	25, 928, 41	15	5	20	✓		✓	✓	✓	✓	✓	✓			✓	✓
13392	Camino De La Reina & Avenida Del Rio	EB	F	6	13	4	17	✓		✓	✓		✓					S	✓
13393	Camino De La Reina & Avenida Del Rio	WB	N	6	0	18	18	✓		✓			✓					S	✓
13397	Ward Rd & Mission San Diego Trolley	NB	F	14	12	0	12	✓		✓	✓	✓	✓	✓			✓	✓	✓
13398	Rancho Mission Rd & San Diego Mission Rd	NB	F	14	7	1	8	✓		✓	✓		✓					S	✓
13404	Rancho Mission Rd & San Diego Mission Rd	SB	F	14	1	4	5	✓		✓			✓					S	✓
13405	Ward Rd & Mission San Diego Trolley	SB	N	14	1	18	19	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
13510	Hotel Circle South & Bachman Pl	WB	N	20, 120	39	28	67	✓					✓					S	

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant	
60741	Mission Center Rd & Sevan Ct	NB	F	928	1	2	3	✓					✓							
75046	Fashion Valley Transit Center	WB	-	Green Line	1538	1499	3037		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75047	Fashion Valley Transit Center	EB	-	Green Line	1370	1646	3016		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75048	Hazard Center Station	EB	-	Green Line	350	576	926		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75049	Hazard Center Station	WB	-	Green Line	566	350	916		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75050	Mission Valley Center Station	EB	-	Green Line	505	615	1120		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75051	Mission Valley Center Station	WB	-	Green Line	594	496	1090		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75052	Rio Vista Station	WB	-	Green Line	408	274	682		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75053	Rio Vista Station	EB	-	Green Line	278	383	661		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75054	Fenton Parkway Station	WB	-	Green Line	445	265	710		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
75055	Fenton Parkway Station	EB	-	Green Line	255	430	685		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75056	Qualcomm Stadium Station	EB	-	Green Line	100	161	261		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75057	Qualcomm Stadium Station	WB	-	Green Line	164	86	250		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75058	Mission San Diego Station	WB	-	Green Line	315	150	465		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
75059	Mission San Diego Station	EB	-	Green Line	165	267	432		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
91130	Mission Valley Rd & Mission Center Rd	NB	N	928	7	27	34	✓		✓	✓		✓					S	✓
91133	Murray Canyon Rd & Metropolitan Dr	SB	F	928	17	1	18	✓		✓			✓					S	✓
91312	Mission Valley Rd & Mission Center Rd	SB	F	928	17	7	24	✓		✓	✓		✓						✓
94037	Fashion Valley Transit Center	NB	-	120	353	402	755	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
94038	Fashion Valley Transit Center	SB	-	41	2	848	850	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant	
94040	Fashion Valley Transit Center	NB/SB	-	928	477	416	893	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
94041	Fashion Valley Transit Center	SB	-	120	537	347	884	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
94042	Fashion Valley Transit Center	SB	-	20	169	347	516	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
94044	Fashion Valley Transit Center	WB	-	88	87	131	218	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
94045	Fashion Valley Transit Center	EB	-	6	543	420	963	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
94046	Fashion Valley Transit Center	NB/SB	-	25, 41	1130	89	1219	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
94048	Fashion Valley Transit Center	NB	-	20	439	231	670	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
99260	Camino Del Rio N & 3456	WB	N	18	3	6	9	✓					✓							✓
99261	Mission City Pkwy & Camino Del Rio N	WB	F	18	3	8	11	✓		✓	✓		✓							✓
99262	Camino Del Rio S & 3160	WB	F	18	7	1	8	✓		✓	✓		✓							✓

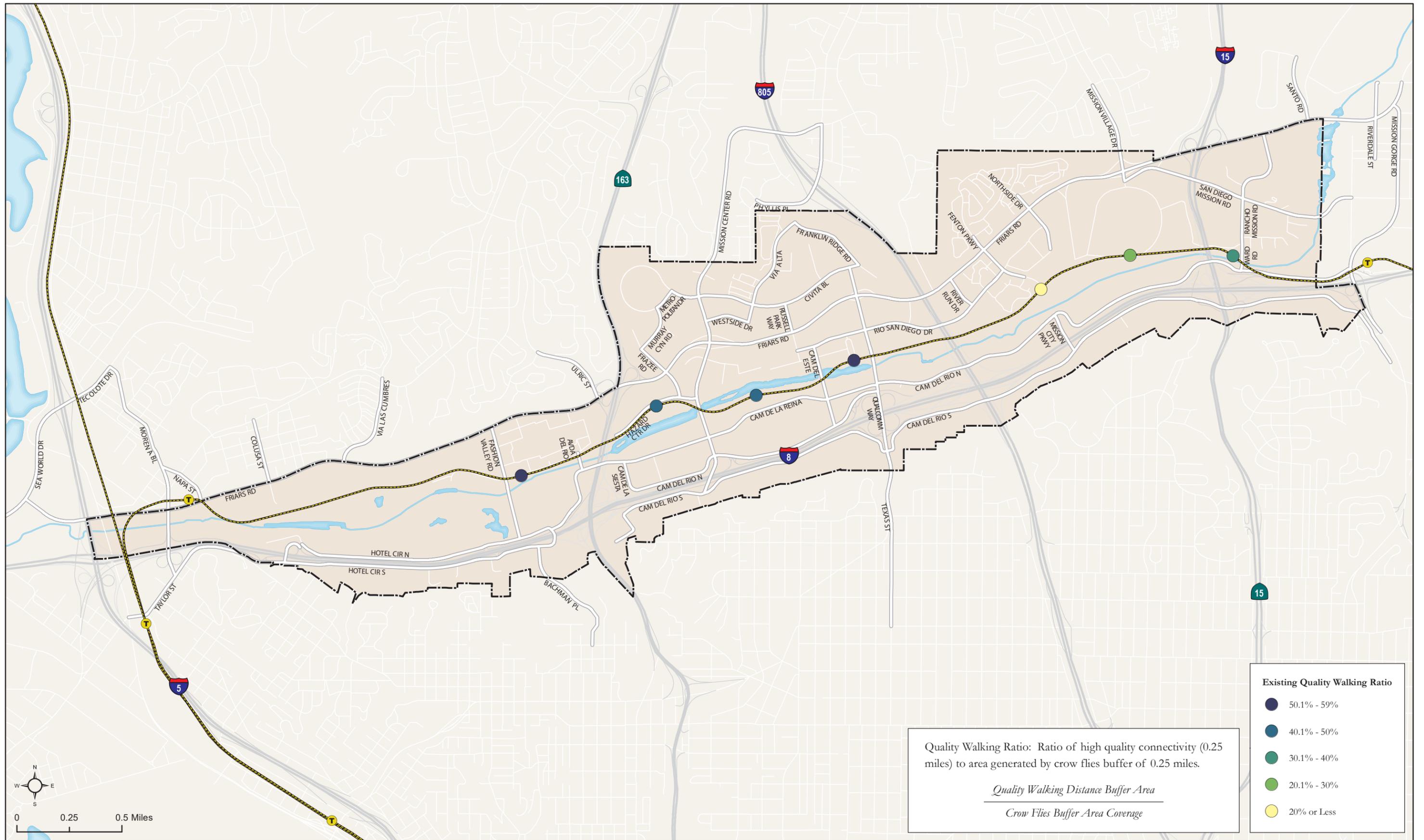
Table 4-18 Transit Amenities and Average Daily Boardings and Alightings by Stop (FY2014)

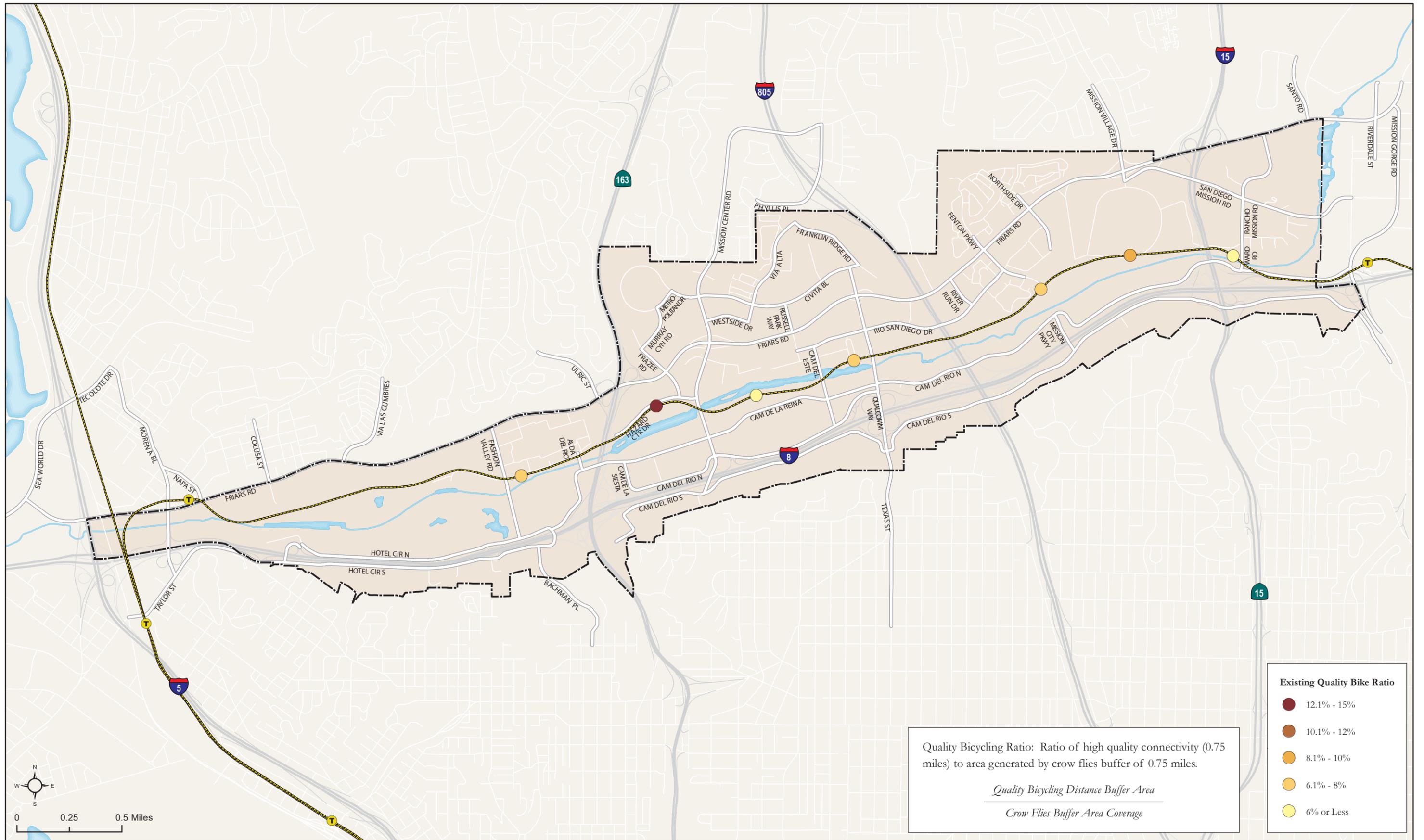
Stop ID	Intersection	Direction of Travel	Far Side / Near Side	Route	Boardings	Alightings	Total	Sign and Pole	Built-in Sign	Expanded Sidewalk	Bench	Shelter	Route Designations	Time Table	Route Map	System Map	Trash Receptacle	Lighting ¹	ADA Compliant
99263	Camino Del Rio S & 2828	WB	F	18	28	36	64	✓					✓						✓
99379	Hotel Circle N & Camino De La Reina	WB	F	88	0	4	4	✓		✓	✓		✓						
99380	Camino De La Reina & Saks 5th Av	WB	F	6	6	39	45	✓		✓	✓		✓						✓
99449	Camino Del Rio North & Ward Rd	WB	F	18	5	0	5	✓					✓						✓
99864	Camino Del Rio N & Qualcomm Wy	WB	N	18	5	8	13	✓					✓						✓
Total					11,787	11,580	23,367												

Source: FY2014 SANDAG Passenger Counting Program, 2015; Chen Ryan Associates, 2016

Notes:

- 1) A red cell indicates missing amenities required by the Metropolitan Transit Development Board (MTDB) Designing for Transit (1993), based on average daily boardings.
- 2) A grey cell indicates amenities that are not required at a particular stop, based on average daily boardings.
- 2) "S" = Street Lighting Only





4.4 Vehicular Mobility

Maintaining efficient vehicular operations is vital to the economy. Local roadways and the regional freeway system provide an interconnected network used to move people and goods throughout the region.

2008 City of San Diego General Plan Mobility Element – Street & Freeway System Goals:

- *A street and freeway system that balances the needs of multiple users of the public right-of-way.*
- *An interconnected street system that provides multiple linkages within and between communities.*
- *Vehicle congestion relief.*
- *Safe and efficient street design that minimizes environmental and neighborhood impacts.*
- *Well maintained streets.*

Figure 4-24 presents the existing roadway cross-sections for study area roadways. A description of each study roadway is provided below.

East-West Roadways

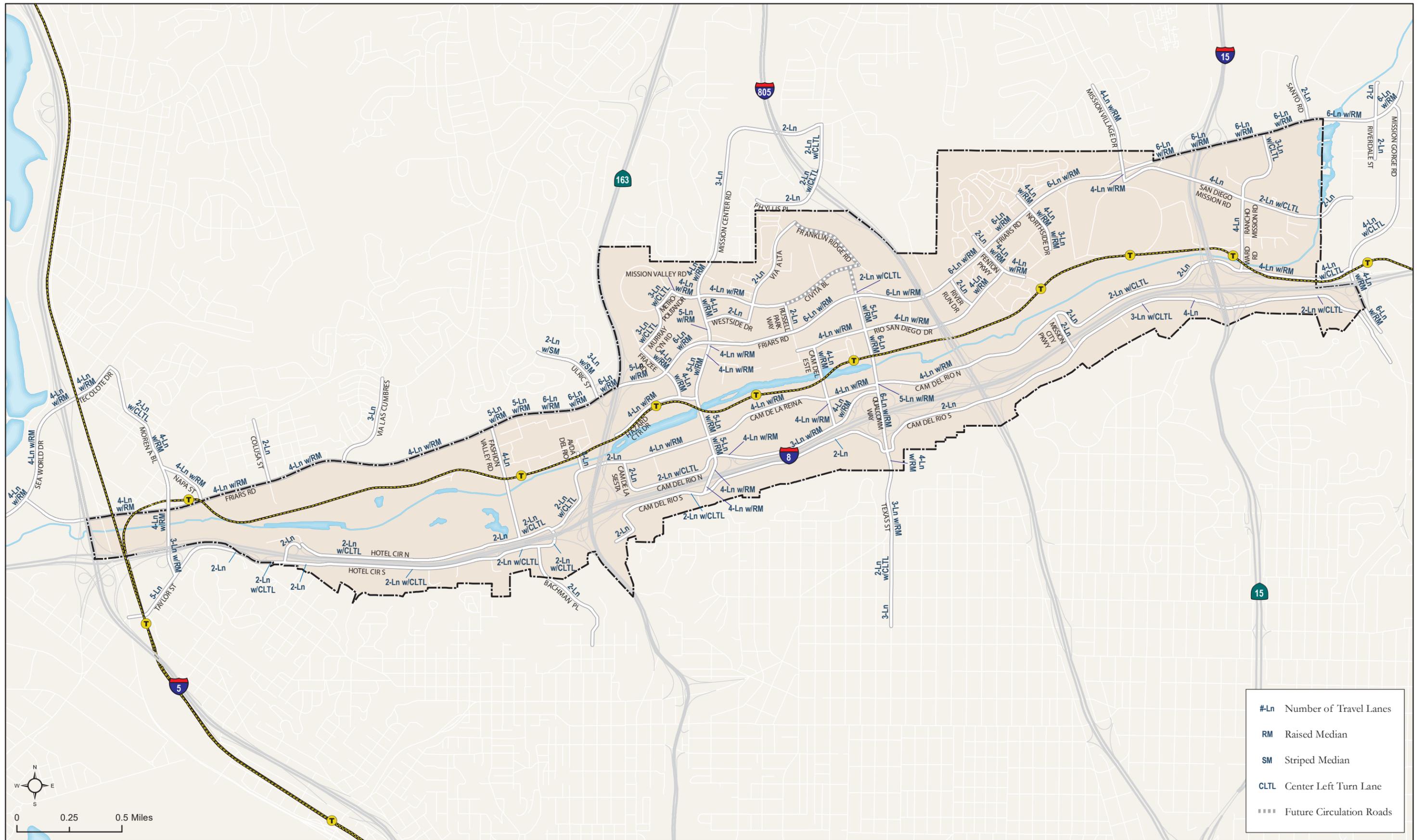
Phyllis Place is a two-lane roadway with a striped median between the I-805 northbound ramps and the I-805 southbound ramps. Sidewalks are present on the north side of the roadway. A Class III bike route is provided. Parking is permitted on both sides of the roadway. Speed limits are not posted.

Sea World Drive is a four-lane roadway. Between Mission Bay Parkway and Friars Road, a raised median is present. Class II bicycle facilities are present on both sides of the roadway along this segment. Sidewalks are not present along this segment. Between Friars Road and the I-5 southbound ramps, Sea World Drive has a striped median. Sidewalks are present along the south side of the roadway. On-street parking is prohibited. Speed limits are not posted.

Tecolote Road is a four-lane roadway with a raised median. Class II bicycle facilities and sidewalks are present on both sides of the roadway. On-street parking is prohibited on both sides of Tecolote Road. Speed limits are not posted.

Mission Valley Road is a four-lane roadway with a raised median and a posted speed limit of 25 mph between Metropolitan Drive and Mission Center Road. Sidewalks and Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. MTS routes 25 and 928 run along the roadway between Metropolitan Drive and Mission Center Road.

Civita Boulevard is a four-lane roadway with a landscaped raised median and no posted speed limit. Sidewalks, as well as Class II bicycle facilities, are present on both sides of the roadway. Parallel parking is permitted on both sides of the roadway.



Westside Drive is a two-lane undivided roadway with a posted speed limit of 25 mph. Sidewalks are present on both sides of the roadway, and no bicycle facilities are provided. Parallel and angled parking is permitted on both sides of the roadway.

Friars Road is a four-lane roadway with a striped median and a posted speed limit of 55 mph between Sea World Drive and Napa Street. East of Napa Street, Friars Road becomes a four-lane roadway with a raised median and a posted speed limit of 45 mph until reaching Colusa Street. East of Colusa Street, Friars Road continues as a four-lane roadway, but its median varies between a center left-turn lane and a striped median until reaching Via Las Cumbres. East of Via Las Cumbres, Friars Road is a four-lane roadway with a center left-turn lane and a posted speed limit of 45 mph until reaching Fashion Valley Road. East of Fashion Valley Road, Friars Road transitions to a five-lane roadway with a raised median and a posted speed limit of 45 mph until reaching Avenida De Las Tiendas. East of Avenida De Las Tiendas, Friars Road transitions into a six-lane roadway with a raised median and no posted speed limit until reaching the SR-163 northbound ramps. East of the SR-163 northbound ramps, Friars Road is a five-lane roadway with a raised median and posted speed limit of 45 mph until reaching Frazee Road. East of Frazee Road, Friars Road is a six-lane roadway with a striped median for approximately 1,500 feet, then its median transitions into a K-Rail median, and finally changes into a striped median approximately 1,600 feet before reaching River Run Drive. East of River Run Drive, Friars Road becomes a six-lane roadway with a raised median until reaching Northside Drive. East of Northside Drive, Friars Road continues as a six-lane roadway, but its median transitions from a raised median to a K-Rail median until reaching the I-15 southbound ramps. East of the I-15 southbound ramps, Friars Road is a six-lane roadway with a striped median and a posted speed limit of 45 mph until reaching Santo Road. East of Santo Road, Friars Road is a six-lane roadway with a raised median and a posted speed limit of 45 mph until reaching its eastern terminus at Mission Gorge Road. Sidewalks are present on both sides of the roadway along the entire extent of Friars Road between Sea World Drive and Mission Gorge Road, with the exception of approximately 577 feet on each side of the road to the east of Sea World Drive, a section near Ulric Street and the SR-163 southbound ramps where sidewalks are only present along the south side of the roadway, expressway segments where sidewalks follow expressway exits, and between Mission Village Drive and the I-15 southbound ramps where sidewalks are not present. Bicycle facilities are present along Friars Road, including a two-way Cycle Track on the south side of the roadway between Sea World Drive and approximately 900 feet west of Fashion Valley Road, as well as Class II bicycle facilities intermittently present on both sides of the roadway. Parking is generally prohibited along the roadway, with some exceptions between Sea World Drive and Ulric Street/SR-163 southbound ramps. MTS bus route 14 runs along Friars Road between Rancho Mission Road and Mission Gorge Road. Additionally, several transit routes run between Fashion Valley Road and SR-163 to access the freeway, such as route 20 and 41. Route 120 runs between Fashion Valley Road and Ulric Street, and Routes 25 and 928 run between Fashion Valley Road and Frazee Road.

Mission Gorge Road is a six-lane roadway with a center left-turn lane between Friars Road and Zion Avenue. On-street parking is prohibited on both sides of the roadway. Sidewalks are present on both sides of the roadway. Class II bicycle facilities are present along the north side of the roadway.

Hazard Center Drive is a four-lane roadway. The median varies between a striped median and a raised median, with no posted speed limit, between its western terminus and Frazee Road. East of Frazee Road, Hazard Center Drive is a four-lane roadway with a raised median and no posted speed limit. Sidewalks are present on both sides of the roadway, but no bicycle facilities are provided. Parking is permitted on both sides of the roadway.

Rio San Diego Drive is a four-lane roadway with a posted speed limit of 40 mph. The roadway has a raised median between Gill Village Way and Qualcomm Way. East of Qualcomm Way, Rio San Diego Drive is a four-lane roadway with a raised median for approximately 477 feet, after which its median transitions to a center left-turn lane, then to a raised median, until reaching its eastern terminus at Fenton Parkway. Sidewalks are present on both sides of the roadway. Class II bicycle facilities are present on both sides of the roadway between Gill Village Way and Qualcomm Way. Parking is prohibited between Gill Village Way and Qualcomm Way, but generally permitted between Qualcomm Way and Fenton Parkway.

San Diego Mission Road is a four-lane undivided roadway with a posted speed limit of 40 mph between Mission Village Drive and Rancho Mission Road. East of Rancho Mission Road, San Diego Mission Road is a two-lane roadway with a center left-turn lane and a posted speed limit of 35 mph, until reaching its eastern terminus at Fairmount Avenue. Sidewalks are present intermittently on both sides of the roadway. Class II bicycle facilities are present on both sides of the roadway east of Rancho Mission Road. Parking is intermittently permitted along San Diego Mission Road. MTS route 14 runs along this roadway between Friars Road and the southern terminus of the road, where the roadway's name changes to Ward Road.

Taylor Street is a five-lane roadway with a striped median between Pacific Highway and Morena Boulevard with a posted speed of 35 mph. Sidewalks are present on both sides of the roadway in this segment, although bicycle facilities are not present. Between Morena Boulevard and Hotel Circle South, Taylor Street reduces to a two-lane roadway with a striped median. Class II bicycle facilities are present on the south side of the road between Morena Boulevard and the I-8 eastbound ramps. There are no sidewalks present east of Morena Boulevard. On-street parking is prohibited along Taylor Street. MTS routes 44, 88 and 105 run along the roadway between the Old Town Transit Center and Morena Boulevard, whereas route 88 continues to run along Taylor Street to the roadway's terminus at Hotel Circle South.

Hotel Circle North is a two-lane roadway with a center left-turn lane and a posted speed limit of 35 mph between Hotel Circle Place and the I-8 westbound ramps. East of the I-8 westbound ramps, Hotel Circle North is a two-lane undivided roadway with a posted speed limit of 35 mph until reaching Fashion Valley Road. East of Fashion Valley Road, Hotel Circle North is a two-lane roadway with a center left-turn lane until reaching its terminus at Camino De La Reina. Sidewalks are present only on the north side of the roadway, with an exception east of Fashion Valley Road, where approximately 800 feet of sidewalk is missing. Class II bicycle facilities are present on both sides of the roadway between Hotel Circle Place and the I-8 westbound ramps. Parking is prohibited along the entire extent of the roadway. Several transit routes run along Hotel Circle North between the I-8 westbound ramps and Fashion Valley Road to access the Fashion Valley Transit Center, such as routes 20 and 120. In addition, route 88 runs along the entirety of the roadway.

Camino De La Reina is a two-lane roadway with a center left-turn lane and a posted speed limit of 25 mph between Hotel Circle North and Avenida Del Rio. East of Avenida Del Rio, Camino De La Reina continues to be a two-lane roadway with a posted speed limit of 30 mph, but transitions to a striped median for approximately 300 feet, before transitioning to a raised median before reaching Camino De La Siesta. East of Camino De La Siesta, Camino De La Reina is a four-lane roadway with a raised median and a posted speed limit of 35 mph until reaching Mission Center Road. East of Mission Center Road, Camino De La Reina is a four-lane undivided roadway for approximately 930 feet, before its median transitions to a raised median prior to reaching Park In The Valley Driveway. East of Park In The Valley Driveway, Camino De La Reina continues as a four-lane roadway with a raised median. Sidewalks are

present along both sides of the roadway, although there are no bicycle facilities. On-street parking is generally permitted east of Camino De La Siesta. MTS bus route 6 runs along Camino De La Reina between Avenida Del Rio and Camino Del Este in both directions, as well as between Camino Del Este and Qualcomm Way in the eastbound direction.

Camino Del Rio North is a two-lane roadway between Camino De La Siesta and Mission Center Road. Between Mission Center Road and the I-8 westbound ramps, Camino Del Rio North becomes a four-lane road. Between the I-8 westbound ramps and Camino Del Este, Camino Del Rio North becomes a three-lane road. Between Camino Del Este and Mission City Parkway, Camino Del Rio South becomes a four-lane roadway, before reducing to two lanes until Ward Road. Between Ward Road and Fairmount Avenue, Camino Del Rio North expands again to four lanes. Camino Del Rio South has a raised median between Camino De La Siesta and Mission City Parkway, and alternates between a striped median and a center left-turn lane between Mission City Parkway and Fairmount Avenue. A posted speed limit of 35 mph is present at the I-8 westbound ramps, with an increase to 45 mph at Qualcomm Way. On-street parking is prohibited, except between Camino De La Siesta and Mission Center Road. Sidewalks are located along the north side of the road between Camino De La Siesta and the I-8 westbound ramps, Camino Del Este and Qualcomm Way, and from approximately 800 feet east of Mission City Parkway to Fairmount Avenue. Sidewalks also exist along both sides of the road between Qualcomm Way and Mission City Parkway. Class II bicycle facilities are intermittent as well, and are present along both sides of the roadway between Qualcomm Way and Mission City Parkway, and from approximately 1,800 feet West of Ward Road to Fairmount Avenue. Class III sharrows are present between Camino Del Rio North and 1,800 feet west of Ward Road. MTS bus route 6 runs along Camino Del Rio North between Camino Del Este and Qualcomm way in the eastbound direction. MTS route 14 runs along the roadway between Ward Road and the Grantville Trolley Station. Additionally, route 18 runs along the roadway between the Grantville Trolley Station and Mission City Parkway in the westbound direction, as well as between Qualcomm Way and Mission City Parkway in the eastbound direction.

Hotel Circle South is a two-lane undivided roadway with a posted speed limit of 35 mph between the I-8 over-cross and approximately 1,270 feet to the east, where Hotel Circle South becomes a two-lane roadway with a center left-turn lane until reaching its eastern terminus at Hotel Circle North. Sidewalks are present only on the south side of the roadway, with the exception of between the I-8 over-cross and approximately 1,270 feet to the east, where sidewalks are missing. Pavement markings indicating a Class III bicycle route are present between the I-8 overcross and the I-8 westbound ramps. East of the I-8 westbound ramps, Class II bicycle facilities are present on both sides of the roadway. Parking is generally prohibited on both sides of the roadway, aside from a short segment west of the I-8 eastbound ramps. Several transit routes run along the roadway between Hotel Circle North and the I-8 eastbound ramps to access the freeway, such as routes 20 and 120. In addition, route 88 runs along the entirety of the roadway.

Camino Del Rio South is a predominantly two-lane roadway, which widens to three lanes between Mission City Parkway and the I-15 southbound off-ramp. Camino Del Rio South widens to four lanes between the I-15 southbound off-ramp and the I-15 southbound on-ramp, and narrows to two lanes between the I-15 southbound on-ramp and Fairmount Avenue. Camino Del Rio South has a center left-turn lane from approximately 1,800 feet west of Mission Center Road to Mission Center Road, and from the I-15 southbound on-ramp to Fairmount Avenue. Camino Del Rio South has a posted speed limit of 25 mph between its western terminus and approximately 1,800 feet west of Mission Center Road. There is a posted speed of 35 mph between Mission Center Road and Mission City Parkway, a posted speed of 45 mph between Mission City Parkway and the I-15 southbound off-ramp, and a posted speed of 40 mph between the I-15 southbound off-ramp and Fairmount Avenue. On-street Parking is allowed

along the south side of the roadway between approximately 1,800 feet west of Mission Center Road and Texas Street, between Mission City Parkway and the I-15 southbound off-ramp, and between the I-15 southbound on-ramp and Fairmount Avenue. Sidewalks are present along the south side of the entire roadway, and are present on both sides of the roadway between the western terminus of Camino Del Rio South and approximately 1,800 feet west of Mission Center Road. Bicycle facilities are not provided, except between Mission Center Road and Texas Street, where Class II bicycle facilities are present on both sides of the roadway.

North-South Roadways

Morena Boulevard is a two-lane roadway with a center left-turn lane and a posted speed limit of 35 mph between Tecolote Road and West Morena Boulevard. Between West Morena Boulevard and the I-8 westbound off-ramps, Morena Boulevard widens to four lanes and has a raised median, with a posted speed limit of 40 mph. Morena Boulevard narrows to three lanes south of the I-8 westbound off-ramps, with two northbound lanes and one southbound lane. On-street parking is only permitted between Tecolote road and West Morena Boulevard. Sidewalks and Class II bicycle facilities are present on both sides of the roadway, although the I-5 overcross lacks bicycle facilities. MTS routes 44 and 105 run along the roadway between Taylor Street and Linda Vista Road, whereas route 105 continues along the roadway to Milton Street, north of Tecolote Road.

Napa Street is a four-lane roadway with a striped median and a posted speed limit of 25 mph. On-street parking is permitted on both sides of the roadway. Sidewalks are present on both sides of the roadway, but there are no bicycle facilities.

Colusa Street is a two-lane roadway with a striped median and a posted speed limit of 25 MPH. On-street parking is permitted on both sides of the roadway. Sidewalks are present on both sides of the roadway, but there are no bicycle facilities.

Via Las Cumbres is a three-lane roadway with two northbound lanes, one southbound lane, and a striped median. A speed limit is not posted in the segment studied, between Linda Vista Road and Friars Road. On-street parking is permitted on both sides of the roadway. Sidewalks are present on both sides of the roadway, although segments are missing along the east side of the roadway. Class II bicycle facilities are present on the east side of the roadway.

Fashion Valley Road is a four-lane roadway with a striped median. A speed limit is not posted. On-street parking is not permitted. Sidewalks are present on both sides of the roadway. There are no bicycle facilities present. Fashion Valley Road is used by many transit routes to access the Fashion Valley Transit Center, including routes 20, 25, 41, 88, 120, and 928.

Bachman Place is a two-lane undivided roadway with a posted speed limit of 40 mph. Sidewalks are present along the west side of the roadway. On-street parking is permitted on the west side of the roadway only. There are no bicycle facilities present.

Avenida Del Rio is a four-lane roadway with a center left-turn lane and no posted speed limit. On-street parking is not permitted. Sidewalks are present along the along both sides of the roadway, although sections are missing along the east side. There are no bicycle facilities present. The roadway is used by MTS bus route 6 to access the Fashion Valley Transit Center.

Ulric Street is three-lane roadway with two northbound lanes and one southbound lane and a striped median between Friars Road and approximately 600 feet south of Fashion Hills Boulevard. North of that

point, Ulric Street narrows to a two-lane roadway. Ulric Street has a posted speed limit of 40 mph. On-street parking is not permitted. Sidewalks are present along the west side of the roadway, and Class II bicycle facilities are present on both sides of the roadway. MTS route 120 runs along this roadway between Friars Road and Linda Vista Road.

Camino De La Siesta is a two-lane undivided roadway with a posted speed limit of 25 mph. On-street parking is generally permitted on both sides of the roadway. Sidewalks are present on both sides of the roadway, although there are no bicycle facilities present.

Metropolitan Drive is a three-lane roadway with two northbound lanes and one southbound lane. A center left-turn lane is present. There is a posted speed limit of 25 mph. On-street parking is permitted on both sides of the roadway. Sidewalks are present on both sides of the roadway, although there are no bicycle facilities present. MTS routes 25 and 928 run along Metropolitan Drive, between Murray Canyon Road and Mission Valley Road.

Murray Canyon Road is a three-lane roadway with two northbound lanes and one southbound lane. A center left-turn lane is present. There is no posted speed limit. On-street parking is permitted on both sides of the roadway. Sidewalks are present on both sides of the roadway, although there are no bicycle facilities present. MTS routes 25 and 928 run along Murray Canyon Road between Frazee Road and Metropolitan Drive.

Frazee Road is a four-lane roadway with a raised median and no posted speed limit. On-street parking is intermittently permitted on both sides of the roadway. Sidewalks are present on both sides of the roadway. There are no bicycle facilities present. MTS routes 25 and 928 runs along Frazee Road between Friars Road and Murray Canyon Road.

Mission Center Road is a two-lane roadway between Murray Ridge Road and approximately 1,200 feet west of Murray Ridge Road. The roadway expands to two northbound and one southbound lanes until approximately 950 feet north of Mission Valley Road. From Mission Valley Road to Westside Drive, Mission Center Road expands to four lanes, and again to five lanes between Westside Drive and the Friars Road westbound ramps. Mission Center Road becomes a four lane roadway once again until Mission Center Court, and expands to five lanes between Mission Center Court and Camino Del Rio North. Posted speed limits are 45 mph between Murray Ridge Road and approximately 950 feet north of Mission Valley Road, with a reduction to 40 mph for the remainder of the roadway. There is no on-street parking permitted. Sidewalks are generally present, except between Murray Ridge Road and approximately 950 feet north of Mission Valley Road. Class II bicycle facilities are present along both sides of the roadway. MTS routes 25 and 928 run along Mission Center Road between Mission Valley Road and Murray Ridge Road.

Auto Circle begins at the southern terminus of Mission Center Road and continues to Camino Del Rio South. Auto Circle is a four-lane roadway with a striped median between Camino Del Rio South and the I-8 eastbound ramps, and a raised median south of the I-8 eastbound ramps. There is no posted speed limit along the roadway. Sidewalks are present along the west side of the roadway. Class II bicycle facilities are present between Camino Del Rio North and the I-8 eastbound ramps. On-street parking is not permitted along the roadway.

Via Alta is a two-lane roadway between Westside Drive and Franklin Ridge Road with a raised median. There is no posted speed limit. On-street parking is prohibited. Sidewalks and Class II bicycle facilities are present on both sides of the roadway.

Murray Ridge Road is a two-lane road with a center left-turn lane between Mission Center Road and the I-805 northbound ramps, and a striped median between the I-805 northbound and I-805 southbound ramps. There is a posted speed limit of 25 mph, which increases to 35 mph approximately 250 feet north of Mission Center Road. On-street parking is allowed north of the I-805 northbound ramps. Sidewalks and Class II bicycle facilities are present along both sides of the roadway.

Russell Park Way is a two-lane roadway with a raised median. There is no posted speed limit. On-street parallel parking is permitted on the west side of the roadway. Sidewalks and Class II bicycle facilities are present on both sides of the roadway.

Camino Del Este is a four-lane roadway that alternates between a raised median, striped median, and center left-turn lane. North of Camino De La Reina, the posted speed limit is 35 mph. South of Camino De La Reina, the posted speed limit is reduced to 25 mph. On-street parking is only permitted south of Camino De La Reina. Sidewalks are present along both sides of the roadway. Class II bicycle lanes are present north of Camino De La Reina. MTS bus route 6 runs along Camino Del Este between Camino De La Reina and Camino Del Rio North in the northbound direction.

Franklin Ridge Road is a future roadway that will provide north-south travel as a modified two-lane road with a center median. The roadway will be classified as a two lane major street. It will begin at the eastern terminus of Civita Boulevard and run northerly to connect with Via Alta. Parking will be prohibited on both sides of Franklin Ridge Road, and it is planned to have Class II bike lanes.

Qualcomm Way is a two-lane roadway between the Friars Road westbound ramps and the Friars Road eastbound ramps. Qualcomm Way widens to five lanes between the Friars Road eastbound ramps and Rio San Diego Drive, before expanding again to six lanes through Camino Del Rio North. South of Camino Del Rio North, Qualcomm Way narrows to five lanes, before narrowing again to four lanes through the Camino Del Rio South, where the roadway changes names to Texas Street. Qualcomm Way is generally an undivided roadway, with a center left-turn lane between the Friars Road eastbound ramps and Friars Road westbound ramps, a raised median between the Friars Road westbound ramps and Rio San Diego Drive, and a striped median between Rio San Diego Drive and Camino Del Rio North. Qualcomm Way has no posted speed limits, and has intermittent on-street parking, generally between the Friars Road eastbound ramps and Rio San Diego Drive. Sidewalks are generally present, except for the east side of the roadway between Camino De La Reina and Camino Del Rio South. Class II bicycle lanes are generally present, except south of Camino De La Reina, where an unsigned paved shoulder is intermittently present. MTS bus route 6 runs along Qualcomm Way between Camino De La Reina and the roadway's southern terminus at Camino Del Rio South, where the roadway changes its name to Texas Street. In addition, MTS route 18 runs along the roadway between Camino Del Rio North and Camino Del Rio South.

Texas Street is a four-lane roadway between Camino Del Rio South and approximately 1,400 feet north of Madison Avenue, where the roadway narrows to three lanes. Between that point and Madison Avenue, there are two southbound and one northbound lanes. Between Madison Avenue and Meade Avenue, Texas Street Narrows to a two-lane roadway, before widening again to a three-three-lane roadway, with two southbound lanes and one northbound lane, between Meade Avenue and El Cajon Boulevard. Texas Street has a raised median between Camino Del Rio South and Madison Avenue, a center left-turn lane between Madison Avenue and Meade Avenue, and is an undivided roadway south of Meade Avenue. There are no posted speed limits along the roadway. There is no on-street parking permitted north of Madison Avenue. Sidewalks are generally present throughout the roadway, but are

missing from the east side of the roadway between Camino Del Rio South and approximately 1,400 feet north of Madison Avenue. Class II bicycle facilities lanes are available between Madison Avenue. MTS bus route 6 runs along Texas Street from the roadway's northern terminus at Camino Del Rio South to El Cajon Boulevard.

River Run Drive is a two-lane undivided roadway with no posted speed limit. On-street parking is permitted. Sidewalks are present throughout the roadway, however, there are no bicycle facilities present.

Fenton Parkway is a four-lane roadway. A raised median is present through all segments of Fenton Parkway. Speed limits are not posted along the roadway. On-street parking is not permitted, and sidewalks are present along the entire roadway. Class II bicycle facilities are generally present, except between the Portofino Apartments driveway and Friars Road.

Mission City Parkway is a two-lane undivided roadway with a posted speed limit of 35 mph. On-street parking is not permitted. Sidewalks are present along the roadway, although they switch sides halfway through the roadway. There are no bicycle facilities. MTS Route 18 runs along the entirety of the roadway.

Northside Drive is a four-lane roadway between the Portofino Apartments driveway and the Fenton Marketplace Driveway. South of the Fenton Marketplace Driveway, Northside Drive becomes a three lane roadway, with two northbound lanes and one southbound lane. A raised median is present through all segments of Northside Drive. Speed limits are not posted along the roadway. On-street parking is permitted south of the Fenton Marketplace Driveway, as well as between Friars Road and the Fenton Marketplace Driveway, where a small segment of 15-minute parking exists. Sidewalks are present along the entire roadway. There are no Class II bicycle facilities.

Mission Village Drive is a four-lane roadway with a raised median between Ronda Avenue and the Friars Road westbound ramps. South of Friars Road, Mission Village Drive is an undivided roadway. There is a posted speed limit of 45 mph between Ronda Avenue and Friars Road. On-street parking is not permitted. Sidewalks are present along both sides of the roadway, and Class II bicycle facilities are present north of Friars Road.

Rancho Mission Road is a three-lane road with one southbound lane, two northbound lanes, and a center left-turn lane between Friars Road and San Diego Mission Road. There is a posted speed limit of 35 mph between Friars Road and San Diego Mission Road. On-street parking is permitted on both sides of the roadway. Sidewalks are present between Friars Road and San Diego Mission Road. Class II bicycle lanes are generally present, although there are no bicycle facilities between San Diego Mission Road and Camino Del Rio North.

Ward Road is a four-lane undivided roadway with no posted speed limit. On-street parking is permitted along both sides of the roadway. Sidewalks are present along both sides of the roadway. There are no bicycle facilities present. MTS bus route 14 runs along Ward Road between Camino Del Rio North and the northern terminus of the roadway, where the roadway name changes to Rancho Mission Road.

Santo Road is a two-lane roadway with a raised median and no posted speed limit. On-street parking is permitted along both sides of the roadway. Sidewalks are present along both sides of the roadway. There are no bicycle facilities present.

Riverdale Street is a two-lane undivided roadway with no posted speed limit. On-street parking is permitted along both sides of the roadway. Sidewalks are present along both sides of the roadway. There are no bicycle facilities present.

Mission Gorge Road is a four-lane roadway with a center left-turn lane and a posted speed limit of 30 mph. On-street parking is generally permitted along both sides of the roadway. Sidewalks are present along both sides of the roadway. There are no bicycle facilities present. MTS bus route 13 runs along Mission Gorge Road between Zion Avenue and Mission Gorge Place in both directions, as well as between Mission Gorge Place and the roadway's southern terminus at Fairmount Avenue, in the northbound direction.

Fairmount Avenue is a four-lane roadway with a raised median between the Camino Del Rio North/I-8 westbound off-ramp and the I-8 eastbound off-ramp. Between the I-8 eastbound off-ramp and Camino Del Rio South, Fairmount Avenue widens to a five-lane roadway with three southbound lanes and two northbound lanes and a raised median. Speed limits are not posted. On-street parking is not permitted. Sidewalks are present along the east side of the roadway only. Bicycle facilities are generally present, including Class II bike lanes between the I-8 westbound off-ramp and the I-8 eastbound off-ramp, and a Class I bike path south of the I-8 eastbound off-ramp along the east side of the roadway between the I-8 eastbound off-ramp and Camino Del Rio South. MTS bus route 13 runs along the roadway in both directions from the southern community boundary to Camino Del Rio North, as well as in the northbound direction between Camino Del Rio North and Mission Gorge Road. Additionally, MTS route 18 accesses Fairmount Avenue at Camino Del Rio South, running south to Montezuma Road, and north to the Grantville Trolley Station.

Existing roadway characteristics are summarized in **Table 4-19**, including the segment functional classification, pavement width, posted speed limit, parking availability, and sidewalk, bicycle facility, and transit stop presence.

Existing intersection configurations are displayed in **Figure 4-25**.

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
1	Phyllis Place	Abbotshill Road	I-805 SB Ramps	2-Ln Collector w/ Commercial Fronting	40'	Not Posted	Parallel (Both sides)	North Side Only	Class III bike route	No	Serra Mesa
2	Sea World Drive	Mission Bay Parkway	Friars Road	4-Ln Major Arterial	88'	Not Posted	None	No	Class II	No	Mission Bay Park
3	Sea World Drive	Friars Road	I-5 SB Ramps	4-Ln Major Arterial	91'	Not Posted	None	South side Only	Class II	No	Mission Bay Park
4	Tecolote Road	I-5 SB Ramps	I-5 NB Ramps	4-Ln Major Arterial	76'	Not Posted	None	Yes	Class II	No	Linda Vista
5	Tecolote Road	I-5 NB Ramps	Morena Boulevard	4-Ln Major Arterial	78'	Not Posted	None	Yes	Class II	No	Linda Vista
6	Mission Valley Road	Metropolitan Drive	Mission Center Road	4-Ln Major Arterial	73'	25	None	Yes	Class II	Yes (Rt. 928)	Mission Valley
7	Civita Boulevard	Mission Center Road	Qualcomm Way	4-Ln Major Arterial	81'	Not Posted	Parallel (Both sides)	Yes	Class II	No	Mission Valley
8	Westside Drive	Mission Center Road	Via Alta	2-Ln Collector Multi-Family	36'	25	Parallel and Diagonal sections (Both sides)	Yes	No	No	Mission Valley
9	Friars Road	Sea World Drive	Napa Street	4-Ln Major Arterial	82'	55	None	Yes	Class II (Cycle track)	Yes (Green Line)	Mission Bay Park, Linda Vista
10	Friars Road	Napa Street	Colusa Street	4-Ln Major Arterial	90'	45	Parallel (north side)	Yes	Class II (Cycle track)	No	Mission Valley
11	Friars Road	Colusa Street	Via Las Cumbres	4-Ln Major Arterial	90'	45	Parallel (north side)	Yes	Class II (Cycle track)	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
12	Friars Road	Via Las Cumbres	Fashion Valley Road	4-Ln Major Arterial	90'	Not Posted	Parallel (North side)	Yes	Class II (Cycle track)	No	Mission Valley
13	Friars Road	Fashion Valley Road	Via De La Moda	5-Ln Major Arterial (3 EB, 2 WB)	88'	45	None	Yes	Class II	No	Mission Valley
14	Friars Road	Via De La Moda	Fashion Valley Driveway	5-Ln Major Arterial (3 EB, 2 WB)	100'	Not Posted	Parallel (North side) (Sections Prohibited)	Yes	Class II	No	Mission Valley
15	Friars Road	Fashion Valley Driveway	Avenida De Las Tiendas	6-Ln Major Arterial	100'	Not Posted	None	Yes	Class II	Yes (Rt. 25, 41, 928)	Mission Valley
16	Friars Road	Avenida De Las Tiendas	Ulric Street/ SR-163 SB Ramps	6-Ln Major Arterial	105'	Not Posted	None	Yes	Class II (Sections missing on onramps)	No	Mission Valley
17	Friars Road	Ulric Street/ SR-163 SB Ramps	SR-163 NB Ramps	6-Ln Major Arterial	101'	Not Posted	None	South side Only	Class II, South side Only	No	Mission Valley
18	Friars Road	SR-163 NB Ramps	Frazees Road	5-Ln Major Arterial (3 EB, 2 WB)	116'	Not Posted	None	Yes	Class II	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
19	Friars Road	Frazee Road	Mission Center Road	6-Ln Prime Arterial	123'	50	None	Yes (Sections missing on south side, Sidewalks follow 6-Ln Expressway exits)	Class II	No	Mission Valley
20	Friars Road	Mission Center Road	Qualcomm Way	6-Ln Expressway	105'	50	None	Yes (Sections missing on north side, sidewalks follow 6-Ln Expressway exits)	Class II	No	Mission Valley
21	Friars Road	Qualcomm Way	River Run Drive	6-Ln Expressway	92'	50	None	South side Only (Sidewalks follow 6-Ln Expressway exits)	Class II	No	Mission Valley
22	Friars Road	River Run Drive	Fenton Parkway	6-Ln Major Arterial	102'	Not Posted	None	Yes	Class II	No	Mission Valley
23	Friars Road	Fenton Parkway	Northside Drive	6-Ln Major Arterial	105'	Not Posted	None	Yes	Class II	No	Mission Valley
24	Friars Road	Northside Drive	Mission Village Drive	6-Ln Expressway	93'	50	None	Yes (Sidewalks follow 6-Ln Expressway exits)	Class II	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
25	Friars Road	Mission Village Drive	I-15 SB Ramps	6-Ln Expressway	88'	Not Posted	None	No	Class II	No	Mission Valley
26	Friars Road	I-15 SB Ramps	I-15 NB Ramps	6-Ln Prime Arterial	95'	Not Posted	None	No	Class II	No	Mission Valley
27	Friars Road	I-15 NB Ramps	Rancho Mission Road	6-Ln Prime Arterial	103'	Not Posted	None	Yes	Class II	No	Mission Valley
28	Friars Road	Rancho Mission Road	Santo Road	6-Ln Major Arterial	105'	45	None	Yes	Class II	No	Mission Valley
29	Friars Road	Santo Road	Riverdale Street	6-Ln Major Arterial	110'	Not Posted	None	Yes	Class II	No	Mission Valley
30	Friars Road	Riverdale Street	Mission Gorge Road	6-Ln Major Arterial	105'	Not Posted	None	Yes	Class II, North side only	Yes (Rt. 14)	Mission Valley
31	Mission Gorge Road	Friars Road	Zion Avenue	6-Ln Prime Arterial	116'	Not Posted	None	Yes	Class II, North side only	Yes (Rt. 14)	Mission Valley
32	Hazard Center Drive	Western Terminus	Mission Center Road	4-Ln Collector w/ RM or SM	76'	Not Posted	Parallel (Both sides)	Yes	No	Yes (Green line)	Mission Valley
33	Rio San Diego Drive	Gill Village Way	Qualcomm Way	4-Ln Collector w/ RM	70'	Not Posted	None	Yes	Class II	No	Mission Valley
34	Rio San Diego Drive	Qualcomm Way	River Run Drive	4-Ln Major Arterial	75-78'	40	Parallel (Both sides)	Yes	No	No	Mission Valley
35	Rio San Diego Drive	River Run Drive	Fenton Parkway	4-Ln Collector w/ RM	78'	Not Posted	Parallel (Both sides)	Yes	No	No	Mission Valley
36	San Diego Mission Road	Friars Road EB Ramps	Rancho Mission Road	4-Ln Collector w/o CLTL	40-55'	40	Parallel (Both) (Sections prohibited)	Yes (Sections missing)	No	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
37	San Diego Mission Road	Rancho Mission Road	950 Feet West of Fairmount Avenue	2-Ln Collector w/ CLTL	58'	35	Parallel (Both) (Sections prohibited)	South side Only (Sections Missing)	Class II	No	Mission Valley
38	San Diego Mission Road	950 Feet West of Fairmount Avenue	Fairmount Avenue	2-Ln Collector No Fronting Property	58'	35	None	North side only	Class II	No	Mission Valley
39	Taylor Street	Pacific Highway	Morena Boulevard	5-Ln Major Arterial (3 EB, 2 WB)	80'	35	None	Yes	No	No	Old Town
40	Taylor Street	Morena Boulevard	I-8 EB Ramps	2-Ln Collector No Fronting Property	48'	Not Posted	None	No	Class II	No	Old Town
41	Taylor Street	I-8 EB Ramps	Hotel Circle South	2-Ln Collector w/ CLTL	52'	Not Posted	None	No	Class II, South side Only	No	Old Town
42	Hotel Circle North	Taylor Street	Hotel Circle Place	2-Ln Collector No Fronting Property	37'	Not Posted	None	North side Only	Class II	No	Mission Valley
43	Hotel Circle North	Hotel Circle Place	I-8 WB Ramps	2-Ln Collector w/ CLTL	35'	35	None	North side Only	Class II	Yes (Rt. 88)	Mission Valley
44	Hotel Circle North	I-8 WB Ramps	Fashion Valley Road	3-Ln Collector (2 EB, 1 WB)	45'	35	None	North side Only	No	No	Mission Valley
45	Hotel Circle North	Fashion Valley Road	Camino De La Reina	2-Ln Collector w/ CLTL	40'	35	None	No	No	Yes (Rt. 88)	Mission Valley
46	Camino De La Reina	Hotel Circle North	Avenida Del Rio	2-Ln Collector w/ CLTL	40'	25	None	Yes	No	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
47	Camino De La Reina	Avenida Del Rio	Camino De La Siesta	2-Ln Collector No Fronting Property	38-75'	30	None	Yes	No	Yes (Rt. 6)	Mission Valley
48	Camino De La Reina	Camino De La Siesta	Mission Center Road	4-Ln Major Arterial	75'	30	Parallel (Both sides)	Yes	No	Yes (Rt. 6)	Mission Valley
49	Camino De La Reina	Mission Center Road	Camino Del Este	4-Ln Major Arterial	72'	30	Parallel (north side)	Yes	No	Yes (Rt. 6)	Mission Valley
50	Camino De La Reina	Camino Del Este	Qualcomm Way	4-Ln Major Arterial	83'	30	Parallel (Both sides)	Yes	No	Yes (Rt. 6)	Mission Valley
51	Camino Del Rio North	Camino De La Siesta	Mission Center Road	2-Ln Collector w/ CLTL	37-55'	Not Posted	Parallel (Both sides)	North side Only	No	No	Mission Valley
52	Camino Del Rio North	Mission Center Road	I-8 WB Ramps	4-Ln Major Arterial	72'	Not Posted	None	North side Only	No	No	Mission Valley
53	Camino Del Rio North	I-8 WB Ramps	Camino Del Este	3-Ln Collector w/ RM (1 EB, 2 WB)	49'	35	None	No	No	No	Mission Valley
54	Camino Del Rio North	Camino Del Este	Qualcomm Way	4-Ln Major Arterial	60-150'	Not Posted	None	North side Only	No	No	Mission Valley
55	Camino Del Rio North	Qualcomm Way	Mission City Parkway	4-Ln Major Arterial	77'	45	None	Yes	Class II	Yes (Rt. 18)	Mission Valley
56	Camino Del Rio North	Mission City Parkway	800 Feet East of Mission City Parkway	2-Ln Collector No Fronting Property	39'	Not Posted	None	No	Class III sharrows	No	Mission Valley
57	Camino Del Rio North	800 Feet East of Mission City Parkway	1800 Feet West of Ward Road	2-Ln Collector w/ CLTL	36'	Not Posted	None	North side Only	Class III sharrows	Yes (Rt. 18)	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
58	Camino Del Rio North	1800 Feet West of Ward Road	Ward Road	2-Ln Collector No Fronting Property	50'	Not Posted	None	North side Only (Sections missing)	Class II	Yes (Rt. 18)	Mission Valley
59	Camino Del Rio North	Ward Road	1000 Feet West of Fairmount Avenue	4-Ln Major Arterial	63'	Not Posted	None	North side Only	Class II	No	Mission Valley
60	Camino Del Rio North	1000 Feet West of Fairmount Avenue	Fairmount Avenue	4-Ln Collector w/ CLTL	83'	Not Posted	None	North side Only	Class II	Yes (Rt. 14, 18)	Mission Valley
61	Hotel Circle South	Hotel Circle North	1200 Feet East of Hotel Circle North	2-Ln Collector No Fronting Property	40'	35	None	No	Class III sharrows	Yes (Rt. 88)	Mission Valley
62	Hotel Circle South	1200 Feet East of Hotel Circle North	I-8 EB Ramps	2-Ln Collector w/ CLTL	40'	35	Parallel (South side) (Most sections prohibited)	South Side Only	Class III sharrows	Yes (Rt. 88)	Mission Valley
63	Hotel Circle South	I-8 EB Ramps	Bachman Place	2-Ln Collector w/ CLTL	40'	35	None	South Side Only	Class II	Yes (Rt. 88)	Mission Valley
64	Hotel Circle South	Bachman Place	Hotel Circle North	2-Ln Collector w/ CLTL	40'	Not Posted	None	South Side Only	Class II	Yes (Rt. 88, 120)	Mission Valley
65	Camino Del Rio South	Western Terminus	1800 Feet west of Mission Center Road	2-Ln Collector w/ Commercial Fronting	40'	25	Parallel (Both sides)	Yes	No	No	Mission Valley
66	Camino Del Rio South	1800 Feet west of Mission Center Road	Mission Center Road	2-Ln Collector w/ CLTL	65'	35	Parallel (South side)	South Side Only	No	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
67	Camino Del Rio South	Mission Center Road	Texas Street	2-Ln Collector w/ Commercial Fronting	45'	35	Parallel (South side)	South Side Only	Class II	No	Mission Valley
68	Camino Del Rio South	Texas Street	Mission City Parkway	2-Ln Collector w/ Commercial Fronting	50-55'	35	Parallel (Both sides) (Sections prohibited)	Yes (Switches Sides)	No	Yes (Rt. 18)	Mission Valley
69	Camino Del Rio South	Mission City Parkway	I-15 SB Off-Ramp	3-Ln Collector w/ CLTL (2 EB, 1 WB)	68'	45	Parallel (South side) (Sections prohibited)	South Side Only	No	Yes (Rt. 18)	Mission Valley
70	Camino Del Rio South	I-15 SB Off-Ramp	I-15 SB On-Ramp	4-Ln Collector w/o CLTL	74'	Not Posted	None	South Side Only	No	No	Mission Valley
71	Camino Del Rio South	I-15 SB On-Ramp	Fairmount Avenue	2-Ln Collector w/ CLTL	62-70'	40	Parallel (Both sides) (Sections prohibited)	South Side Only	No	Yes (Rt. 18)	Mission Valley
72	Morena Boulevard	Tecolote Road	West Morena Boulevard	2-Ln Collector w/ CLTL	60'	35	Parallel (Both sides)	Yes	Class II	Yes (Rt. 105)	Linda Vista
73	Morena Boulevard	West Morena Boulevard	Linda Vista Road	4-Ln Major Arterial	74'	40	None	Yes	Class II	Yes (Rt. 105)	Linda Vista
74	Morena Boulevard	Linda Vista Road	I-8 WB Off-Ramp	4-Ln Major Arterial	50'	Not Posted	None	Yes	Class II (Section missing on overpass)	No	Linda Vista

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
75	Morena Boulevard	I-8 EB Off-Ramp	Taylor Street	3-Ln Collector w/ RM (2 NB, 1 SB)	61'	Not Posted	None	Yes	Class II	No	Old Town
76	Napa Street	Morena Boulevard	Friars Road	4-Ln Major Arterial	75-80'	25	Parallel (Both sides)	Yes	No	No	Linda Vista
77	Colusa Street	Linda Vista Road	Friars Road	2-Ln Collector Multi-Family	40'	25	Parallel (Both sides)	Yes	No	No	Linda Vista
78	Via Las Cumbres	Linda Vista Road	Friars Road	3-Ln Collector (2 NB, 1 SB)	56'	Not Posted	Parallel (Both sides)	Yes (Sections missing on east side)	Class II, East side Only	No	Linda Vista
79	Fashion Valley Road	Friars Road	Hotel Circle North	4-Ln Collector w/o CLTL	50'	Not Posted	None	Yes	No	Yes (Rt. 25, 41, 928, 120, Green Line)	Mission Valley
80	Bachman Place	Hotel Circle South	Lewis Street	2-Ln Collector No Fronting Property	38'	40	Parallel (West side)	West side Only	No	No	Mission Valley
81	Avenida Del Rio	Fashion Valley Parking Lot	Camino De La Reina	4-Ln Collector w/o CLTL	48'	Not Posted	None	Yes (Sections missing on east side)	No	No	Mission Valley
82	Ulric Street	Fashion Hills Boulevard	600 Feet South of Fashion Hills Boulevard	2-Ln Collector w/ Striped Median	66'	40	None	Yes (Sections missing on east side)	Class II	Yes (Rt. 25, 120)	Linda Vista

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
83	Ulric Street	600 Feet South of Fashion Hills Boulevard	Friars Road	3-Ln Collector w/ SM (1 NB 2 SB)	66'	40	None	West side Only	Class II	Yes (Rt. 25, 120)	Linda Vista
84	Camino De La Siesta	Camino De La Reina	Camino Del Rio North	2-Ln Collector w/ Commercial Fronting	40'	25	Parallel (Both sides) (Intermittent on west side)	Yes	No	No	Mission Valley
85	Metropolitan Drive	Mission Valley Road	Murray Canyon Road	3-Ln Collector w/ CLTL (2 NB, 1 SB)	46'	25	Parallel (Both sides)	Yes	No	Yes (Rt. 928)	Mission Valley
86	Murray Canyon Road	Metropolitan Drive	Frazee Road	3-Ln Collector w/ CLTL (2 EB, 1 WB)	55-60'	Not Posted	Parallel (Both sides)	Yes	No	Yes (Rt. 928)	Mission Valley
87	Frazee Road	Murray Canyon Road	Friars Road	4-Ln Major Arterial	74'	Not Posted	Parallel (Both sides) (Parking not allowed along large sections)	Yes	No	Yes (Rt. 928)	Mission Valley
88	Frazee Road	Friars Road	Hazard Center Drive	4-Ln Major Arterial	74'	Not Posted	Parallel (Both sides) (South of shopping center driveway only)	Yes	No	No	Mission Valley
89	Mission Center Road	Murray Ridge Road	1200 Feet West of Murray Ridge Road	2-Ln Collector w/o CLTL	36'	45	None	No	Class II	Yes (Rt. 928)	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
90	Mission Center Road	1200 Feet West of Murray Ridge Road	950 Feet North of Mission Valley Road	3-Ln Collector (2 NB, 1 SB)	46'	45	None	No	Class II	Yes (Rt. 928)	Mission Valley
91	Mission Center Road	950 Feet North of Mission Valley Road	Mission Valley Road	4-Ln Major Arterial	74-95'	40	None	Yes (sections missing on east side)	Class II (Buffered on W Side)	No	Mission Valley
92	Mission Center Road	Mission Valley Road	Westside Drive	4-Ln Major Arterial	88-90'	Not Posted	None	Yes	Class II	No	Mission Valley
93	Mission Center Road	Westside Drive	Friars Road WB Ramps	5-Ln Major Arterial (3 NB, 2 SB)	114'	Not Posted	None	Yes	Class II	No	Mission Valley
94	Mission Center Road	Friars Road WB Ramps	Friars Road EB Ramps	4-Ln Major Arterial	78'	Not Posted	None	Yes	Class II	No	Mission Valley
95	Mission Center Road	Friars Road EB Ramps	Mission Center Court	4-Ln Major Arterial	80'	Not Posted	None	Yes	Class II	No	Mission Valley
96	Mission Center Road	Mission Center Court	Hazard Center Drive	5-Ln Major Arterial (2 NB, 3 SB)	88'	40	None	Yes	Class II	No	Mission Valley
97	Mission Center Road	Hazard Center Drive	Camino De La Reina	5-Ln Major Arterial (2 NB, 3 SB)	100-105'	Not Posted	None	Yes	Class II	No	Mission Valley
98	Mission Center Road	Camino De La Reina	Camino Del Rio North	5-Ln Major Arterial (3 NB, 2 SB)	95-105'	Not Posted	None	Yes	Class II	No	Mission Valley
99	Auto Circle	Camino Del Rio North	I-8 EB Ramps	4-Ln Major Arterial	68'	Not Posted	None	West side only	Class II	No	Mission Valley
100	Auto Circle	I-8 EB Ramps	Camino Del Rio South	4-Ln Collector w/ RM	68'	Not Posted	None	West side only	No	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
101	Via Alta	Westside Drive	Franklin Ridge Road	2-Ln Collector w/ RM	50-55'	Not Posted	None	Yes	Class II	No	Mission Valley
102	Murray Ridge Road	Mission Center Road	I-805 NB Ramps	2 Ln Collector w/ CLTL	64'	25 (Increases to 35 approx. 250 ft N of Mission Center Rd)	Parallel (Both sides)	Yes	Class II	No	Serra Mesa
103	Murray Ridge Road	I-805 NB Ramps	I-805 SB Ramps	2-Ln Collector w/ CLTL	64'	Not Posted	None	Yes	Class II	No	Serra Mesa
104	Russell Park Way	Friars Road	Civita Boulevard	2-Ln Collector w/ RM	66'	Not Posted	Diagonal (West side)	Yes	Class II	No	Mission Valley
105	Camino Del Este	Rio San Diego Drive	Camino De La Reina	4-Ln Collector w/ RM or CLTL	60'	35	None	Yes	Class II	No	Mission Valley
106	Camino Del Este	Camino De La Reina	Camino Del Rio North	4-Ln Collector w/ RM or CLTL	68'	25	Parallel (Both sides)	Yes	No	No	Mission Valley
107	Franklin Ridge Road	Civita Boulevard	Via Alta	Future Roadway							Mission Valley
108	Qualcomm Way	Civita Boulevard	Friars Road WB Ramps	Future Roadway							Mission Valley
109	Qualcomm Way	Friars Road WB Ramps	Friars Road EB Ramps	2-Ln Collector w/ CLTL	78'	Not Posted	None	Yes	Class II	No	Mission Valley
110	Qualcomm Way	Friars Road EB Ramps	Rio San Diego Drive	5-Ln Major Arterial (2 NB, 3 SB)	102'	Not Posted	None	Yes	Class II	No	Mission Valley
111	Qualcomm Way	Rio San Diego Drive	Camino Del Rio North	6-Ln Major Arterial	102'	Not Posted	None	Yes	Class II	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
112	Qualcomm Way	Camino Del Rio North	I-8 WB Ramps	5-Ln Major Arterial (3 NB, 2 SB)	90'	Not Posted	None	No	No	No	Mission Valley
113	Qualcomm Way	I-8 WB Ramps	I-8 EB Ramps	6-Ln Major Arterial	85'	Not Posted	None	West side Only	Class II	No	Mission Valley
114	Qualcomm Way	I-8 EB Ramps	Camino Del Rio South	4-Ln Major Arterial	78'	Not Posted	None	Yes (Sections missing on east side)	No	Yes (Rt. 6, 18)	Mission Valley
115	Texas Street	Camino Del Rio South	1400 Feet North of Madison Ave	4-Ln Major Arterial	64'	Not Posted	None	West side Only	Class II	No	Greater North Park
116	Texas Street	1400 Feet North of Madison Ave	Madison Avenue	3-Ln Collector w/ Raised Barrier (1 NB, 2 SB)	52'	Not Posted	None	Yes	Class II	No	Greater North Park
117	Texas Street	Madison Avenue	Meade Avenue	2-Ln Collector w/ CLTL	52'	Not Posted	Parallel (Both sides)	Yes	No	Yes (Rt. 6)	Greater North Park
118	Texas Street	Meade Avenue	El Cajon Boulevard	3-Ln Collector	52'	Not Posted	Parallel (Both sides)	Yes	No	Yes (Rt. 6)	Greater North Park
119	River Run Drive	Friars Road	Rio San Diego Drive	2-Ln Collector Multi-Family	40'	Not Posted	Parallel (Both sides)	Yes	No	No	Mission Valley
120	Fenton Parkway	Portofino Driveway	Friars Road	2-Ln Collector Multi-Family	83'	Not Posted	None	Yes	No	No	Mission Valley
121	Fenton Parkway	Friars Road	Rio San Diego Drive	4-Lane Major Arterial	78'	Not Posted	None	Yes	Class II	No	Mission Valley
122	Fenton Parkway	Rio San Diego Drive	Del Rio Apartments Driveway	4-Lane Major Arterial	75'	Not Posted	None	Yes	Class II	No	Mission Valley

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
123	Mission City Parkway	Camino Del Rio North	Camino Del Rio South	2-Ln Collector w/ No Fronting Property	46'	35	None	Yes (Switches Sides)	No	Yes (Rt. 18)	Mission Valley
124	Northside Drive	Portofino Driveway	Friars Road	4-Ln Collector w/ RM	82'	Not Posted	None	Yes	No	No	Mission Valley
125	Northside Drive	Friars Road	Fenton Marketplace Driveway	4-Ln Collector w/ RM	82'	Not Posted	Section of 15-minute parking on east side	Yes	No	No	Mission Valley
126	Northside Drive	Fenton Marketplace Driveway	Lowe's Frontage Road	3-Ln Collector w/ RM (2 NB, 1 SB)	75-105'	Not Posted	Parallel (Both sides)	Yes	No	No	Mission Valley
127	Mission Village Drive	Ronda Avenue	Friars Road WB Ramps	4-Ln Major Arterial	73'	45	None	Yes (asphalt)	Class II	No	Mission Valley
128	Mission Village Drive	Friars Road WB Ramps	Friars Road EB Ramps	4-Ln Major Arterial	78'	Not Posted	None	Yes	No	No	Mission Valley
129	Rancho Mission Road	Friars Road	San Diego Mission Road	3-Ln Collector w/ CLTL (2 NB, 1 SB)	64'	35	Parallel (Both sides)	Yes	No	Yes (Rt. 14)	Mission Valley
130	Ward Road	San Diego Mission Road	Camino Del Rio North	4-Ln Collector w/o CLTL	55'	Not Posted	Parallel (Both sides)	Yes	No	Yes (Rt. 14, Green Line)	Mission Valley
131	Santo Road	Northern Terminus	Friars Road	2-Ln Collector Multi-Family	70'	Not Posted	Parallel (Both sides)	Yes	No	No	Tierrasanta
132	Riverdale Street	Zion Road	Friars Road	2-Ln Collector w/ Commercial Fronting	50'	Not Posted	Parallel (Both sides)	Yes	No	No	Grantville

Table 4-19 Existing Roadway Characteristics

No.	Roadway	Segment		Functional Classification	Pavement Width (ft)*	Speed Limit (mph)	On-Street Parking	Sidewalks	Bicycle Facilities	Transit Stop	Community
		From	To								
133	Riverdale Street	Friars Road	Vandever Avenue	2-Ln Collector w/ Commercial Fronting	50'	Not Posted	Parallel (Both sides)	Yes	No	No	Grantville
134	Mission Gorge Road	Friars Road	Camino Del Rio North	4-Ln Collector w/ CLTL	62'	30	Parallel (Both sides) (Sections prohibited)	Yes	No	Yes (Rt. 13)	Grantville
135	Fairmount Avenue	Camino Del Rio North/I-8 WB Off-Ramp	I-8 EB Off-Ramp	4-Ln Major Arterial	90'	Not Posted	None	East side Only	Class II	No	Grantville
136	Fairmount Avenue	I-8 EB Off-Ramp	Camino Del Rio South	6-Ln Expressway	122-187'	Not Posted	None	East side Only	Class I, East side Only	No	Grantville

Source: Chen Ryan Associates (2016)

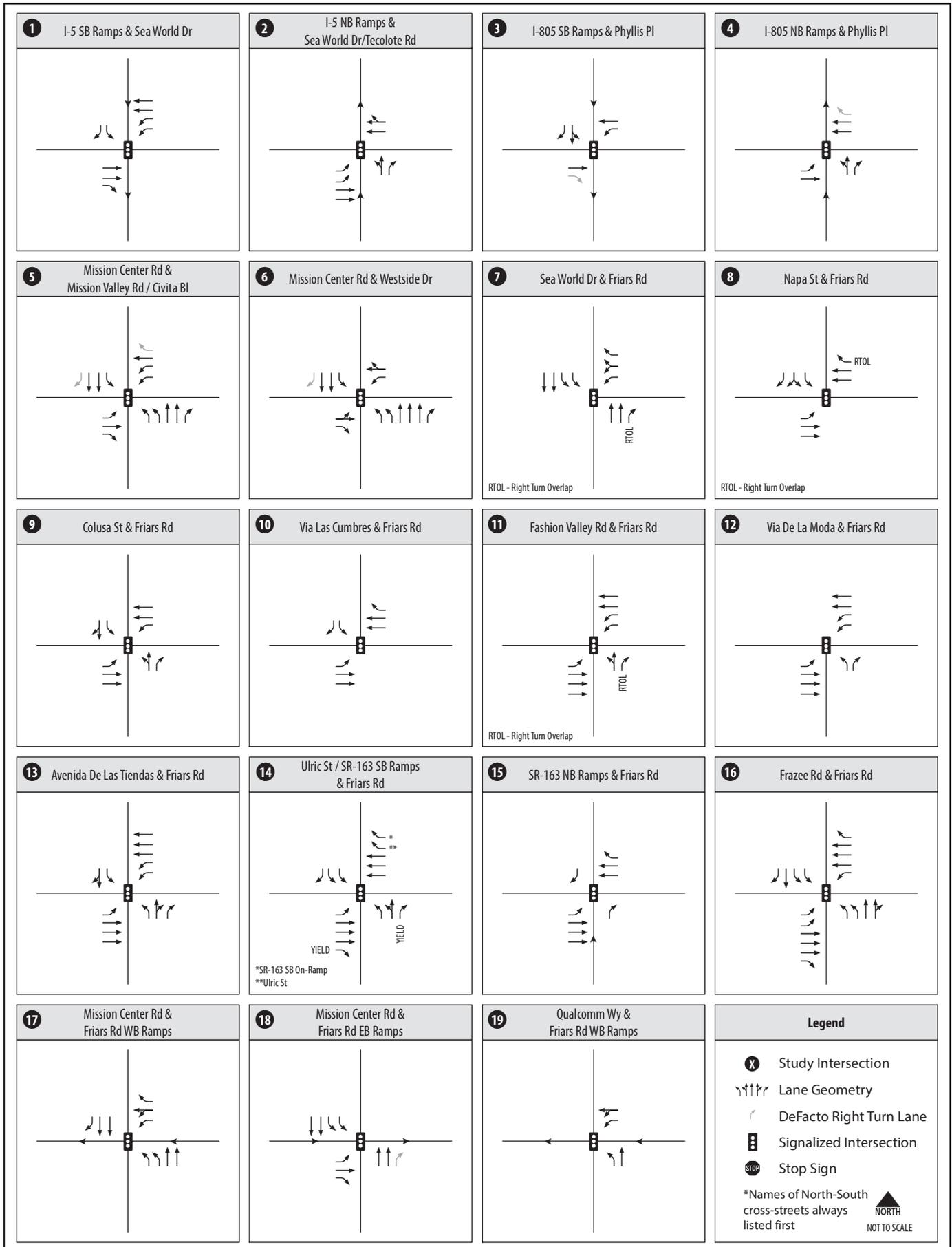
Notes:

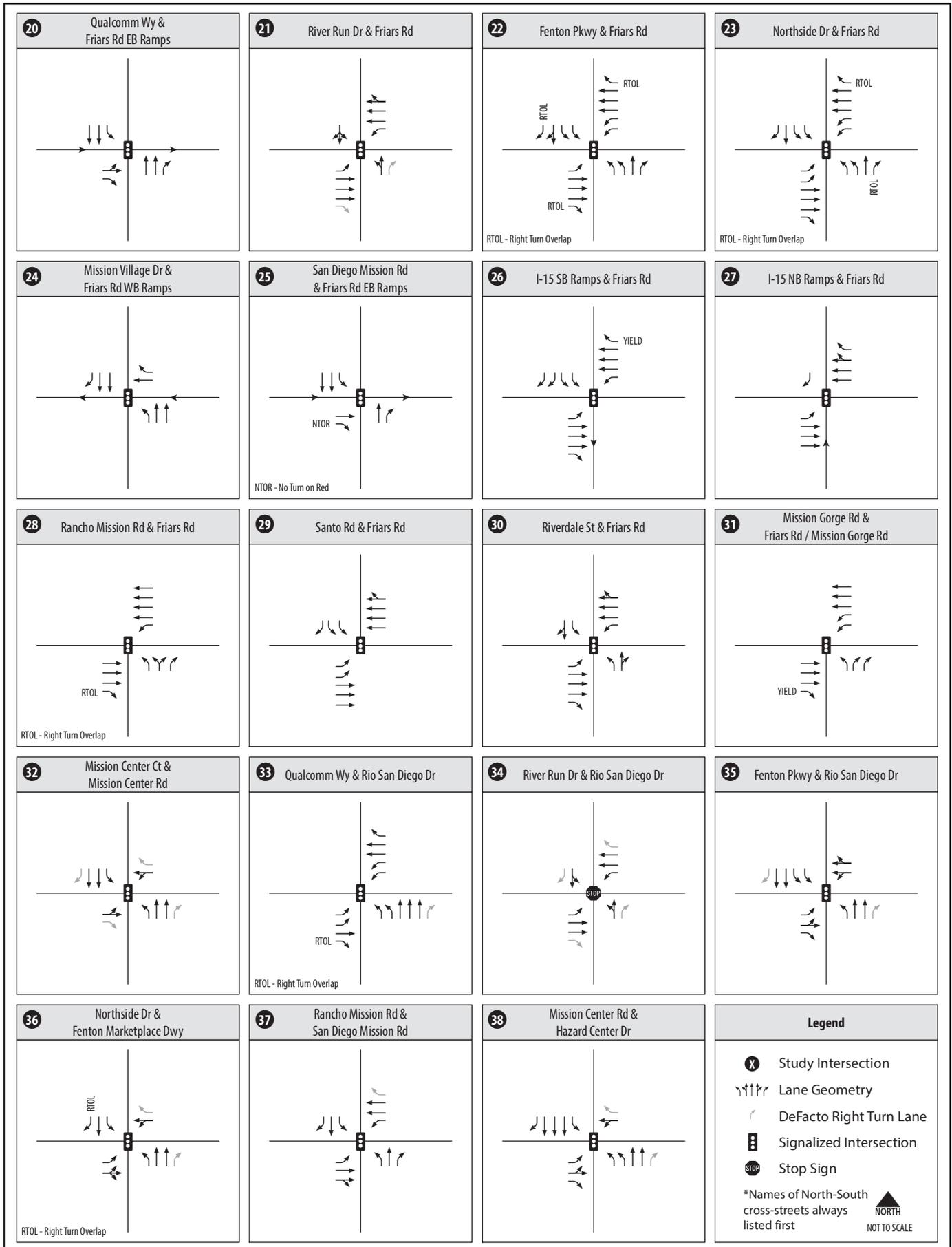
RM = Raised Median.

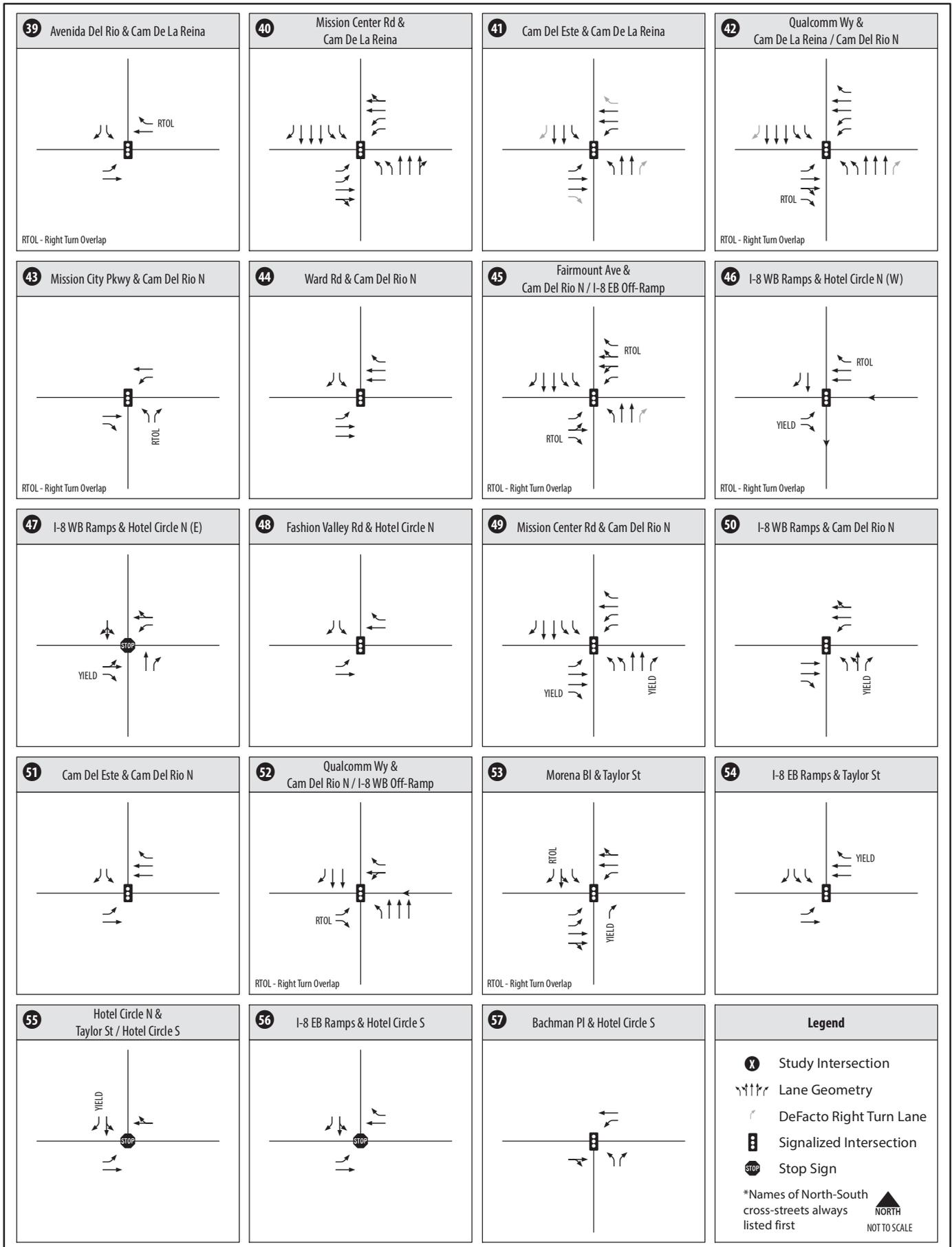
SM = Striped Median.

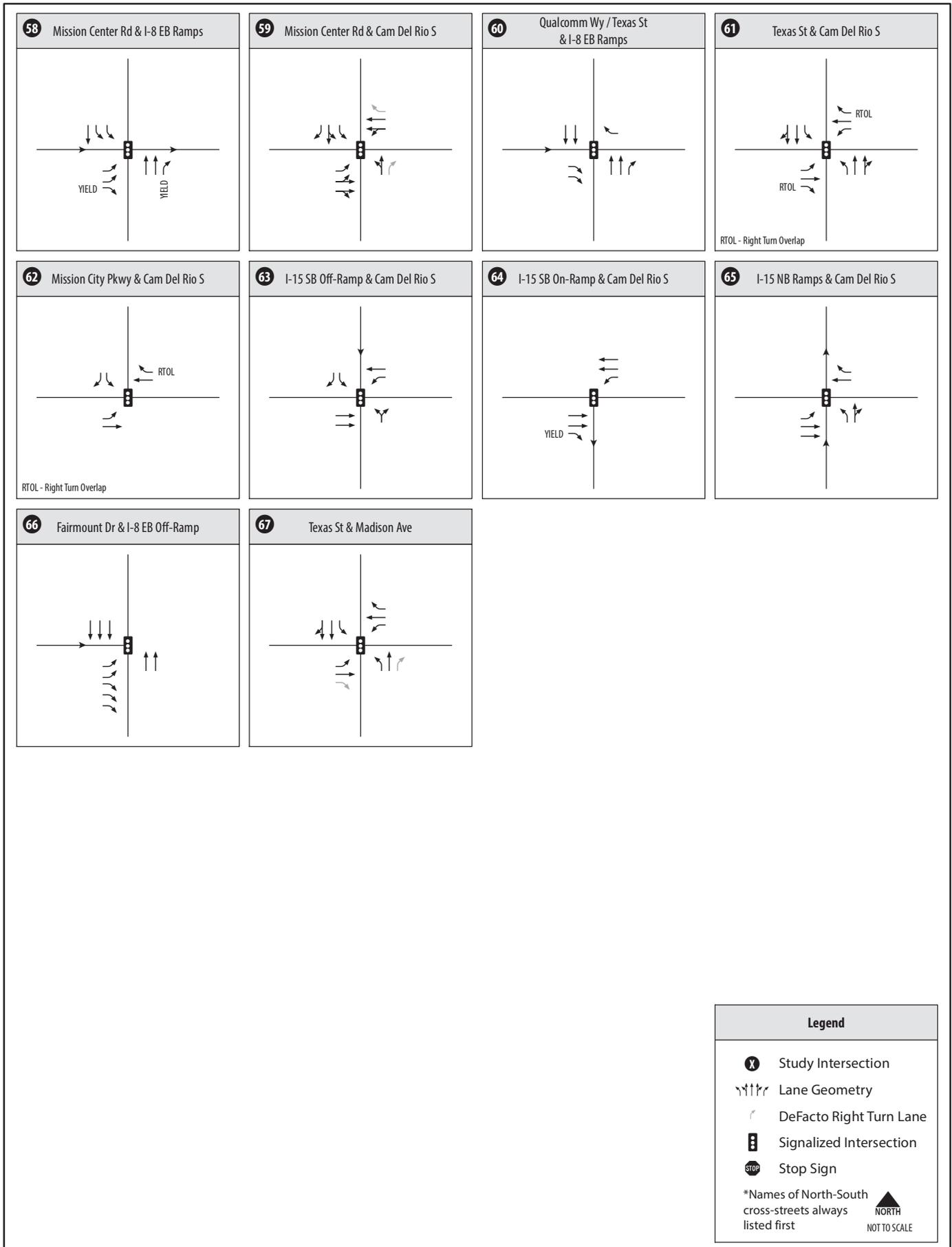
CLTL = Center Left-Turn Lane.

*Pavement width was measured from Google Earth and field measurement will be obtained for segments where improvements are recommended as a result of this planning effort.









4.4.1 Vehicular Demand

Vehicular demand is examined using US Census Bureau data and intersection volume counts taken during the AM and PM peak hours. Additionally, intersection volumes were taken during the midday peak along select segments. An operational analysis of the vehicular volume data is provided in Section 4.4.3.

Table 4-20 presents the vehicular commute mode share as reported in the US Census American Community Survey 2013 5-year estimates, comparing the Mission Valley community to the City of San Diego and San Diego County as a whole. Mission Valley was reported to have the greatest vehicular commute mode share of all three geographies, representing 78.5% of Mission Valley commuters.

Table 4-20 Vehicular Commute Mode Share Comparison

	Mission Valley	City of San Diego	San Diego County
Total Vehicular Commuters	9,271	480,170	1,090,962
Total Workers	11,813	641,412	1,436,094
Vehicular Commute Mode Share	78.5%	74.9%	76.0%

Source: US Census, American Community Survey 2013 5-Year Estimates (2016); Chen Ryan Associates (2016)

Figure 4-26 provides intersection count volumes during the AM, PM, and midday peak hours.

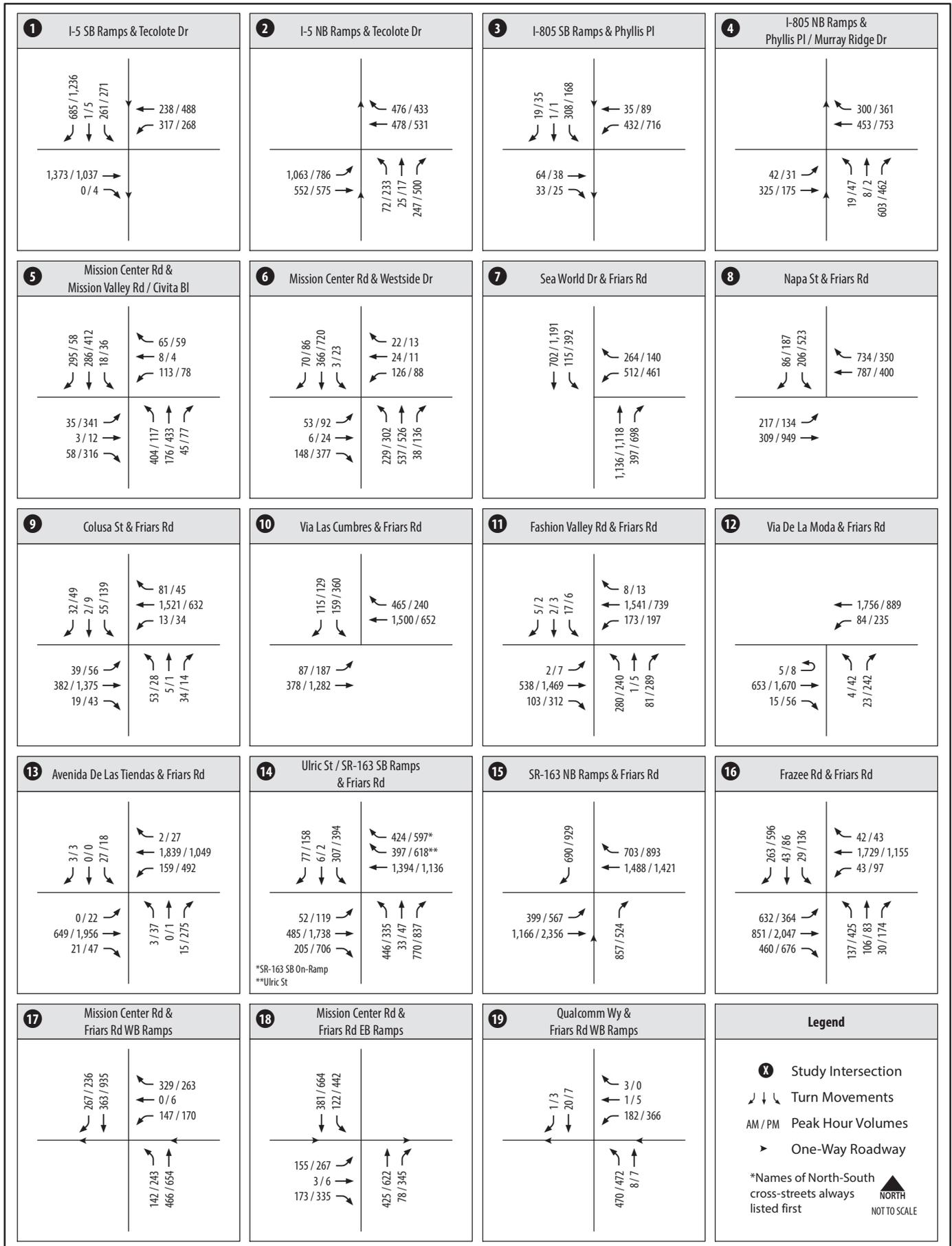
4.4.2 Vehicular Safety

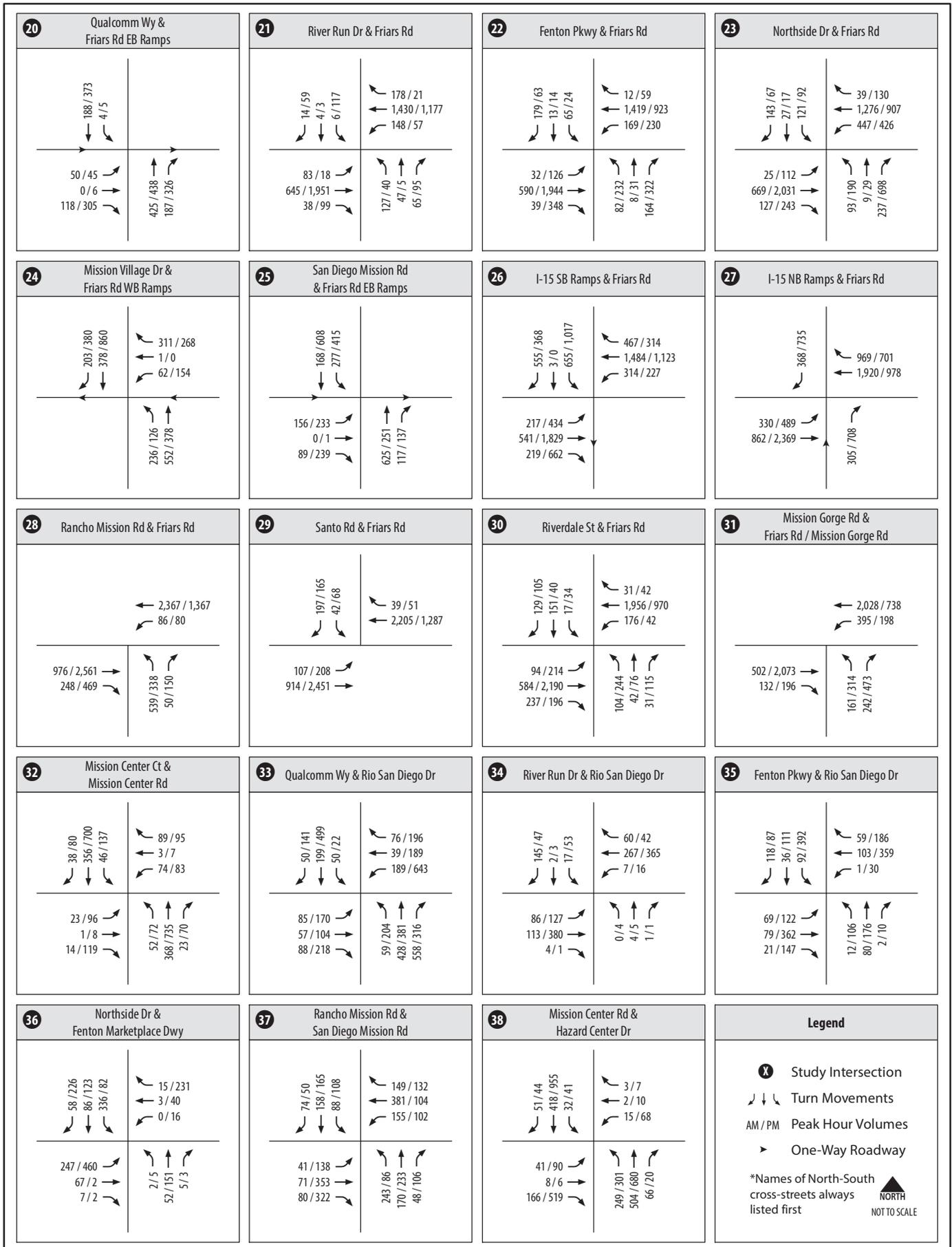
Vehicular collision data was obtained for the period from October 2008 through October 2013. A total of 959 vehicular collisions (excluding bicyclist- and pedestrian-involved collisions) were reported during this five-year period. **Figure 4-27** displays the distribution of the vehicular collisions across Mission Valley. **Table 4-21** identifies the intersections with the most reported collisions.

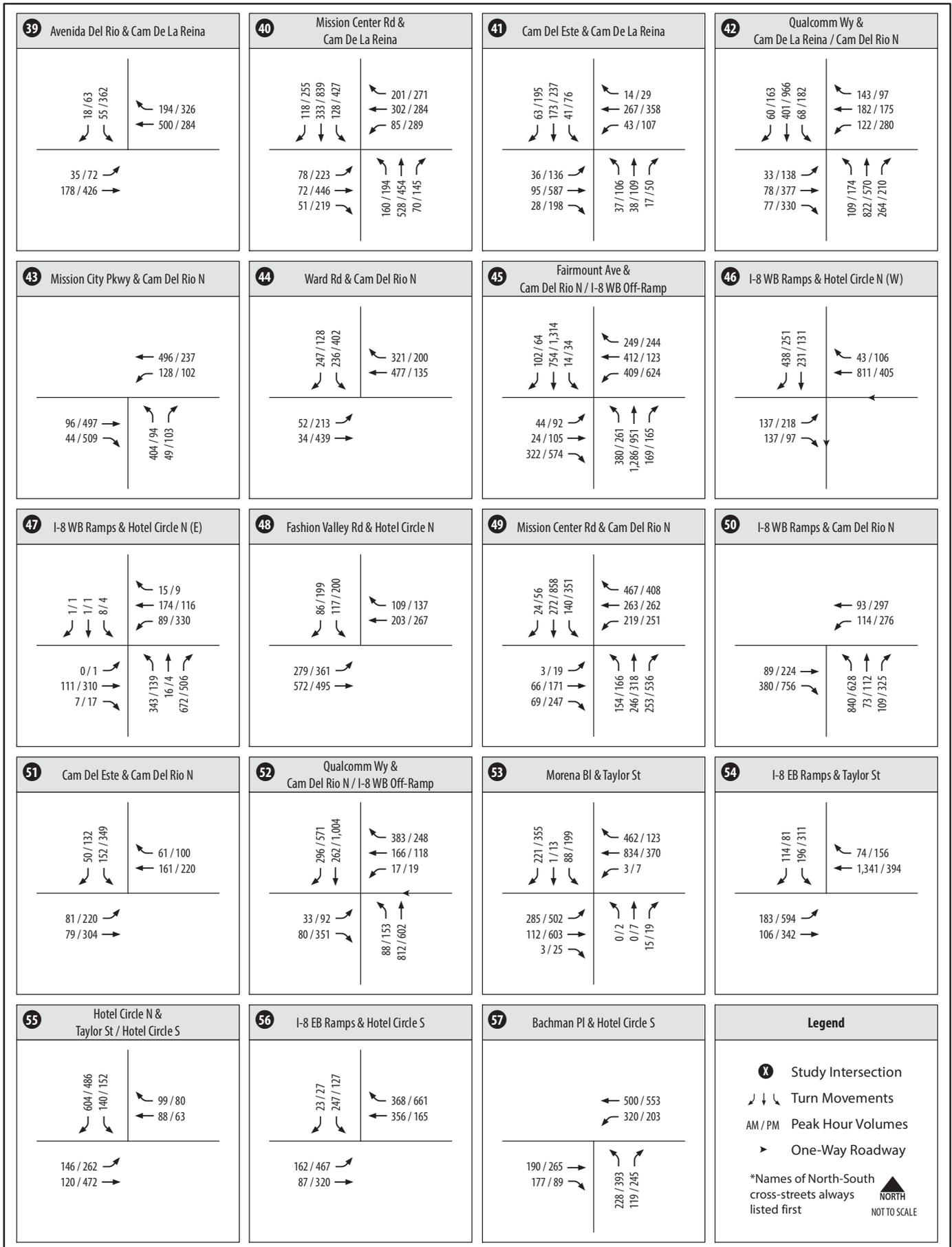
Table 4-21 Most Frequent Automobile Collision Locations (October 2008 – October 2013)

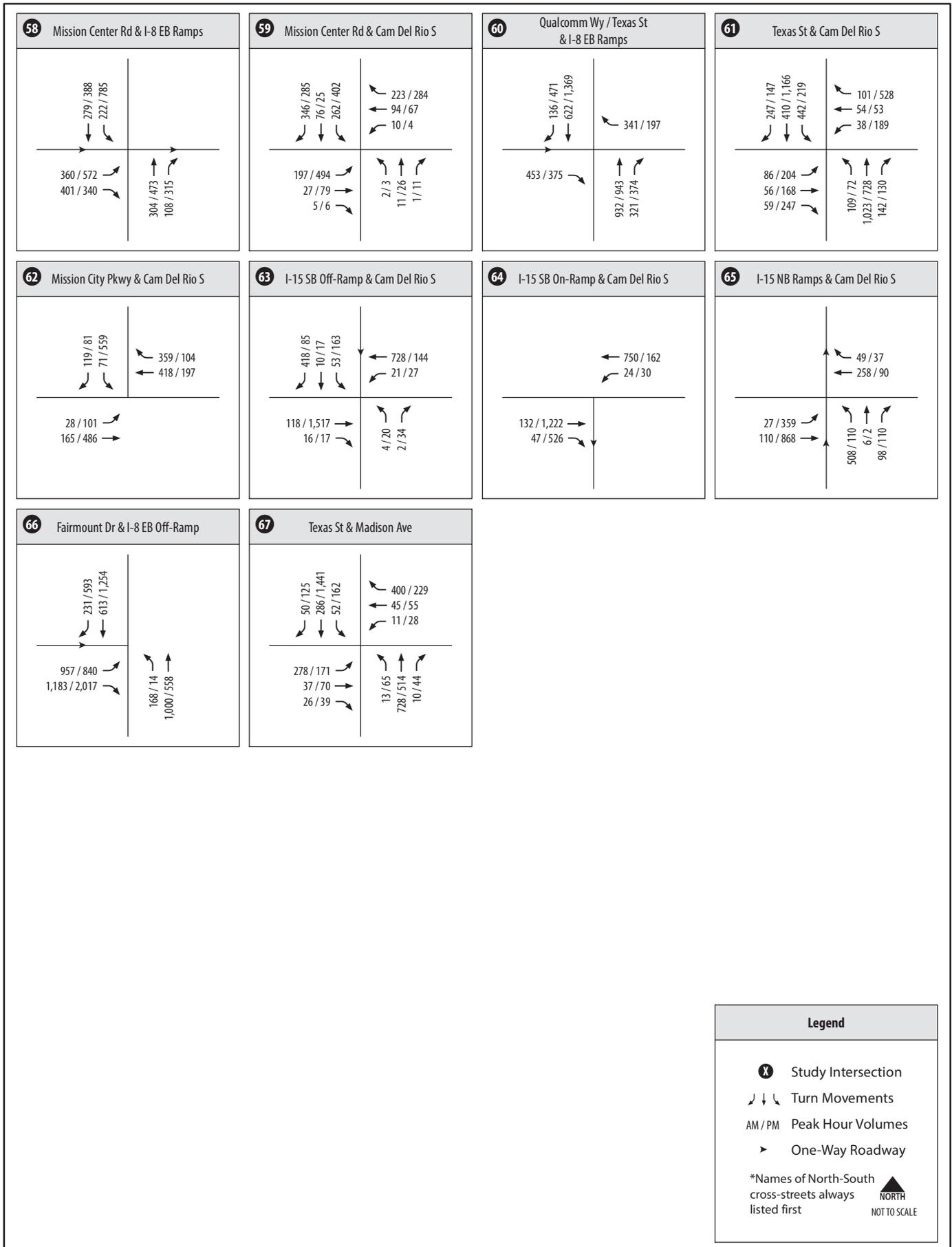
Rank	Intersection	Collisions
1	Mission Center Road & Camino De La Reina	26
2	Ulric Street & Friars Road	24
3	Mission Center Road/Auto Circle & Camino Del Rio North	23
4	Frazee Road & Friars Road	20
5	Rancho Mission Road & Friars Road	19
6	Northside Drive & Friars Road	18
7	Texas Street & Camino Del Rio South	15
8	Qualcomm Way & Camino De La Reina	14
9	Santo Road & Friars Road	13
10	Napa Street & Friars Road	10
11	Mission Center Road & Mission Center Court	10
12	Interstate 15 Northbound On-Ramps & Friars Road	10

Source: City of San Diego (2015)









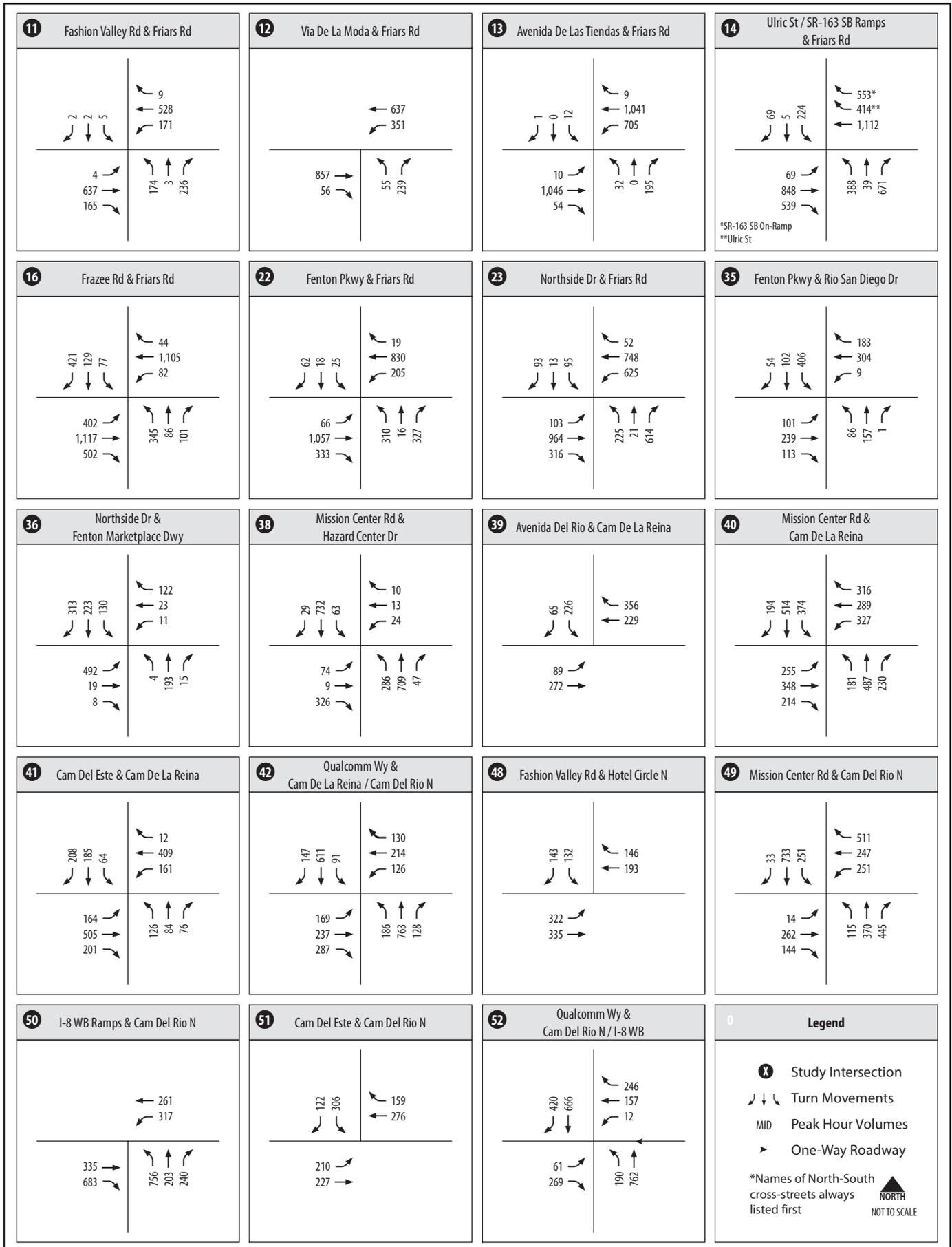
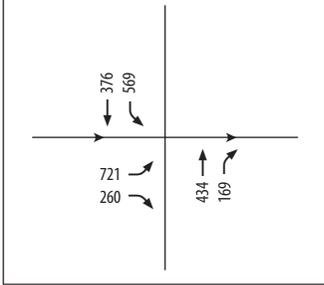
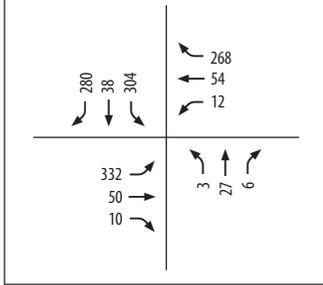


Figure 4-26
 Existing Peak Hour Traffic Volumes (Midday)
 (Intersections 11-14, 16, 22, 23, 35, 36, 38-42 and 48-52)

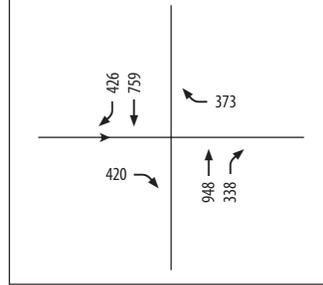
58 Mission Center Rd & I-8 EB Ramps



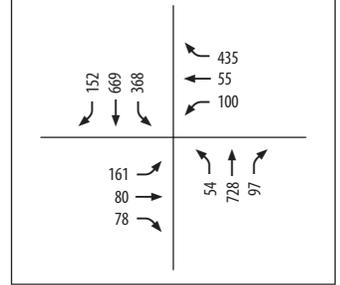
59 Mission Center Rd & Cam Del Rio S



60 Qualcomm Wy / Texas St & I-8 EB Ramps



61 Texas St & Cam Del Rio S



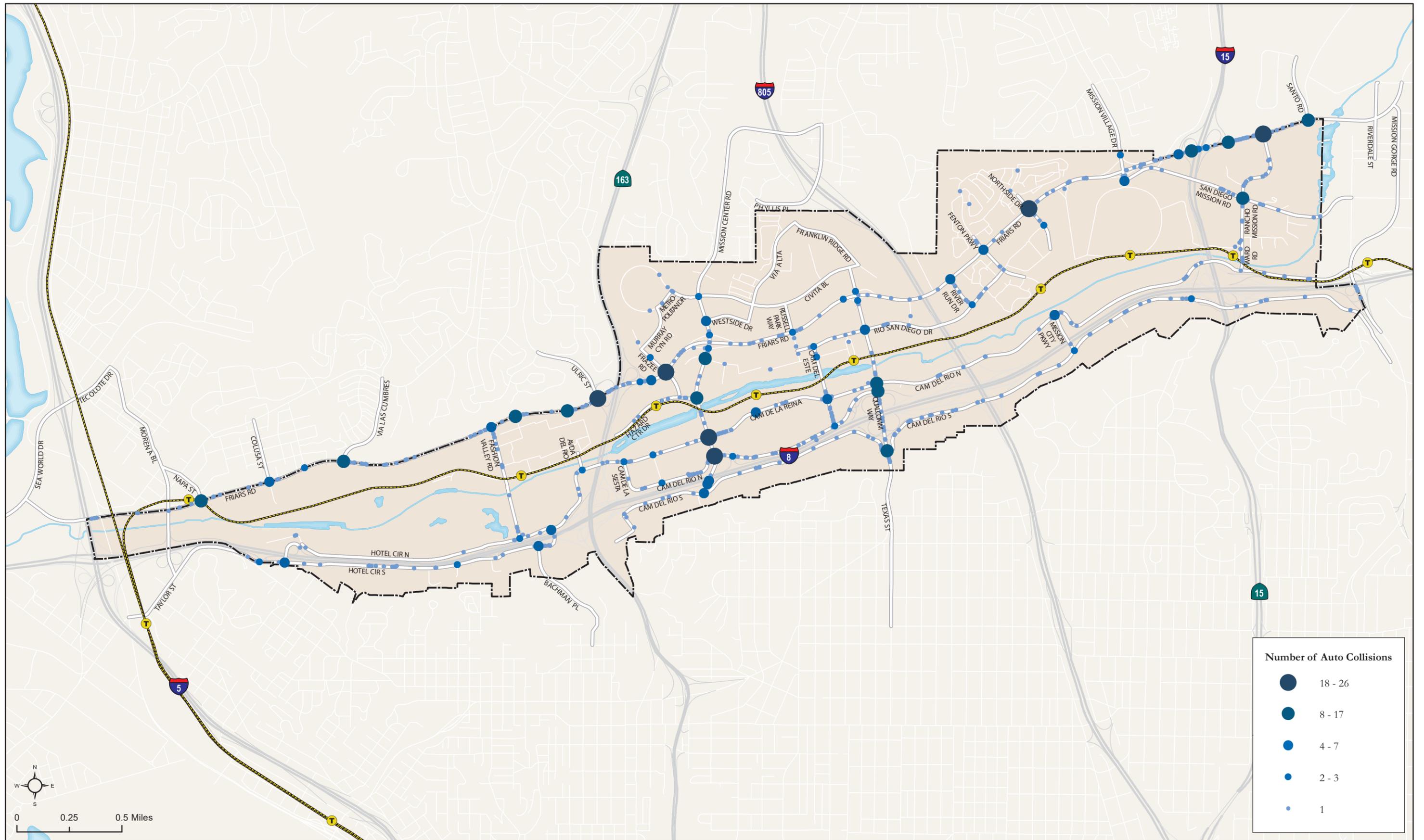
Legend

- Study Intersection
- Turn Movements
- MID Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

Figure 4-26
 Existing Peak Hour Traffic Volumes (Midday)
 (Intersections 58-61)



As shown in Figure 4-27, collisions were reported throughout the community. A concentration of collisions is apparent in the center of the community, however, there is also a relatively greater density of roadways in this area. Segments with notable collision occurrences include the following:

- Friars Road, from Fashion Valley Road to Frazee Road
- Friars Road, from Mission Village Drive to Santo Road
- Mission Center Road, from Westside Drive to Camino Del Rio South
- Qualcomm Way, from Friars Road to Camino Del Rio South

Each segment listed above provide access to the regional freeway network, and include multiple freeway on- and off-ramps.

Table 4-22 summarizes automobile collisions by the type of collision. “Rear End” collisions were reported as the most frequent collision type, followed by “Right Angle” and Side Swipe (Same Direction)” collisions.

**Table 4-22 Automobile Collision Type
(October 2008 – October 2013)**

Collision Location	Collisions	Percent
Rear End	323	33.7%
Right Angle	261	27.2%
Side Swipe (Same Direction)	94	9.8%
Hit Object	75	7.8%
Hit Parked Vehicle	52	5.4%
Head-On	33	3.4%
Hit “Fixed” Object	33	3.4%
Run Off Road – Hit Object	28	2.9%
Overturned in Road	24	2.5%
Non-Collision	11	1.2%
Side Swipe (Opposing Direction)	11	1.2%
Rear End / Backing	9	1.0%
Unknown	3	0.3%
Ran Off of Road	2	0.2%
Total	959	100.0%

Source: City of San Diego (2015)

Collision locations are summarized in **Table 4-23**, identifying the number of collisions that occurred at intersections, mid-block, approaching and departing locations. The majority of collisions occurred at intersection locations, accounting for just over half, followed by mid-block locations.

**Table 4-23 Automobile Collision Location in Roadway
(October 2008 – October 2013)**

Collision Location	Collisions	Percent
Intersection	513	53.5%
Mid-block	350	36.5%
Approaching	83	8.7%
Departing	13	1.3%
Total	959	100.0%

Source: City of San Diego (2015)

Table 4-24 identifies the primary collision cause reported for each of the 959 automobile collisions. The leading collision cause was attributed to “Speed Too Fast for Conditions” accounting for 26.5% of all automobile collisions, followed by “Unknown” causes and “Violated Vehicle’s Right-of-Way”.

**Table 4-24 Primary Automobile Collision Cause
(October 2008 – October 2013)**

Primary Collision Cause	Collisions	Percent
Speed Too Fast for Conditions	254	26.5%
Unknown	143	14.9%
Violated Vehicle’s Right-of-Way	141	14.7%
Ran Traffic Signal	82	8.6%
D.U.I. or N/A	76	7.9%
Following Too Close	39	4.1%
Not Paying Attention	39	4.1%
Ran Stop Sign	36	3.8%
Unsafe Movement – Right Turn	30	3.1%
Other	26	2.7%
Crossed Centerline	13	1.4%
Unsafe Movement – Left Turn	12	1.3%
Lost Control of Vehicle	11	1.2%
Distraction in Vehicle	7	0.7%
Visibility Issue	7	0.7%
Cornered Too Fast	6	0.6%
Fell Out/Off Vehicle	6	0.6%
Mechanical Condition	5	0.5%
Wet/Hydroplane	5	0.5%
Improper Start	4	0.4%
Lost Control at Curve	4	0.4%
Medical Condition	4	0.4%
Fell Asleep	3	0.3%
Improper Turn	3	0.3%
No Fault	3	0.3%
Total	959	100.0%

Source: City of San Diego, (2015)

4.4.3 Vehicular Quality – Roadway Segment Level of Service Analysis

The vehicular analysis evaluated vehicular operations at study intersections and segments, including freeways. The analysis results are reported in terms of level of service (LOS), a quantitative measure representing the quality of service from the driver’s perspective.

Figure 4-28 displays existing average daily traffic volumes for study roadway segments and associated level of service. **Table 4-25** presents the functional classification for each roadway, unacceptable volume threshold, average daily traffic volume, volume to capacity ratio and resulting level of service. The count sheets are provided in **Appendix F**.

As shown, 29 study segments currently operate at an unacceptable level of service (LOS E or F), including the following:

- Friars Road, between Ulric Street/SR-163 SB Ramps and SR-163 NB Ramps (LOS F)
- Friars Road, between SR-163 NB Ramps and Frazee Road (LOS F)
- Taylor Street, between Morena Boulevard and I-8 EB Ramps (LOS F)
- Taylor Street, between I-8 EB Ramps and Hotel Circle South (LOS E)
- Hotel Circle North, between Hotel Circle South and Hotel Circle Place (LOS F)
- Hotel Circle North, between I-8 WB Ramps and Fashion Valley Road (LOS F)
- Camino De La Reina, between Avenida Del Rio and Camino De La Siesta (LOS F)
- Hotel Circle South, between Hotel Circle North and 1200 Feet East of Hotel Circle North (LOS F)
- Hotel Circle South, between I-8 EB Ramps and Bachman Place (LOS F)
- Hotel Circle South, between Bachman Place and Hotel Circle North (LOS F)
- Camino Del Rio South, between Western Terminus and 1800 Feet west of Mission Center Road (LOS E)
- Camino Del Rio South, between Mission Center Road and Texas Street (LOS E)
- Camino Del Rio South, between Texas Street and Mission City Parkway (LOS F)
- Morena Boulevard, between Tecolote Road and Morena Boulevard (LOS F)
- Morena Boulevard, between Linda Vista Road and I-8 WB Off-Ramp (LOS F)
- Via Las Cumbres, between Linda Vista Road and Friars Road (LOS E)
- Bachman Place, between Hotel Circle South and Lewis Street (LOS E)
- Ulric Street, between Fashion Hills Boulevard and 600 Feet South of Fashion Hills Boulevard (LOS F)
- Ulric Street, between 600 Feet South of Fashion Hills Boulevard and Friars Road (LOS E)
- Mission Center Road, between Murray Ridge Road and 1200 Feet West of Murray Ridge Road (LOS F)
- Mission Center Road, between 1200 Feet West of Murray Ridge Road and 950 Feet North of Mission Valley Road (LOS E)
- Murray Ridge Road, between Mission Center Road and I-805 NB Ramps (LOS F)
- Texas Street, between 1400 Feet North of Madison Ave and Madison Avenue (LOS F)
- Texas Street, between Madison Avenue and Meade Ave, (LOS F)
- Texas Street, between Meade Ave and El Cajon Boulevard (LOS F)
- Riverdale Street, between Friars Road and Vandever Avenue (LOS F)
- Fairmount Avenue, between Camino Del Rio North/I-8 WB Off-Ramp and I-8 EB Off-Ramp (LOS F)
- Fairmount Avenue, between I-8 EB Off-Ramp and Camino Del Rio South (LOS F)

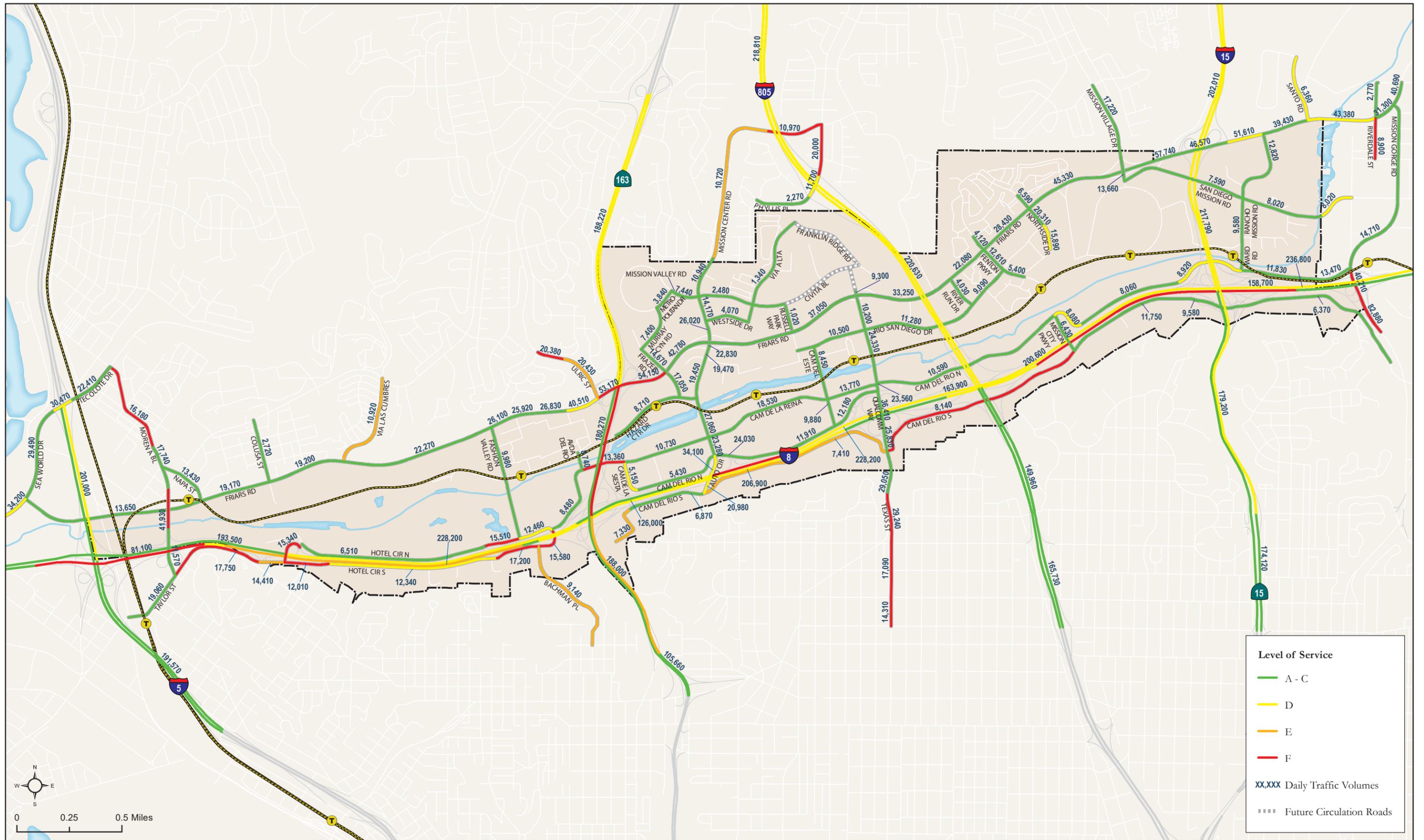


Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
1	Phyllis Place	Between I-805 SB Ramps and Abbotshill Road	9/9/2015 - 9/10/2015	PTD	2-Ln Collector w/ Commercial Fronting	8,000	2,270	0.284	A	Serra Mesa
2	Sea World Drive	Between Mission Bay Parkway and Friars Road	9/9/2015 - 9/10/2015	NDS	4-Ln Major Arterial	40,000	34,200	0.855	D	Mission Bay Park
3	Sea World Drive	Between Friars Road and I-5 SB Ramps	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	29,490	0.737	C	Mission Bay Park
4	Tecolote Road	Between I-5 SB Ramps and I-5 NB Ramps	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	30,470	0.762	D	Linda Vista
5	Tecolote Road	Between I-5 NB Ramps and Morena Boulevard	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	22,410	0.560	C	Linda Vista
6	Mission Valley Road	Between Metropolitan Drive and Mission Center Road	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	7,440	0.186	A	Mission Valley
7	Civita Boulevard	Between Mission Center Road and Qualcomm Way	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	2,480	0.062	A	Mission Valley
8	Westside Drive	Between Mission Center Road and Via Alta	9/16/2015 - 9/17/2015	NDS	2-Ln Collector Multi-Family	8,000	4,070	0.508	C	Mission Valley
9	Friars Road	Between Sea World Drive and Napa Street	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	13,650	0.341	A	Mission Bay Park, Linda Vista
10	Friars Road	Between Napa Street and Colusa Street	9/9/2015 - 9/10/2015	PTD	4-Ln Major Arterial	40,000	19,170	0.479	B	Mission Valley
11	Friars Road	Between Colusa Street and Via Las Cumbres	9/9/2015 - 9/10/2015	PTD	4-Ln Major Arterial	40,000	19,200	0.480	B	Mission Valley
12	Friars Road	Between Via Las Cumbres and Fashion Valley Road	9/9/2015 - 9/10/2015	PTD	4-Ln Major Arterial	40,000	22,270	0.557	C	Mission Valley
13	Friars Road	Between Fashion Valley Road and Via De La Moda	9/9/2015 - 9/10/2015	PTD	5-Ln Major Arterial (3 EB, 2 WB) ¹	41,667	26,100	0.626	C	Mission Valley
14	Friars Road	Between Via De La Moda and Fashion Valley Driveway	9/16/2015 - 9/17/2015	NDS	5-Ln Major Arterial (3 EB, 2 WB) ¹	41,667	25,920	0.622	C	Mission Valley

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
15	Friars Road	Between Fashion Valley Driveway and Avenida De Las Tiendas	9/9/2015 - 9/10/2015	NDS	6-Ln Major Arterial	50,000	26,830	0.537	B	Mission Valley
16	Friars Road	Between Avenida De Las Tiendas and Ulric Street/SR-163 SB Ramps	9/16/2015 - 9/17/2015	NDS	6-Ln Major Arterial	50,000	40,510	0.810	D	Mission Valley
17	Friars Road	Between Ulric Street/SR-163 SB Ramps and SR-163 NB Ramps	9/16/2015 - 9/17/2015	NDS	6-Ln Major Arterial	50,000	53,170	1.063	F	Mission Valley
18	Friars Road	Between SR-163 NB Ramps and Frazee Road	9/16/2015 - 9/17/2015	NDS	5-Ln Major Arterial (3 EB, 2 WB) ¹	41,667	54,150	1.299	F	Mission Valley
19	Friars Road	Between Frazee Road and Mission Center Road	9/16/2015 - 9/17/2015	NDS	6-Ln Prime Arterial	60,000	42,780	0.713	C	Mission Valley
20	Friars Road	Between Mission Center Road and Qualcomm Way	9/16/2015 - 9/17/2015	NDS	6-Ln Expressway	80,000	37,050	0.463	B	Mission Valley
21	Friars Road	Between Qualcomm Way and River Run Drive	9/9/2015 - 9/10/2015	PTD	6-Ln Expressway	80,000	33,250	0.416	B	Mission Valley
22	Friars Road	Between River Run Drive and Fenton Parkway	9/9/2015 - 9/10/2015	PTD	6-Ln Major Arterial	80,000	22,080	0.276	A	Mission Valley
23	Friars Road	Between Fenton Parkway and Northside Drive	9/9/2015 - 9/10/2015	PTD	6-Ln Major Arterial	80,000	28,430	0.355	A	Mission Valley
24	Friars Road	Between Northside Drive and San Diego Mission Road	9/9/2015 - 9/10/2015	PTD	6-Ln Expressway	80,000	45,330	0.567	C	Mission Valley
25	Friars Road	Between San Diego Mission Road and I-15 SB Ramps	9/9/2015 - 9/10/2015	PTD	6-Ln Expressway	80,000	57,740	0.722	C	Mission Valley
26	Friars Road	Between I-15 SB Ramps and I-15 NB Ramps	9/9/2015 - 9/10/2015	PTD	6-Ln Prime Arterial	60,000	46,570	0.776	C	Mission Valley
27	Friars Road	Between I-15 NB Ramps and Rancho Mission Road	9/9/2015 - 9/10/2015	PTD	6-Ln Prime Arterial	60,000	51,610	0.860	D	Mission Valley
28	Friars Road	Between Rancho Mission Road and Santo Road	9/9/2015 - 9/10/2015	PTD	6-Ln Major Arterial	50,000	39,430	0.789	C	Mission Valley
29	Friars Road	Between Santo Road and Riverdale Street	9/9/2015 - 9/10/2015	PTD	6-Ln Major Arterial	50,000	43,380	0.868	D	Mission Valley
30	Friars Road	Between Riverdale Street and Mission Gorge Road	9/9/2015 - 9/10/2015	PTD	6-Ln Major Arterial	50,000	31,300	0.626	C	Mission Valley

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
31	Mission Gorge Road	Between Friars Road and Zion Avenue	9/16/2015 - 9/17/2015	PTD	6-Ln Prime Arterial	60,000	40,690	0.678	C	Mission Valley
32	Hazard Center Drive	Between Western Terminus and Mission Center Road	9/9/2015 - 9/10/2015	PTD	4-Ln Collector w/ RM or SM	30,000	8,710	0.290	A	Mission Valley
33	Rio San Diego Drive	Between Gill Village Way and Qualcomm Way	9/16/2015 - 9/17/2015	NDS	4-Ln Collector w/ RM	30,000	10,500	0.350	B	Mission Valley
34	Rio San Diego Drive	Between Qualcomm Way and River Run Drive	9/16/2015 - 9/17/2015	PTD	4-Ln Major Arterial	40,000	11,280	0.282	A	Mission Valley
35	Rio San Diego Drive	Between River Run Drive and Fenton Parkway	9/16/2015 - 9/17/2015	PTD	4-Ln Collector w/ RM	30,000	9,090	0.303	A	Mission Valley
36	San Diego Mission Road	Between Friars Road EB Ramps and Rancho Mission Road	9/16/2015 - 9/17/2015	PTD	4-Ln Collector w/o CLTL	15,000	7,590	0.506	C	Mission Valley
37	San Diego Mission Road	Between Rancho Mission Road and 950 Feet West of Fairmount Avenue	9/16/2015 - 9/17/2015	PTD	2-Ln Collector w/ CLTL	15,000	8,020	0.534	C	Mission Valley
38	San Diego Mission Road	Between 950 Feet West of Fairmount Avenue and Fairmount Avenue	9/9/2015 - 9/10/2015	NDS	2-Ln Collector No Fronting Property	10,000	8,020	0.802	D	Mission Valley
39	Taylor Street	Between Pacific Highway and Morena Boulevard	9/9/2015 - 9/10/2015	NDS	5-Ln Major Arterial (3 EB, 2 WB) ¹	41,667	19,060	0.457	B	Old Town
40	Taylor Street	Between Morena Boulevard and I-8 EB Ramps	9/9/2015 - 9/10/2015	NDS	2-Ln Collector No Fronting Property	10,000	17,750	1.775	F	Old Town
41	Taylor Street	Between I-8 EB Ramps and Hotel Circle South	9/9/2015 - 9/10/2015	NDS	2-Ln Collector w/ CLTL	15,000	14,410	0.961	E	Old Town
42	Hotel Circle North	Between Hotel Circle South and Hotel Circle Place	9/9/2015 - 9/10/2015	NDS	2-Ln Collector No Fronting Property	10,000	15,340	1.534	F	Mission Valley
43	Hotel Circle North	Between Hotel Circle Place and I-8 WB Ramps	9/9/2015 - 9/10/2015	NDS	2-Ln Collector w/ CLTL	15,000	6,510	0.434	B	Mission Valley
44	Hotel Circle North	Between I-8 WB Ramps and Fashion Valley Road	9/16/2015 - 9/17/2015	NDS	3-Ln Collector (2 EB, 1 WB) ²	11,250	15,510	1.378	F	Mission Valley

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
45	Hotel Circle North	Between Fashion Valley Road and Camino De La Reina	9/9/2015 - 9/10/2015	NDS	2-Ln Collector w/ CLTL	15,000	12,460	0.831	D	Mission Valley
46	Camino De La Reina	Between Hotel Circle North and Avenida Del Rio	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ CLTL	15,000	8,480	0.566	C	Mission Valley
47	Camino De La Reina	Between Avenida Del Rio and Camino De La Siesta	9/9/2015 - 9/10/2015	PTD	2-Ln Collector No Fronting Property	10,000	13,360	1.336	F	Mission Valley
48	Camino De La Reina	Between Camino De La Siesta and Mission Center Road	1/20/2016 - 1/21/2016	AVC	4-Ln Major Arterial	40,000	10,730	0.268	A	Mission Valley
49	Camino De La Reina	Between Mission Center Road and Camino Del Este	1/20/2016 - 1/21/2016	AVC	4-Ln Major Arterial	40,000	18,530	0.463	B	Mission Valley
50	Camino De La Reina	Between Camino Del Este and Qualcomm Way	9/16/2015 - 9/17/2015	PTD	4-Ln Major Arterial	40,000	13,770	0.344	A	Mission Valley
51	Camino Del Rio North	Between Camino De La Siesta and Mission Center Road	9/16/2015 - 9/17/2015	PTD	2-Ln Collector w/ CLTL	15,000	5,430	0.362	B	Mission Valley
52	Camino Del Rio North	Between Mission Center Road and I-8 WB Ramps	9/16/2015 - 9/17/2015	PTD	4-Ln Major Arterial	40,000	24,030	0.601	C	Mission Valley
53	Camino Del Rio North	Between I-8 WB Ramps and Camino Del Este	9/16/2015 - 9/17/2015	PTD	3-Ln Collector w/ RM (1 EB, 2 WB) ³	22,500	11,910	0.529	C	Mission Valley
54	Camino Del Rio North	Between Camino Del Este and Qualcomm Way	9/9/2015 - 9/10/2015	NDS	4-Ln Major Arterial	40,000	12,180	0.305	A	Mission Valley
55	Camino Del Rio North	Between Qualcomm Way and Mission City Parkway	9/9/2015 - 9/10/2015	NDS	4-Ln Major Arterial	40,000	10,590	0.265	A	Mission Valley
56	Camino Del Rio North	Between Mission City Parkway and 800 Feet East of Mission City Parkway	9/16/2015- 9/17/2015	NDS	2-Ln Collector No Fronting Property	10,000	8,080	0.808	D	Mission Valley
57	Camino Del Rio North	Between 800 Feet East of Mission City Parkway and 1800 Feet West of Ward Road	9/16/2015- 9/17/2015	NDS	2-Ln Collector w/ CLTL	15,000	8,060	0.537	C	Mission Valley
58	Camino Del Rio North	Between 1800 Feet West of Ward Road and Ward Road	9/16/2015 - 9/17/2015	NDS	2-Ln Collector No Fronting Property	10,000	8,920	0.892	D	Mission Valley

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
59	Camino Del Rio North	Between Ward Road and 1000 Feet West of Fairmount Avenue	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	11,830	0.296	A	Mission Valley
60	Camino Del Rio North	Between 1000 Feet West of Fairmount Avenue and Fairmount Avenue	9/16/2015 - 9/17/2015	NDS	4-Ln Collector w/ CLTL	30,000	13,470	0.449	B	Mission Valley
61	Hotel Circle South	Between Hotel Circle North and 1200 Feet East of Hotel Circle North	9/16/2015 - 9/17/2015	PTD	2-Ln Collector No Fronting Property	10,000	12,010	1.201	F	Mission Valley
62	Hotel Circle South	Between 1200 Feet East of Hotel Circle North and I-8 EB Ramps	9/16/2015 - 9/17/2015	PTD	2-Ln Collector w/ CLTL	15,000	12,340	0.823	D	Mission Valley
63	Hotel Circle South	Between I-8 EB Ramps and Bachman Place	9/16/2015 - 9/17/2015	PTD	2-Ln Collector w/ CLTL	15,000	17,200	1.146	F	Mission Valley
64	Hotel Circle South	Between Bachman Place and Hotel Circle North	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ CLTL	15,000	15,580	1.038	F	Mission Valley
65	Camino Del Rio South	Between Western Terminus and 1800 Feet west of Mission Center Road	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ Commercial Fronting	8,000	7,330	0.916	E	Mission Valley
66	Camino Del Rio South	Between 1800 Feet west of Mission Center Road and Mission Center Road	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ CLTL	15,000	6,870	0.458	B	Mission Valley
67	Camino Del Rio South	Between Mission Center Road and Texas Street	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ Commercial Fronting	8,000	7,410	0.927	E	Mission Valley
68	Camino Del Rio South	Between Texas Street and Mission City Parkway	9/16/2015 - 9/17/2015	PTD	2-Ln Collector w/ Commercial Fronting	8,000	8,140	1.018	F	Mission Valley
69	Camino Del Rio South	Between Mission City Parkway and I-15 SB Off-Ramp	9/9/2015 - 9/10/2015	NDS	3-Ln Collector w/ CLTL (2 EB, 1 WB) ³	22,500	11,750	0.522	C	Mission Valley
70	Camino Del Rio South	Between I-15 SB Off-Ramp and I-15 SB On-Ramp	9/9/2015 - 9/10/2015	NDS	4-Ln Collector w/o CLTL	15,000	9,580	0.638	C	Mission Valley
71	Camino Del Rio South	Between I-15 SB On-Ramp and Fairmount Avenue	9/9/2015 - 9/10/2015	NDS	2-Ln Collector w/ CLTL	15,000	6,370	0.424	B	Mission Valley

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
72	Morena Boulevard	Between Tecolote Road and Morena Boulevard	9/16/2015 - 9/17/2015	PTD	2-Ln Collector w/ CLTL	15,000	16,180	1.079	F	Linda Vista
73	Morena Boulevard	Between West Morena Boulevard and Linda Vista Road	9/9/2015 - 9/10/2015	NDS	4-Ln Major Arterial	40,000	17,740	0.443	B	Linda Vista
74	Morena Boulevard	Between Linda Vista Road and I-8 WB Off-Ramp	9/16/2015 - 9/17/2015	PTD	4-Ln Major Arterial	40,000	41,930	1.048	F	Linda Vista
75	Morena Boulevard	Between I-8 WB Off-Ramp and Taylor Street	9/16/2015 - 9/17/2015	PTD	3-Ln Collector w/ RM (2 NB, 1 SB) ³	22,500	11,570	0.514	C	Old Town
76	Napa Street	Between Morena Boulevard and Friars Road	9/16/2015 - 9/17/2015	PTD	4-Ln Major Arterial	40,000	13,430	0.336	A	Linda Vista
77	Colusa Street	Between Linda Vista Road and Friars Road	9/16/2015 - 9/17/2015	PTD	2-Ln Collector Multi-Family	8,000	2,720	0.339	B	Linda Vista
78	Via Las Cumbres	Between Linda Vista Road and Friars Road	9/16/2015 - 9/17/2015	PTD	3-Ln Collector (2 NB, 1 SB) ²	11,250	10,920	0.971	E	Linda Vista
79	Fashion Valley Road	Between Friars Road and Hotel Circle North	9/16/2015 - 9/17/2015	PTD	4-Ln Collector w/o CLTL	15,000	9,980	0.665	C	Mission Valley
80	Bachman Place	Between Hotel Circle South and Lewis Street	9/16/2015 - 9/17/2015	PTD	2-Ln Collector No Fronting Property	10,000	9,140	0.914	E	Mission Valley
81	Avenida Del Rio	Between Fashion Valley Parking Lot and Camino De La Reina	9/16/2015 - 9/17/2015	PTD	4-Ln Collector w/o CLTL	15,000	8,740	0.583	C	Mission Valley
82	Ulric Street	Between Fashion Hills Boulevard and 600 Feet South of Fashion Hills Boulevard	9/16/2015 - 9/17/2015	PTD	2-Ln Collector w/ Striped Median	15,000	20,380	1.359	F	Linda Vista
83	Ulric Street	Between 600 Feet South of Fashion Hills Boulevard and Friars Road	9/16/2015 - 9/17/2015	NDS	3-Ln Collector w/ SM (1 NB 2 SB) ³	22,500	20,430	0.908	E	Linda Vista
84	Camino De La Siesta	Between Camino De La Reina and Camino Del Rio North	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ Commercial Fronting	8,000	5,150	0.643	D	Mission Valley
85	Metropolitan Drive	Between Mission Valley Road and Murray Canyon Road	9/16/2015 - 9/17/2015	NDS	3-Ln Collector w/ CLTL (2 NB, 1 SB) ³	22,500	3,840	0.171	A	Mission Valley

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
86	Murray Canyon Road	Between Metropolitan Drive and Frazee Road	9/9/2015 - 9/10/2015	PTD	3-Ln Collector w/ CLTL (2 EB, 1 WB) ³	22,500	7,400	0.329	A	Mission Valley
87	Frazee Road	Between Murray Canyon Road and Friars Road	9/9/2015 - 9/10/2015	NDS	4-Ln Major Arterial	40,000	14,670	0.367	A	Mission Valley
88	Frazee Road	Between Friars Road and Hazard Center Drive	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	17,050	0.426	B	Mission Valley
89	Mission Center Road	Between Murray Ridge Road and 1200 Feet West of Murray Ridge Road	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/o CLTL	10,000	10,970	1.097	F	Mission Valley
90	Mission Center Road	Between 1200 Feet West of Murray Ridge Road and 950 Feet North of Mission Valley Road	9/16/2015 - 9/17/2015	NDS	3-Ln Collector (2 NB, 1 SB) ²	11,250	10,720	0.953	E	Mission Valley
91	Mission Center Road	Between 950 Feet North of Mission Valley Road and Mission Valley Road	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	10,940	0.273	A	Mission Valley
92	Mission Center Road	Between Mission Valley Road and Westside Drive	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	14,170	0.354	A	Mission Valley
93	Mission Center Road	Between Westside Drive and Friars Road WB Ramps	9/16/2015 - 9/17/2015	NDS	5-Ln Major Arterial (3 NB, 2 SB) ¹	41,667	26,020	0.624	C	Mission Valley
94	Mission Center Road	Between Friars Road WB Ramps and Friars Road EB Ramps	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	22,830	0.571	C	Mission Valley
95	Mission Center Road	Between Friars Road EB Ramps and Mission Center Court	9/9/2015 - 9/10/2015	PTD	4-Ln Major Arterial	40,000	19,470	0.487	B	Mission Valley
96	Mission Center Road	Between Mission Center Court and Hazard Center Drive	9/9/2015 - 9/10/2015	PTD	5-Ln Major Arterial (2 NB, 3 SB) ¹	41,667	19,450	0.467	B	Mission Valley
97	Mission Center Road	Between Hazard Center Drive and Camino De La Reina	9/9/2015 - 9/10/2015	PTD	5-Ln Major Arterial (2 NB, 3 SB) ¹	41,667	27,060	0.650	C	Mission Valley
98	Mission Center Road	Between Camino De La Reina and Camino Del Rio North	9/9/2015 - 9/10/2015	PTD	5-Ln Major Arterial (3 NB, 2 SB) ¹	41,667	23,280	0.559	B	Mission Valley

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community	
99	Auto Circle	Between Camino Del Rio North and I-8 EB Ramps	9/16/2015 - 9/17/2015	NDS	4-Ln Major Arterial	40,000	34,100	0.852	D	Mission Valley	
100	Auto Circle	Between I-8 EB Ramps and Camino Del Rio South	9/9/2015 - 9/10/2015	NDS	4-Ln Collector w/ RM	30,000	20,980	0.699	D	Mission Valley	
101	Via Alta	Between Westside Drive and Franklin Ridge Road	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ RM	15,000	1,340	0.089	A	Mission Valley	
102	Murray Ridge Road	Between Mission Center Road and I-805 NB Ramps	9/16/2015 - 9/17/2015	NDS	2 Ln Collector w/ CLTL	15,000	20,000	1.333	F	Serra Mesa	
103	Murray Ridge Road	Between I-805 NB Ramps and I-805 SB Ramps	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ CLTL	15,000	11,700	0.780	D	Serra Mesa	
104	Russell Park Way	Between Civita Boulevard and Friars Road	9/16/2015 - 9/17/2015	NDS	2-Ln Collector w/ RM	15,000	1,020	0.068	A	Mission Valley	
105	Camino Del Este	Between Rio San Diego Drive and Camino De La Reina	9/16/2015 - 9/17/2015	NDS	4-Ln Collector w/ RM or CLTL	30,000	8,450	0.282	A	Mission Valley	
106	Camino Del Este	Between Camino De La Reina and Camino Del Rio North	9/9/2015 - 9/10/2015	PTD	4-Ln Collector w/ RM or CLTL	30,000	9,880	0.329	A	Mission Valley	
107	Franklin Ridge Road	Between Civita Boulevard and Via Alta	Future Roadway								Mission Valley
108	Qualcomm Way	Between Civita Boulevard and Friars Road WB Ramps	Future Roadway								Mission Valley
109	Qualcomm Way	Between Friars Road WB Ramps and Friars Road EB Ramps	9/9/2015 - 9/10/2015	PTD	2-Ln Collector w/ CLTL	15,000	9,300	0.620	C	Mission Valley	
110	Qualcomm Way	Between Friars Road EB Ramps and Rio San Diego Drive	9/9/2015 - 9/10/2015	PTD	5-Ln Major Arterial (2 NB, 3 SB) ¹	41,667	10,200	0.245	A	Mission Valley	
111	Qualcomm Way	Between Rio San Diego Drive and Camino Del Rio North	9/9/2015 - 9/10/2015	PTD	6-Ln Major Arterial	50,000	24,330	0.487	B	Mission Valley	
112	Qualcomm Way	Between Camino Del Rio North and I-8 WB Ramps	9/9/2015 - 9/10/2015	PTD	5-Ln Major Arterial (3 NB, 2 SB) ¹	41,667	23,560	0.565	C	Mission Valley	
113	Qualcomm Way	Between I-8 WB Ramps and I-8 EB Ramps	9/9/2015 - 9/10/2015	PTD	6-Ln Major Arterial	50,000	36,410	0.728	C	Mission Valley	

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
114	Qualcomm Way	Between I-8 EB Ramps and Camino Del Rio South	9/9/2015 - 9/10/2015	PTD	4-Ln Major Arterial	40,000	25,830	0.646	C	Mission Valley
115	Texas Street	Between Camino Del Rio South and 1400 Feet North of Madison Ave	9/9/2015 - 9/10/2015	PTD	4-Ln Major Arterial	40,000	29,050	0.726	C	Greater North Park
116	Texas Street	Between 1400 Feet North of Madison Ave and Madison Avenue	9/16/2015 - 9/17/2015	PTD	3-Ln Collector w/ Raised Barrier (1 NB, 2 SB) ³	22,500	29,240	1.300	F	Greater North Park
117	Texas Street	Between Madison Avenue and Meade Ave	9/9/2015 - 9/10/2015	PTD	2-Ln Collector w/ CLTL	15,000	17,090	1.139	F	Greater North Park
118	Texas Street	Between Meade Ave and El Cajon Boulevard	9/16/2015 - 9/17/2015	NDS	3-Ln Collector	15,000	14,310	0.954	E	Greater North Park
119	River Run Drive	Between Friars Road and Rio San Diego Drive	9/16/2015 - 9/17/2015	PTD	2-Ln Collector Multi-Family	8,000	4,030	0.504	C	Mission Valley
120	Fenton Parkway	Between Portofino Driveway and Friars Road	9/16/2015 - 9/17/2015	PTD	2-Ln Collector Multi-Family	8,000	4,120	0.514	C	Mission Valley
121	Fenton Parkway	Between Friars Road and Rio San Diego Drive	9/16/2015 - 9/17/2015	PTD	4-Lane Major Arterial	40,000	12,610	0.315	A	Mission Valley
122	Fenton Parkway	Between Rio San Diego Drive and Del Rio Apartments Driveway	9/16/2015 - 9/17/2015	PTD	4-Lane Major Arterial	40,000	5,400	0.135	A	Mission Valley
123	Mission City Parkway	Between Camino Del Rio North and Camino Del Rio South	9/9/2015 - 9/10/2015	NDS	2-Ln Collector w/ No Fronting Property	10,000	6,430	0.643	C	Mission Valley
124	Northside Drive	Between Portofino Driveway and Friars Road	9/9/2015 - 9/10/2015	NDS	4-Ln Collector w/ RM	30,000	6,590	0.220	A	Mission Valley
125	Northside Drive	Between Friars Road and Fenton Marketplace Driveway	9/9/2015 - 9/10/2015	NDS	4-Ln Collector w/ RM	30,000	20,310	0.677	C	Mission Valley
126	Northside Drive	Between Fenton Marketplace Driveway and Lowe's Frontage Road	9/9/2015 - 9/10/2015	NDS	3-Ln Collector w/ RM (2 NB, 1 SB) ³	22,500	15,890	0.706	D	Mission Valley
127	Mission Village Drive	Between Ronda Avenue and Friars Road WB Ramps	9/9/2015 - 9/10/2015	NDS	4-Ln Major Arterial	40,000	17,220	0.431	B	Mission Valley

Table 4-25 Existing Roadway Level of Service

ID	Roadway	Segment	Count Dates	Data Source	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS	Community
128	Mission Village Drive	Between Friars Road WB Ramps and Friars Road EB Ramps	9/9/2015 - 9/10/2015	NDS	4-Ln Major Arterial	40,000	13,660	0.342	A	Mission Valley
129	Rancho Mission Road	Between Friars Road and San Diego Mission Road	9/16/2015 - 9/17/2015	NDS	3-Ln Collector w/ CLTL (2 NB, 1 SB) ³	22,500	12,820	0.570	C	Mission Valley
130	Ward Road	Between San Diego Mission Road and Camino Del Rio North	9/9/2015 - 9/10/2015	NDS	4-Ln Collector w/o CLTL	15,000	9,580	0.639	C	Mission Valley
131	Santo Road	Between Northern Terminus and Friars Road	9/16/2015 - 9/17/2015	NDS	2-Ln Collector Multi-Family	8,000	6,360	0.796	D	Tierrasanta
132	Riverdale Street	Between Zion Road and Friars Road	9/9/2015 - 9/10/2015	PTD	2-Ln Collector w/ Commercial Fronting	8,000	2,770	0.346	B	Grantville
133	Riverdale Street	Between Friars Road and Vandever Avenue	1/20/2016 - 1/21/2016	AVC	2-Ln Collector w/ Commercial Fronting	8,000	8,900	1.113	F	Grantville
134	Mission Gorge Road	Between Friars Road and Camino Del Rio North	1/20/2016 - 1/21/2016	AVC	4-Ln Collector w/ CLTL	30,000	14,710	0.490	C	Grantville
135	Fairmount Avenue	Between Camino Del Rio North/I-8 WB Off-Ramp and I-8 EB Off-Ramp	9/16/2015 - 9/17/2015	PTD	4-Ln Major Arterial	40,000	40,210	1.005	F	Grantville
136	Fairmount Avenue	Between I-8 EB Off-Ramp and Camino Del Rio South	9/16/2015 - 9/17/2015	PTD	6-Ln Expressway	80,000	82,880	1.036	F	Grantville

Source: Chen Ryan Associates (2016)

Notes:

Bold letter indicated substandard LOS E and F.

RM = Raised Median.

SM = Striped Median.

CLTL = Center Left-Turn Lane.

¹ Capacity for a 5-Ln Major Arterial is assumed to carry 5/6 the capacity of a 6-Ln Major Arterial.

² Capacity for a 3-Ln Collector is assumed to carry ¾ the capacity of a 4-Ln Collector.

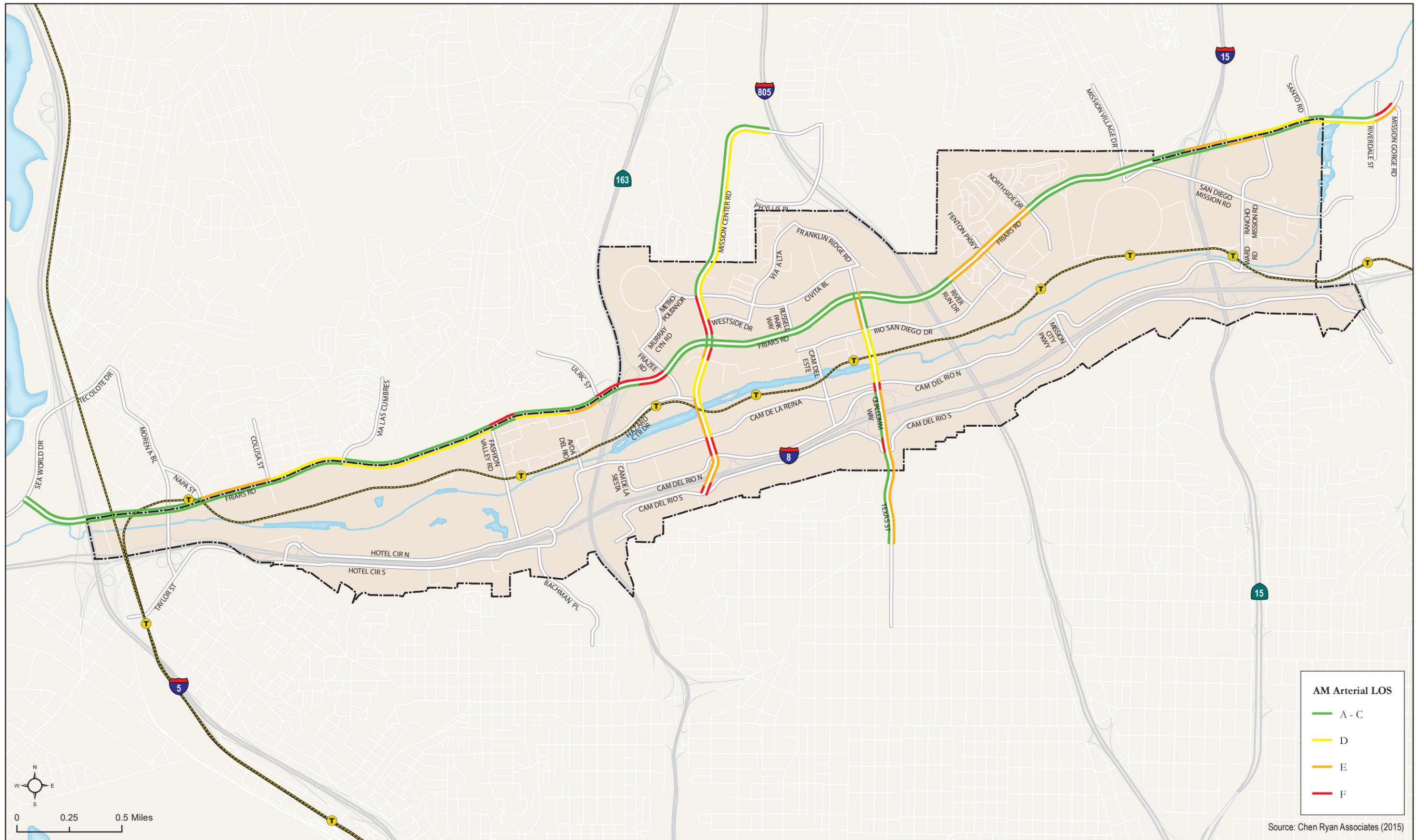
³ Capacity for a 3-Ln Collector w/ CLTL, SM or RM is assumed to carry ¾ the capacity of a 4-Ln Collector with CLTL.

4.4.4 Vehicular Quality – Peak Hour Arterial Analysis

AM and PM peak hour segment level of service was analyzed for study segments, in both directions, based on average travel speeds. **Figure 4-29a** and **4-29b** display AM and PM peak hour automobile level of service results, respectively. **Appendix G** presents the peak hour automobile analysis output. The AM and PM peak hour level of service results are also presented in **Table 4-26**.

As shown, the following segments operate at a substandard level of service (LOS E or F) during either the AM or PM peak hour:

- Friars Road, from Napa Street to Colusa Street – Westbound AM (LOS E)
- Friars Road, from Fashion Valley Road to Via De La Moda – Westbound AM (LOS F); Westbound PM (LOS E)
- Friars Road, from Avenida De Las Tiendas and Ulric Street/SR-163 SB Ramps – Eastbound AM (LOS E); Eastbound PM (LOS F)
- Friars Road, from Ulric Street/SR-163 SB Ramps and SR-163 NB Ramps – Westbound AM/PM (LOS F)
- Friars Road, from SR-163 NB Ramps to Frazee Road – Eastbound/Westbound AM/PM (LOS F)
- Friars Road, from River Run Drive to Fenton Parkway – Eastbound AM/PM (LOS E) Westbound AM (LOS E)
- Friars Road, from Fenton Parkway to Northside Drive – Eastbound/Westbound AM (LOS E); Eastbound PM (LOS F)
- Friars Road, from I-15 SB Ramps to I-15 NB Ramps – Westbound AM (LOS E); Westbound PM (LOS F)
- Friars Road, from I-15 NB Ramps to Rancho Mission Road – Eastbound AM (LOS E); Eastbound PM (LOS F); Westbound PM (LOS E)
- Friars Road, from Santo Road to Riverdale Street – Eastbound PM (LOS E)
- Friars Road, from Riverdale Street to Mission Gorge Road – Eastbound AM (LOS E); Eastbound PM & Westbound AM/PM (LOS F)
- Mission Center Road, from Mission Valley Road/Civita Boulevard to Westside Drive – Southbound AM/PM (LOS F)
- Mission Center Road, from Westside Drive to Friars Road WB Ramps – Northbound AM/PM & Northbound PM (LOS F); Southbound PM (LOS E)
- Mission Center Road, from Friars Road WB Ramps to Friars Road EB Ramps – Northbound PM (LOS E)
- Mission Center Road, from Friars Road EB Ramps to Mission Center Court – Northbound AM & PM and Southbound PM (LOS F); Southbound AM (LOS E)
- Mission Center Road, from Mission Center Court to Hazard Center Drive – Southbound PM (LOS F)
- Mission Center Road, from Hazard Center Drive to Camino De La Reina – Southbound AM/PM & Northbound PM (LOS E)
- Mission Center Road, from Camino De La Reina to Camino Del Rio North – Northbound AM/PM & Southbound AM/PM (LOS F)
- Mission Center Road, from Camino Del Rio North to I-8 EB Ramps – Northbound/Southbound AM (LOS E); Southbound PM (LOS F)
- Mission Center Road, from I-8 EB Ramps to Camino Del Rio South – Northbound/Southbound AM/PM (LOS F)
- Qualcomm Way, from Friars Road WB Ramps to Friars Road EB Ramps – Northbound AM (LOS E); Northbound PM (LOS F)



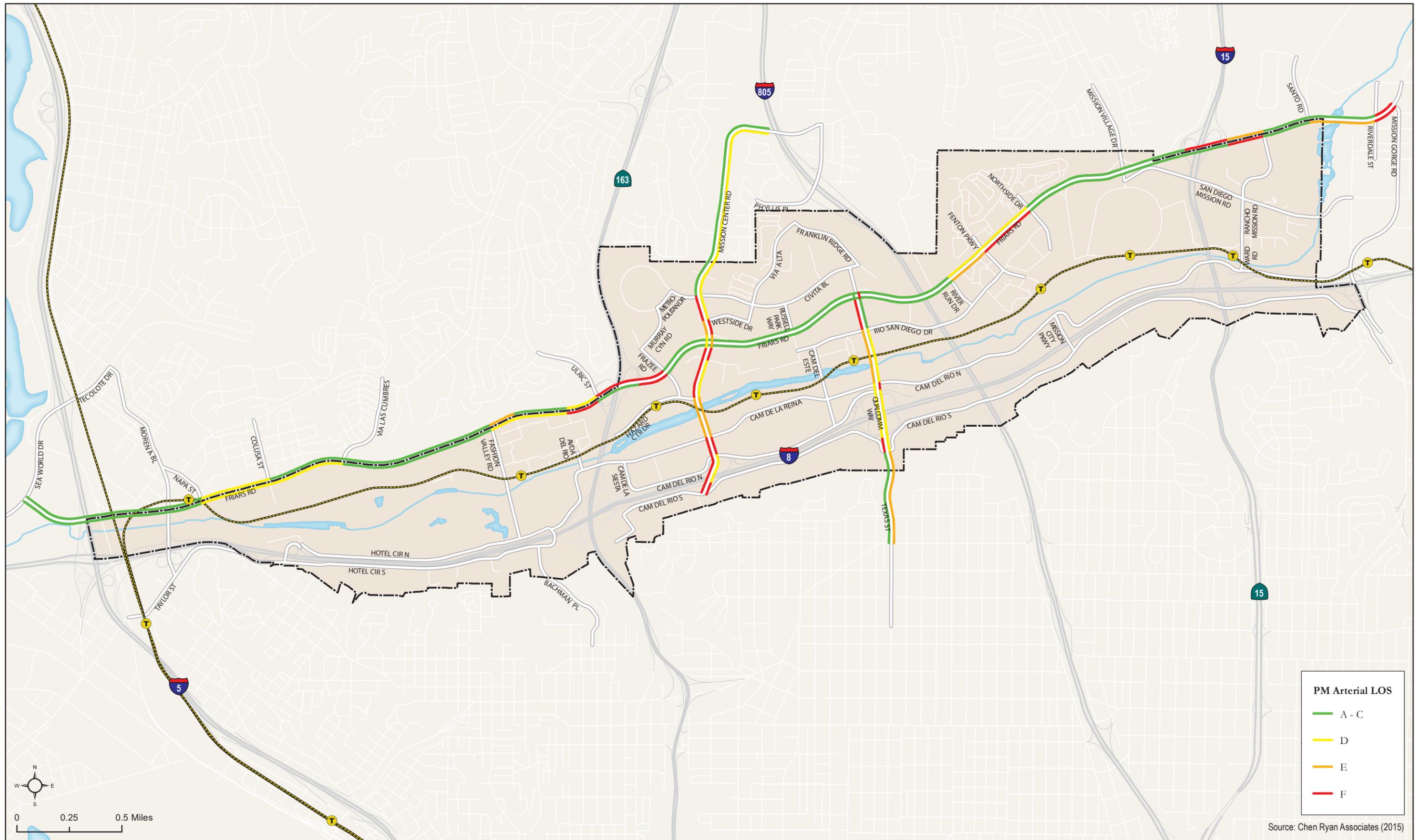


Table 4-26 Existing Peak Hour Roadway Arterial Analysis

Roadway	Segment	AM Peak Hour				PM Peak Hour			
		EB/NB		WB/SB		EB/NB		WB/SB	
		Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Friars Road	Between Sea World Drive and Napa Street	39.5	B	32.7	C	36.9	B	30.4	C
	Between Napa Street and Colusa Street	31.8	C	19.5	E	23.8	D	24.2	D
	Between Colusa Street and Via Las Cumbres	31.6	C	25.5	D	24.4	D	27.1	C
	Between Via Las Cumbres and Fashion Valley Road	25.3	D	31.2	C	28.9	C	32.4	C
	Between Fashion Valley Road and Via De La Moda	31.3	C	11.1	F	23.9	D	19.7	E
	Between Via De La Moda and Fashion Valley Driveway	22.3	D	29.1	C	23.1	D	30.8	C
	Between Fashion Valley Driveway and Avenida De Las Tiendas	22.3	D	29.1	C	23.1	D	30.8	C
	Between Avenida De Las Tiendas and Ulric Street/SR-163 SB Ramps	17.8	E	27.1	C	14.0	F	25.6	D
	Between Ulric Street/SR-163 SB Ramps and SR-163 NB Ramps	34.4	B	14.7	F	34.1	B	12.6	F
	Between SR-163 NB Ramps and Frazee Road	13.7	F	15.7	F	7.3	F	12.7	F
	Between Frazee Road and Mission Center Road	43.3	A	33.6	C	41.0	B	35.3	B
	Between Mission Center Road and Qualcomm Way	43.3	A	33.6	C	41.0	B	35.3	B
	Between Qualcomm Way and River Run Drive	43.3	A	33.6	C	41.0	B	35.3	B
	Between River Run Drive and Fenton Parkway	20.6	E	19.6	E	16.5	E	21.8	D
	Between Fenton Parkway and Northside Drive	19.5	E	19.6	E	7.3	F	25.1	D
	Between Northside Drive and Mission Village Drive	34.8	B	39.0	B	29.0	C	38.3	B
	Between Mission Village Drive and I-15 SB Ramps	34.8	B	39.0	B	29.0	C	38.3	B
	Between I-15 SB Ramps and I-15 NB Ramps	35.8	B	18.6	E	35.4	B	12.5	F
	Between I-15 NB Ramps and Rancho Mission Road	20.2	E	23.8	D	15.5	F	19.6	E
	Between Rancho Mission Road and Santo Road	33.8	C	23.1	D	31.0	C	28.7	C
Between Santo Road and Riverdale Street	23.6	D	28.7	C	18.7	E	30.4	C	
Between Riverdale Street and Mission Gorge Road	17.4	E	11.7	F	11.2	F	11.2	F	
Mission Center Road	North of Mission Valley Road/Civita Boulevard	18.3	D	33.9	B	17.2	D	33.5	B
	Between Mission Valley Road/Civita Boulevard and Westside Drive	18.3	D	11.6	F	17.2	D	11.1	F
	Between Westside Drive and Friars Road WB Ramps	11.0	F	9.4	F	8.1	F	13.2	E
	Between Friars Road WB Ramps and Friars Road EB Ramps	25.6	C	23.4	C	16.2	E	17.4	D

Table 4-26 Existing Peak Hour Roadway Arterial Analysis

Roadway	Segment	AM Peak Hour				PM Peak Hour			
		EB/NB		WB/SB		EB/NB		WB/SB	
		Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Mission Center Road	Between Friars Road EB Ramps and Mission Center Court	7.6	F	13.7	E	3.6	F	10.6	F
	Between Mission Center Court and Hazard Center Drive	21.3	D	17.9	D	18.1	D	12.5	F
	Between Hazard Center Drive and Camino De La Reina	19.2	D	15.8	E	13.7	E	13.7	E
	Between Camino De La Reina and Camino Del Rio North	9.8	F	10.5	F	8.4	F	10.2	F
	Between Camino Del Rio North and I-8 EB Ramps	14.0	E	15.8	E	18.9	D	6.7	F
	Between I-8 EB Ramps and Camino Del Rio South	5.7	F	6.4	F	4.9	F	11.6	F
Qualcomm Way	Between Friars Road WB Ramps and Friars Road EB Ramps	15.4	E	24.4	C	12.6	F	22.8	C
	Between Friars Road EB Ramps and Rio San Diego Drive	27.2	C	15.9	E	26.1	C	11.2	F
	Between Rio San Diego Drive and Camino De La Reina/Camino Del Rio North	20.9	D	21.2	D	18.5	D	14.8	E
	Between Camino De La Reina/Camino Del Rio North and I-8 WB Ramps	11.3	F	7.7	F	7.5	F	18.6	D
	Between I-8 WB Ramps and I-8 EB Ramps	16.1	E	22.1	C	18.0	D	18.6	D
	Between I-8 EB Ramps and Camino Del Rio South	13.2	E	9.9	F	18.0	D	3.8	F
Texas Street	Between Camino Del Rio South and Madison Ave	15.4	E	26.5	C	13.9	E	22.2	C

Source: Chen Ryan Associates (2016)

Note:

Bold letter indicates substandard LOS E or F.

Substandard operating segments (continued):

- Qualcomm Way, from Friars Road EB Ramps to Rio San Diego Drive – Southbound AM (LOS E); Southbound PM (LOS F)
- Qualcomm Way, from Rio San Diego Drive to Camino De La Reina/Camino Del Rio North – Southbound PM (LOS E)
- Qualcomm Way, from Camino De La Reina/Camino Del Rio North to I-8 WB Ramps – Southbound/Northbound AM & Northbound PM (LOS F)
- Qualcomm Way, from I-8 WB Ramps to I-8 EB Ramps – Northbound AM (LOS E)
- Qualcomm Way, from I-8 EB Ramps to Camino Del Rio South – Northbound AM (LOS E); Southbound AM/PM (LOS F)
- Texas Street, from Camino Del Rio South to Madison Avenue – Northbound AM/PM (LOS E)

4.4.5 Vehicular Quality – Travel Speed Survey

Travel speeds were recorded along three major corridors in Mission Valley during periods of high demand to estimate real-world vehicular speeds when traffic is likely to be heaviest, as well as to identify locations of delay along key roadway facilities. Roadways analyzed include Friars Road, Mission Center Road, and Qualcomm Way/Texas Street. Peak periods were defined as follows:

- Morning Peak: 7:00 AM – 9:00 AM
- Midday Peak: 11:00 AM – 1:00 PM
- Evening Peak: 4:00 PM – 6:00 PM

Data for Mission Center Road and Qualcomm Way were collected on one typical midweek day. On Friars Road, data collection spanned two days, as indicated below:

- Mission Center Road: Wednesday, November 11, 2015
- Qualcomm Way/Texas Street: Thursday, October 29, 2015
- Friars Road: Tuesday, October 27 and Wednesday, October 28, 2015.

Data collection was accomplished by driving continuously along each segment, at speeds comparable to the flow of traffic. Data collectors drove in both directions in order to capture directional speed data, for the entirety of each two-hour peak. Speed and position data were recorded through GPS logging software. The software captures a vehicle’s latitudinal and longitudinal position, as well as speed in miles per hour, once per half-second.

Average speeds by direction and period for Mission Center Road are summarized in **Figure 4-30** and **Figure 4-31** for northbound and southbound directions, respectively.

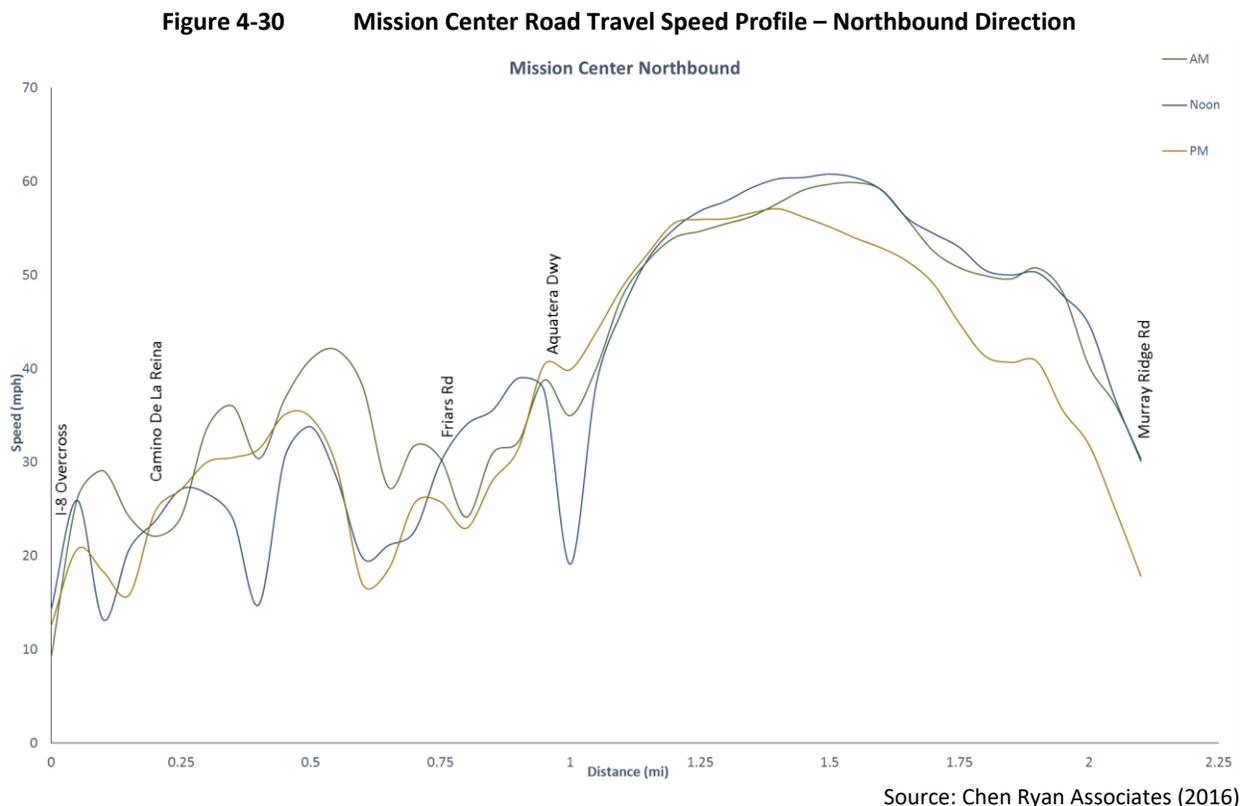
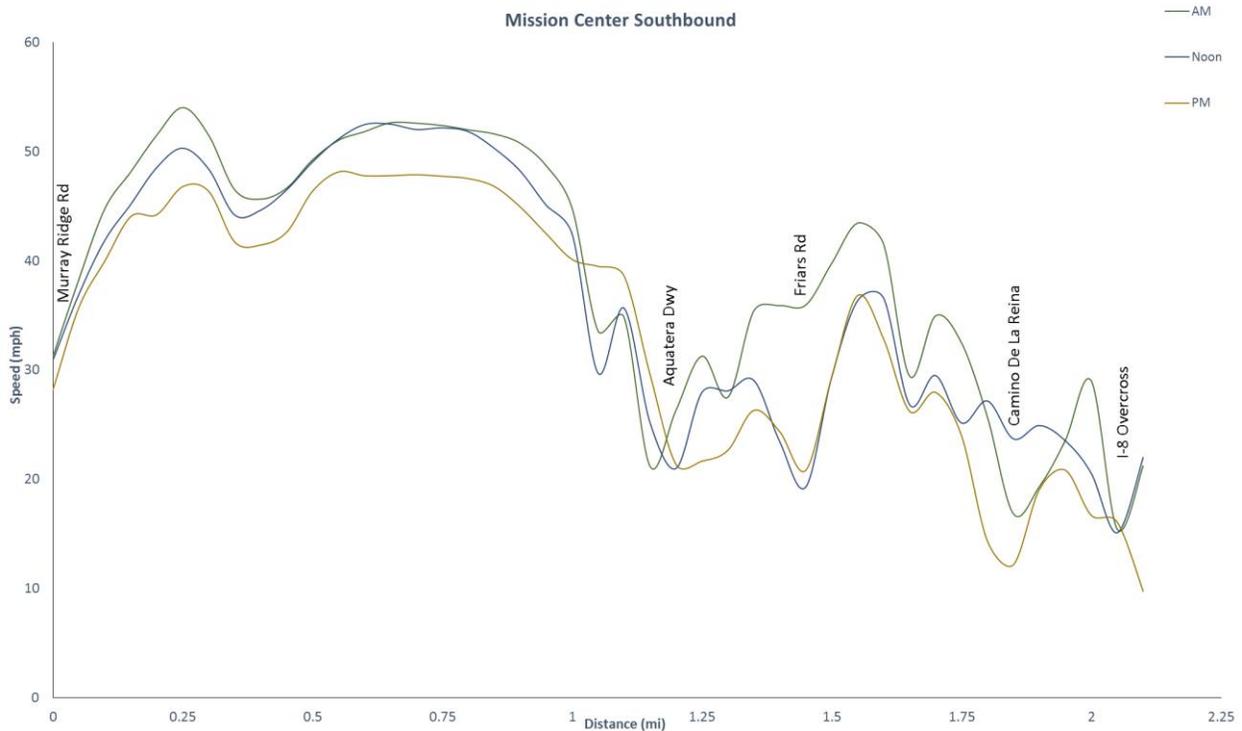


Figure 4-31 Mission Center Road Travel Speed Profile – Southbound Direction



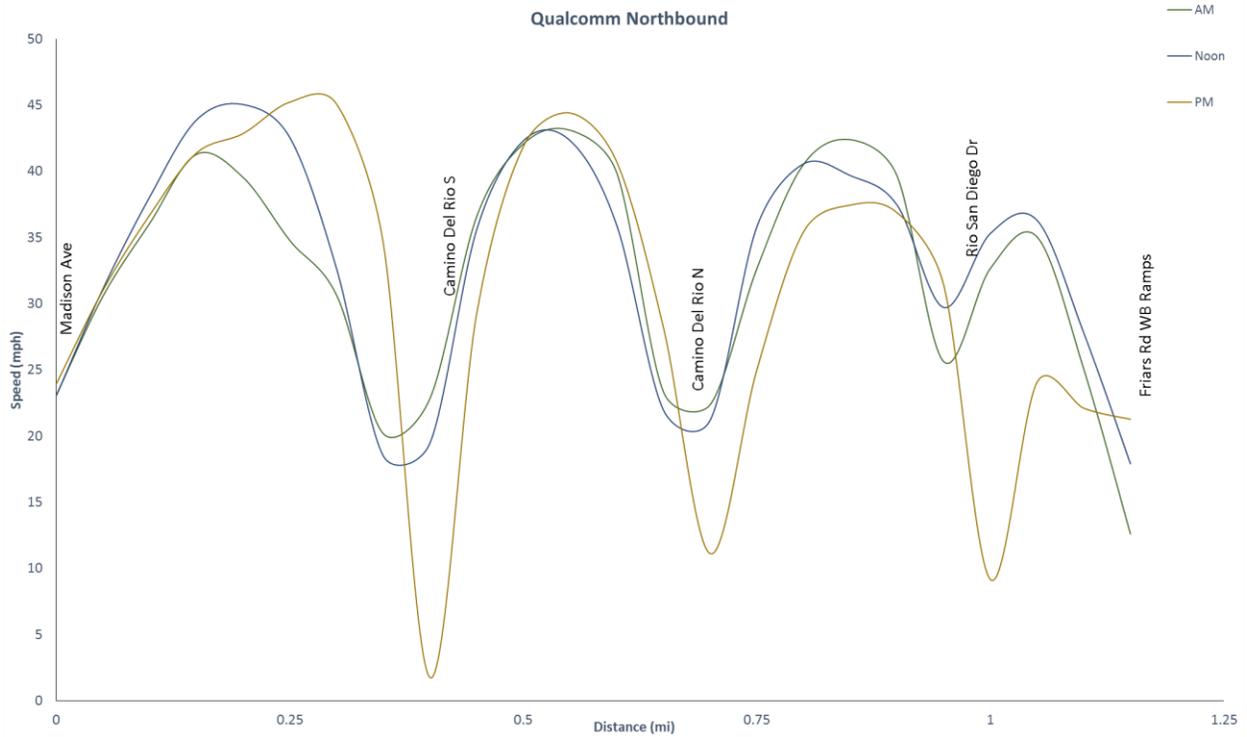
Source: Chen Ryan Associates (2016)

In the northbound direction, the lowest vehicular speeds were recorded at the Interstate 8 overcross during the AM peak period, at approximately 9 mph, whereas highest vehicular speeds were found between Aquaterra Driveway and Murray Ridge Road during the noon peak period, at approximately 60 mph. In the southbound direction, the lowest vehicular speeds were recorded at the Interstate 8 overcross during the PM peak period, at approximately 10 mph, whereas highest vehicular speeds were found between Murray Ridge Road and Aquaterra Driveway in the AM peak period, at approximately 54 mph.

Average directional speeds for the Qualcomm Way/Texas Street corridor are summarized in **Figure 4-32** and **Figure 4-33** for northbound and southbound directions, respectively.

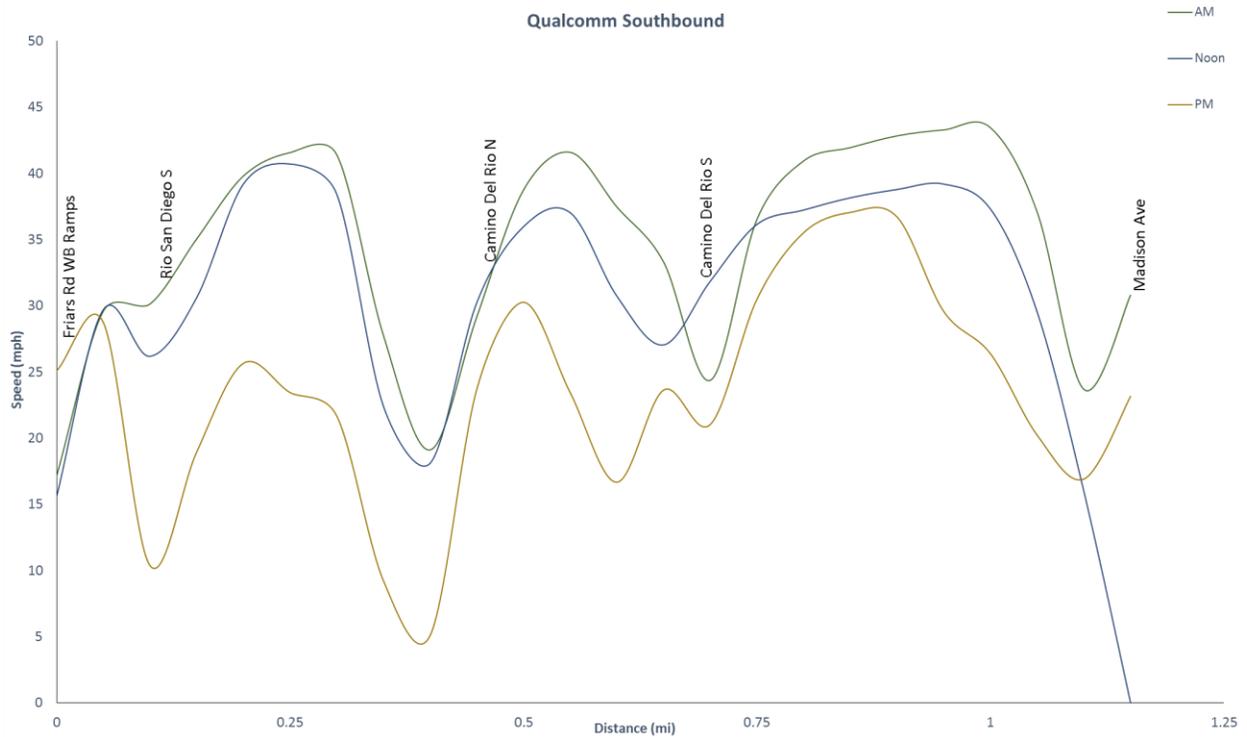
In the northbound direction, the lowest vehicular speeds were recorded approaching the intersection of Qualcomm Way/Texas Street and Camino Del Rio South during the PM peak period, at approximately 2 mph, whereas highest vehicular speeds were found between Madison Avenue and Camino Del Rio South during the PM peak period, at approximately 45 mph. In the southbound direction, the lowest vehicular speeds were recorded approaching the intersection of Texas Street and Madison Avenue during the noon peak period, where travel speeds reduced to a halt, whereas highest vehicular speeds were found during the AM period, where the speed of traffic reached approximately 45 mph on several occurrences.

Figure 4-32 Qualcomm Way Travel Speed Profile – Northbound Direction



Source: Chen Ryan Associates (2016)

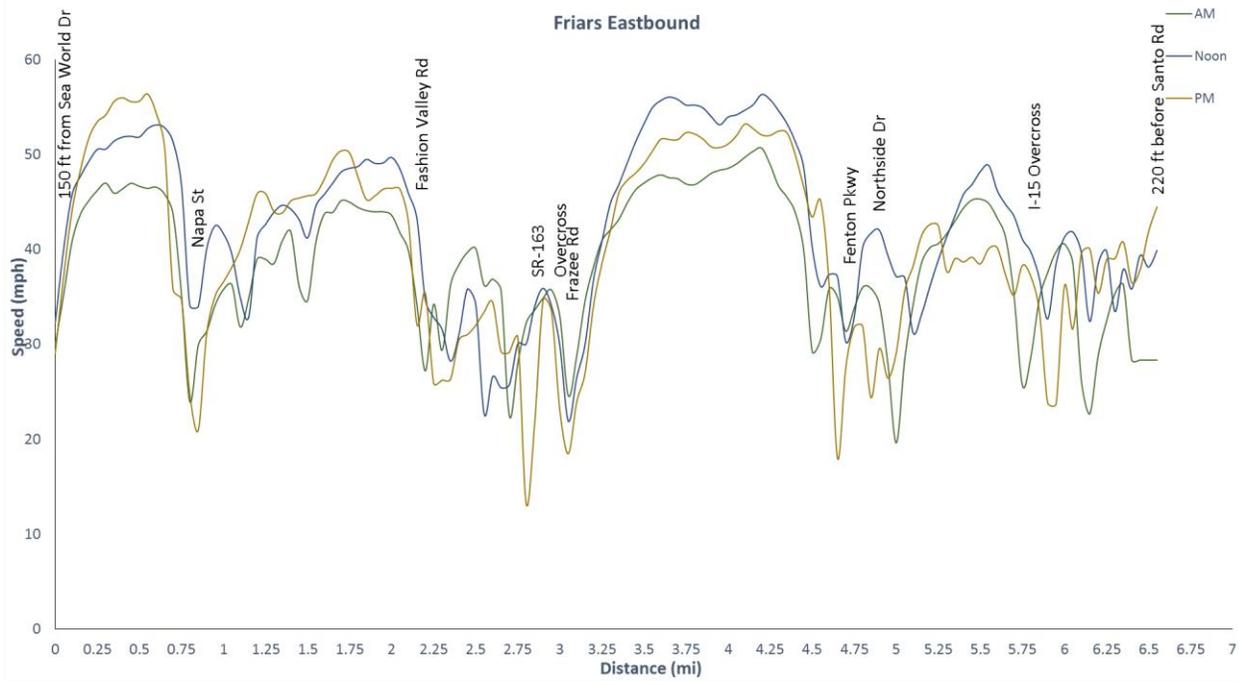
Figure 4-33 Qualcomm Way Travel Speed Profile – Southbound Direction



Source: Chen Ryan Associates (2016)

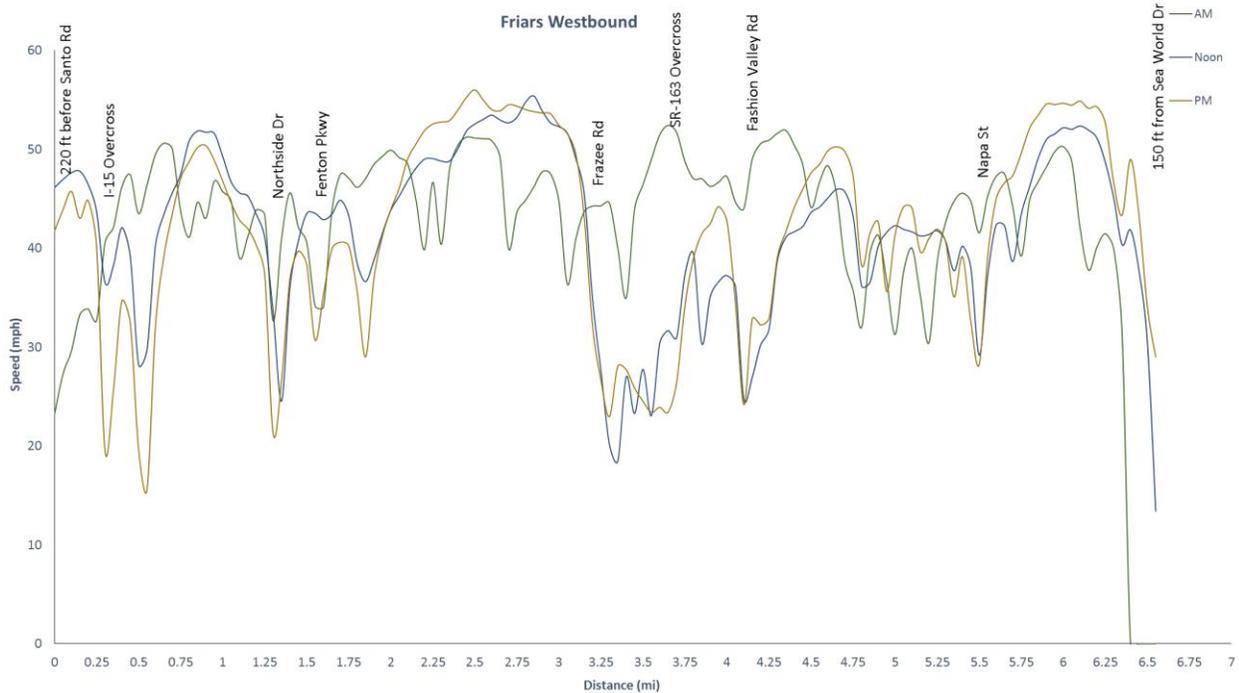
Figure 4-34 and Figure 4-35 summarize average directional speeds along the Friars Road corridor for eastbound and westbound directions, respectively.

Figure 4-34 Friars Road Travel Speed Profile – Eastbound Direction



Source: Chen Ryan Associates (2016)

Figure 4-35 Friars Road Travel Speed Profile – Westbound Direction



Source: Chen Ryan Associates (2016)

In the eastbound direction, the lowest vehicular speeds were recorded near the SR-163 overcross during the PM peak period, at approximately 13 mph. The highest vehicular speeds were found between Sea World Drive and Napa Street during the PM peak period, as well as between Frazee Road and Fenton Parkway during the noon peak period. In both of these segments, traffic speeds reached approximately 55 mph. In the westbound direction, the lowest vehicular speeds were recorded approaching the intersection of Friars Road and Sea World Drive during the AM peak period, where travel speeds reduced to a halt, whereas highest vehicular speeds were found between Fenton Parkway and Frazee Road during the PM period, where the speed of traffic reached approximately 55 mph.

A complete dataset, including all vehicular runs performed for this analysis, is provided in **Appendix H**.

4.4.6 Vehicular Quality – Intersection Analysis

The intersection analysis results are presented in **Figure 4-36a** for all 67 study intersections, during the AM and PM peak hours. **Figure 4-36b** presents the midday peak hour intersection level of service for 23 study intersections. **Table 4-27** identifies the traffic control, provides the intersection level of service results and the average intersection delay for AM and PM peak hours for all study intersections. Table 4-27 also provides mid-day peak hour results for 23 of the study intersections where mid-day data was collected. Intersection level of service calculation worksheets are provided in **Appendix I**.

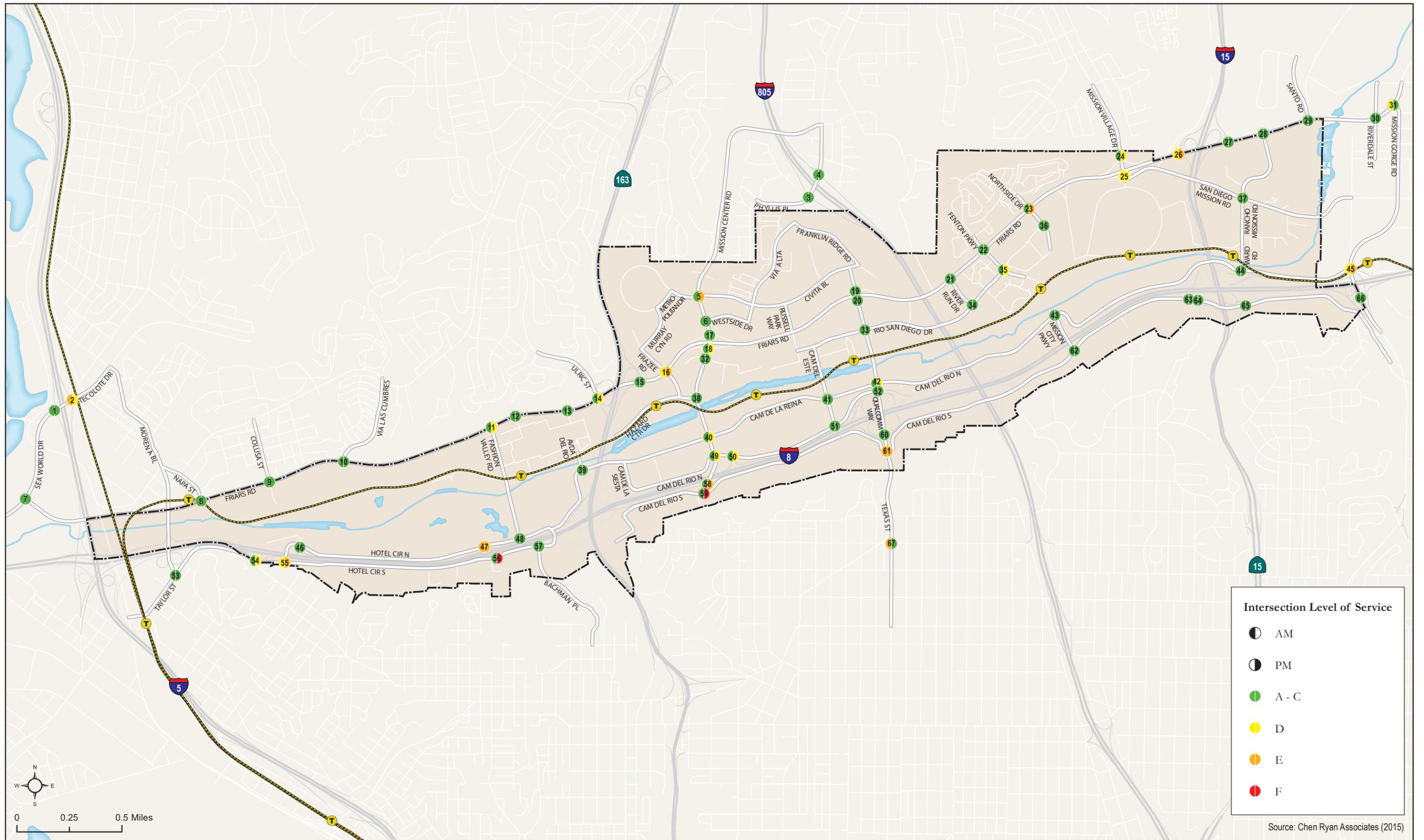
The following 13 intersections were found to operate at substandard (LOS E or F) levels of service during the AM, PM and/or midday peak hour:

- #2 I-5 NB Ramps and Sea World Drive/Tecolote Road – AM LOS E
- #5 Mission Center Road and Mission Valley Road/Civita Boulevard – PM LOS E
- #16 Frazee Road and Friars Road – PM LOS E
- #23 Northside Drive and Friars Road – PM LOS E
- #26 I-15 SB Ramps and Friars Road – PM LOS E
- #45 Fairmount Avenue/Camino Del Rio North and I-8 WB Off-Ramp – PM LOS E
- #47 I-8 WB Ramps/Handlery Hotel Driveway and Hotel Circle North (E) – AM/PM LOS E
- #55 Hotel Circle North and Taylor Street/Hotel Circle South – PM LOS E
- #56 I-8 EB Ramps and Hotel Circle South – PM LOS F
- #58 Mission Center Road and I-8 EB Ramps – PM LOS E
- #59 Mission Center Road and Camino Del Rio South – PM LOS F; Midday LOS E
- #61 Texas Street and Camino Del Rio South – AM/PM LOS E
- #67 Texas Street and Madison Avenue – AM LOS E

4.4.7 Vehicular Quality – Intersection Queuing Analysis

A queuing analysis was performed to understand potential overflow issues at all study area off-ramps, congested and/or closely spaced intersections, and each metered freeway on-ramp. Closely spaced intersections include those separated by less than 500 feet. The limitations in turn-lane storage capacity can result in turning vehicles overflowing into adjacent lanes, while excessive queuing (where queue length exceeds distance to the upstream intersection) at closely spaced intersections can negatively impact upstream intersection operations. Either situation may result in deteriorating traffic operations and additional levels of congestion.

Table 4-28 identifies the intersection control, pocket length, 95% queue length and excess queue (if applicable) for each movement at the study intersections.



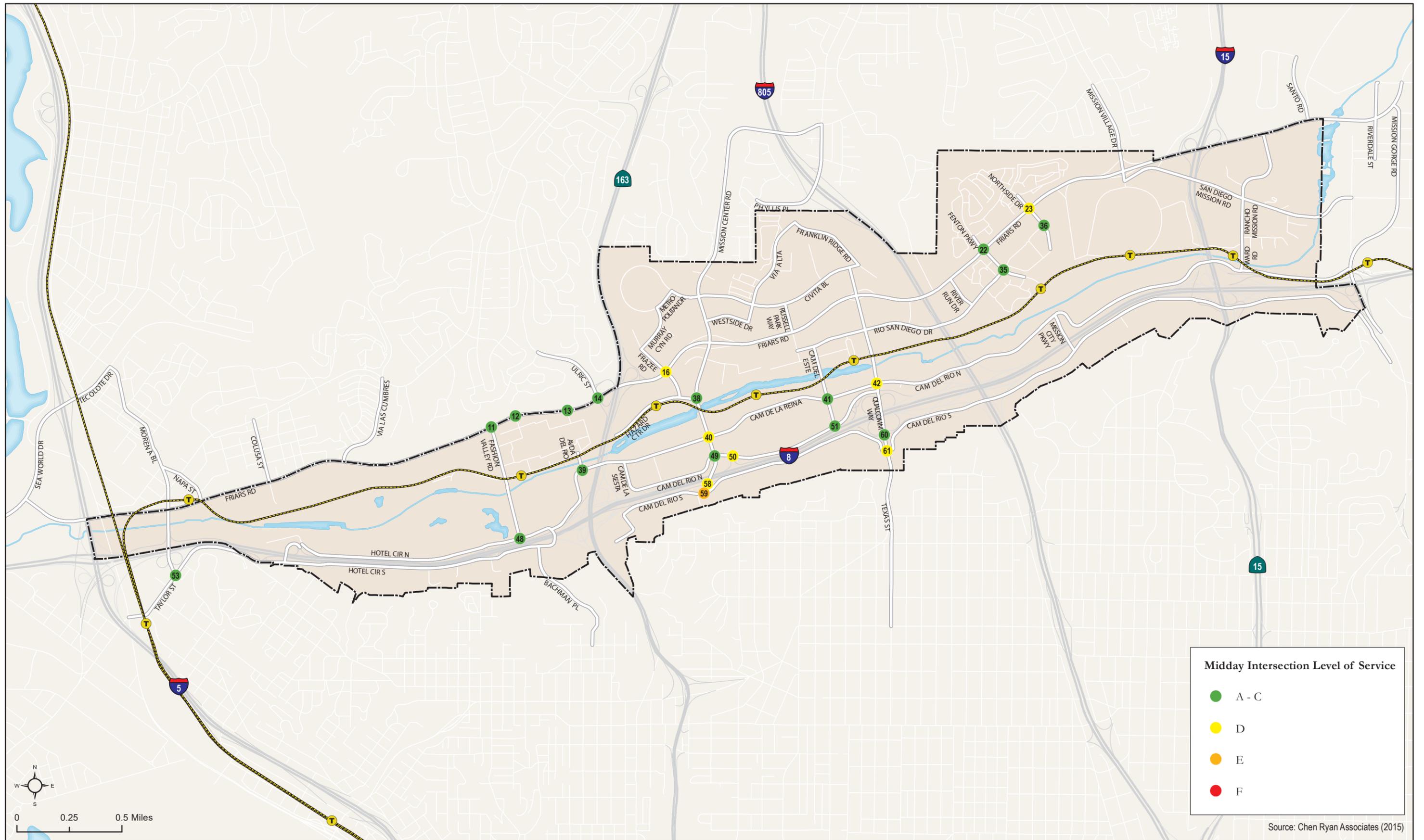


Table 4-27 Existing Peak Hour Intersection Analysis

Intersection	Traffic Control	Count Date	Count Source	AM Peak Hour		PM Peak Hour		Mid-Day Peak Hour	
				Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1: I-5 SB Ramps / Sea World Drive	Signal	9/10/2015	PTD	33.1	C	27.4	C	-	-
2: I-5 NB Ramps / Sea World Drive/Tecolote Road	Signal	9/10/2015	PTD	58.6	E	44.3	D	-	-
3: I-805 SB Ramps / Phyllis Place	Signal	9/16/2015	PTD	20.2	C	20.1	C	-	-
4: I-805 NB Ramps / Phyllis Place	Signal	9/16/2015	PTD	14.7	B	10.0	B	-	-
5: Mission Center Road / Mission Valley Road/Civita Boulevard	Signal	9/16/2015	PTD	31.1	C	78.9	E	-	-
6: Mission Center Road / Westside Drive	Signal	9/16/2015	PTD	20.9	C	15.6	B	-	-
7: Sea World Drive / Friars Road	Signal	9/10/2015	PTD	15.9	B	19.9	B	-	-
8: Napa Street / Friars Road	Signal	9/10/2015	PTD	12.0	B	7.7	A	-	-
9: Colusa Street / Friars Road	Signal	9/10/2015	PTD	15.0	B	16.3	B	-	-
10: Via Las Cumbres / Friars Road	Signal	9/10/2015	PTD	16.5	B	20.8	C	-	-
11: Fashion Valley Road / Friars Road	Signal	9/10/2015	PTD	22.0	C	51.3	D	12.0	B
12: Via De La Moda / Friars Road	Signal	9/10/2015	PTD	2.5	A	6.7	A	10.1	B
13: Avenida De Las Tiendas / Friars Road	Signal	9/10/2015	PTD	5.4	A	28.0	C	12.0	B
14: Ulric Street/SR-163 SB Ramps / Friars Road	Signal	9/10/2015	PTD	35.0	C	39.9	D	22.4	C
15: SR-163 NB Ramps / Friars Road	Signal	9/10/2015	PTD	11.3	B	12.2	B	-	-
16: Frazee Road / Friars Road	Signal	9/10/2015	PTD	37.1	D	66.5	E	38.4	D
17: Mission Center Road / Friars Road WB Ramps	Signal	9/16/2015	PTD	12.4	B	10.9	B	-	-
18: Mission Center Road / Friars Road EB Ramps	Signal	9/16/2015	PTD	20.5	C	44.0	D	-	-
19: Qualcomm Way / Friars Road WB Ramps	Signal	9/16/2015	PTD	12.4	B	13.1	B	-	-
20: Qualcomm Way / Friars Road EB Ramps	Signal	9/16/2015	PTD	7.2	A	8.8	A	-	-
21: River Run Drive / Friars Road	Signal	9/16/2015	PTD	18.6	B	21.0	C	-	-

Table 4-27 Existing Peak Hour Intersection Analysis

Intersection	Traffic Control	Count Date	Count Source	AM Peak Hour		PM Peak Hour		Mid-Day Peak Hour	
				Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
22: Fenton Parkway / Friars Road	Signal	9/16/2015	PTD	26.3	C	21.2	C	22.8	C
23: Northside Drive / Friars Road	Signal	9/16/2015	PTD	29.2	C	55.5	E	42.2	D
24: Mission Village Drive / Friars Road WB Ramps	Signal	9/16/2015	PTD	9.2	A	38.1	D	-	-
25: Mission Village Drive / Friars Road EB Ramps	Signal	9/16/2015	PTD	44.5	D	52.5	D	-	-
26: I-15 SB Ramps / Friars Road	Signal	9/16/2015	PTD	38.1	D	57.5	E	-	-
27: I-15 NB Ramps / Friars Road	Signal	9/16/2015	PTD	5.2	A	4.8	A	-	-
28: Rancho Mission Road / Friars Road	Signal	9/16/2015	PTD	21.5	C	34.4	C	-	-
29: Santo Road / Friars Road	Signal	9/17/2015	PTD	13.0	B	13.0	B	-	-
30: Riverdale Street / Friars Road	Signal	9/17/2015	PTD	29.4	C	26.2	C	-	-
31: Mission Gorge Road / Friars Road	Signal	9/17/2015	PTD	39.8	D	33.4	C	-	-
32: Mission Center Road / Mission Center Court	Signal	9/16/2015	PTD	25.3	C	24.8	C	-	-
33: Qualcomm Way / Rio San Diego Drive	Signal	9/16/2015	PTD	14.6	B	30.4	C	-	-
34: River Run Drive / Rio San Diego Drive	AWSC	9/16/2015	PTD	9.5	A	10.4	B	-	-
35: Fenton Parkway / Rio San Diego Drive	Signal	9/16/2015	PTD	16.0	B	35.7	D	32.3	C
36: Northside Drive / Rio San Diego Drive	Signal	9/16/2015	PTD	19.0	B	16.2	B	21.2	C
37: Rancho Mission Road / San Diego Mission Road	Signal	9/17/2015	PTD	27.3	C	31.6	C	-	-
38: Mission Center Road / Hazard Center Drive	Signal	9/10/2015	PTD	12.9	B	33.1	C	17.1	B
39: Avenida Del Rio / Camino De La Reina	Signal	9/10/2015	PTD	7.5	A	11.2	B	9.8	A
40: Mission Center Road / Camino De La Reina	Signal	9/10/2015	PTD	21.9	C	42.2	D	35.6	D
41: Camino Del Este / Camino De La Reina	Signal	9/16/2015	PTD	10.7	B	17.6	B	20.5	C
42: Qualcomm Way / Camino De La Reina	Signal	9/17/2015	PTD	16.7	B	37.8	D	41.4	D
43: Mission City Parkway / Camino Del Rio North	Signal	9/17/2015	PTD	13.3	B	9.4	A	-	-

Table 4-27 Existing Peak Hour Intersection Analysis

Intersection	Traffic Control	Count Date	Count Source	AM Peak Hour		PM Peak Hour		Mid-Day Peak Hour	
				Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
44: Ward Road / Camino Del Rio North	Signal	9/17/2015	PTD	12.0	B	14.6	B	-	-
45: Fairmount Avenue / Camino Del Rio North/I-8 WB Off-Ramp	Signal	9/17/2015	PTD	51.4	D	72.7	E	-	-
46: I-8 WB Ramps / Hotel Circle North (W)	Signal	9/10/2015	PTD	6.6	A	6.6	A	-	-
47: I-8 WB Ramps/Handlery Driveway / Hotel Circle North (E)	AWSC	9/10/2015	PTD	36.6	E	41.0	E	-	-
48: Fashion Valley Road / Hotel Circle North	Signal	9/10/2015	PTD	10.0	A	16.2	B	11.5	B
49: Mission Center Road / Camino Del Rio North	Signal	9/10/2015	PTD	16.3	B	43.1	D	21.0	C
50: I-8 WB Ramps/Mission Valley Mall Driveway / Camino Del Rio North	Signal	9/10/2015	PTD	19.8	B	53.7	D	38.8	D
51: Camino Del Este / Camino Del Rio North	Signal	9/10/2015	PTD	18.5	B	33.8	C	29.1	C
52: Qualcomm Way / Camino Del Rio N/I-8 WB Ramps	Signal	9/16/2015	PTD	12.4	B	17.7	B	15.7	B
53: Morena Boulevard / Taylor Street	Signal	9/10/2015	PTD	29.8	C	18.8	B	-	-
54: I-8 EB Ramps / Taylor Street	Signal	9/10/2015	PTD	20.3	C	39.4	D	-	-
55: Hotel Circle North / Taylor Street/Hotel Circle South	AWSC	11/19/2015	AVC	34.2	D	43.1	E	-	-
56: I-8 EB Ramps / Hotel Circle South	AWSC	9/10/2015	PTD	23.3	C	53.2	F	-	-
57: Bachman Place / Hotel Circle South	Signal	9/10/2015	PTD	22.9	C	19.5	B	-	-
58: Mission Center Road / I-8 EB Ramps	Signal	9/9/2015	PTD	17.5	B	60.5	E	51.1	D
59: Mission Center Road / Camino Del Rio South	Signal	9/10/2015	PTD	28.9	C	107.3	F	64.1	E
60: Qualcomm Way/Texas Street / I-8 EB Ramps	Signal	9/17/2015	PTD	0.9	A	0.8	A	1.0	A
61: Texas Street / Camino Del Rio South	Signal	9/16/2015	PTD	58.4	E	67.6	E	37.0	D
62: Mission City Parkway / Camino Del Rio South	Signal	9/17/2015	PTD	8.0	A	18.8	B	-	-

Table 4-27 Existing Peak Hour Intersection Analysis

Intersection	Traffic Control	Count Date	Count Source	AM Peak Hour		PM Peak Hour		Mid-Day Peak Hour	
				Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
63: I-15 SB Off-Ramp / Camino Del Rio South	Signal	9/16/2015	PTD	3.5	A	6.9	A	-	-
64: I-15 SB On-Ramp / Camino Del Rio South	Signal	9/17/2015	PTD	1.3	A	3.2	A	-	-
65: I-15 NB Ramps / Camino Del Rio South	Signal	9/17/2015	PTD	17.0	B	11.6	B	-	-
66: Mission Gorge Road/Fairmount Avenue / I-8 EB Off-Ramp	Signal	9/17/2015	PTD	16.7	B	23.1	C	-	-
67: Texas Street / Madison Avenue	Signal	9/17/2015	PTD	64.3	E	31.9	C	-	-

Source: Pacific Technical Data, Accurate Video Counts (2015); City of San Diego; Chen Ryan Associates (2016)

Notes:

Bold letter indicates substandard LOS E or F.

AWSC = All-way stop controlled.

PTD = Pacific Technical Data.

AVC = Accurate Video Counts.

Table 4-28 Existing Peak Hour Intersection Queuing Analysis

ID	Intersection	Traffic Control	Turning Movement	Pocket Length	AM / Midday / PM 95% Queue Length	AM / Midday / PM Excess Queue (ft)
1	I-5 SB Ramps / Sea World Drive	Signalized	SBL	180	254 / - / 268	74 / - / 88
			SBR	180	0 / - / 0	0 / - / 0
			EBT	950	542 / - / 360	0 / - / 0
			WBL	120	210 / - / 151	90 / - / 31
			WBT	425	62 / - / 100	0 / - / 0
2	I-5 NB Ramps / Sea World Drive/Tecolote Road	Signalized	NBT	65	114 / - / 351	49 / - / 286
			NBR	65	50 / - / 355	0 / - / 290
			EBL	170	600 / - / 361	430 / - / 191
			EBT	430	135 / - / 192	0 / - / 0
			WBT	1,165	296 / - / 316	0 / - / 0
3	I-805 SB Ramps / Phyllis Place	Signalized	SBT	120	238 / - / 135	118 / - / 15
			SBR	120	0 / - / 1	0 / - / 0
			EBT	1,300	65 / - / 45	0 / - / 0
			EBR	1,300	0 / - / 0	0 / - / 0
			WBL	550	315 / - / 603	0 / - / 53
			WBT	550	20 / - / 30	0 / - / 0
4	I-805 NB Ramps / Phyllis Place	Signalized	NBT	190	23 / - / 48	0 / - / 0
			NBR	190	263 / - / 73	73 / - / 0
			EBL	200	61 / - / 41	0 / - / 0
			EBT	550	229 / - / 57	0 / - / 0
			WBT	255	171 / - / 178	0 / - / 0
			WBR	255	39 / - / 43	0 / - / 0
5	Mission Center Road / Mission Valley Road/Civita Boulevard	Signalized	NBL	220	192 / - / 79	0 / - / 0
			NBT	550	64 / - / 53	0 / - / 0
			NBR	550	0 / - / 1	0 / - / 0
			SBL	195	37 / - / 59	0 / - / 0
			SBT	480	130 / - / 183	0 / - / 0
			SBR	480	62 / - / 0	0 / - / 0
			EBL	165	54 / - / 461	0 / - / 296
			EBT	635	8 / - / 18	0 / - / 0
			EBR	635	0 / - / 6	0 / - / 0
			WBL	270	70 / - / 54	0 / - / 0
			WBT	1,270	16 / - / 11	0 / - / 0

Table 4-28 Existing Peak Hour Intersection Queuing Analysis

ID	Intersection	Traffic Control	Turning Movement	Pocket Length	AM / Midday / PM 95% Queue Length	AM / Midday / PM Excess Queue (ft)
5	Mission Center Road / Mission Valley Road/Civita Boulevard	Signalized	WBR	1,270	0 / - / 0	0 / - / 0
6	Mission Center Road / Westside Drive	Signalized	NBL	100	128 / - / 153	28 / - / 53
			NBT	320	138 / - / 184	0 / - / 0
			NBR	200	0 / - / 87	0 / - / 0
			SBL	130	11 / - / 40	0 / - / 0
			SBT	550	145 / - / 415	0 / - / 0
			EBT	70	69 / - / 144	0 / - / 74
			EBR	70	27 / - / 99	0 / - / 29
			WBL	120	102 / - / 94	0 / - / 0
11	Fashion Valley Road / Friars Road	Signalized	WBT	950	33 / - / 25	0 / - / 0
			NBT	940	295 / 112 / 308	0 / 0 / 0
			NBR	940	17 / 64 / 192	0 / 0 / 0
			SBT	50	30 / 7 / 22	0 / 0 / 0
			EBL	155	9 / 11 / 25	0 / 0 / 0
			EBT	3,770	204 / 158 / 769	0 / 0 / 0
			WBL	270	58 / 79 / 129	0 / 0 / 0
12	Via De La Moda / Friars Road	Signalized	WBT	570	777 / 173 / 158	207 / 0 / 0
			EBL	160	0 / 17 / 6	0 / 0 / 0
			NBL	200	11 / 45 / 77	0 / 0 / 0
			NBR	200	0 / 46 / 50	0 / 0 / 0
			EBT	580	26 / 210 / 121	0 / 0 / 0
			WBL	310	53 / 144 / 154	0 / 0 / 0
13	Avenida De Las Tiendas / Friars Road	Signalized	WBT	1,235	790 / 187 / 170	0 / 0 / 0
			NBL	215	9 / 34 / 65	0 / 0 / 0
			NBT/NBR	215	0 / 0 / 60	0 / 0 / 0
			EBL	150	0 / 23 / 47	0 / 0 / 0
			EBT	1,235	213 / 284 / 493	0 / 0 / 0
			WBL	430	95 / 325 / 276	0 / 0 / 0
14	Ulric Street/SR-163 SB Ramps / Friars Road	Signalized	WBT	715	331 / 187 / 178	0 / 0 / 0
			NBL/NBT	330	212 / 136 / 310	0 / 0 / 0
			NBR	225	0 / 0 / 0	0 / 0 / 0
			SBL	516	172 / 98 / 268	0 / 0 / 0
			SBR	205	34 / 18 / 89	0 / 0 / 0

Table 4-28 Existing Peak Hour Intersection Queuing Analysis

ID	Intersection	Traffic Control	Turning Movement	Pocket Length	AM / Midday / PM 95% Queue Length	AM / Midday / PM Excess Queue (ft)
14	Ulric Street/SR-163 SB Ramps / Friars Road	Signalized	EBL	135	87 / 98 / 170	0 / 0 / 35
			EBT	715	109 / 143 / 489	0 / 0 / 0
			EBR	120	0 / 166 / 0	0 / 46 / 0
			WBT	1070	474 / 260 / 393	0 / 0 / 0
			WBR	100	145 / 65 / 99	45 / 0 / 0
15	SR-163 NB Ramps / Friars Road	Signalized	EBL	250	371 / - / 430	121 / - / 180
			EBT	1,070	0 / - / 0	0 / - / 0
			WBT	630	386 / - / 430	0 / - / 0
16	Frazee Road / Friars Road	Signalized	EBL	205	500 / 277 / 242	295 / 72 / 37
			NBL	190	106 / 223 / 358	0 / 33 / 168
			NBT/NBR	375	65 / 51 / 92	0 / 0 / 0
			SBL	145	32 / 62 / 136	0 / 0 / 0
			SBT/SBR	250	63 / 283 / 687	0 / 33 / 437
			EBT	630	247 / 379 / 867	0 / 0 / 237
			EBR	320	66 / 61 / 488	0 / 0 / 168
			WBL	160	84 / 142 / 226	0 / 0 / 66
17	Mission Center Road / Friars Road WB Ramps	Signalized	NBL	210	76 / - / 139	0 / - / 0
			NBT	210	62 / - / 188	0 / - / 0
			SBT	290	160 / - / 155	0 / - / 0
			SBR	130	129 / - / 4	0 / - / 0
			WBL	305	65 / - / 100	0 / - / 0
			WBT/WBR	970	65 / - / 98	0 / - / 0
18	Mission Center Road / Friars Road EB Ramps	Signalized	NBT/NBR	200	160 / - / 352	0 / - / 152
			SBL	120	73 / - / 173	0 / - / 53
			SBT	240	39 / - / 73	0 / - / 0
			EBL	250	135 / - / 218	0 / - / 0
			EBT	825	9 / - / 12	0 / - / 0
			EBR	250	35 / - / 247	0 / - / 0
19	Qualcomm Way / Friars Road WB Ramps	Signalized	NBL	195	287 / - / 302	92 / - / 107
			NBT	195	5 / - / 6	0 / - / 0
			WBL	650	68 / - / 144	0 / - / 0
			WBT/WBR	650	68 / - / 143	0 / - / 0

Table 4-28 Existing Peak Hour Intersection Queuing Analysis

ID	Intersection	Traffic Control	Turning Movement	Pocket Length	AM / Midday / PM 95% Queue Length	AM / Midday / PM Excess Queue (ft)
20	Qualcomm Way / Friars Road EB Ramps	Signalized	NBT	665	67 / - / 85	0 / - / 0
			NBR	160	22 / - / 32	0 / - / 0
			SBL	195	11 / - / 13	0 / - / 0
			SBT	195	18 / - / 46	0 / - / 0
			EBL/EBT	340	58 / - / 53	0 / - / 0
			EBR	950	43 / - / 66	0 / - / 0
25	Mission Village Drive / Friars Road EB Ramps	Signalized	SBL	170	378 / - / 401	208 / - / 231
			SBT	330	109 / - / 230	0 / - / 0
			EBL/EBT	160	222 / - / 198	62 / - / 38
			EBR	530	21 / - / 40	0 / - / 0
26	I-15 SB Ramps / Friars Road	Signalized	SBL/SBT	315	315 / - / 705	0 / - / 390
			SBR	815	188 / - / 110	0 / - / 0
			EBL	415	285 / - / 637	0 / - / 222
			EBR	165	34 / - / 296	0 / - / 131
			WBL	350	277 / - / 384	0 / - / 34
			WBR	600	0 / - / 0	0 / - / 0
27	I-15 NB Ramps / Friars Road	Signalized	NBR	1,800	0 / - / 0	0 / - / 0
			SBR	980	0 / - / 0	0 / - / 0
			EBL	500	324 / - / 252	0 / - / 0
			EBT	1,065	0 / - / 0	0 / - / 0
			WBT	785	247 / - / 203	0 / - / 0
			WBR	785	173 / - / 143	0 / - / 0
28	Rancho Mission Road & Friars Road	Signalized	NBL	145	240 / - / 220	95 / - / 75
			NBR	370	25 / - / 67	0 / - / 0
			EBT	790	185 / - / 799	0 / - / 9
			EBR	310	0 / - / 17	0 / - / 0
			WBL	155	113 / - / 129	0 / - / 0
			WBT	1,075	380 / - / 134	0 / - / 0
29	Santo Road / Friars Road	Signalized	SBL	100	37 / - / 50	0 / - / 0
			SBR	100	214 / - / 162	114 / - / 62
			EBL	260	65 / - / 114	0 / - / 0
			EBT	1,080	47 / - / 218	0 / - / 0
			WBT	1,600	336 / - / 166	0 / - / 0

Table 4-28 Existing Peak Hour Intersection Queuing Analysis

ID	Intersection	Traffic Control	Turning Movement	Pocket Length	AM / Midday / PM 95% Queue Length	AM / Midday / PM Excess Queue (ft)
30	Riverdale Street / Friars Road	Signalized	NBL	150	160 / - / 274	10 / - / 124
			SBL	110	24 / - / 39	0 / - / 0
			EBR	180	51 / - / 53	0 / - / 0
			EBL	250	118 / - / 237	0 / - / 0
			WBL	240	232 / - / 67	0 / - / 0
31	Mission Gorge Road / Friars Road	Signalized	NBL	180	201 / - / 637	21 / - / 457
			EBR	200	0 / - / 0	0 / - / 0
			WBL	140	204 / - / 118	64 / - / 0
32	Mission Center Road / Mission Center Court	Signalized	NBL	140	67 / - / 97	0 / - / 0
			SBT	135	57 / - / 162	0 / - / 27
			SBL	200	54 / - / 151	0 / - / 0
41	Camino Del Este / Camino De La Reina	Signalized	NBL	165	31 / 91 / 79	0 / 0 / 0
			SBL	175	36 / 51 / 59	0 / 0 / 0
			EBL	130	50 / 252 / 206	0 / 122 / 76
			WBL	280	58 / 213 / 131	0 / 0 / 0
43	Mission City Parkway / Camino Del Rio North	Signalized	NBL	140	329 / - / 64	189 / - / 0
			WBL	110	138 / - / 127	28 / - / 17
45	Fairmount Avenue / Camino Del Rio North/I-8 WB Off-Ramp	Signalized	NBL	100	544 / - / 395	444 / - / 295
			SBL	90	17 / - / 34	0 / - / 0
			SBR	150	9 / - / 9	0 / - / 0
			EBL	230	76 / - / 190	0 / - / 0
			WBL/WBT	250	473 / - / 538	223 / - / 288
			WBT/WBR	160	446 / - / 329	286 / - / 169
46	I-8 WB Ramps / Hotel Circle North (W)	Signalized	NBT	800	282 / - / 121	0 / - / 0
			NBR	150	0 / - / 25	0 / - / 0
			WBT	50	163 / - / 87	113 / - / 37
			WBR	50	67 / - / 30	17 / - / 0
47	I-8 WB Ramps/Handlery Driveway / Hotel Circle North (E)	AWSC*	NBL	260	125 / - / 50	0 / - / 0
			NBR	2,210	400 / - / 375	0 / - / 0
			EBT/EBL	90	50 / - / 200	0 / - / 110
			WBL	110	25 / - / 200	0 / - / 90
51	Camino Del Este / Camino Del Rio North	Signalized	SBL	295	101 / 247 / 309	0 / 0 / 14
			SBR	295	22 / 38 / 34	0 / 0 / 0

Table 4-28 Existing Peak Hour Intersection Queuing Analysis

ID	Intersection	Traffic Control	Turning Movement	Pocket Length	AM / Midday / PM 95% Queue Length	AM / Midday / PM Excess Queue (ft)
51	Camino Del Este / Camino Del Rio North	Signalized	WBR	90	14 / 32 / 22	0 / 0 / 0
			EBL	205	106 / 229 / 244	0 / 24 / 39
54	I-8 EB Ramps / Taylor Street	Signalized	SBL	680	81 / - / 170	0 / - / 0
			SBR	30	73 / - / 11	43 / - / 0
			EBL	180	239 / - / 681	59 / - / 501
55	Hotel Circle North / Taylor Street/Hotel Circle South	AWSC*	SBR	145	400 / - / 325	255 / - / 180
			EBL	350	50 / - / 100	0 / - / 0
56	I-8 EB Ramps / Hotel Circle South	AWSC*	SBL/SBR	355	175 / - / 75	0 / - / 0
			EBL	140	50 / - / 350	0 / - / 210
			WBT	210	175 / - / 50	0 / - / 0
			WBR	115	150 / - / 375	35 / - / 260
58	Mission Center Road / I-8 EB Ramps	Signalized	NBR	180	0 / 71 / 0	0 / 0 / 0
			SBL	340	107 / 307 / 623	0 / 0 / 283
			EBR	700	58 / 114 / 63	0 / 0 / 0
			EBL	750	102 / 349 / 317	0 / 0 / 0
60	Qualcomm Way/Texas Street / I-8 EB Ramps	Signalized	EBR	910	69 / 66 / 142	0 / 0 / 0
61	Texas Street / Camino Del Rio South	Signalized	NBL	105	175 / 106 / 178	70 / 1 / 73
			SBL	150	873 / 600 / 352	723 / 450 / 202
			SBR	305	51 / 64 / 88	0 / 0 / 0
			EBL	85	129 / 235 / 283	44 / -150 / 198
			WBL	270	68 / 146 / 247	0 / 0 / 0
			WBT	80	89 / 89 / 81	9 / 9 / 1
			WBR	270	36 / 172 / 520	0 / 0 / 250
62	Mission City Parkway / Camino Del Rio South	Signalized	SBL	80	55 / - / 509	0 / - / 429
			EBL	160	34 / - / 101	0 / - / 0
			WBR	310	14 / - / 13	0 / - / 0
63	I-15 SB Off-Ramp / Camino Del Rio South	Signalized	SBL	910	59 / - / 173	0 / - / 0
			SBR	150	271 / - / 17	121 / - / 0
			WBL	90	32 / - / 44	0 / - / 0
64	I-15 SB On-Ramp / Camino Del Rio South	Signalized	EBT/EBR	90	11 / - / 153	0 / - / 63
			WBL	380	21 / - / 40	0 / - / 0
65	I-15 NB Ramps / Camino Del Rio South	Signalized	NBL	200	332 / - / 69	132 / - / 0

Table 4-28 Existing Peak Hour Intersection Queuing Analysis

ID	Intersection	Traffic Control	Turning Movement	Pocket Length	AM / Midday / PM 95% Queue Length	AM / Midday / PM Excess Queue (ft)
65	I-15 NB Ramps / Camino Del Rio South	Signalized	EBL	120	32 / - / 257	0 / - / 137
			WBR	170	5 / - / 0	0 / - / 0
66	Mission Gorge Road/Fairmount Avenue / I-8 EB Off-Ramp	Signalized	NBU	275	149 / - / 39	0 / - / 0
			NBT	400	173 / - / 171	0 / - / 0
			SBT	540	100 / - / 488	0 / - / 0
			EBL	920	245 / - / 436	0 / - / 0

Source: Chen Ryan Associates (2016)

Note:

*AWSC = All-Way Stop Controlled intersection, queuing results was obtained from HCM 2010 report assuming 25 feet per queuing vehicle.

As shown, 66 movements at 34 intersections currently operate with potential queuing issues during either the AM or PM peak hour.

4.4.8 Vehicular Quality – Freeway Level of Service Analysis

Five freeways run adjacent to or traverse Mission Valley, carrying significant traffic volumes while providing regional mobility. A description of each freeway is provided, within the Mission Valley study area context, followed by an operational analysis of freeway segments.

Interstate 5

Interstate 5 (I-5) is a north-south facility connecting San Diego County to the US-Mexico International Border to the south and Orange County to the north. The freeway is maintained and operated by Caltrans. I-5 has eight to nine mixed-flow/general purpose lanes (4 northbound lanes, 4-5 southbound lanes) and two to three auxiliary lanes (1 northbound lanes, 1-2 southbound lanes) within the study area. Access within Mission Valley is provided by the I-8 interchange, however, I-5 is accessible just outside the community via Seaworld Drive/Tecolote Road, Camino Del Rio West, Old Town Avenue. In 2014, I-5 accommodated between 191,000 and 201,000 ADT along segments adjacent to Mission Valley. Heavy vehicle traffic was estimated to account for 3.4% to 4.1% of total daily traffic.

State Route 163

State Route 163 (SR-163) is a north-south facility running from Interstate 15, north of State Route 52, to downtown San Diego. The freeway is maintained and operated by Caltrans. SR-163 varies from five to nine mixed-flow/general purpose lanes (3-5 northbound lanes, 2-4 southbound lanes) and zero to three auxiliary lanes (0-1 northbound lanes, 0-2 southbound lanes) within the study area. Access within Mission Valley is provided at Friars Road and the I-8 interchange. Genesee Avenue and Washington Street provide access to SR-163 just outside of the community. In 2014, SR-163 accommodated between 105,000 and 189,000 ADT along segments adjacent to Mission Valley. Heavy vehicle traffic was estimated to account for 3.0% to 3.7% of total daily traffic.

Interstate 805

Interstate 805 (I-805) is a north-south facility splitting from I-5 in Sorrento Valley and running parallel to I-5 to just north of the US-Mexico International Border, where the freeways merge back together. The freeway is maintained and operated by Caltrans. I-805 has nine to ten mixed-flow/general purpose

lanes (4-5 northbound lanes, 4-6 southbound lanes) and zero to two auxiliary lanes (0-1 northbound lanes, 0-2 southbound lanes) within the study area. I-805 is accessible via the I-8 interchange within Mission Valley, and at Phyllis Place/Murray Ridge Road and Adams Avenue just outside of the community. In 2014, I-805 carried between 149,000 and 221,000 ADT along segments adjacent to Mission Valley. Heavy vehicle traffic was estimated to account for 6.2% to 6.5% of total daily traffic.

Interstate 15

Interstate 15 (I-15) is a north-south facility connecting San Diego County to Riverside County to the north and terminating in the Barrio Logan community, near I-5, to the south. South of I-8, I-15 becomes State Route 15 (SR-15). The freeway is maintained and operated by Caltrans. The freeway is comprised of seven to nine mixed-flow/general purpose lanes (3-4 northbound lanes, 3-5 southbound lanes) and zero to four auxiliary lanes (1-2 northbound, 0-3 southbound) within the study area. Access within Mission Valley is provided at Friars Road, the I-8 interchange, Camino Del Rio North, and Camino Del Rio South, with Adams Aero Drive and Adams Avenue providing access just outside of the community. In 2014, I-15 accommodated between 174,000 and 218,000 ADT along segments adjacent to Mission Valley. Heavy vehicle traffic was estimated to account for 2.2% to 5.1% of total daily traffic.

Interstate 8

Interstate 8 (I-8) is an east-west facility connecting Mission Valley to I-5 and the coastal communities to the west and La Mesa, El Cajon and eventually Imperial County to the east. The freeway is maintained and operated by Caltrans. Adjacent to Mission Valley I-8 varies from four to nine mixed-flow/general purpose lanes (2-5 westbound lanes, 2-5 eastbound lanes) and zero to four auxiliary lanes (0-2 westbound lanes, 0-2 eastbound lanes) adjacent to the community. Access within and adjacent to Mission Valley is provided at the I-5 interchange, Morena Boulevard, Taylor Street, Hotel Circle North (multiple access points), Hotel Circle South (multiple access points), SR-163 interchange, Mission Center Road, Camino Del Rio North, Qualcomm Way, I-805 interchange, Camino Del Rio South, and the I-15 interchange. In 2014, I-8 accommodated between 100,000 and 237,000 ADT along segments adjacent to Mission Valley. Heavy vehicle traffic was estimated to account for 2.7% to 3.5% of total daily traffic.

Table 4-29 presents freeway characteristics and the level of service analysis results for segments within the vicinity of Mission Valley, with the exception of I-8. Data was obtained from Caltrans and is representative of year 2014 and is provided in **Appendix J**. The Interstate 8 Transportation Concept Report was completed in 2015 and provides a more comprehensive analysis of the complex movements along the corridor, largely a result of closely spaced interchanges (I-5, SR-163, I-805, and I-15). I-8 analysis results are summarized in **Table 4-30**. As shown, the following segments operate at a substandard level of service (weave, diverge and merge movements from Table 4-30 are excluded):

- SR-163 NB, from Friars Road to I-8 Interchange – LOS F (AM)
- SR-163 NB, from I-8 Interchange to 6th Avenue – LOS E (AM)
- I-8 EB, from I-5 SB off-ramp to I-5 SB on-ramp – LOS F (PM)
- I-8 EB, from I-5 SB on-ramp to Camino Del Rio West on-ramp – LOS F (PM)
- I-8 EB, from Taylor Street off-ramp to Taylor Street on-ramp, LOS E (PM)
- I-8 EB, from Taylor Street on-ramp to Hotel Circle South off-ramp – LOS E (PM)
- I-8 EB, from I-15 NB off-ramp to I-15 SB on-ramp – LOS F (PM)
- I-8 WB, from Mission Center Road off-ramp to Mission Center Road on-ramp – LOS F (AM)

Table 4-29 Existing Freeway Segment Level of Service Results: I-5, SR-163, I-805, I-15

Freeway	Segment	ADT ^(a)	Direction	# of Lanes	Capacity ^(b)	D ^(c)	K ^(d)	HV ^(e)	Peak Hour Volume	V/C	LOS	Peak Period
I-5	Seaworld Drive / Tecolote Road and I-8 Interchange	201,000*	NB	4M+1A	10,810	52.8%	7.2%	3.4%	8,100	0.749	D	AM
			SB	4M+2A	12,220	51.8%	7.7%	3.4%	8,470	0.693	C	PM
	I-8 Interchange and Old Town Avenue	191,570	NB	4M+1A	10,810	50.6%	7.0%	4.1%	7,100	0.657	C	PM
			SB	5M	11,750	53.8%	6.2%	4.1%	6,770	0.576	C	AM
SR-163	Genesee Avenue and Friars Road	188,220	NB	5M	11,750	54.3%	8.2%	3.7%	8,830	0.751	D	AM
			SB	4M	9,400	51.0%	6.9%	3.7%	7,010	0.746	D	PM
	Friars Road and I-8 Interchange	180,270	NB	3M	7,050	56.0%	7.9%	3.7%	8,430	1.196	F	AM
			SB	4M+2A	12,220	50.2%	7.1%	3.7%	6,720	0.550	C	AM
	I-8 Interchange and 6th Avenue	188,000	NB	3M+1A	8,460	50.7%	7.5%	3.0%	7,550	0.892	E	AM
			SB	3M+2A	9,870	50.1%	6.9%	3.0%	6,870	0.696	C	PM
6th Avenue and Washington Street	105,660	NB	3M	7,050	51.5%	7.8%	3.0%	4,470	0.634	C	AM	
		SB	2M+1A	6,110	53.3%	6.6%	3.0%	3,900	0.638	C	AM	
I-805	Mesa College Drive / Kearny Villa Road and Murray Ridge Road / Phyllis Place	218,810	NB	5M	11,750	64.4%	7.0%	6.2%	10,380	0.883	D	AM
			SB	5M	11,750	65.7%	6.0%	6.2%	9,150	0.779	D	PM
	Murray Ridge Road / Phyllis Place and I-8 Interchange	220,630	NB	5M	11,750	64.2%	7.0%	6.2%	10,370	0.883	D	AM
			SB	4M+2A	12,220	65.5%	6.2%	6.2%	9,400	0.769	D	PM
	I-8 Interchange and Adams Avenue	149,960	NB	4M+1A	10,810	65.8%	7.2%	6.5%	7,440	0.688	C	AM
			SB	6M	14,100	65.8%	6.2%	6.5%	6,400	0.454	B	PM
Adams Avenue and El Cajon Boulevard	165,730	NB	4M	9,400	63.0%	5.4%	6.5%	5,970	0.635	C	AM	
		SB	5M+1A	13,160	69.9%	7.4%	6.5%	9,080	0.690	C	PM	
I-15	Aero Drive and Friars Road	202,010	NB	4M+1A	10,810	59.7%	6.7%	5.1%	8,540	0.790	D	AM
			SB	4M+1A	10,810	57.6%	7.7%	5.1%	9,380	0.868	D	PM
I-15	Friars Road and I-8	217,790	NB	4M+1A	10,810	55.3%	6.4%	5.1%	8,050	0.745	D	AM

Table 4-29 Existing Freeway Segment Level of Service Results: I-5, SR-163, I-805, I-15

Freeway	Segment	ADT ^(a)	Direction	# of Lanes	Capacity ^(b)	D ^(c)	K ^(d)	HV ^(e)	Peak Hour Volume	V/C	LOS	Peak Period
	I-8 and Adams Avenue	179,200	SB	3M+3A	11,280	58.7%	7.1%	5.1%	9,560	0.848	D	PM
			NB	3M+2A	9,870	55.3%	7.5%	2.2%	7,810	0.791	D	AM
			SB	5M	11,750	60.1%	5.8%	2.2%	6,610	0.563	C	PM
	Adams Avenue and El Cajon Boulevard	174,120	NB	4M+1A	10,810	54.1%	6.6%	2.2%	6,500	0.601	C	AM
			SB	5M+1A	13,160	57.6%	6.2%	2.2%	6,600	0.502	C	PM

Source: Caltrans Performance Measurement System (PeMS), Caltrans 2014 Traffic Volumes on California State Highways, Chen Ryan Associates; February 2016

Notes:

Bold letter indicates substandard LOS E or F.

M = Mainline. Aux = Auxiliary Lane.

^a Traffic volumes provided by Caltrans (2015).

^b The capacity is calculated as 2,350 ADT per main lane and 1,410 ADT (60% of the main lane capacity) per auxiliary lane.

^c D = Directional split.

^d K = Peak hour %.

^e HV = Heavy vehicle %.

*Volume obtained from Caltrans, 2014 Traffic Volumes on California State Highways.

Table 4-30 Existing Freeway Segment Level of Service Results: I-8

Direction	Segment	Type	Peak-Hour Volume	Density ¹	LOS	Peak Period
Eastbound	Sunset Cliffs Boulevard to Sports Arena Boulevard SB On-Ramp	Basic	2,108	16	B	PM
	Sports Arena Boulevard On-Ramps to I-5 SB Off-Ramp	Weave	3,982	16	B	PM
	I-5 SB Off Ramp to I-5 SB On-Ramp	Basic	3,061	unknown	F	PM
	I-5 SB On Ramp to Camino Del Rio West On-Ramp	Basic	5,660	unknown	F	PM
	Camino Del Rio West On-Ramp ²	Merge	7,410	32	C	PM
	I-5 NB On-Ramp to Taylor Street Off-Ramp	Weave	6,611	33	D	PM
	Taylor St Off-Ramp to Taylor Street On-Ramp ²	Basic	8,147	40	E	PM
	Taylor Street On-Ramp ²	Merge	8,147	31	D	PM
	Taylor Street On-Ramp to Hotel Circle South Off-Ramp ²	Basic	7,859	44	E	PM
	Hotel Circle South Off-Ramp	Diverge	9,337	30	D	PM
	Hotel Cir South On-Ramp to SR-163 SB Off-Ramp	Weave	7,382	25	C	PM
	SR-163 NB Off-Ramp	Diverge	5,326	21	C	PM
	Mission Center Road Off-Ramp	Diverge	5,285	23	C	PM
	Mission Center Road Off-Ramp to SR-163 NB On-Ramp	Basic	7,542	30	D	PM
	SR-163 NB On-Ramp ²	Merge	4,570	28	C	PM
	Mission Center Road On-Ramp	Merge	8,998	31	D	PM
	Qualcomm Way Off-Ramp ²	Diverge	6,916	32	D	PM
	Qualcomm Way Off-Ramp to I-805 Off-Ramp ²	Basic	5,559	19	C	PM
	I-805 Off-Ramp	Diverge	5,719	31	D	PM
	I-805 Off-Ramp to Qualcomm Way On-Ramp ²	Basic	4,367	17	B	PM
	Qualcomm Way On-Ramp	Merge	6,770	42	E	PM
	Qualcomm Way On-Ramp to I-805 On Ramp	Basic	8,841	33	D	PM
	I-805 On-Ramp to I-15 NB Off-Ramp	Weave	6,827	unknown	F	PM
I-15 NB Off-Ramp to I-15 SB On-Ramp ²	Basic	10,000	unknown	F	PM	
I-15 SB On-Ramp to Fairmount Avenue SB On-Ramp ²	Basic	6,548	17	B	PM	
Fairmount Avenue SB On-Ramp	Merge	9,599	45	E	PM	
Westbound	Fairmount Avenue Off-Ramp	Diverge	9,828	31	D	AM
	Fairmount Avenue Off-Ramp to I-15 NB Off-Ramp	Basic	9,387	29	D	AM
	I-15 NB Off-Ramp ²	Diverge	11,664	42	E	AM
	I-15 SB Off-Ramp ²	Diverge	9,365	46	F	AM
Westbound	I-15 SB Off Ramp to I-15 On-Ramp	Basic	6,048	29	D	AM

Table 4-30 Existing Freeway Segment Level of Service Results: I-8

Direction	Segment	Type	Peak-Hour Volume	Density ¹	LOS	Peak Period
	I-15 On-Ramp to I-805 Off-Ramp	Weave	11,327	35	D	AM
	Qualcomm Way Off-Ramp	Diverge	6,997	29	D	AM
	Qualcomm Way Off-Ramp to I-805 On-Ramp	Basic	6,256	28	D	AM
	I-805 On-Ramp to Mission Center Road Off-Ramp	Weave	8,726	32	D	AM
	Mission Center Road Off-Ramp to Mission Center Road On-Ramp ²	Basic	10,150	72	F	AM
	Mission Center Rd On-Ramp to SR-163 NB Off-Ramp	Weave	9,069	29	D	AM
	SR-163 SB Off-Ramp ²	Diverge	8,384	37	E	AM
	SR-163 SB Off-Ramp to SR-163 SB On-Ramp	Basic	7,264	22	C	AM
	SR-163 On-Ramps ²	Merge	9,639	42	E	AM
	SR-163 NB On-Ramp to Fashion Valley Rd On-Ramp	Basic	7,986	25	D	AM
	Fashion Valley Rd On-Ramp ²	Merge	10,918	55	F	AM
	Fashion Valley Rd On-Ramp to Taylor St Off-Ramp	Basic	8,000	26	D	AM
	Taylor St Off-Ramp ²	Diverge	11,101	47	F	AM
	Taylor St Off-Ramp to Taylor St On-Ramp	Basic	7,561	33	D	AM
	Taylor St On-Ramp ²	Merge	9,021	54	F	AM
	Morena Blvd Off-Ramp	Diverge	7,747	27	C	AM
	I-5 SB Off-Ramp	Diverge	6,589	24	C	AM
	I-5 NB Off-Ramp	Diverge	4,093	24	C	AM
	I-5 NB Off-Ramp to I-5 On-Ramp	Basic	4,355	24	C	AM
	I-5 On-Ramp to Mission Bay Dr Off-Ramp	Basic	3,000	11	B	AM
	Mission Bay Dr Off-Ramp ²	Diverge	3,801	19	B	AM
	Mission Bay Dr Off-Ramp to Sunset Cliffs Blvd	Basic	1,796	11	B	AM

Source: Kimley-Horn Associates, 2015; Chen Ryan Associates, 2016

Notes:

Bold letter indicates substandard LOS E or F.

Peak hour volumes are an average of September 2015.

¹ Density is measured in pc/hr/ln. If density is not shown, volume exceeded capacity.

² Represents information from the Transportation Concept Report – Interstate 8 (December 2015).

4.4.9 Vehicular Quality – Freeway Ramp Metering Analysis

Table 4-31 presents the ramp metering analysis results for freeway ramp locations where metering is in place for either the AM or PM peak period. Ramp meter rates were obtained from Caltrans District 11 and are provided in **Appendix K**.

Table 4-31 Existing Freeway Ramp Metering Analysis

Location	Peak Hour	Total Demand ¹ (veh/hr)	SOV Demand ²	Meter Rate ³ (veh/hr)	Excess Demand ⁴ (veh/hr)	Delay ⁵ (min)	Queue ⁶ (ft)
I-5 NB On-ramp @ Sea World Drive	AM	1,564	782	965	0	0	0
	PM	1,236	618	972	0	0	0
I-5 SB On-ramp @ Sea World Drive	AM	318	318	444	0	0	0
	PM	277	277	444	0	0	0
I-805 NB On-ramp @ Murray Ridge Road	AM	350	350	851	0	0	0
	PM	394	394	Not Metered			
I-805 SB On-ramp @ Phyllis Place	AM	466	438	Not Metered			
	PM	742	586	691	0	0	0
I-15 NB On-ramp @ Friars Road	AM	1,299	552	558	0	0	0
	PM	1,190	530	529	1	0.11	25
I-15 SB On-ramp @ Friars Road (EB approach)	AM	536	536	Not Metered			
	PM	889	889	996	0	0	0
I-15 SB On-ramp @ Friars Road (WB approach)	AM	684	684	Not Metered			
	PM	748	748	828	0	0	0
I-8 EB On-ramp @ Texas Street (NB approach)	AM	321	321	Not Metered			
	PM	374	374	810	0	0	0
I-8 EB On-ramp @ Texas Street (SB approach)	AM	136	136	Not Metered			
	PM	471	396	444	0	0	0
I-8 EB On-ramp @ Fairmount Avenue (NB approach)	AM	480	480	Not Metered			
	PM	480	480	745	0	0	0
I-8 EB On-ramp @ Fairmount Avenue (SB approach)	AM	231	231	Not Metered			
	PM	593	593	745	0	0	0

Source: Caltrans Ramp Metering Data, 2015; Chen Ryan Associates, 2016

Notes:

SOV = Single Occupancy Vehicle

¹ Total Demand is the peak hour demand for both SOV and HOV lanes expected to use the on-ramp.

² SOV Demand = (Total Demand) – (HOV Demand).

³ Meter Rate is the peak hour capacity expected to be processed through the ramp meter per lane. This value was obtained from Caltrans. The average between the “high” and “low” meter rate was used for this analysis.

⁴ Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater.

⁵ Delay = (Excess Demand / Meter Rate) X 60 min/hr.

⁶ Queue = (Excess Demand) X 29 ft/veh. SOV volumes were used in the calculation of Queue. A zero represents no excess queue. It is important to note the on-ramps queues could also occur as a result of freeway congestion as the lack freeway capacity could limit the number of vehicles that can merge onto the freeway.

*HOV demand was obtained from Caltrans Performance Measurements System (PeMS).

4.5 Parking

Parking within the Mission Valley community consists of public on-street parking, private off-street parking for local businesses and residents, and public parking lots. Time restricted parking was only found along the following two study segments:

- Northside Drive, between Friars Road and Fenton Marketplace Driveway (section of 15-minute parking along east side)
- Camino Del Rio South, between Mission Center Road and Texas Street (2-hour parking along south side)

“Drive-by” parking occupancy surveys were performed along study roadways to inform times and locations of relatively greater demand. **Figure 4-37a, 4-37b, and 4-37c** display the parking occupancy survey results for the AM, midday, and PM peak hours, respectively. Generally, greater parking demand was observed during the midday peak hours.

4.6 Intelligent Transportation Systems

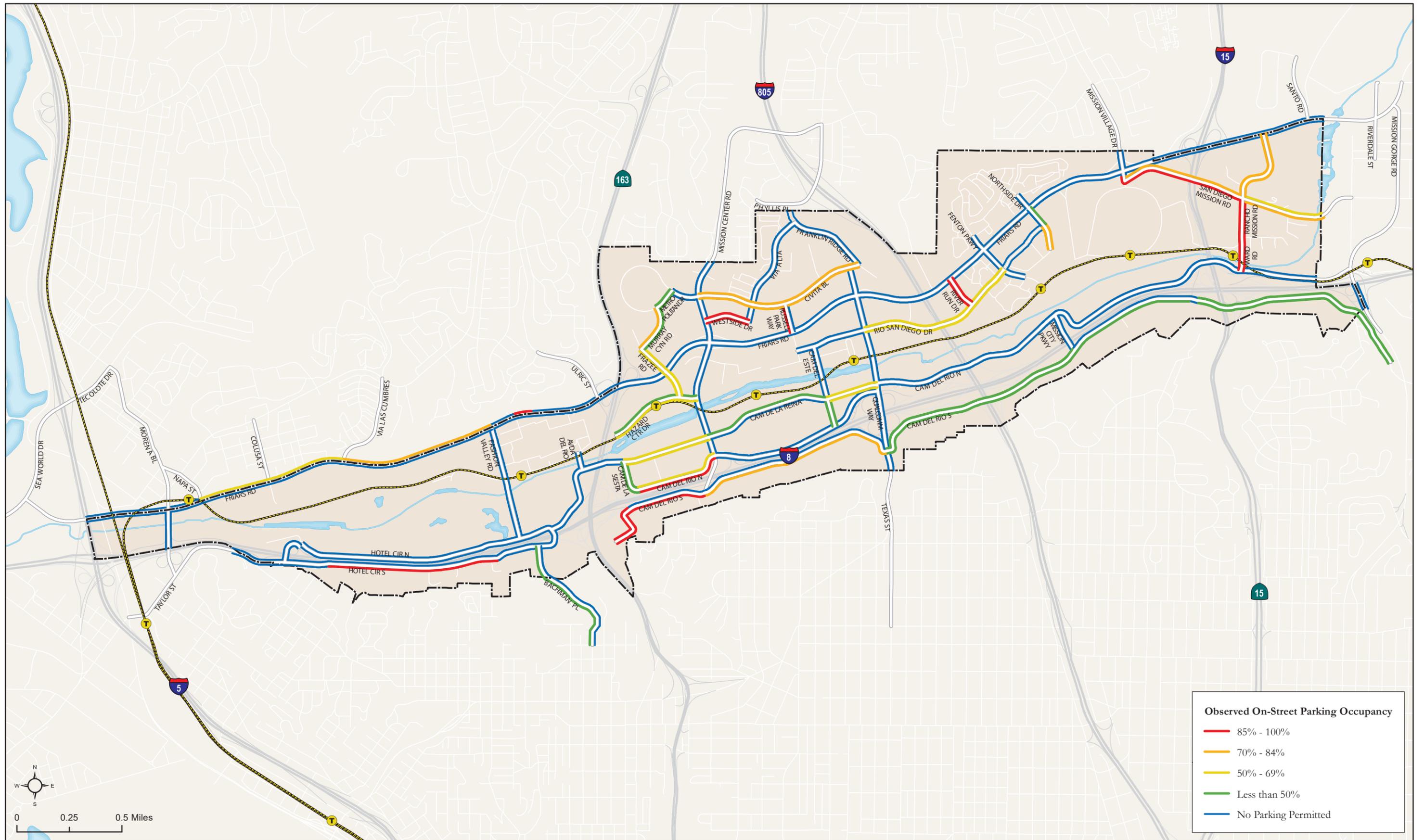
Intelligent Transportation Systems (ITS) use technology to improve the movement of people and goods. ITS can provide many benefits to local and regional roadway networks, including improved roadway traffic operations, improved transit operations, relaying valuable traffic-related information, and providing guidance to drivers through dynamic message signs (ex. locations of available parking, traffic congestion points, and accident locations).

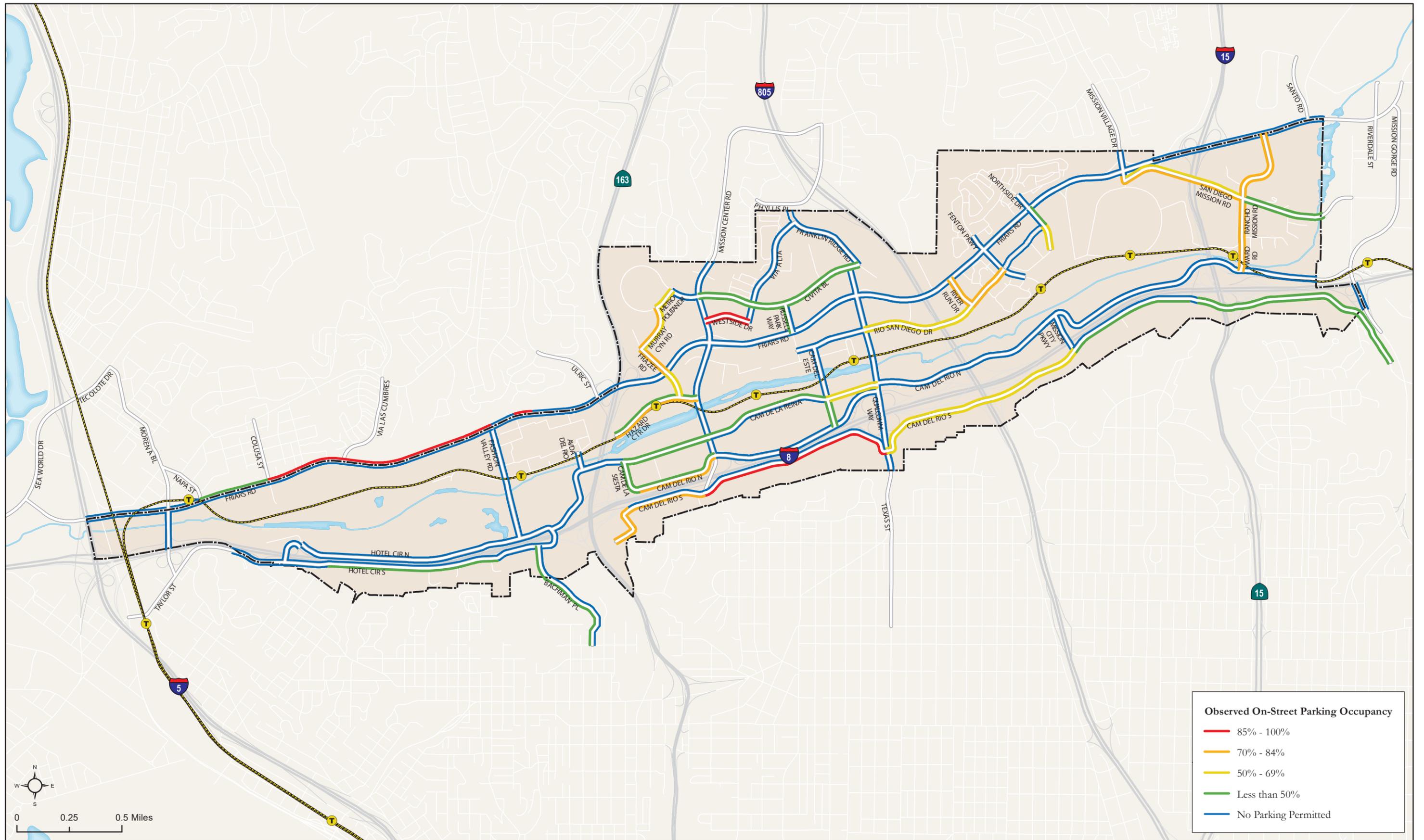
2008 City of San Diego General Plan Mobility Element – Intelligent Transportation Systems:

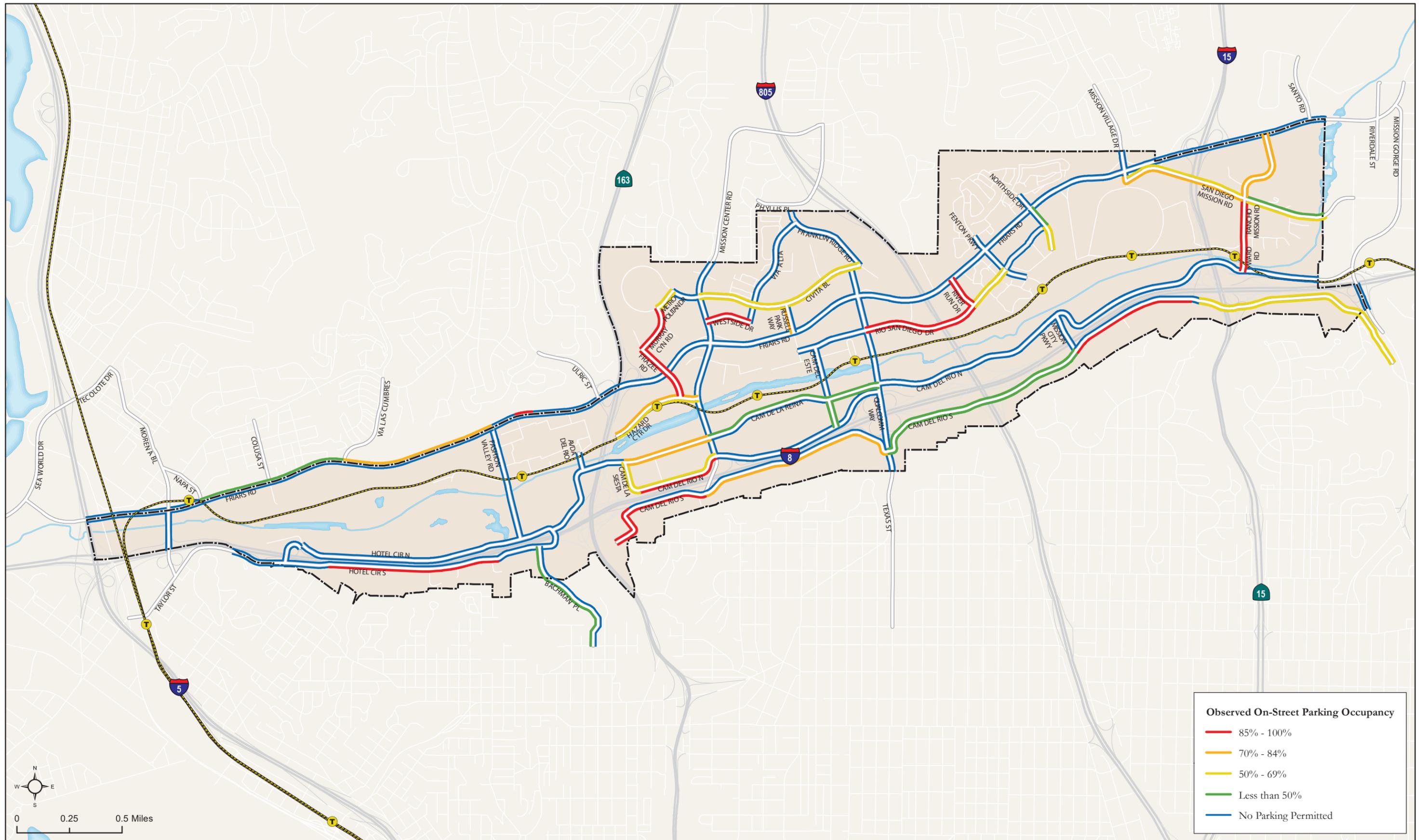
- *A transportation system which operated efficiently, saves energy, and reduces negative environmental impacts.*
- *A safe transportation system.*
- *A transportation system that effectively uses appropriate technologies.*

In 2014, the City of San Diego completed the Traffic Signal Communication Master Plan as a means to modernize the traffic signal system. The resulting improved coordination will increase public safety, shorten commutes, reduce greenhouse gas emissions, and increase mobility at intersections for all modes of travel. The Traffic Signal Communication Master Plan identified traffic signal communication gaps – signals without an existing communication line to connect with – effectively preventing coordination. Signals at the following 14 intersections were identified as having communication gaps in the 2014 report:

- Camino De La Reina & Avenida Del Rio
- Camino De La Reina & Camino De La Siesta
- Camino De La Reina & Camino Del Este
- Camino De La Reina & Qualcomm Way
- Camino De La Reina & Westfield Driveway
- Camino Del Rio North & Mission City Pkwy
- Camino Del Rio North & Ward Road
- Camino Del Rio North & Camino Del Este
- Camino Del Rio North & Theater Driveway
- Fashion Valley Road & Riverwalk Drive
- Hotel Circle North & Camino De La Reina
- Hotel Circle North & Fashion Valley Road
- Hotel Circle South & Bachman Place
- Rio San Diego Drive & Rio Bonito Way







Signal Coordination

Signal coordination can improve the operations of a roadway corridor by allowing more motorists to travel with reduced delays and fewer stops at red lights. This is achieved by linking signals and coordinating the signal timing to account for the time it takes a motorist to drive from one signal to the next while traveling at a set speed.

The City of San Diego Climate Action Plan (2015) includes the following action strategy and target regarding traffic signals:

Action 3.4: Implement a Traffic Signal Master Plan to retime traffic signals to reduce vehicle fuel consumption.

Target: Retime 200 traffic signals by 2020.

Transit Priority

Transit priority treatments are designed to improve transit operations and overall schedule adherence. A trolley pre-emption system is installed at all at-grade crossings, providing the trolley priority access through the intersection.

4.7 Transportation Demand Management

Transportation Demand Management (TDM) programs and strategies aim to improve transportation system efficiency by reducing peak hour vehicular trips.

2008 City of San Diego General Plan Mobility Element – Transportation Demand Management Goals:

- *Reduced single-occupant vehicle traffic on congested streets and freeways.*
- *Improved performance and efficiency of the street and freeway system, by means other than roadway widening or construction.*
- *Expanded travel options and improved personal mobility.*

The City of San Diego's TDM program specifically serves to improve mobility, reduce congestion and air pollution, and provide options for employees and residents to commute to and from work. Typical TDM strategies include promoting the following:

- Teleworking
- Alternative Work Schedules
- Walking
- Bicycling
- Carpooling
- Vanpooling
- Transit
- Car-Share
- Mixed-use Development
- Other Transportation Options

The City of San Diego collaborates with SANDAG to encourage participation in citywide and regional TDM measures due to the regional significance of commuting. SANDAG administers the regional TDM program known as iCommute, which provides the following programs and services:

- **Employer Services Program** – Free assistance to local business to help them develop and implement employee commuter benefit programs that lower costs, increase productivity, and help the environment.

-
- **Vanpool Program** – SANDAG contracts with vanpool vendors that provide vehicles, maintenance, and insurance. SANDAG also provides up to a \$400 monthly subsidy to qualified vanpools.
 - **Guaranteed Ride Home (GRH)** – Serves as a safety net for commuters who carpool, vanpool, ride transit, walk, or bike to work three or more times per work. GRH provides a free taxi ride or 24-hour car rental up to three times per year in the event of a family emergency, unscheduled overtime, or being stranded from a carpool or vanpool.
 - **Bike Encouragement Program** – Supports bike commuting by providing Bike Month and Bike to Work Day events, and the San Diego Regional Bike Map. iCommute manages more than 800 bike lockers at more than 60 transit stations and Park & Ride lots throughout San Diego County.
 - **Walk, Ride, and Roll to School** – Education and outreach program to increase the number of students who walk, bike, skate, or ride a scooter to school.
 - **Carpool Match** – iCommute provides access to a database of commuters looking for a carpool match.
 - **Park & Ride Map** – Map identifying the location of approximately 90 Park & Ride lots in the San Diego Region and southern Riverside County.

The iCommute program markets its various offerings through a variety of promotional campaigns, such as Bike Month and Rideshare Month. The iCommute website (www.icommutesd.com) provides links to additional resources and information that encourage alternatives to single occupant vehicle commutes.

The City of San Diego's land development policies require new developments to provide sufficient bicycle parking, employee showers and lockers, carpool parking, pedestrian paths, and a display of alternative transportation information. The City's Mobility Management section also serves as a resource to assist employers and developers in identifying and pursuing opportunities to implement TDM measures.

Car2Go operates a car-share program in San Diego, allowing commuters and residents to rent vehicles within the designated service area. The service area or "Home Area" includes Mission Valley south of Friars Road and west of SR-163, in addition to Downtown San Diego, Ocean Beach, Pacific Beach, Mission Beach, the San Diego International Airport, Uptown, North Park, Normal Heights, Greater Golden Hill, and City Heights west of SR-15. Car2Go members may begin and end a trip within the Home Area, and are not required to pay for City of San Diego metered or pay station parking spaces. Driving outside the Home Area is permitted, however, a trip cannot end there.

4.8 Airports, Passenger Rail, and Goods Movement

4.8.1 Airports

2008 City of San Diego General Plan Mobility Element – Airports Goals:

- *An air transportation system that fosters economic growth.*
- *Adequate capacity to serve the forecasted passenger and cargo needs at existing airports.*
- *An air transportation system that is integrated with a multi-modal surface transportation system that efficiently moves people and goods.*
- *An international airport to serve the region’s long-term air transportation and economic needs.*

The San Diego International Airport at Lindberg Field is in close proximity to Mission Valley, located just southwest of the community. It is the busiest single-runway commercial service airport in the nation with an average of 525 operations per day. In 2014, the San Diego International Airport served a record 18.7 million passengers, including 672,927 international passengers. The airport is operated by the San Diego County Regional Airport Authority (SDRAA). Three major plans/projects will influence future access to and from the airport, including Destination Lindberg, the San Diego International Airport Consolidated Rental Car Facility project, and the San Diego International Airport Master Plan.

Destination Lindbergh is a long-range planning effort to guide the ultimate build-out of the San Diego International Airport. The plan proposes an expanded configuration of the facility that attempts to minimize airport-related traffic impacts to adjacent communities, and improve intermodal access to the airport. The plan recommends improvements to the local and regional roadway networks providing access to the airport, as well as a new transit route to serve the airport. The Intermodal Transit Center (ITC) is proposed as an intermodal hub to facilitate airport access without the need for driving single occupant vehicles. The plans also indicate that existing trolley lines, the Coaster, Amtrak, new express bus routes, local bus routes, and the planned California High Speed Rail system will all be served by the ITC.

The *San Diego International Airport Consolidated Rental Car Facility* (CONRAC) project is consolidating rental car facilities currently serving the airport into a single location located west of Pacific Highway and north of Sassafras Street. The project includes extending Sassafras Street west of Pacific Highway and along the east end of the airport to serve as a point of access for rental vehicle.

The current *San Diego International Airport Master Plan* was adopted in 2008 to serve as the future blueprint for the airport’s 661 acres. The Master Plan provides guidance for the airport to meet anticipated growth for passengers, cargo and operations. Additionally, it outlines local roadway improvements to expand vehicular capacity and enhance airport access. The SDRAA is currently in the process of updating the Airport Master Plan.

4.8.2 Passenger Rail

2008 City of San Diego General Plan Mobility Element – Passenger Rail Goal:

- *Improved rail travel opportunities.*

The Coaster commuter rail and Amtrak Pacific Surfliner offer passenger rail services at the Old Town Transit Center, located just outside of Mission Valley to the southwest. The Coaster is operated by the North County Transit District (NCTD), running north-south through San Diego County. It serves eight stations along the coast between Oceanside and downtown San Diego. The Pacific Surfliner is operated by Amtrak and runs north-south between San Luis Obispo and downtown San Diego. The Old Town Transit Center is also served by the Green Line Trolley and MTS Bus Route 8, 9, 10, 28, 30, 35, 44, 84, 88, 105, and 150.

4.8.3 Goods Movement

2008 City of San Diego General Plan Mobility Element – Goods Movement Goal:

- *Safe and efficient movement of goods with minimum negative impacts.*

The efficient movement of goods is essential for meeting basic consumer demands and sustaining the local economy, requiring interaction between multiple transportation modes. Goods movement in San Diego is supported by infrastructure consisting of roadways, railways, maritime facilities, and airports.

Truck Freight

The majority of goods in the San Diego region are transported by truck through the regional freeway network and local roadways. While the City of San Diego does not have a system of designated truck routes, regional truck access to Mission Valley is provided via I-5, SR-163, I-805, I-15, and I-8. Truck access is necessary throughout the community due to the dispersal of commercial and industrial designated land uses.

Rail Freight

Rail freight passes Mission Valley along the western community boundary, operated by the Burlington Northern Santa Fe Railway Company (BNSF). BNSF operates freight rail service along the same right-of-way as Amtrak and the Coaster passenger services. BNSF transports freight to points north and east of San Diego County, such as Los Angeles and Arizona. The *LOSSAN Corridor Strategic Assessment (2010)* anticipates that freight rail frequencies within the corridor will double (from 4 trains a day to 8) over the next 20 years. The San Diego Imperial Valley Railroad provides additional rail freight service to the south of Mission Valley, operating short-haul freight service along the Orange Line Trolley corridor through Southeastern San Diego, providing an important rail connection between the United States and Mexico.

Maritime Freight

The 10th Avenue Marine Terminal and the National City Marine Terminal, both located on the San Diego Bay, are the closest maritime cargo facilities to Mission Valley. Freight is then transported via truck, rail, and air throughout San Diego County and the rest of the United States.

Air Freight

Air freight transport companies such as FedEx, DHL Express and UPS operate out of the San Diego International Airport, which serves as the regions primary airport for air freight. Air freight is then transported via truck, rail, and/or maritime modes.

5.0 Mobility Needs and Future Direction

This chapter provides a summary of pedestrian, bicycle, transit, and street and freeway mobility needs determined through the existing conditions analyses.

5.1 Pedestrian Needs

The pedestrian environment affects us all whether we are walking to transit, a store, school, or simply walking from a parked car to a building. Most people prefer walking in places where there are sidewalks shaded with trees, lighting, interesting buildings or scenery to look at, other people outside, neighborhood destinations and a feeling of safety. Pedestrian improvements in areas with land uses that promote pedestrian activities can help to increase walking as a means of transportation and recreation. Land use and street design recommendations that benefit pedestrians also contribute to the overall quality, vitality, and sense of community within a neighborhood.

Pedestrian needs identified in the Mission Valley community include locations with high pedestrian collisions, sidewalk connectivity issues, high existing pedestrian activity, and high pedestrian priority as identified by the updated City of San Diego Pedestrian Priority Model. Pedestrian needs are identified in **Figure 5-1**.

5.1.1 Pedestrian Safety

Pedestrian comfort adjacent to roadways is highly influenced by right-of-way width, vehicular volumes and speed, and adequate separation from vehicles. Pedestrian comfort and safety at intersections is influenced by lighting, crosswalk visibility, crossing distance, and traffic control measures. Additionally, personal safety and comfort considerations, such as planters, public seating, presence of illegal graffiti and sidewalk cleanliness reinforce quality of the facility. Together, these factors play a major role in determining a person's willingness to make a trip by walking.

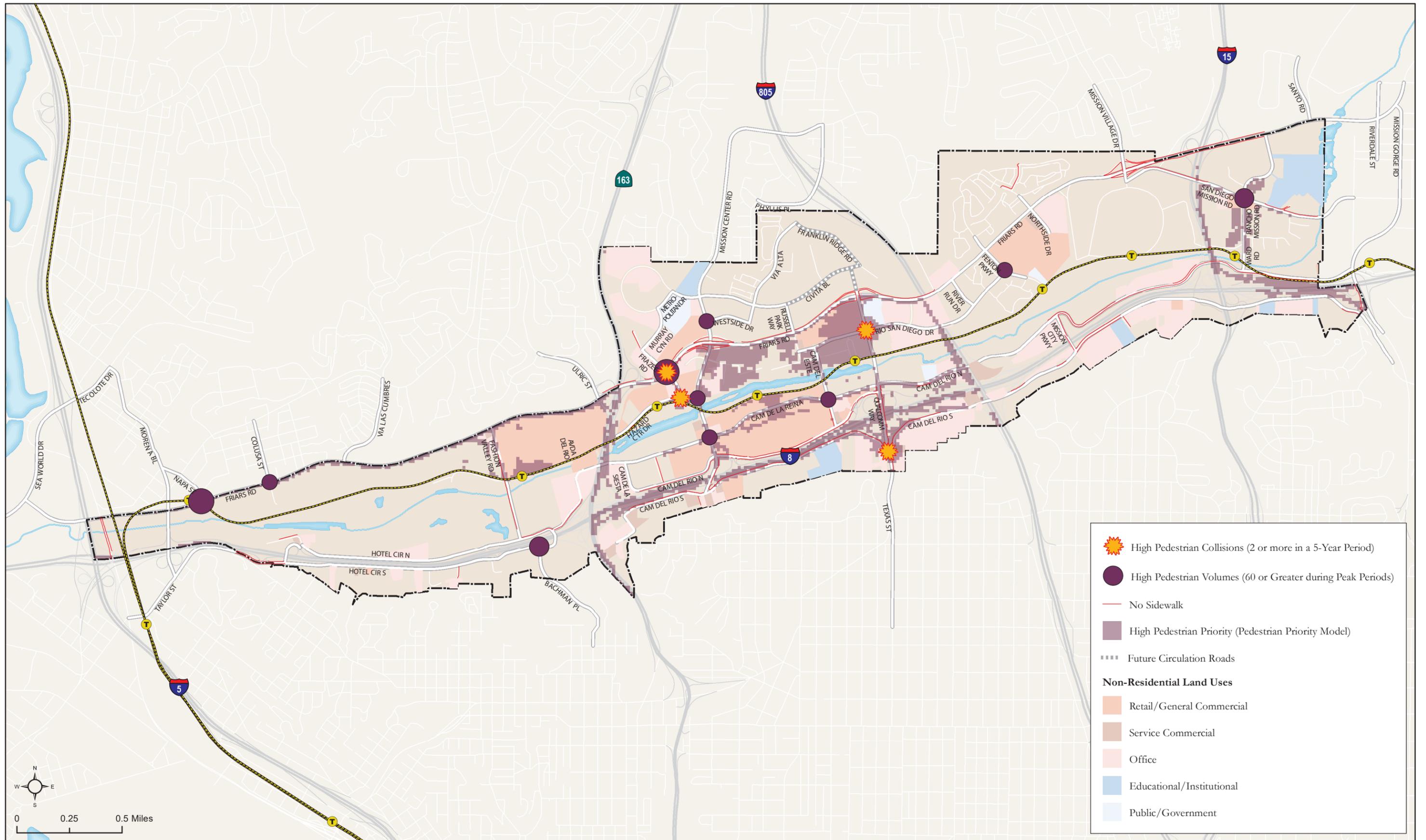
The central portion of Mission Valley, between SR-163 and I-805, exhibits the greatest concentration of pedestrian collisions within the community. In particular, there are four intersections where two or more pedestrian collisions were reported during the five-year study period (2008-2013), including:

- Friars Road and Frazee Road
- Hazard Center Drive and Frazee Road
- Rio San Diego Drive and Qualcomm Way
- Camino Del Rio South and Qualcomm Way

5.1.2 Sidewalk Connectivity

Connectivity is an important consideration when attempting to increase walking activity levels across a community. A disconnected pedestrian network discourages active trip making. Furthermore, a discontinuous network with low-quality or unsafe segments may cause a potential active traveler to choose driving. Understanding barriers to connectivity, such as low-quality or missing sidewalks, is important for guiding long-range planning recommendations.

There are many roadways with missing sidewalk, or sidewalk gaps, in Mission Valley, including major segments of Friars Road, Hotel Circle North and South, and Camino Del Rio North and South. Some of these streets are served by bus routes, with sidewalk gaps inhibiting transit access.



5.1.3 Pedestrian Activity

High pedestrian volumes are generally found near transit stops, retail, general commercial, and office land uses. There are ten high pedestrian volume locations (defined as sixty or more pedestrians during peak periods) in Mission Valley, including:

- Friars Road and Napa Street
- Friars Road and Colusa Street
- Friars Road and Frazee Road
- Mission Center Road and Hazard Center Drive
- Mission Center Road and Camino De La Reina
- Mission Center Road and Westside Drive
- San Diego Mission Road and Rancho Mission Road
- Camino Del Este and Camino De La Reina
- Rio San Diego Drive and Fenton Parkway
- Hotel Circle South and Bachman Place

5.1.4 Pedestrian Priority Model

Pedestrian Priority Areas were determined using the City of San Diego's Pedestrian Priority Model. The model evaluates community characteristics including demographic data, traffic volumes and speed, pedestrian collisions, presence of street lighting, location of transit stations, and land uses such as residential, office, commercial/retail, schools, and parks. The model uses these factors to identify areas where both pedestrian demand and detractors are high, thereby indicating a need to focus resources in these locations.

Relatively higher need or priority is exhibited in central Mission Valley, approximately bordered by Friars Road to the north, Camino Del Rio South to the south, I-805 to the east, and SR-163 to the west. Additional high demand areas surround the Fashion Valley Transit Station and Mall, as well as just east of I-15, surrounding Ward Road.

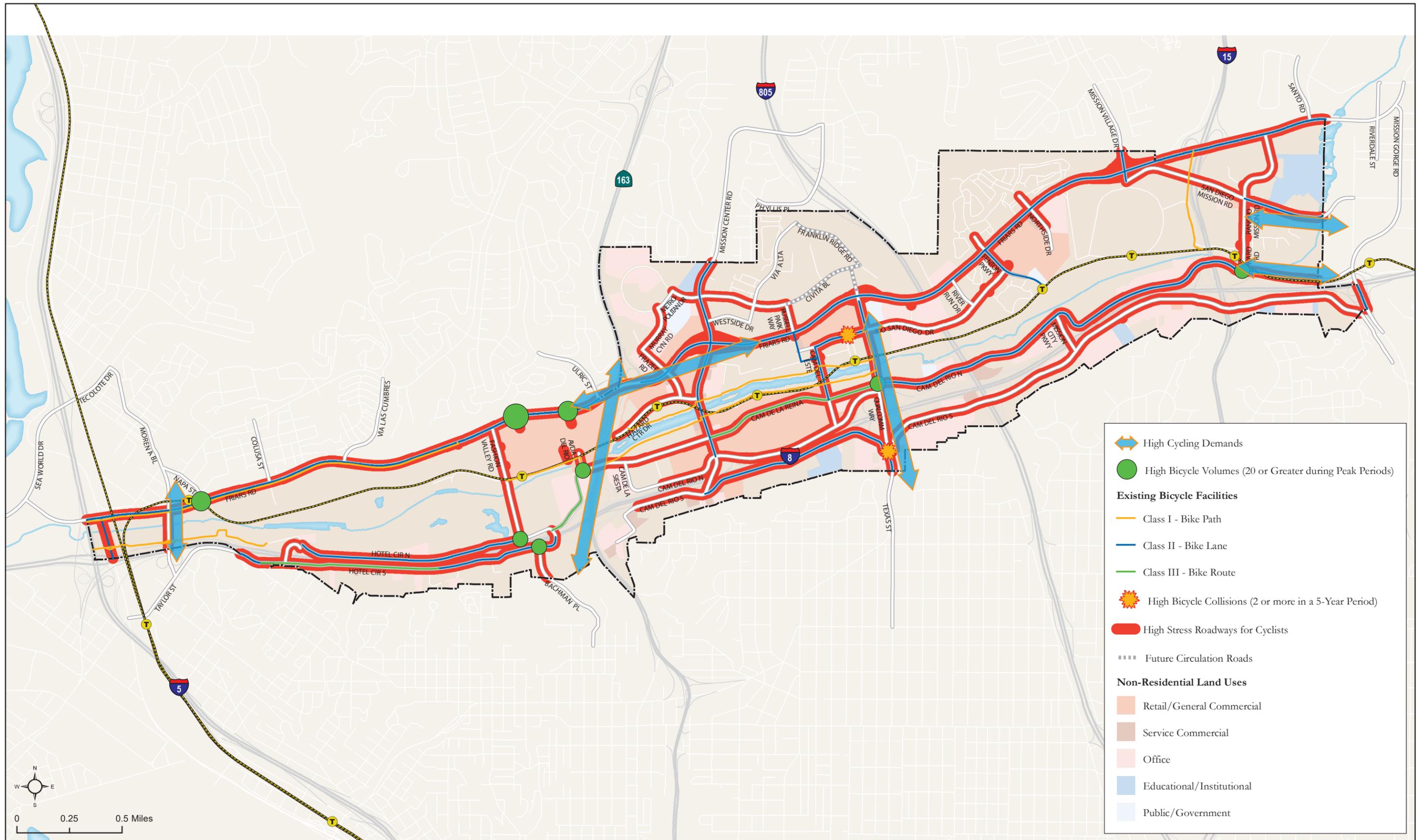
5.2 Bicycle Needs

Bicycle infrastructure should provide for the safety and comfort of its users, and the bicycle network should be well connected across a community. Safety and comfort are paramount considerations, given that active travelers are more exposed and vulnerable than those inside a vehicle. Unsafe or uncomfortable conditions discourage the decision to make a trip by bike. Network connectivity is also important – safe and comfortable infrastructure will not be useful if destinations cannot be efficiently reached.

Bicycle needs are found throughout Mission Valley. Needs are identified by locations with a high number of bicycle collisions, the amount of stress likely to be experienced by a bicyclist, lack of existing bicycle facilities, and high cycling demand. **Figure 5-2** depicts bicycle needs.

5.2.1 Bicycle Safety

Two intersections were reported as experiencing two or more bicycle-involved collisions during the five-year analysis period, including: Rio San Diego Drive and Station Village Way, and Qualcomm Way/Texas Street and Camino Del Rio South. Two segments, Hotel Circle South and Friars Road west of SR-163 were found to have a relatively high amount of bicycle-involved collisions.



5.2.2 Bicycle Level of Traffic Stress

Bicycle Level of Traffic Stress (LTS) measures the level of comfort a cyclist would experience on a roadway, taking into account physical separation from vehicular traffic, vehicular traffic speeds along the roadway segment, number of travel lanes, and factors related to intersection approaches with dedicated right-turn lanes and unsignalized crossings. This measurement classifies streets and intersections from LTS 1 (suitable for children) through LTS 4 (suitable for riders who are comfortable sharing the road with autos traveling at 35 mph or greater).

In general, stress levels are high along most roadways in Mission Valley, regardless of the presence of bicycle facilities. This is largely due to high traffic speeds, the high number of vehicular travel lanes, as well as the limited space allocated to cyclists.

5.2.3 Bicycle Demand

Bicycle demand is estimated through a number of factors, including existing bicycle facilities, land uses (residential, office, commercial/retail, schools, and parks), location of transit stations, and demographic data. Mission Valley exhibits relatively greater demand in the north-south direction. There is also high demand along Friars Road near the cluster of shopping centers. These bicycle travel demand estimates are generally supported by higher observed bicycle volumes.

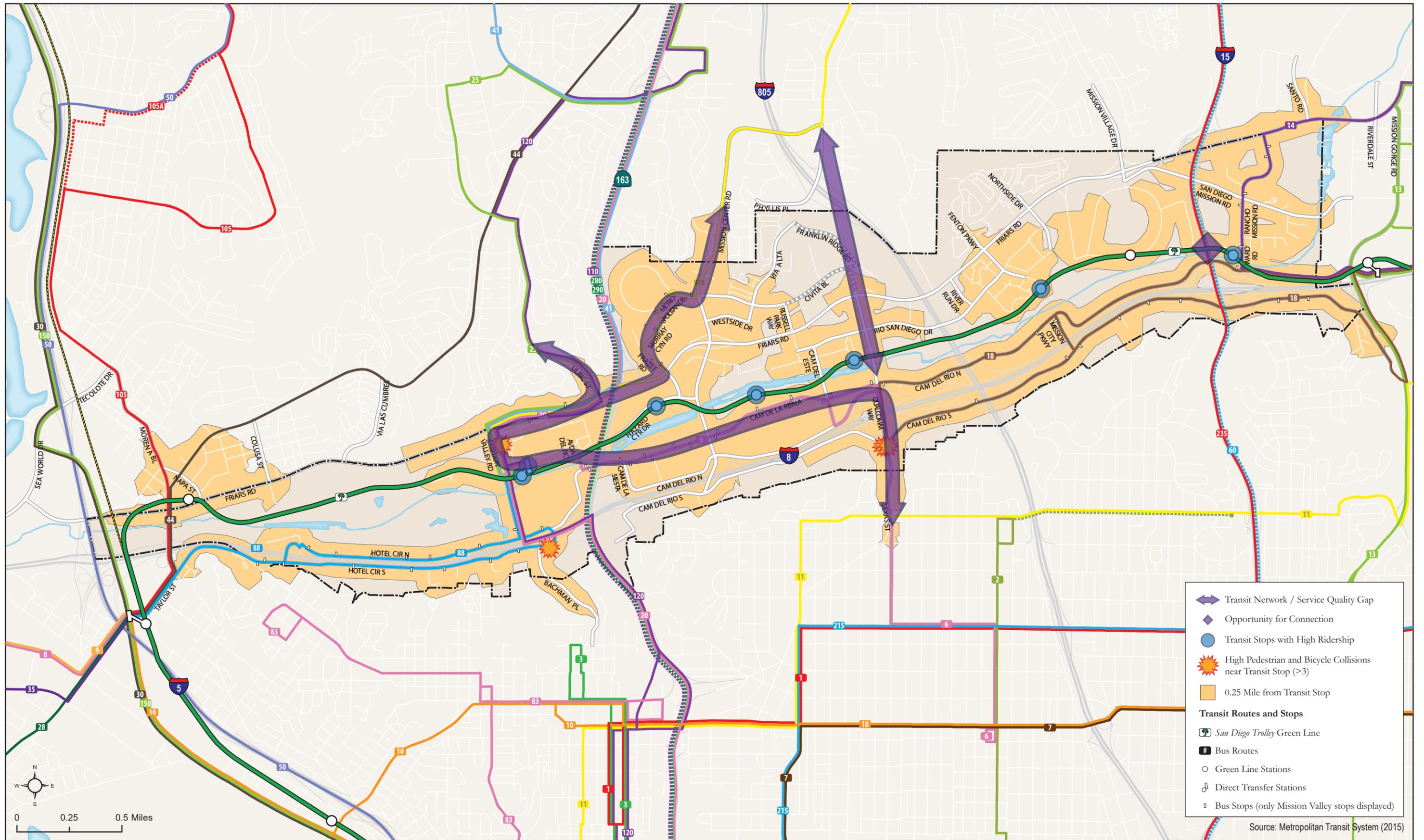
The following 11 intersections were identified as high bicycle volume locations (defined as 20 or more cyclists observed during peak periods):

- Friars Road and Napa Street
- Friars Road and Via De La Moda
- Friars Road and Avenida Del Rio
- Camino Del Rio North and Qualcomm Way
- Camino Del Rio North and Rancho Mission Road
- Camino Del Rio North and Mission Gorge Road
- Taylor Street and Morena Boulevard
- Hotel Circle North and Fashion Valley Road
- Hotel Circle South and Bachman Place
- Camino De La Reina and Avenida Del Rio
- Texas Street and Madison Avenue

5.3 Transit Needs

The City of Villages strategy supports expansion of the transit system by calling for multi-family housing, employment centers, and other higher-intensity uses to be located in areas that can be served by high quality transit services. This will allow more people to live and work within walking distance of transit.

Mission Valley is relatively well served by transit, with most of the community within a quarter mile of a transit stop. The highest public transit ridership levels in the community are along the Green Line Trolley, as well as at the Fashion Valley Transit Center. Future transit needs in Mission Valley primarily stem from access limitations due to transit network gaps or poor service in terms of on-time performance, safety issues near transit stations, and connectivity issues. **Figure 5-3** illustrates transit needs.



5.3.1 Community Circulators

Some developments within Mission Valley have implemented, or are planning to implement, a community circulator. Examples include the Centerville office complex, which offers lunchtime shuttle services for employees, as well as the Civita residential development, which plans to implement a circulator to connect residents to transit and major community attractions. These circulators are often implemented through conditions established during a proposed development's approval process. While not accessible to all members of the general public, these circulators can facilitate mobility for eligible travelers. Community circulator systems are currently privately financed and operated. Future large developments within the community are likely to continue the trend of implementing community circulators as a traffic-mitigating community amenity.

5.3.2 Access Limitations

Poor service quality and network gaps are present among many of the bus routes serving the core of Mission Valley. In particular, poor on-time performance along bus routes serving destinations to the north and south of the Fashion Valley Transit Center limit the convenience and reliability of public transit. Bus Route 6, 25, 41, 105, and 928 suffer with on-time performance that is significantly below the goals set by MTS. These buses are frequently stuck in the same congestion as private vehicles, indicating a potential need for transit priority measures along congested roadway segments. In addition, a network gap exists near the I-805 corridor, which links Mission Valley to the Serra Mesa and Kearny Mesa communities to the north.

5.3.3 Transit Rider Safety

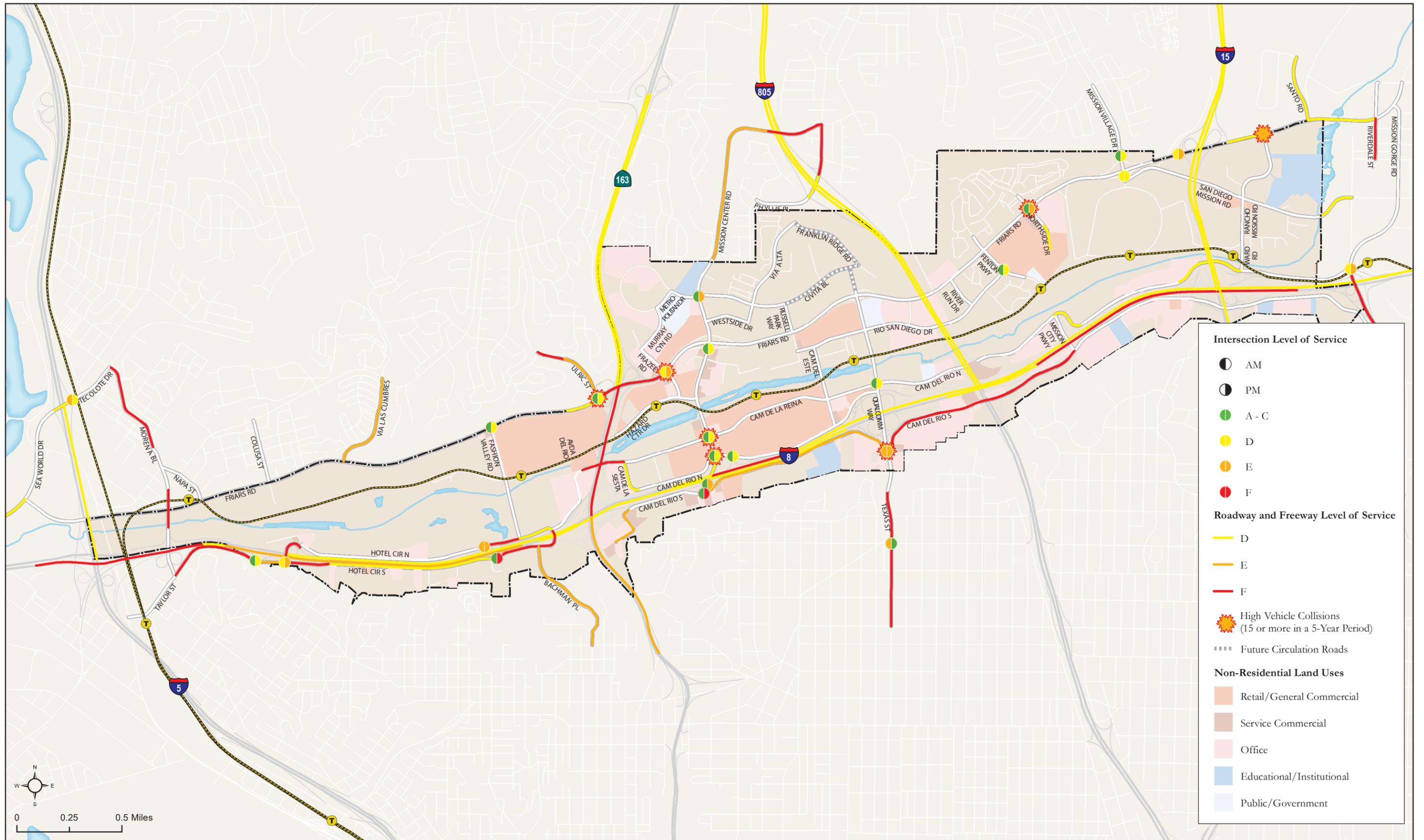
Most transit users access transit stops by walking or biking. Therefore, high numbers of bicycle and pedestrian collisions near a transit stop may indicate safety issues for transit users at that location. Fashion Valley Transit Center, Hotel Circle South near Bachman Place, and Camino Del Rio South near Qualcomm Way/Texas Street have experienced three or more bicycle- and/or pedestrian-involved collisions during the five-year collision analysis period.

5.3.4 Connectivity

There is a lack of high quality transit service (light rail, Bus Rapid Transit) serving Mission Valley in the north and south directions. Although there is a Rapid Bus that travels along I-15, there is no bus station located within the community. Future connectivity improvements may be beneficial near the intersection of I-15 and Camino Del Rio North. This location could potentially serve as a transfer point between the MTS Rapid 235, which links Escondido to downtown San Diego, and the Green Line Trolley linking downtown San Diego to Santee. Establishing a connection between these frequent, high-quality transit lines will improve connectivity and expand regional travel opportunities via public transit.

5.4 Street and Freeway Needs

Streets and freeways comprise the framework of our transportation system and play a major role in shaping community form and quality of life. A street system plagued by congestion can have major impacts on the community. Roadways and intersections experiencing level of service D or worse, and locations with a high concentration of reported collisions are shown in **Figure 5-4**.



5.4.1 Arterials

Although Mission Valley is readily accessible by freeway, travel to specific points within the community by means of local roadways can be difficult during the peak hours. In the morning and midday peak hours, congestion occurs on the freeways as workers living outside of the community travel to jobs in Mission Valley, while in the evening the surface street system experiences congestions. The evening congestion is due to Mission Valley commuters accessing the freeway network, in addition to motorists coming into the area to frequent the shopping, restaurants, and theaters.

These high vehicular traffic volumes result in a number of roadway segments operating at a substandard level of service. In particular, north-south links such as Morena Boulevard, Bachman Place, and Texas Street experience LOS D conditions or below. Many east-west links, such as portions of Friars Road, Camino De La Reina, Hotel Circle North and South, and Camino Del Rio North and South experience LOS D conditions or below.

5.4.2 Freeways

The five freeways that serve Mission Valley are I-5, SR-163, I-805, I-15, and I-8. These freeways are utilized by residents, employees, and patrons of Mission Valley, as well as significant regional pass-through trips. As shown in Figure 5-4, a large portion of the freeway segments within Mission Valley operate at a poor level of service during the peak commute periods along one or both directions.

SANDAG, in collaboration with Caltrans, the City of San Diego, the Metropolitan Transit System, and other key stakeholders, has developed a multimodal corridor study for I-8 within the City of San Diego. This planning effort will further engage Caltrans on I-8 improvement concepts within Mission Valley, especially a potential interchange at Via Las Cumbres.

5.4.3 Intersections

Nearly one third of the study intersections (21 of 67) currently operate at LOS D or worse during the peak commute hours. Mission Center Road experiences some of the worst intersection congestion during the evening peak hour, with a majority of the intersections operating at LOS D or worse. The following thirteen intersections currently operate at an unacceptable level of service (LOS E or F) during the AM or PM peak hour:

- I-5 NB Ramps and Sea World Drive/Tecolote Road – AM LOS E
- Mission Center Road and Mission Valley Road/Civita Boulevard – PM LOS E
- Frazee Road and Friars Road – PM LOS E
- Northside Drive and Friars Road – PM LOS E
- I-15 SB Ramps and Friars Road – PM LOS E
- Fairmount Avenue/Camino Del Rio North and I-8 WB Off-Ramp – PM LOS E
- I-8 WB Ramps/Handlery Hotel Driveway and Hotel Circle North (E) – AM/PM LOS E
- Hotel Circle North and Taylor Street/Hotel Circle South – PM LOS E
- I-8 EB Ramps and Hotel Circle South – PM LOS F
- Mission Center Road and I-8 EB Ramps – PM LOS E
- Mission Center Road and Camino Del Rio South – PM LOS F; Mid-day LOS E
- Texas Street and Camino Del Rio South – AM/PM LOS E
- Texas Street and Madison Avenue – AM LOS E

5.4.4 Safety

Several intersections within Mission Valley were reported to have a high number of vehicular collisions, defined as 15 or more collisions during the five-year analysis period, including:

- Friars Road and Ulric Street
- Friars Road and Frazee Road
- Friars Road and Northside Drive
- Friars Road and Rancho Mission Road
- Mission Center Road and Camino De La Reina
- Mission Center Road and Camino Del Rio North
- Camino Del Rio South and Qualcomm Way/Texas Street

5.4.5 Parking

Greater management of parking spaces can help achieve mobility, environmental, and community development goals. Motorists are accustomed to “free” parking at many destinations, but in reality no parking is without cost. The real cost of parking is paid by everyone through higher rents, lower salaries, higher costs of goods and services, or taxes – regardless of how many cars we own or how much we drive. This system of “bundling” parking costs with other goods and services lowers the out-of-pocket expenses of driving and makes other types of travel seem expensive by comparison. Research suggests that when the real costs of parking are passed on directly to drivers, the demand for parking typically drops, and alternative modes of transportation, where available (such as transit, carpooling, walking, and bicycling) become more attractive and viable for certain trips.

Parking Occupancy

Due to the abundance of off-street parking at the retail and employment centers in Mission Valley, on-street parking is underutilized in parts of the community. Roadways in the Mission Valley Community with high rates of observed on-street parking occupancy (over 85%) during one or more peak periods are generally located near retail, commercial, or office land uses, as shown in **Figure 5-5**. In particular, segments include Friars Road from Colusa Street to Fashion Valley Road, Friars Road adjacent to the Fashion Valley Mall, Murray Canyon Road, Frazee Road, Westside Drive, Russell Park Way, Rio San Diego Drive, River Run Drive, Rancho Mission/Ward Road, Hotel Circle South, and along Camino Del Rio South west Texas Street and between Mission City Parkway and Interstate 15.

