CITY OF WILDOMAR

MOBILITY PLAN

Existing Conditions Report

June • 2020

Prepared by:

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Prepared for:

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Wildomar, CA 92595

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Executive Summary

The Wildomar Mobility Plan represents the City's inaugural comprehensive Mobility Element and its first Active Transportation Plan (ATP). This Plan is intended to guide network development and investments within the City of Wildomar across all travel modes with a focus on Complete Streets. The active transportation components are intended to improve mobility for people walking and bicycling by providing supportive polices and networks. The importance and heritage of equestrian use in Wildomar is recognized and will be carried forward in this Mobility Plan development process. This Existing Conditions Report is one of the initial steps in the planning process. It serves to document the current state of mobility in Wildomar by examining the existing physical infrastructure, the quality of facilities, user safety, and demand.

Commuter Profile

Demographics and commuter information were reviewed to better understand who lives in Wildomar, how they move through the City, and where employment and residential concentrations are located. The 2017 US Census estimated Wildomar had 35,492 residents. Of these, approximately 9,158 residents were under the age of 18, and 4,234 residents over the age of 65. The age distribution of Wildomar residents tracks closely to Riverside County as a whole.

Commute mode shares in Wildomar also resemble Riverside County, with over 77% of workers in both geographies driving alone for their commute. Carpool rates are slightly higher in Wildomar (14.7%) than in the County (12.9%), however, public transportation use and walking commute rates were both lower in Wildomar.

Pedestrian Mobility

Pedestrian demand was evaluated by conducting peak hour counts and through an Active Transportation Propensity Model used to analyze areas based on land use and demographic characteristics. Pedestrian demand was generally found to be greatest in areas closest to schools, and the central part of the City, south of Wildomar Trail and west of Interstate 15.

Sidewalks are intermittent or nonexistent along many of Wildomar's roadways. The lacking infrastructure results in poor quality walking environments for pedestrians. Sidewalk infill will become an important step toward building a robust pedestrian mobility network. Missing sidewalks act as gap in the sidewalk network and create potential safety challenges for youth, people traveling in wheelchairs, people using mobility assistive devices, and for people pushing strollers. Providing residents with a safer and more comfortable pedestrian environment by building more sidewalks will be a key factor to help increase walkability levels within the city.

Five-years of collision data (October 31, 2014 – October 31, 2019) were reviewed to better understand pedestrian safety issues. During this period, 25 pedestrian-involved collisions were reported, resulting in four severe injuries and three fatalities. Nearly half of the 25 records (12/25) were the result of the pedestrian crossing the roadway outside of designated crossing locations when they did not have the right-of-way. Providing well-connected pedestrian infrastructure, such as sidewalks and high visibility crosswalks, will help improve pedestrian mobility and all other travel modes by promoting and encouraging safe pedestrian behaviors.

Bicycle Mobility

The greatest bicycle volumes were observed along Palomar Street, Corydon Road, and Mission Trail. In general, ridership was greater during the evening peak hours (4 – 6 PM) than the AM peak hours (7 – 9 AM). The bicycle counts were consistent with the Active Transportation Propensity Model results, which identified the central part of the City, south of Wildomar Trail and west of Interstate 15 as demonstrating higher demand land use and demographic characteristics.

Bicycle connectivity is very limited, with facilities only located on Grand Avenue and Clinton Keith Road. A bicycle level of traffic stress (LTS) analysis examined the quality of the bicycle network based on the posted speed limits and separation from vehicular traffic, indicating most roadways outside of neighborhood streets exhibit uncomfortable characteristics for bicyclists. However, the wide and undeveloped roadways/shoulders along many of the City's roadways present a great opportunity to expand the bicycle network and improve facility comfort.

A total of 13 bicycle-involved collisions were reported during the five-year collision analysis period, including three fatalities and one severe injury. Collisions were concentrated along three corridors, each experiencing three collisions: Clinton Keith Road, Mission Trail, Palomar Street. Bicycle-involved collisions were frequently the result of unsafe speeds (three collisions, including one severe injury and one fatality), unsafe lane changes (three collisions, including one fatality), or failure to obey traffic signs/signals (two collisions).

Equestrian Mobility

The Equestrian Heritage and on-going use in Wildomar is noted throughout this Existing Conditions Report and will be carried forward into the development of recommendations. The undeveloped shoulders and wide right-of-way available along many Wildomar roadways provide a unique opportunity to plan and develop a multimodal transportation network.

Grand Avenue is a recent example of an improvement project that transformed the roadway to serve pedestrians, bicyclists, equestrian users, and drivers. This success is something that can be replicated across Wildomar. The Wildomar Adopt-a-Trail System Map will serve as a starting point for identifying corridors that may be preserved for equestrian use. These alignments will be reviewed in tandem with forecast vehicular volumes and available rights-of-way to develop Mobility Plan recommendations.

Transit Mobility

The City of Wildomar is served by Bus Routes 23 and 8 operated by the Riverside Transit Authority (RTA). Bus routes 205 and 206 traverse the City along I-15, but do not stop within Wildomar. The transit stop at Wildomar Trail (formerly Central Street) and Palomar Street was reported as having the highest number of daily boardings and alightings. This bus stop is close to retail opportunities and areas with high active transportation propensity.

Many of the bus stops within the City lack connecting sidewalks or bicycle infrastructure which could discourage or inhibit access, considering transit users frequently start and end their trip as pedestrians or bicyclists. Transit ridership or transit proximity may also be used as an input to prioritize future recommendations such as sidewalks or bicycle facilities as a means to improve these connections.

Vehicular Mobility

The vehicular analysis considered operations along roadway segments, intersections, and freeway segments. A total of 48 roadway segments were analyzed, indicating eight segments which currently operate at a substandard level of service (LOS E or F), including:

- Corydon Road[1], from Palomar Street to Mission Trail (LOS F)
- Bundy Canyon Road, from I-15 NB Ramps to Monte Vista Road (LOS F)
- Bundy Canyon Road, from Monte Vista Road to The Farm Road (LOS F)
- Bundy Canyon Road, from The Farm Road to City Limit (LOS F)
- Wildomar Trail (formerly Central Street), from Palomar Street to I-15 SB Ramps (LOS F)
- Clinton Keith Road, from Inland Valley Drive to City Limit (LOS F)
- Palomar Street, from Orange Street/Gruwell Street to Wildomar Trail (formerly Central Street) (LOS E)
- Inland Valley Drive, from Clinton Keith Road to Prielipp Road (LOS E)

The intersection analysis evaluated 30 intersections during the AM and PM peak hours. The following 6 intersections were found to operate at substandard (LOS E or F) levels of service during the AM and/or PM peak hour:

- Grand Avenue & Gruwell Street – LOS F during the AM peak hour
- I-15 SB Ramps & Wildomar Trail (formerly Baxter Road) – LOS E during the PM peak hour
- I-15 NB Ramps & Wildomar Trail (formerly Baxter Road) – LOS E during the PM peak hour
- McVicar Street & Palomar Street – LOS E during the AM peak hour
- Palomar Street & Clinton Keith Road – LOS E during the AM peak hour
- Hidden Springs Road & Clinton Keith Road – LOS E during the AM peak hour

All freeway segments were found to operate at acceptable levels of service under existing conditions.

The five-year collision analysis identified 19 locations where five or more collisions were reported. Approximately half of these 19 locations are located on two corridors: Bundy Canyon Road and Clinton Keith Road. The intersections along these roadways will be reviewed to determine if improvements such as protected left-turns, no-right-turn on red signage, or other recommendations are appropriate.

The leading violations reported for collisions resulting in fatalities were due to speeding and driving under the influence. These issues will be revisited to determine the suitability for establishing policies to address these collision causes.

[1] The west/north side of this segment is within the City of Lake Elsinore's jurisdiction.

1.0 Introduction

1.1 Study Background and Purpose

The Wildomar Mobility Plan represents the City's inaugural comprehensive Mobility Element and its first Active Transportation Plan (ATP). This Plan is intended to guide network development and investments within the City of Wildomar across all travel modes with a focus on Complete Streets. The active transportation components are intended to improve mobility for people walking and bicycling by providing supportive polices and networks. The importance and heritage of equestrian use in Wildomar is recognized and will be carried forward in this Mobility Plan development process.

Complete Streets is defined in California Assembly Bill No. 1358, The Complete Streets Act, as requiring the planning, design, and construction of transportation infrastructure that "meets the needs of all users of streets, roads, and highways, defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context.

This Existing Conditions Report is one of the initial steps in the planning process. It serves to document the current state of mobility in Wildomar by examining the physical infrastructure, the quality of facilities, user safety and demand. A series of public outreach activities will supplement the existing conditions analyses. The public's input will provide information about perceived issues and opportunities. The overall recommendations for the Mobility Plan will be informed by the Existing Conditions Report, input from the public, and anticipated growth and travel patterns.

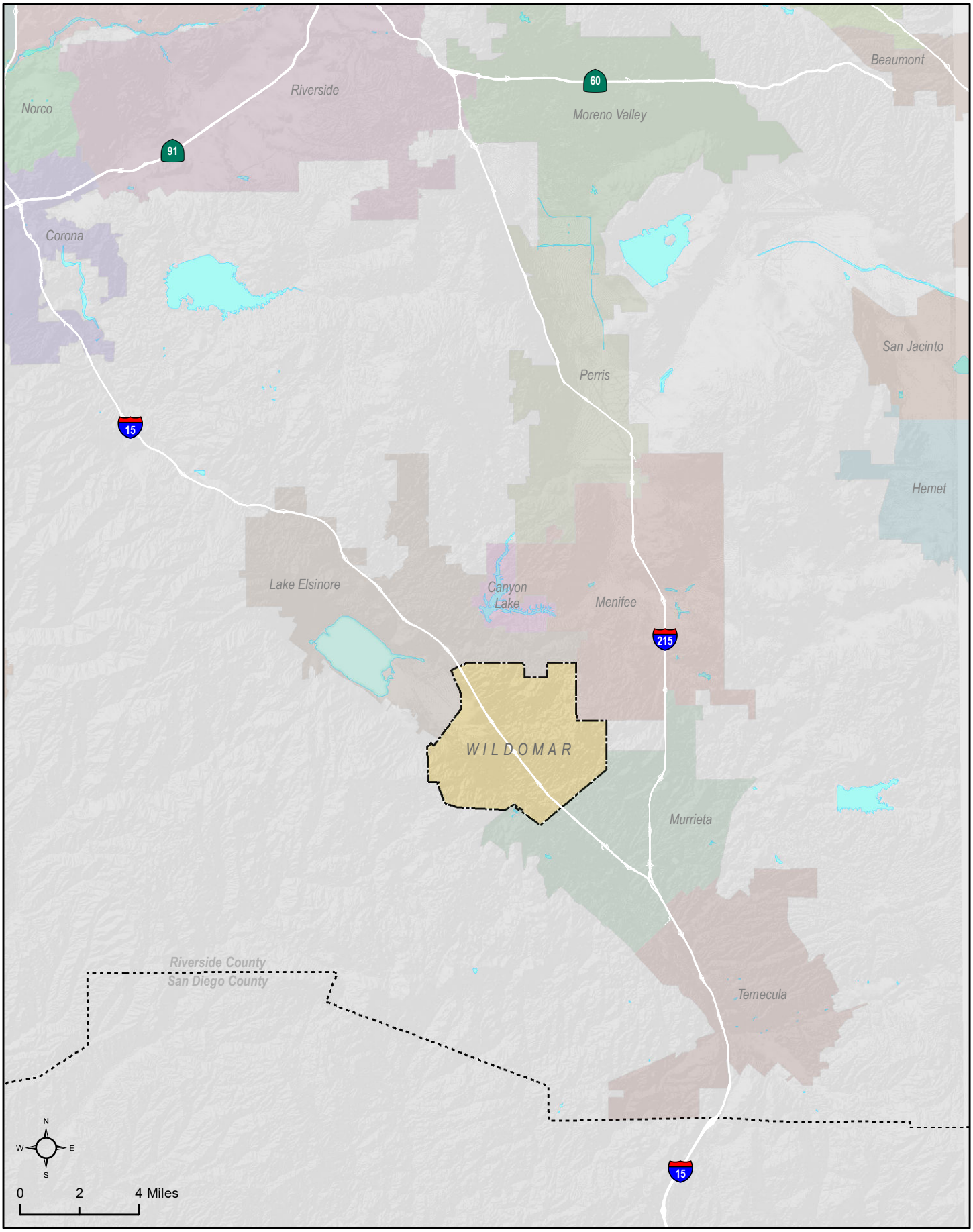
The Wildomar Mobility Plan is funded through a $300,000 grant from the Southern California Association of Governments (SCAG) via Senate Bill 1 (SB1) and the Mobile Source Air Pollution Reduction Review Committee (MSRC).

1.2 Setting

The City of Wildomar is located in southwestern Riverside County and officially incorporated as a city in 2008. It is located north of the City of Murrieta and south of the City of Lake Elsinore. The City of Wildomar is bisected by Interstate 15 (I-15).

The City's location within the region is displayed in **Figure 1.1**.

The current General Plan land uses in Wildomar are displayed in **Figure 1.2**. The commercial retail and commercial office uses are predominately clustered around I-15. There is a noticeable node of commercial, light industrial, mixed-use, and business in the triangle formed between I-15, Clinton Keith Road and the City's boundary. However, the dominant land use is residential, though the City of Wildomar also has substantial amounts of open space and rural mountainous designated areas, as well as undeveloped lands for future developments.



Wildomar Mobility Plan

Figure 1.1
City of Wildomar within the Region

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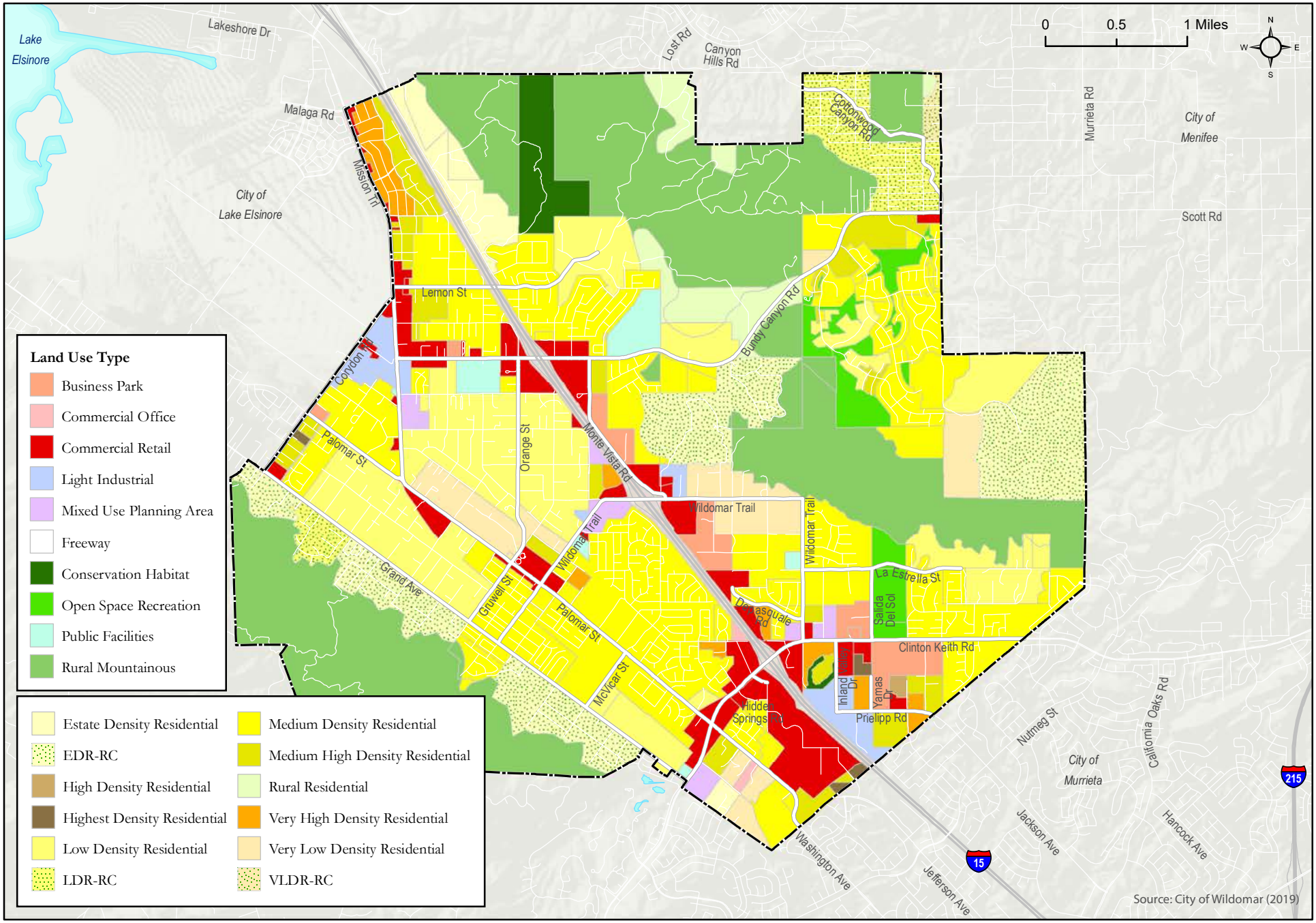

Wildomar Active Transportation Plan

Figure 1.2
Existing Land Uses

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1.3 Supporting Information

Over the past decade plus, several key planning initiatives and legislative actions at the state and regional levels have redefined the way local transportation planning is carried out. Examples include Assembly Bill 1358 – the Complete Streets Act, Senate Bill 375 – Sustainable Communities and Climate Protection Act, Senate Bill 743 – Environmental Quality, and the Southern California Association of Governments (SCAG) Sustainability Program.

In September of 2008, the State of California approved AB 1358 – the Complete Streets Act. Effective January 1, 2011, AB 1358 requires city or county legislative bodies to plan for a balanced, multi-modal transportation network that meets the needs of all users of streets, roads, and highways. "All users" is defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation, in a manner that is suitable to the rural, suburban, or urban context of the general plan.

In 2008, SB 375 was adopted, requiring metropolitan planning organizations (MPOs) to formulate a "sustainable community strategy" (SCS) as part of their regional transportation plans (RTP). The SCS serves to specifically identify how the region will achieve targeted reductions in greenhouse gas emissions from automobiles and light trucks. In April 2016, SCAG's Regional Council adopted the 2016-2040 RTP/SCS, with a vision encompassing three principles identified as key to the region's future: mobility, economy, and sustainability. The RTP/SCS outlines a plan for integrating the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands, with particular emphasis paid to designated High Quality Transit Areas (HQTAs). Although no current or planned HQTAs exist in Wildomar or its Sphere of Influence, the RTP/SCS maintains relevance through its connection to land use patterns as prescribed by local jurisdictions, ensuring consistency between local planning documents and regional plans, policies, and implementation strategies.

The County of Riverside defines a **Sphere of Influence** as "the area outside of and adjacent to a city's border that has been identified by the County Local Agency Formation Commission as a future logical extension of its jurisdiction. While the County of Riverside has land use authority over city sphere areas, development in these areas directly affects circulation, service provision, and community character within the cities.

SB 743 was signed into law by Governor Brown in September 2013, making several changes to the California Environmental Quality Act (CEQA) by removing vehicular 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 traveled (VMT) is considered the new analysis metric used to measure transportation impacts. VMT reflects 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.

SB 743 requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines for evaluating transportation impacts and it is anticipated to be implemented statewide by July 1, 2020.

A number of additional regional and local planning documents work in concert to guide the transportation framework of Wildomar.These include:

- Riverside County Regional Park and Open Space District Comprehensive Trails Plan (2018)
- WRCOG Active Transportation Plan (2018)
- Riverside County Elsinore Area Plan (2017)
- Riverside Transit Agency First & Last Mile Mobility Plan (2017)
- SCAG 2016-2040 RTS/SCS (2016)
- WRCOG and SCAG Sustainability frameworks (2016)
- County of Riverside General Plan (2016)
- City of Wildomar General Plan (adopted County of Riverside General Plan) (2004?)
- Murrieta Creek Regional Trail Project (2014)
- City of Wildomar Housing Element (2013)
- Wildomar Old Town Vision (2013)
- Wildomar Visioning Booklet (2008)
- City of Wildomar Strategic Visioning Plan (2008)

Reviewing relevant documents and guiding policies is intended to provide a summary of previous efforts related to transportation within the City and the region and to insure consistency with other planning efforts. The review is informative to the understanding of existing conditions, as several planning efforts identify needs/issues related to active transportation. The review also helps with recommendation development in terms of goals and policies and feasibility evaluations from previous efforts. The full document review memorandum can be found in Appendix A.

1.4 Organization of the Report

Following this introductory chapter, the remainder of this Existing Conditions Report is organized into the following chapters:

- *Chapter 2 Community Profile* gives an overview of the City of Wildomar's demographics and commuter data.
- *Chapter 3 Analysis Methodology* describes the methodologies employed to assess mobility throughout Chapter 4.
- *Chapter 4 Existing Conditions* evaluates the existing environment for pedestrians, bicyclists, transit users and motorists as related to demand, connectivity, quality, and safety. This chapters also includes a review of the existing public equestrian network.
- *Chapter 5 Opportunities and Constraints* summarizes the key findings identified throughout the document.

2.0 Community Profile

This chapter provides an overview of the City of Wildomar's demographics and commuter information. The purpose of this chapter is to review census data and to look more closely at who lives in Wildomar and how they move through the City and by which travel mode.

2.1 Demographic Summary

Population and employment density, age groups, and vehicle ownership are described within this section. Data was obtained from the US Census 2013-2017 American Community Survey 5-Year Estimates. The employment density map draws from US Census Longitudinal Employer-Household Dynamics (LEHD) 2017 data. The 2017 US Census estimated Wildomar had 35,492 residents. Of these, approximately 9,158 residents were under the age of 18, and 4,234 residents over the age of 65.

Population, Employment and Income Density

Locations where people live and work are important considerations in the planning process. Trips frequently start from – or are generated from – residences. Trips commonly end at places of employment, or destinations such as parks, schools, retail centers, and civic uses. Determining where higher concentrations of residential and employment land uses are can help develop an understanding of travel behavior.

Figure 2.1 displays population density by census block group within Wildomar. The highest population density is shown along the west side of I-15, between Wildomar Trail (formerly Central Street) and Clinton Keith Road. The least populated areas are southwest of Grand Avenue, and between Wildomar Trail (formerly Baxter Road) and Bundy Canyon Road, east of I-15. Figure 2.2 presents the number of jobs per acre by census block group for all employees, regardless of City of residence. The highest employment density area is located in the triangle formed between the Interstate 15, Clinton Keith Road and the City's boundary, which includes the Oak Creek Center, the Inland Valley Medical Center, and several other office and industrial parks.

Figure 2.3 shows median household income by census block group. Median household income levels vary greatly across the City, reflecting a diverse population. The income groupings depicted are well-dispersed, without concentrations of relatively higher or lower levels in any specific area.

Youth and Senior Populations

Youth and senior populations are considered vulnerable roadway users due to their limited mobility options and relatively greater reliance on alternative transportation and infrastructure. Because of this they require additional consideration when planning transportation networks. Figure 2.4 displays the percentage of youth per census block group. The census block groups with the highest percentage of youth are in the southern portion of the City, flanking either side of Interstate 15, as well as, in the furthest northwestern corner of the City.

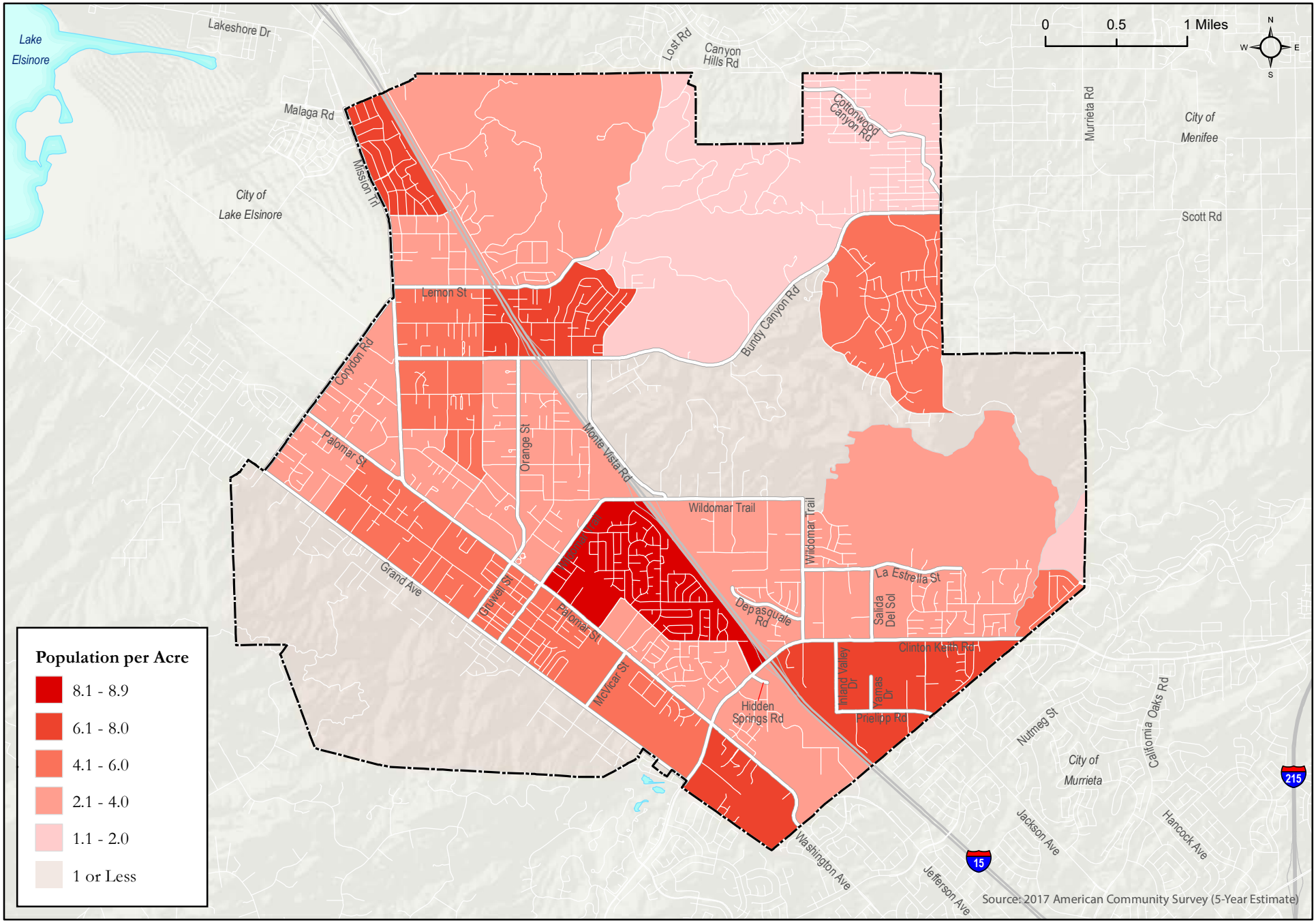

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Figure 2.1
Population Density by Census Block Group

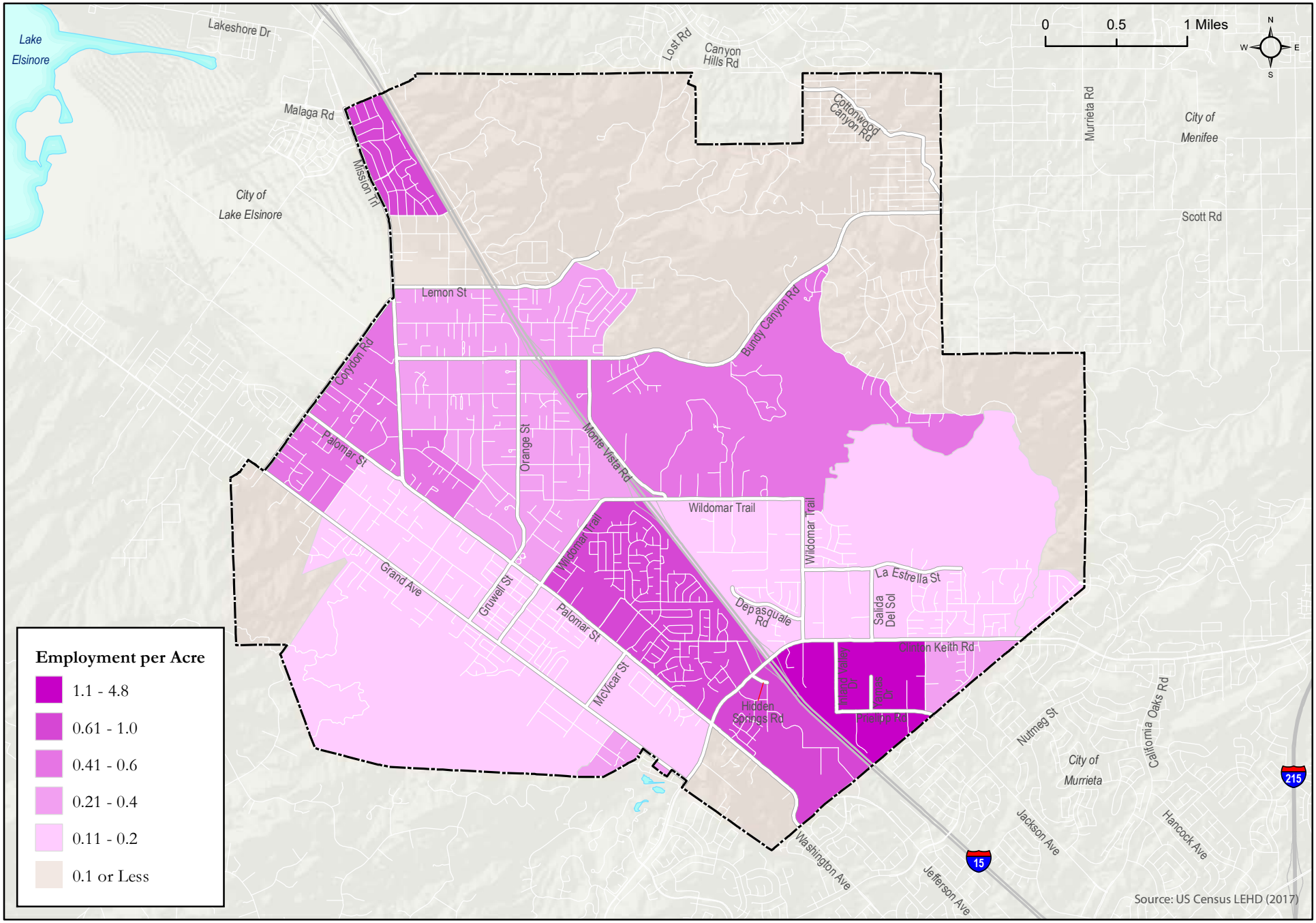

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Figure 2.2
Employment Density by Census Block Group

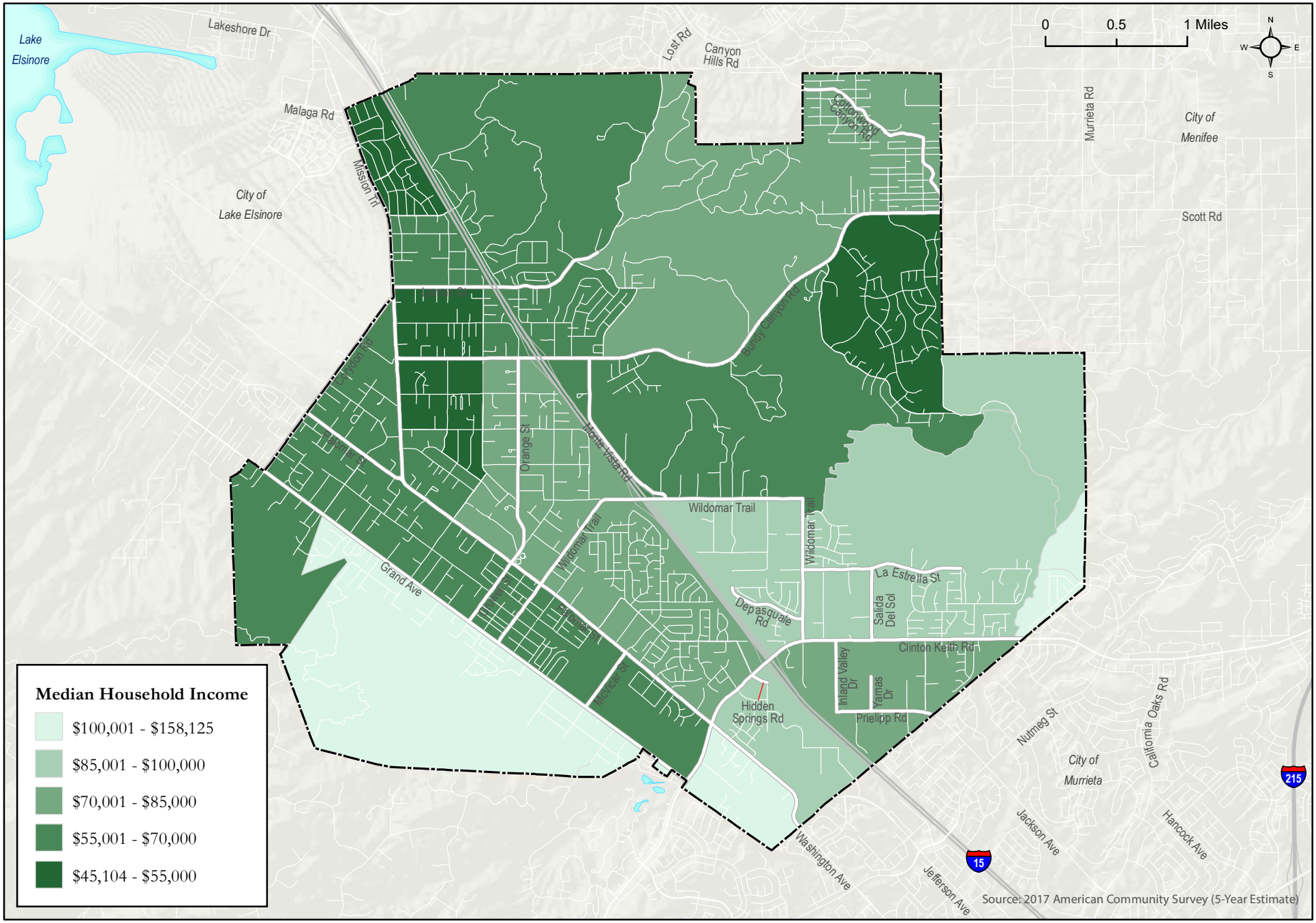

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Figure 2.3
Median Household Income by Census Block Group

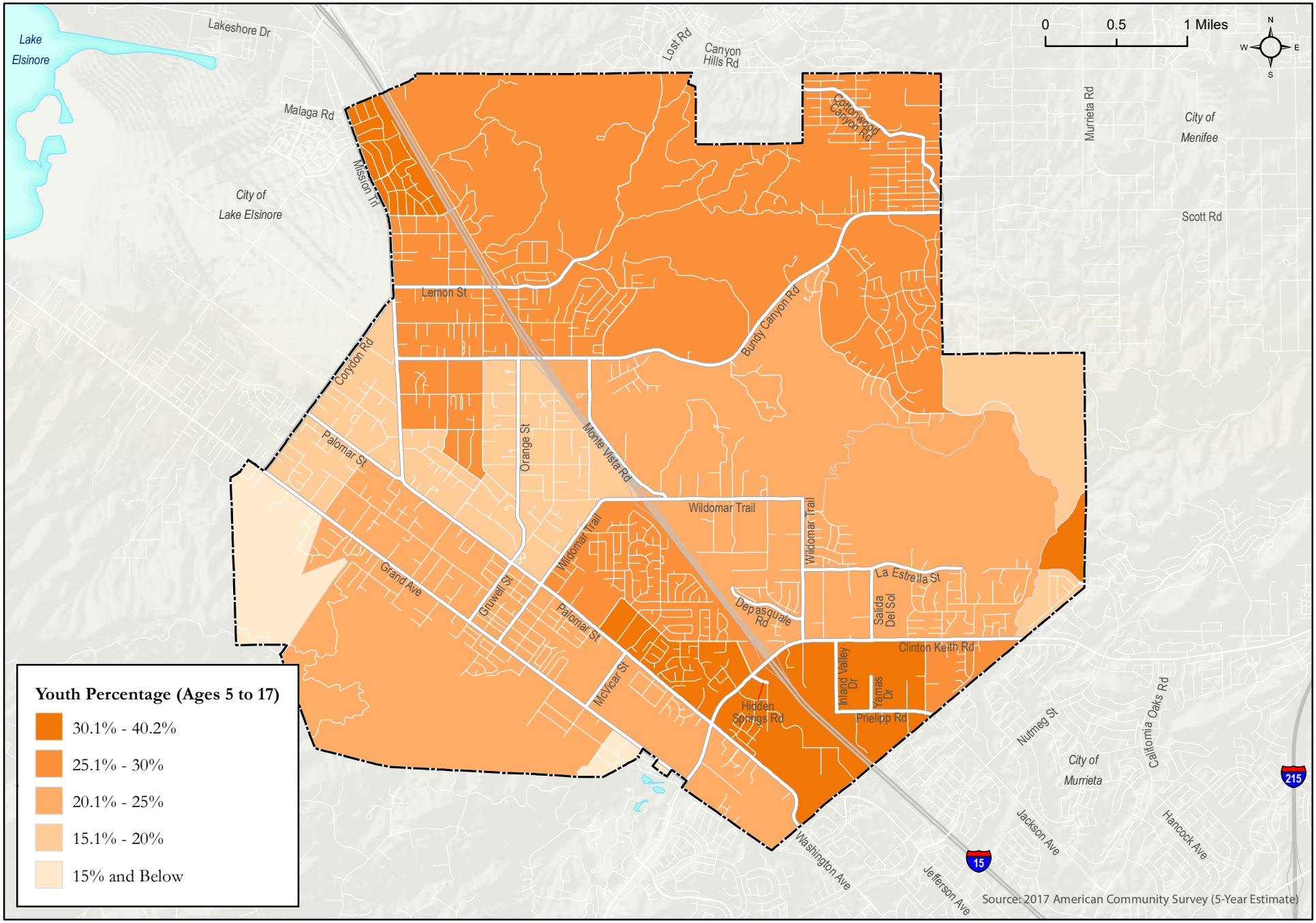

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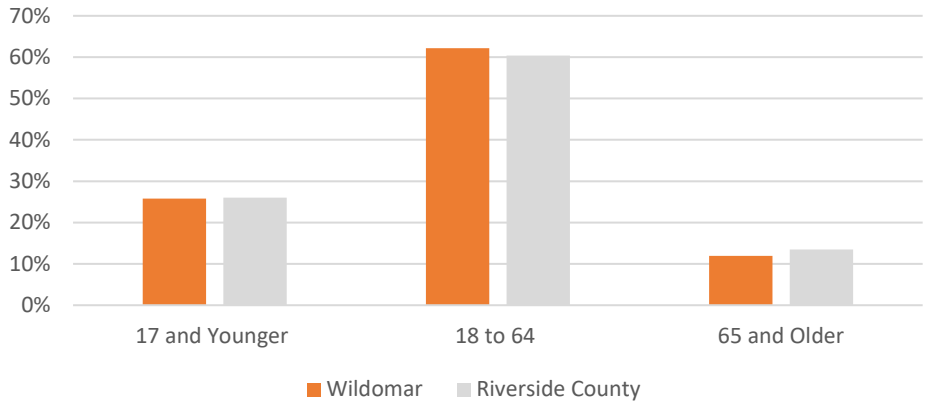
Figure 2.4
Youth Population by Census Block Group

Figure 2.5 displays the percentage of seniors per census block group. The highest percentage of senior citizens is in the southwestern portion of the City, which overlaps with the lowest population density and the highest median household income area. Census block groups with elevated percentages of senior citizens are located in the middle of the City alongside Interstate 15 on the west.

Figure 2.6 presents a comparison of the populations for Wildomar and Riverside County by age group. All age brackets track relatively close to each other. Both Wildomar and Riverside County have approximately 26% of their population who are 17 years old or younger. Approximately 62% of Wildomar's population is between the ages of 18 and 24 years of age, whereas that demographic makes up approximately 60% of Riverside County's population. Approximately 12% of Wildomar's population and 13.5% of the County's population fall within the 65 and older age group.

Figure 2.6 Population by Age Group – City of Wildomar and Riverside County



Source: US Census, 2013-2017 American Community Survey 5-Year Estimate (2020)

Zero Vehicle Households

A well-considered multimodal mobility network serves the needs of all users, regardless of age, ability and socio-economic class. An indicator of social equity is access to a vehicle. Table 2.1 below shows vehicle availability for households in Wildomar. Approximately 3.7% of households in Wildomar are zero-vehicle households. This equates to approximately 366 households.

Table 2.1 Vehicle Availability by Household

Vehicles Available	Households	Percent of Total
No Vehicle Available	366	3.7%
1 Vehicle Available	2,001	20.1%
2 Vehicles Available	3,734	37.6%
3 or more Vehicles Available	3,834	38.6%
Total Occupied Household Units	**9,935**	**100.00**

Source: US Census, 2013-2017 American Community Survey 5-Year Estimate (2020)

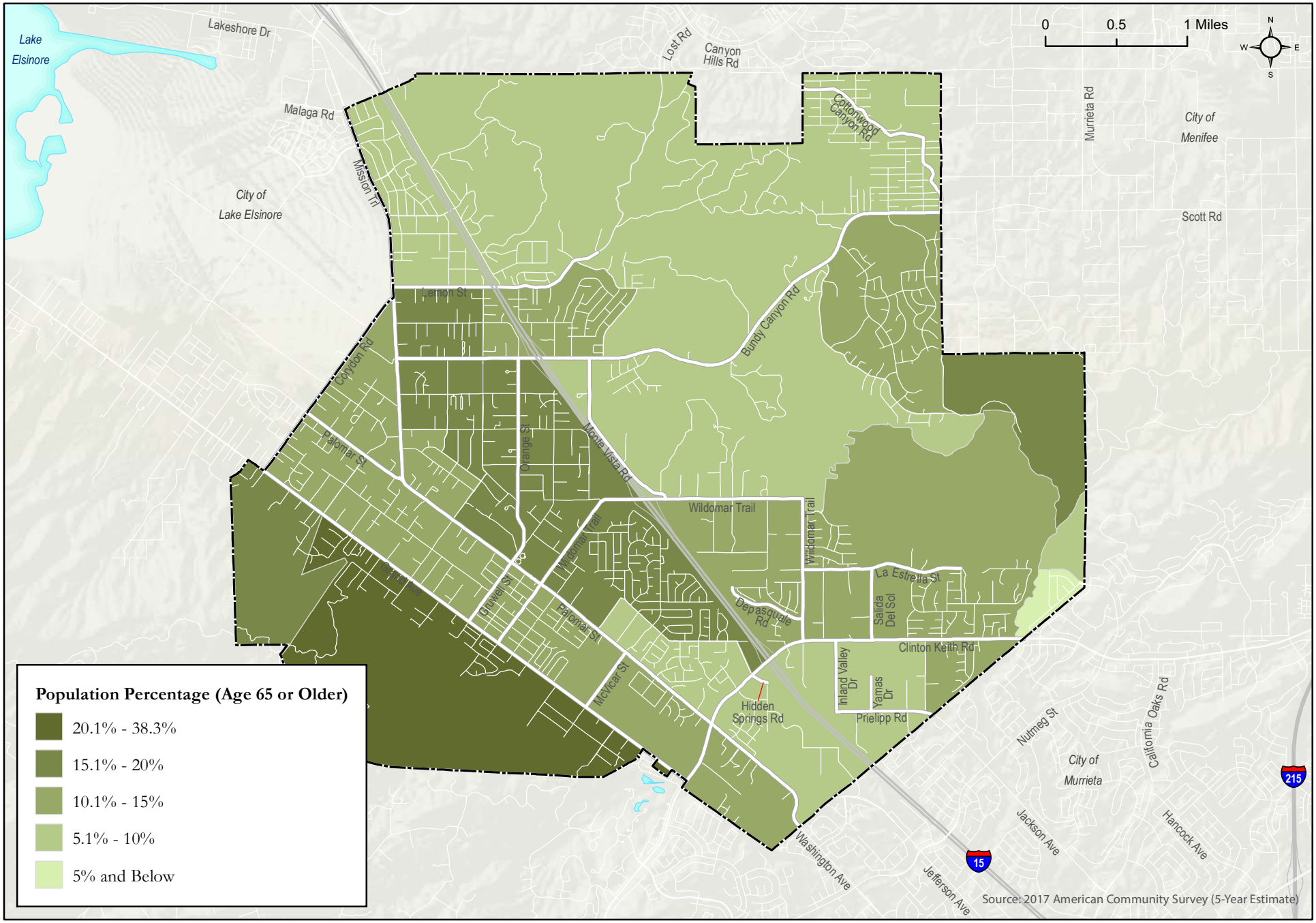


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Figure 2.5
Senior Population by Census Block Group

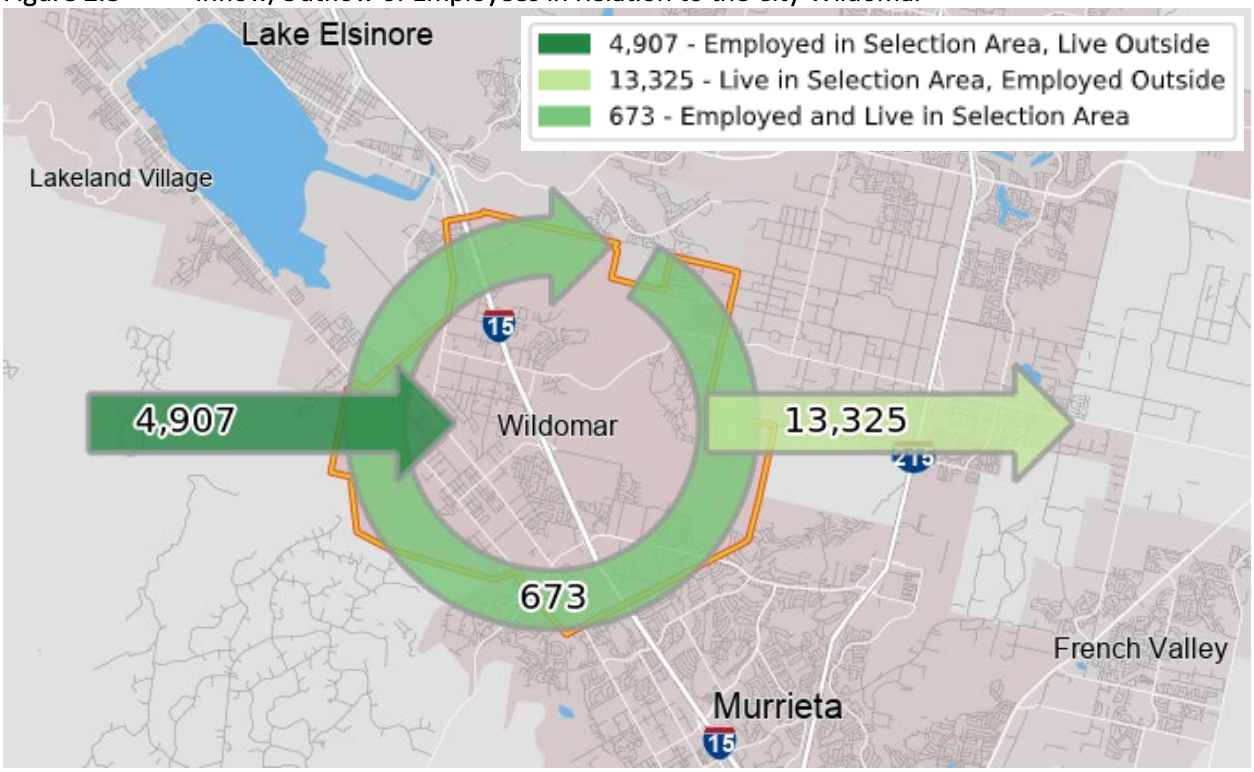
Figure 2.7 (Page 17) shows where census block groups with higher percentages of households without vehicles are located. There are a few census block groups with elevated percentages of zero vehicle households which overlap with census block groups with higher percentages of "$55,000 or Below" as the median income (Figure 2.3).

2.2 Commuter Profile

Examining the existing commuter patterns of residents and employees provides a deeper understanding of how people travel, and in turn, will inform the development of transportation-related recommendations.

Figure 2.8 shows the estimated number of persons (4,907) who live outside the City of Wildomar but are employed within the City limits, the number of employed persons (13,325) who live in Wildomar but work outside of the City limits, and the number of employed persons (673) who both live and work in the City of Wildomar using 2017 census data.

Figure 2.8 Inflow/Outflow of Employees in Relation to the City Wildomar



Source: 2017 US Census data (2020)

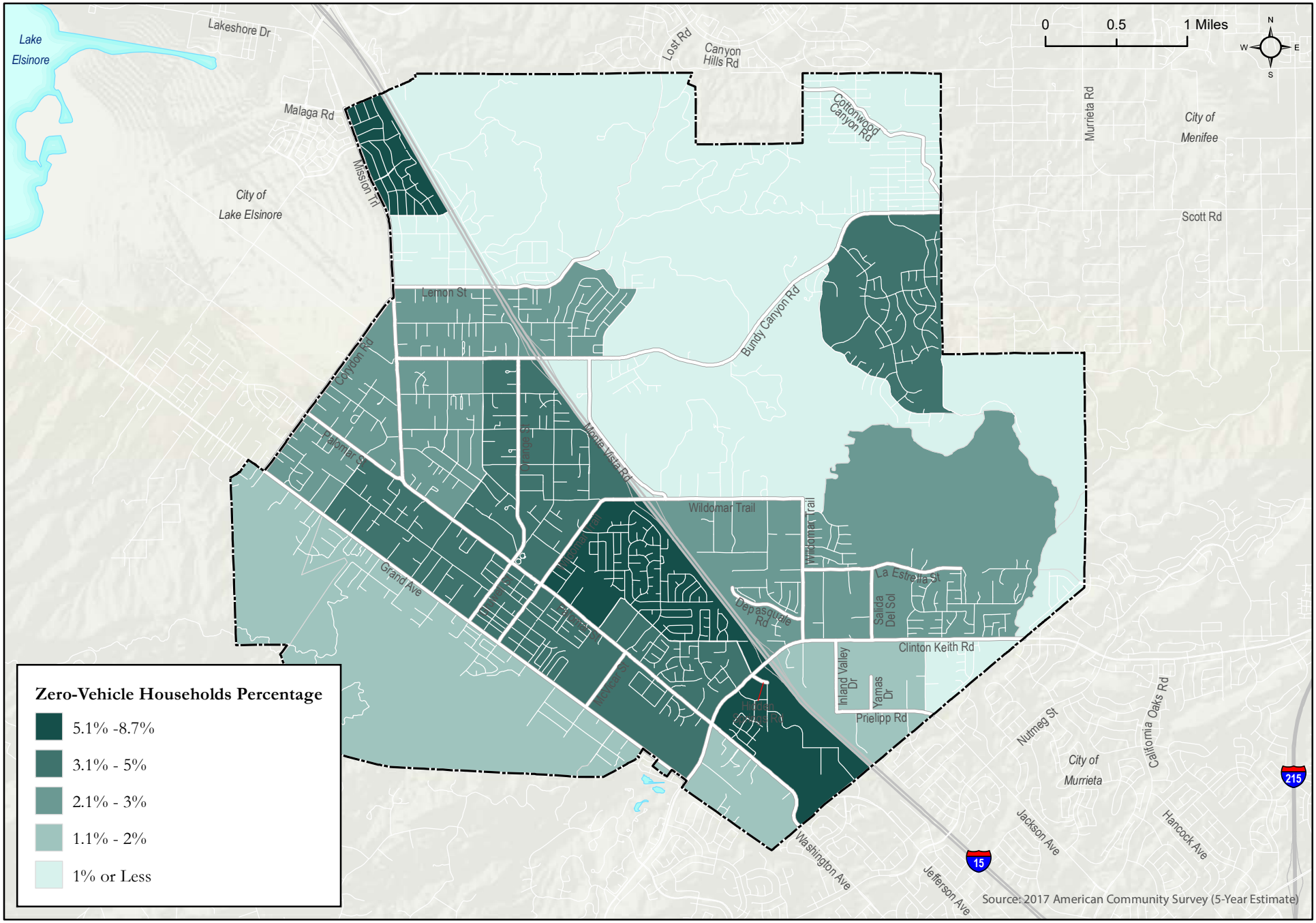


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Figure 2.7
Zero-Vehicle Households by Census Block Group

Table 2.2 displays the distance residents in Wildomar travel for work. Approximately 29% of residents travel less than 10 miles to work. Some of these trips are trips that can be potentially converted to active transportation trips with the appropriate facilities.

Table 2.2 Commute Distance for People that Live in Wildomar

Distance to Work	Percentage of Residents
Less than 10 miles	28.8%
10 – 24 miles	18.4%
25 – 50 miles	31.0%
Greater than 50 miles	21.8%
Total	100%

Source: 2017 US Census data (2020)

Table 2.3 displays the distance people who work in Wildomar travel from their residences in adjacent communities. As displayed, 47.9% of people who commute to Wildomar for work, travel less than 10 miles. With the appropriate type of facilities and connections to adjacent communities, there are a portion of these trips which could possibly convert into active trips.

Table 2.3 Commute Distance for People that Work in Wildomar

Distance to Work	Percentage of Employees
Less than 10 miles	47.9%
10 – 24 miles	18.9%
25 – 50 miles	19.5%
Greater than 50 miles	13.7%
Total	100%

Source: 2017 US Census data (2020)

It is worth noting that with appropriate and connective infrastructure, trips with commute distances less than 10 miles could potentially be converted into a combination of active transportation and transit trips.

Means of Transportation to Work (Commute Mode Share)

Table 2.4 compares means of transportation to work for the City of Wildomar and Riverside County. Wildomar has a slightly higher carpool rate (14.7%) to work than the County (12.9%), though lower rates of public transportation, walking, biking and working from home.

Table 2.4 Means of Transportation to Work

Means of Transportation to Work	Wildomar	Riverside County
Drove Alone	78.9%	77.2%
Carpooled	14.7%	12.9%
Public Transportation	0.7%	1.3%
Walked	0.6%	1.6%
Bicycle	0.2%	0.3%
Other	1.5%	1.4%
Worked from Home	3.4%	5.2%
Total	100%	100%

Source: US Census, 2013-2017 American Community Survey 5-Year Estimate (2020)

Figure 2.9 (Page 17) shows the percentage of Wildomar commuters who walk to work. Both census block groups with the greatest percentage of walking commuters are located in the far western portion of the City; one is east of Grand Avenue, south of Sheila Lane and to the City boundary, the other is north of Olive Street, west of the Interstate 15 to the City boundary.

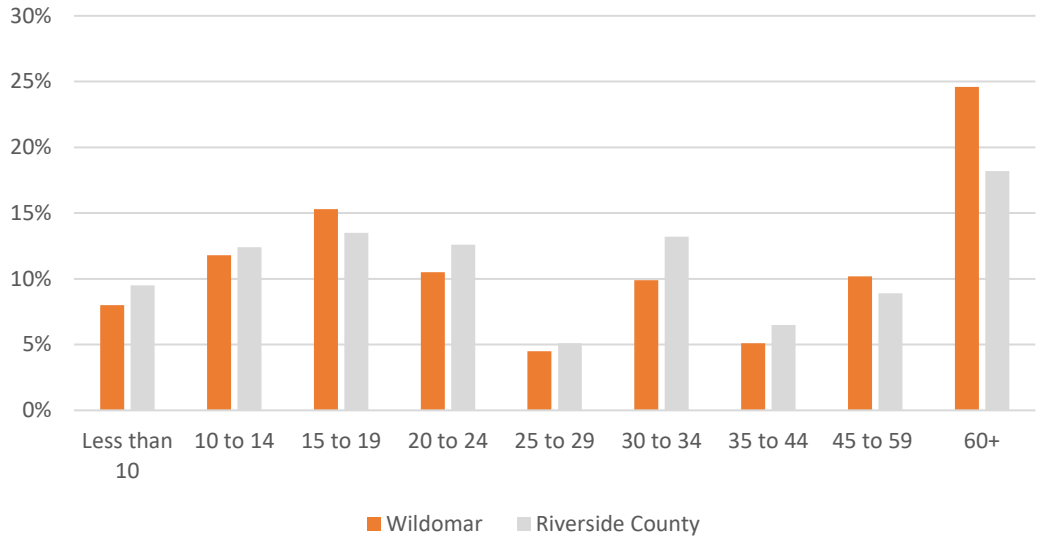
Figure 2.10 (Page 18) shows the percentage of Wildomar commuters who bicycle to work. The only reported bicycle commuters are in census block groups east of I-15 and generally south of Wildomar Trail (formerly Baxter Road). Both census block groups with bicycle commuters are directly adjacent to the census block group with the greatest employment density (Figure 2.2). The close proximity of residences to job concentrations increases the potential and feasibility of trips by bike.

Figure 2.11 (Page 19) displays the percentage of commuters who take transit to work. Two of the highest transit commuter census block groups are directly adjacent to the Interstate 15; the first is in the southwest quadrant of the City and the other straddles Interstate 15 between Bundy Canyon Road and Lemon Street. These census block groups are within walking distance of the transit routes. There is an overlap between some census block groups which have elevated percentages of transit commuters and those which have elevated percentages of zero-vehicle households (Figure 2.7).

Travel Time to Work

Figure 2.12 compares the length of the work commute for residents of the City of Wildomar and Riverside County. The biggest discrepancy is in the 60 minutes or more category. Approximately 20% of Wildomar residents have work commutes which are less than 15 minutes in length. Some of these trips could potentially be converted to active transportation and transit trips if the appropriate facilities are provided.

Figure 2.12 Travel Time (minutes) to Work for Wildomar and Riverside County



Source: US Census, 2013-2017 American Community Survey 5-Year Estimate (2020)

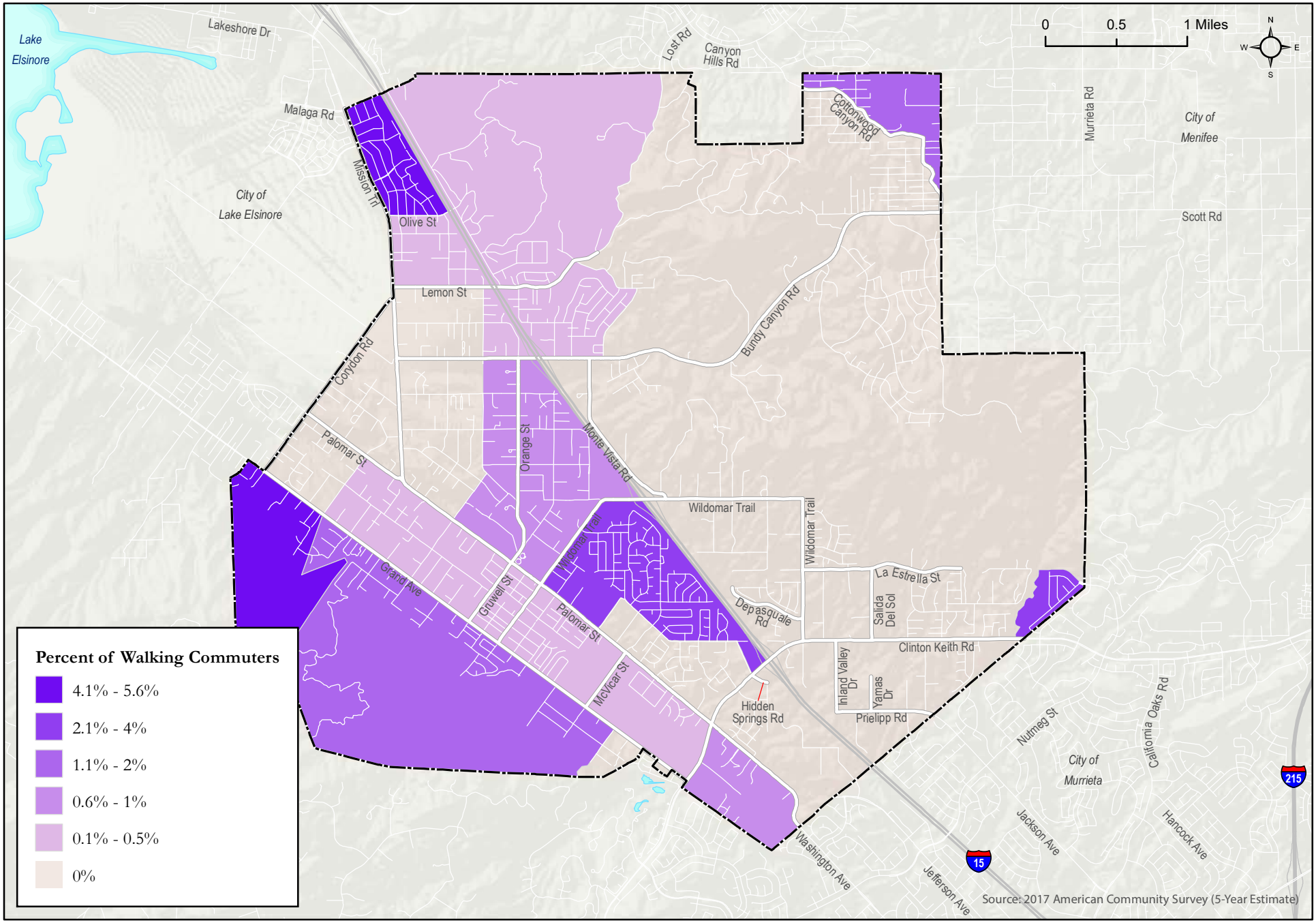


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Figure 2.9
Percent of Commuters Who Walk to Work by Census Block Group

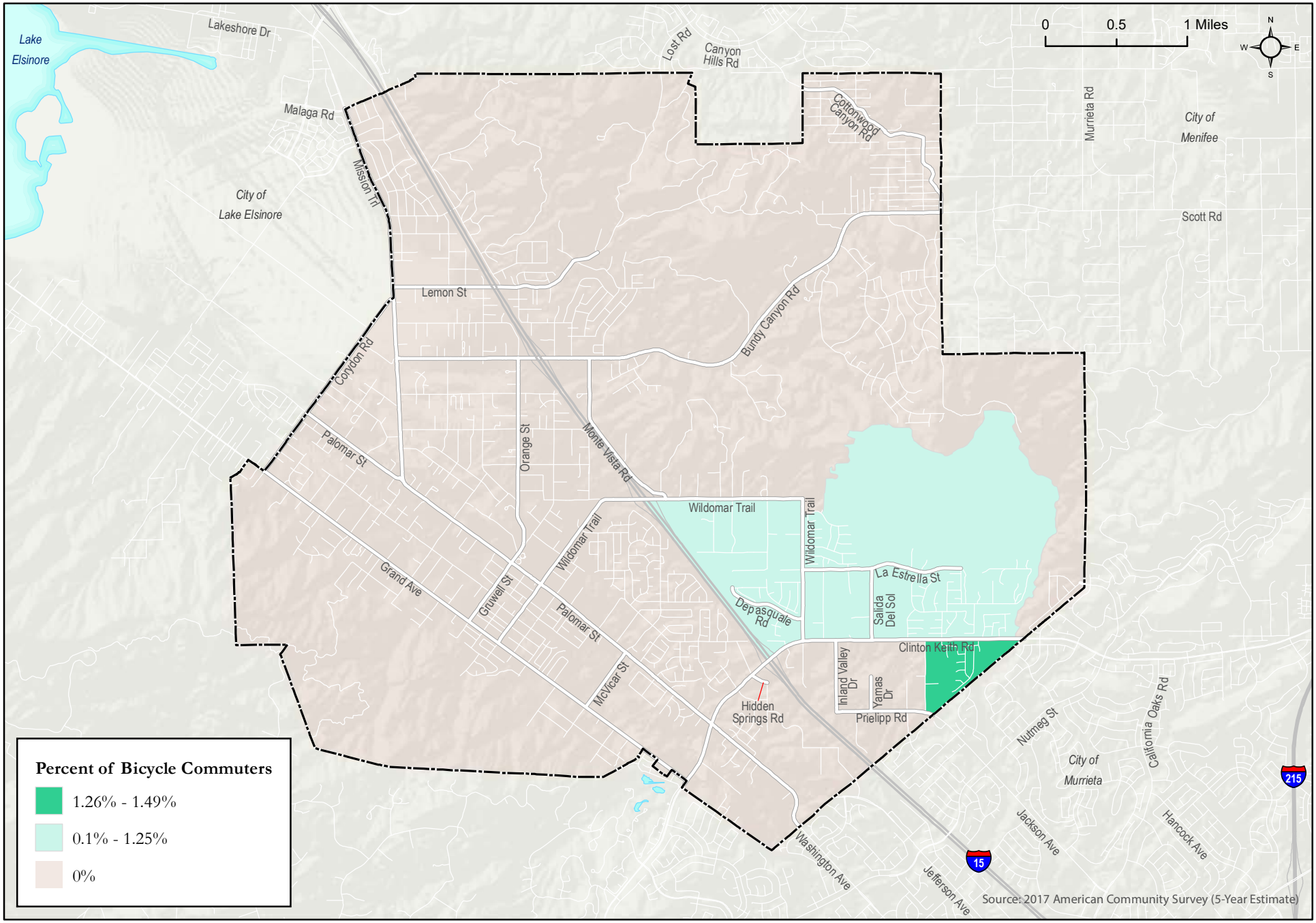

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Figure 2.10
Percent of Commuters Who Bicycle to Work by Census Block Group

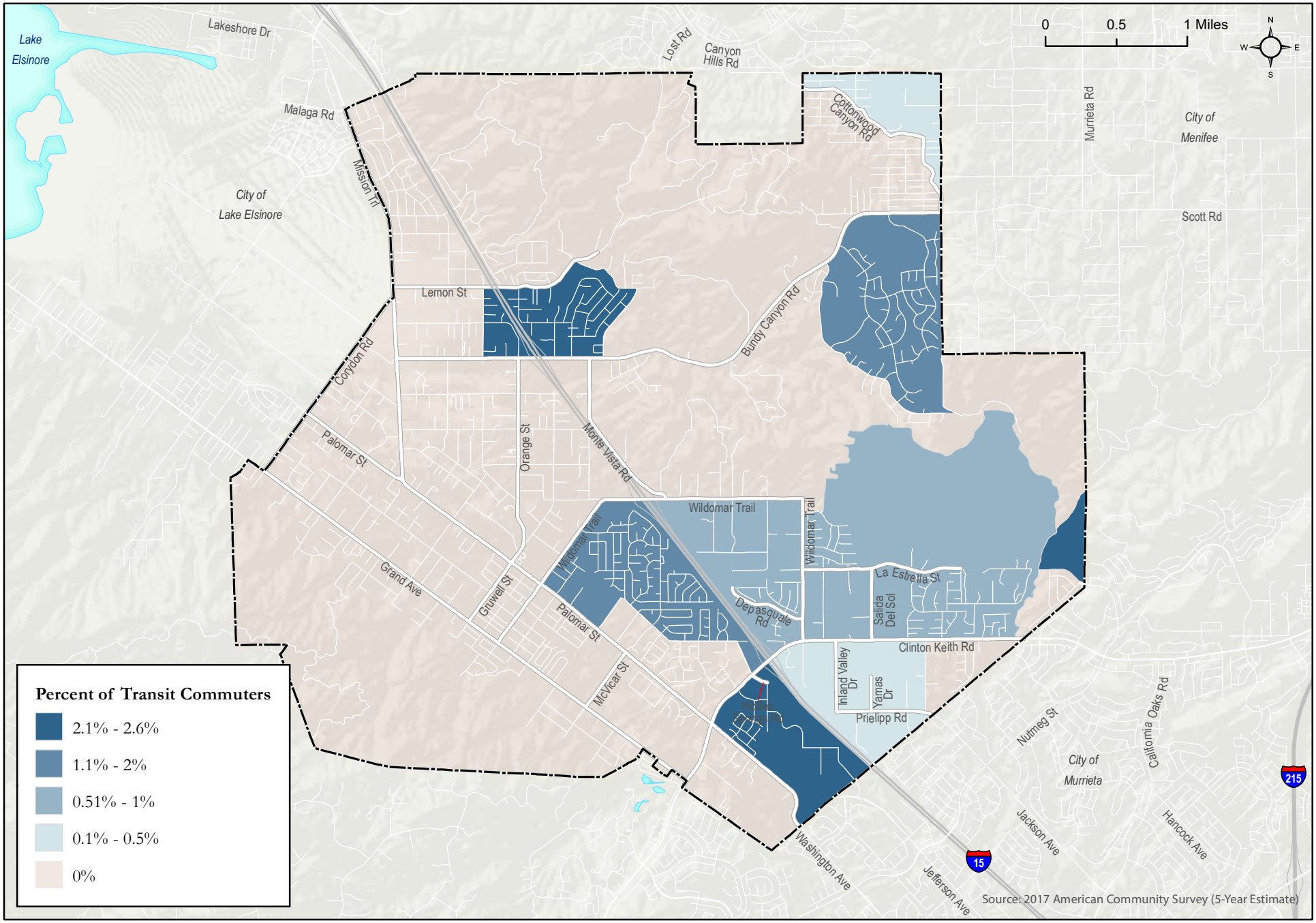

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Figure 2.11

Percent of Commuters Who Take Transit to Work by Census Block Group

3.0 Analysis Methodology

This chapter describes the study area and the mobility network analysis methodologies employed throughout the existing conditions analysis.

Table 3.1 summarizes performance measures used to evaluate each transportation mode, while the remaining sections of this chapter outline methodologies employed to analyze facility demand, network connectivity and quality, and safety associated with each of the four major modes of travel (pedestrian, bicycle, transit and auto) in the study area.

Table 3.1 Multimodal Performance Measures

Performance Measure	Pedestrian	Bicycle	Transit	Vehicular System
Demand	Travel Survey Data & Active Transportation Propensity Model	Travel Survey Data & Active Transportation Propensity Model	Boardings and Alightings information from RTA	Vehicular Segment and Intersection Counts and Future Travel Demand Forecast
Connectivity	Sidewalk Inventory	Existing Bicycle Facilities	Existing Transit Routes and Stop Locations	Vehicular Network and Roadway Classifications
Quality	Pedestrian Environment Quality Evaluation (PEQE)	Bicycle Level of Traffic Stress (LTS)	Station Quality – Presence of Amenities; Service Quality – On-Time Route Performance	Roadway Segment and Intersection Level of Service
Safety (Existing Conditions Only)	Historic Pedestrian Collisions (5-Yr)	Historic Bicycle Collisions (5-Yr)	Historic Collisions near Transit Stations/Stops (5-Yr)	Historic Auto Collisions (5-Yr)

3.1 Defining the Study Area

The primary study area is defined by the City of Wildomar municipal boundary. Study area roadway segments were defined as those included in the City of Wildomar Circulation Plan and a total of 48 roadway segments were evaluated. A total of 30 intersections were analyzed including all signalized and critical stop-controlled intersections along Circulation Plan roadways, as well as ramp intersections that provide access to the community. The study area and key study intersections are displayed in Figure 3.1.

3.2 Pedestrian Analysis

Pedestrian/Active Transportation Demand

To understand how the pedestrian network is currently being used, pedestrian count data was collected during the AM and PM peak commute periods (7-9 AM and 4-6 PM) at 30 study area intersections in September 2019.

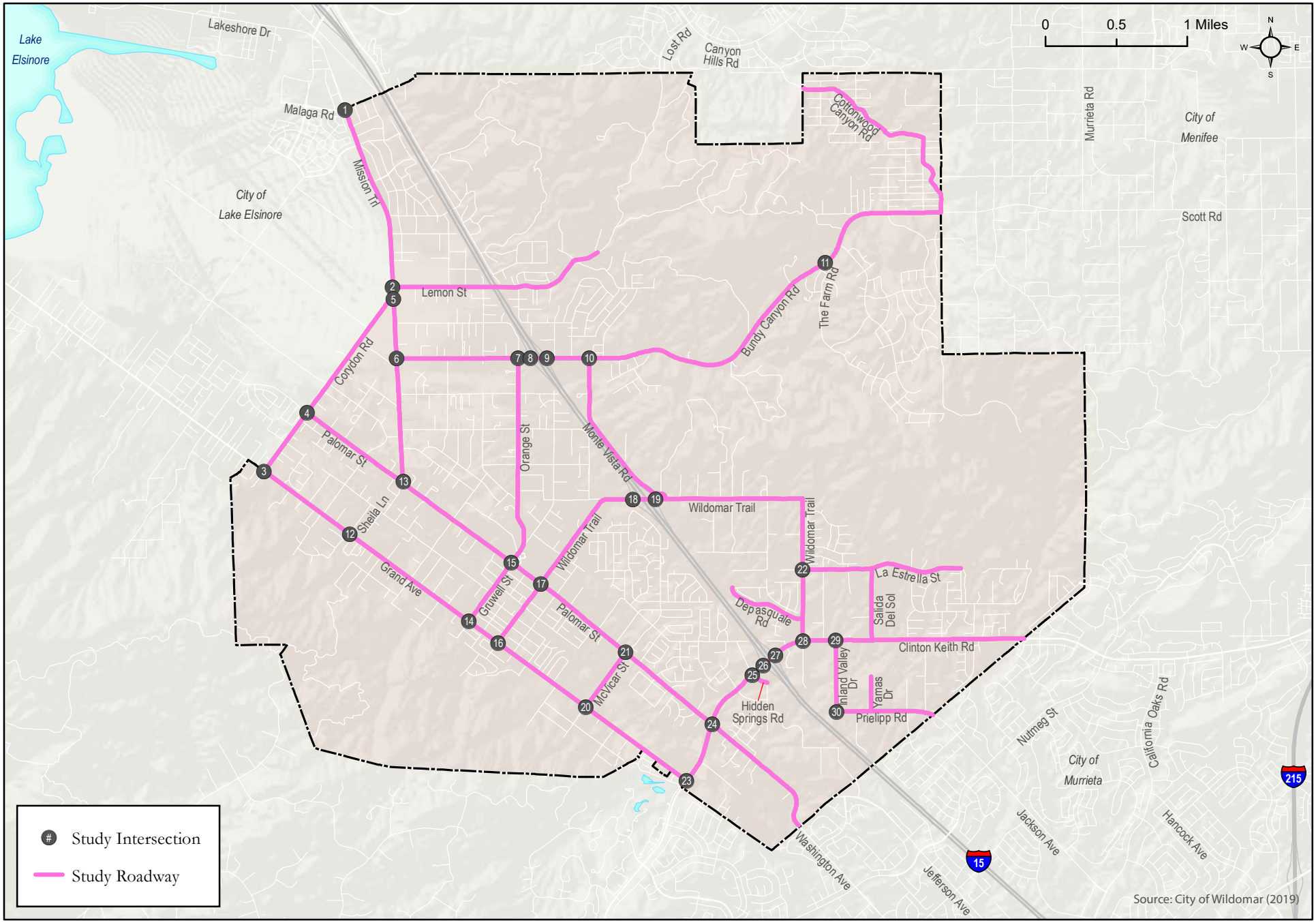

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Figure 3.1
Wildomar Project Study Area and Key Study Intersections

In addition, the latent demand was analyzed. A common analysis technique used to understand latent demand for cycling and walking – or the likelihood to make a walk or bike trip – is through an assessment of population and land use characteristics. This latent demand is depicted in an active transportation propensity model. The propensity model combines walk and bike trip generator inputs – population, employment, transit, pedestrian, and bicycle commuters; and senior population concentrations and facilities – with walk and bike trip attractors – schools, retail, parks, recreational spaces, and beaches. When combined, the active transportation generators and attractors provide a foundation for understanding active transportation demand across the City.

Active Transportation Trip Generators and Attractors

Table 3.2 displays the inputs, thresholds, and multiplier values used to create the active transportation trip generator submodel. Generator input values listed as "high" reflect conditions with a greater likelihood of generating an active transportation trip. Generator input values in the "low" range are understood to generate relatively fewer trips.

Table 3.2 Active Transportation Trip Generator Submodel Inputs

Generator Inputs	Multipliers	Point Values			
		High 3	Medium 2	Low 1	Very Low 0
Population Density (persons per acre)	3	>15	10.1 – 15	5.1 – 10	≤5
Employment Density (jobs per acre)	3	>10	5.1 – 10	1.1 – 5	≤1
Bicycle Commuters (percent of commuters)	2	>1%	0.51% - 1%	0.01% - 0.5%	0%
Pedestrian Commuters (percent of commuters)	2	>5%	2.1% - 5%	1.1% - 2%	≤1%
Transit Commuters (percent of commuters)	2	>10%	5.1% - 10%	2.1% - 5%	≤2%
Median Annual Household Income	1	≤$40,000	$40,000 - $65,000	$65,000 - $100,000	>$100,000
Youth Population (percent of population)	1	>20%	15.1% - 20%	10.1% - 15%	≤10%
Senior Facilities (housing and care facilities)	1	> 60 units	30 - 59 units	10 - 29 units	< 10 units
Senior Population (percent of population)	1	>20%	15.1% - 20%	10.1% - 15%	≤10%

Source: US Census, 2013 – 2017 American Community Survey 5-Year Estimates (2020)

Higher population and employment densities are associated with potentially higher levels of active transportation trip generation. Bicycle and pedestrian commute rates, as well as zero-vehicle households, are also contributing factors to trip generation propensity.

The Active Transportation Trip Attractor Submodel was created using the input variables displayed in Table 3.3. Each attractor is buffered by one-mile, with multipliers that decrease every quarter-mile interval away from the trip attractor. A point value is calculated by multiplying the distance multiplier by the weight assigned to each attractor. Land uses, garner progressively lower weights in terms of their ability to attract active transportation trips as the distance required to travel along the roadway network to reach them increases.

Table 3.3 Attractor Submodel Inputs

Attractor Inputs	Multipliers	Point Values			
		Within ¼ mile	Between ¼ and ½ mile	Between ½ and ¾ mile	Between ¾ mile and 1 mile
		1.5	1	0.75	0.5
Retail	4	6	4	3	2
Schools	3	4.5	3	2.25	1.5
Parks	2	4	2	1.5	1
Office	1	1.5	1	0.75	0.5

Pedestrian Network Connectivity

Pedestrian network connectivity was evaluated by identifying the presence of existing sidewalks study area roadways.

Pedestrian Facility Quality

The quality of all roadway segments and marked crossing locations within the project study area were evaluated using the Pedestrian Environment Quality Evaluation (PEQE) methodology. This approach takes into consideration variables that may influence a pedestrian's comfort or safety, such as the separation from vehicular travel, lighting, posted speed limit, type of traffic control, crossing distance, curb ramps, physical obstructions, and the presence of other operational and physical features. Table 3.4 outlines the evaluation scale utilized. The quality of the pedestrian environment quality is categorized as High, Medium or Low, based upon the following scoring system:

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

Table 3.4 Pedestrian Environment Quality Ranking System

Facility Type	Measure	Description/Feature	Scoring
Segment *between two intersections*	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	• Enhanced/High Visibility Crosswalk • Raised Crosswalk • 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	• 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 tomes 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 tomes 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			

Pedestrian Safety

Historic vehicular-pedestrian collision data was obtained from California Statewide Integrated Traffic Records System (SWITRS), as well as, from Crossroads for the period from October 31, 2014 to October 31, 2019. This data was geocoded and mapped to display pedestrian-involved collision locations within the City. Additional focus will be placed on these locations when considering pedestrian-related improvements. Collision causes were tabulated to further understand pedestrian safety and trends.

3.3 Bicycle Analysis

Bicycle/Active Transportation Demand

To understand how the bicycle network is currently being used, bicycle count data was collected during the AM and PM peak commute periods (7-9 AM and 4-6 PM) at 30 study area intersections in September 2019.

Additionally, the propensity model discussed above in the Pedestrian Demand/Active Transportation Propensity section helps identify latent demand across all active transportation modes.

Bicycle Network Connectivity

Bicycle network connectivity was assessed by reviewing the existing bicycle facilities.

Bicycle Facility Quality

The bicycle environment was assessed using the bicycle Level of Traffic Stress (LTS) methodology for characterizing cycling environments, as developed by Mekuria, et al. (2012) of the Mineta Transportation Institute and reported in *Low-Stress Bicycling and Network Connectivity*. LTS classifies the street network into categories according to the level of stress it causes cyclists, taking into consideration a cyclist's 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 3.5 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 that different populations may find suitable for riding on, considering their stress tolerance.

Bicycle Safety

Historic vehicular-pedestrian collision data was obtained from SWITRS, as well as, Crossroads for the period from October 31, 2014 to October 31, 2019. This data was geocoded and mapped to display bicycle-involved collision locations within the City. Additional focus will be placed on these locations when considering bicycle-related improvements. Collision causes were tabulated to further understand bicycle safety and trends.

Table 3.5 Level of Traffic Stress Classifications and Descriptions

LTS Category	LTS Description	Description of Environment	Comfort Level
LTS 1	Presenting little traffic stress and demanding little attention from cyclists; suitable for almost all cyclists, including children trained to safely cross intersections.	▪ 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.	▪ 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	▪ An exclusive cycling 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	▪ 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)

3.4 Transit Analysis

Demand

Demand for public transit in the City of Wildomar was assessed by quantifying the number of people who currently board and disembark, also referred to as “alight”, at each bus stop within the City.

Transit Network Connectivity

Chapter 4 looks at the bus routes within the City of Wildomar and the destinations which can be accessed by them.

Transit Facility Quality

Two metrics were reviewed regarding the quality of the transit service provided, the on-time performance and the presence of amenities at the bus stops.

On Time Performance

The on-time performance of the transit routes in the City of Wildomar was evaluated.

Presence of Amenities

Each bus stop was reviewed for the presence of the following amenities:

- Bus stop sign & Pole
- Route Designation
- Transit Information
- Schedule Display
- Route Map
- System Map
- Red Curb
- Seating
- Passenger Shelter
- ADA Compliant
- Bus Pad
- Extended Sidewalks
- Digital Display
- Bicycle Rack
- Kiosk
- Trash Receptacle

The Riverside Transit Agency (RTA) has Bus Stop Design Guidelines (August 2015) which offers uniform guidance for the design and placement of bus-related facilities and amenities. RTA’s policy for distributing bus stop amenities has two objectives:

- Maximizing the benefit to existing riders. Amenities should be allocated to the busiest stopes where the greatest number of riders can utilize improved transit services.
- Ensure an equitable distribution. This provides an allocation of amenities (shelters, benches, etc.) across RTA’s large service area such that each jurisdiction experiences some benefit.

The two-tier policy is defined in greater detail within the Bus Stop Design Guidelines document.

Amenities at all stations/stops in the study area are reported in a table, indicating amenities provided.

Safety Near Transit Stop/Station

Historic collision data within 500 feet of a transit stop or station was obtained from SWITRS and Crossroads for the period from October 31, 2014 to October 31, 2019. This data was geocoded and mapped to display collision locations in the Study Area. Additional focus will be placed on these locations when considering improvements near transit stops or stations.

3.5 Vehicular Analysis

Analysis of the vehicular system – roadway segments and intersections – was prepared for this study in accordance with the Riverside County Transportation Department Traffic Impact Analysis Preparation Guide. The vehicular analysis provides an evaluation of vehicular operations at intersections and along roadway segments. A description of the methodologies employed to evaluate vehicular travel is outlined throughout this section.

Demand

To assess the current demand on the vehicular system, weekday count data was collected throughout the City of Wildomar at 30 intersections (7-9 AM and 4-6 PM) and along 48 roadway segments (48-hour). Roadway segments were counted on two days, with the higher volume utilized in a conservative analysis.

Vehicular Network Connectivity

The existing roadway cross-sections for study area roadways were analyzed. This included a description of each study roadway, as well as, the segment functional classification, median type, pavement width, posted speed limit, parking availability, presence of sidewalks, bicycle facilities, and transit routes

Vehicular Facility Quality

Vehicular LOS is a quantitative measure describing how well a transportation facility operates from a driver's perspective. These conditions are generally described in terms of speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents optimum operating conditions from a driver's perspective, while LOS F represents the worst. Table 3.6 describes generalized definitions of vehicular LOS A through F.

Table 3.6 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 (6th Edition)

Roadway Segment Level of Service Standards and Thresholds

Roadway segment level of service standards and thresholds provide the basis for analysis of arterial roadway segment and intersections performance. The analysis of roadway segment level of service is based on the functional classification of the roadway, maximum capacity, roadway geometrics, and existing or forecasted average daily traffic (ADT) volumes. Table 3.7 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 Circulation Plan roadway segments in the City of Wildomar, based on the City's General Plan and the 2013 Housing Element Environmental Impact Report. With that being said, roadway classifications and level of service thresholds may be modified as a part of the Mobility Plan development.

Table 3.7 County of Riverside Roadway Segment Daily Capacity (ADT) and Level of Service Standards

Roadway Functional Classification	Lanes	Level of Service		
		C or Better	D	E
2-Lane Collector	2	10,400	11,700	13,000
4-Lane Secondary	4	20,700	23,300	25,900
4-Lane Major	4	27,300	30,700	34,100
2-Lane Arterial	2	14,400	16,200	18,000
4-Lane Arterial	4	28,700	32,300	35,900
2-Lane Mountain Arterial	2	12,900	14,500	16,100
3-Lane Mountain Arterial	3	16,700	18,800	20,900
4-Lane Mountain Arterial	4	29,800	33,500	37,200
4-Lane Urban Arterial	4	28,700	32,300	35,900
6-Lane Urban Arterial	6	43,100	48,500	53,900
8-Lane Urban Arterial	8	57,400	64,600	71,800
4-Lane Expressway	4	32,700	36,800	40,900
6-Lane Expressway	6	49,000	55,200	61,300
8-Lane Expressway	8	65,400	73,500	81,700
4-Lane Freeway	4	61,200	68,900	76,500
6-Lane Freeway	6	94,000	105,800	117,500
8-Lane Freeway	8	128,400	144,500	160,500
10-Lane Freeway	10	160,500	180,500	200,600
1-Lane Ramp	1	16,000	18,000	20,000

Source: Riverside County

Peak Hour Intersection Level of Service Standards and Thresholds

This section presents the methodologies used to perform weekday 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*: An assumption of 2 pedestrian calls per hour for low activity areas and 5 pedestrian calls per hour for high activity areas;
- *Heavy Vehicle Factor*: A 2% heavy vehicle factor was assumed for all intersections;
- *Peak Hour Factor*: Obtained from existing peak hour counts (included in Appendix B); and
- *Signal Timing*: Obtained from existing signal timing plans (as of November 2019), included as Appendix C.

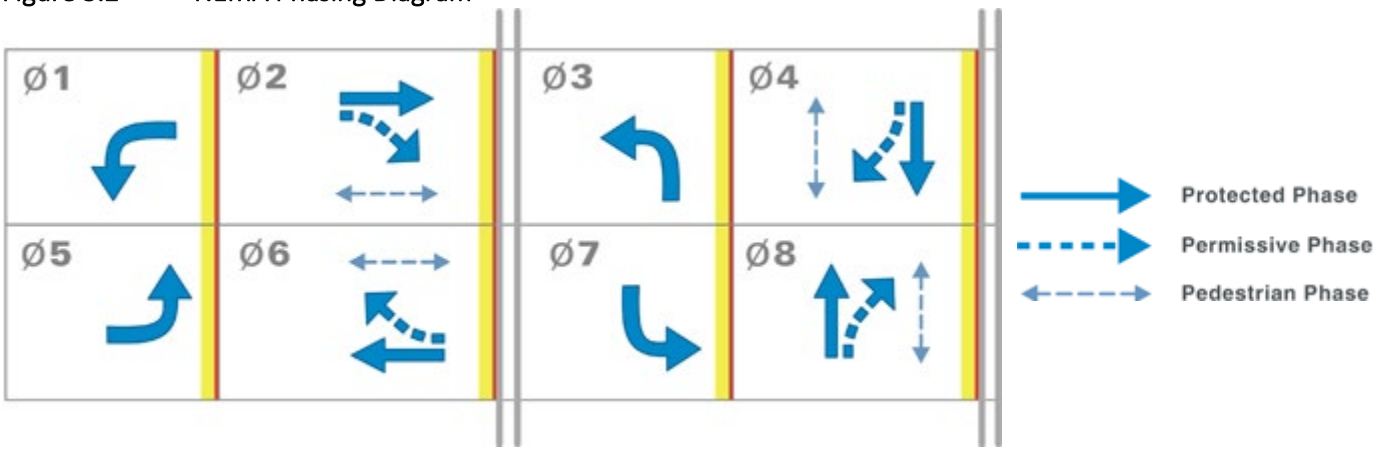
Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in *Highway Capacity Manual (HCM) 6th Edition*. This method defines LOS in terms of delay, or more specifically, average control delay per vehicle (seconds/vehicle).

The *HCM 6th Edition* 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 3.8**. The computerized analysis of intersection operations was performed utilizing the *Synchro 10.2.0.45 (HCM 6th Edition methodology)* traffic analysis software (by Trafficware, 2019).

The HCM 6th Edition analysis methodology requires strict adherence to standard dual ring NEMA phasing. Conflicting phase overlaps, clustered intersections, or other non-compliant phasing sequences cannot be analyzed using this method. **Figure 3-2** depicts a NEMA phasing diagram, which assigns numbers to each of the four left-turn movements and four through movements, and provides a logical process through which each of the movements is served in turn. Each movement is controlled by a phase, with the eight phase numbers accounting for the basis of a NEMA phasing plan. Phases in the diagram that are located above/below each other operate concurrently (i.e. Phase 1 and Phase 5), hence they do not conflict with each other. Phases that are next to each other (i.e. Phase 1 and Phase 2) operate sequentially (i.e. when Phase 1 ends, Phase 2 begins).

Figure 3.2 NEMA Phasing Diagram



Based upon geometry and phasing assignation per their respective signal timing sheets, the following two intersections did not adhere to standard NEMA phasing (as seen in the figure above):

2. Mission Trail & Lemon Street (non-standard NEMA phase assignation)
6. Mission Trail & Driveway/Bundy Canyon Road (non-standard NEMA phase assignation)

Adjustments were implemented in order to utilize the HCM 6th Edition methodology. **Appendix D** provides detailed information on the aforementioned adjustments.

Table 3.8 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 6th Edition

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the *HCM 6th Edition* unsignalized intersection analysis methodology. The Synchro 10.2.0.45 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) or a side-street stop controlled (SSSC) intersection is determined by the computed or measured control delay and is defined for each minor movement, and the worst movement is reported. The LOS for an all-way stop controlled (AWSC) intersection is determined by the computed or measured average control delay of all movements, and intersection-level LOS is reported. Table 3.9 summarizes the level of service criteria for unsignalized intersections. Consistent with City policy, LOS D was used in this study as the minimum acceptable LOS for peak hour intersection operations.

Table 3.9 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 (6th Edition)

Freeway Segment Level of Service Standards and Thresholds

Freeway LOS analysis is based upon procedures developed by Highway Capacity Manual 6th Edition. The procedure for calculating freeway LOS involves estimating the vehicle speed (mi/h) and density/flow (pc/mi/ln).

HCS7 software, developed by McTrans, was used to calculate both the vehicle speed and density/flow along the study area freeway segements. The HCS7 software required the following inputs to complete the speed and density/flow calculations:

- AADT – Caltrans Traffic Census 2017 AADT Volumes Report
- K (peak hour percentage) – Caltrans Traffic Census 2017 AADT Volumes Report
- D (directional split) – Caltrans Traffic Census 2017 AADT Volumes Report
- PHV – Peak Hour Volume
  - Calculated using equation PHV = AADT*K*D
- PHF – Assumed to be a typical value of 0.95
- P_T (% Trucks, RVs, and Busses) – Caltrans Traffic Census 2016 AADT Truck Volumes Report
- General Terrain – Assumed to be less than 2% grade and therefore Level Terrain (HCM 6th Edition 12-35)
- f_p – Driver population factor assumed one as traffic is largely commuter traffic
- E_T – Value of 1.5 as terrain is Level (HCM 6th Edition 12-35)
- Lane Width – Assumed 12' maximum value by Google Earth survey
- Rt-Side Lat. Clearance – Assumed 10' maximum value by Google Earth survey
- Total Ramp Density, TRD
  - Density calculated by total number of on/off ramps in both directions of the segment midpoint, divided by the total length (6 miles)
- Base free-flow Speed, BFFS – Assumed 75.4 mph (HCM 6th Edition 12-28)

The above methodology applies to freeway segments of Interstate 15 within Wildomar.

Vehicular Network Safety

Historic vehicular collision data was obtained from SWITRS, as well as, Crossroads for the period from October 31, 2014 to October 31, 2019. This data was geocoded and mapped to display vehicular collision locations within the City. Collision causes were tabulated to further understand safety and trends.

4.0 Existing Conditions

This chapter provides an overview of the existing environment for pedestrian, equestrian, bicycle, transit, and vehicular travel modes related to demand, connectivity, quality, and safety.

4.1 Pedestrian Mobility

Pedestrian Demand

Pedestrian count data was collected during the weekday AM and PM peak commute periods (7-9 AM and 4-6 PM) at 30 study area intersections in September 2019. This data helps round out the understanding of how the pedestrian and bicycle networks are currently used.

Figure 4.1 displays the AM pedestrian volumes observed at each of the 30 count locations during peak commute hours. The three locations with the highest observed AM pedestrian volumes include:

- Palomar St & Wildomar Trail (formerly Central St) (125)
- Orange St & Bundy Canyon Rd (87)
- Wildomar Trail (formerly Porras Rd/George Ave) & La Estrella St (46)

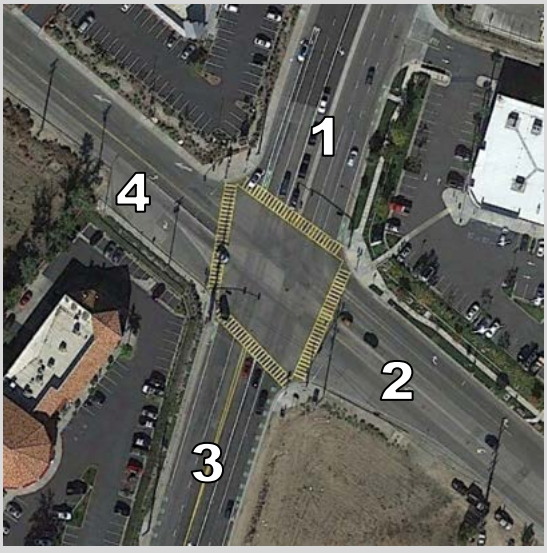
As can be seen, all three intersections above are adjacent to schools. Therefore, the high volumes presented at these sites could be related to the pedestrian flow of students during the AM peak period.

Figure 4.2 displays the PM pedestrian volumes observed at each of the 30 count locations during peak commute hours. The four locations with the highest observed pedestrian volumes include:

- Orange St & Bundy Canyon Rd (17)
- Mission Trail & Malaga Rd (12)
- Palomar St & Wildomar Trail (formerly Central St) (11)
- Wildomar Trail (formerly Porras Rd/George Ave) & La Estrella St (11)

Figure 4.3 displays the AM and PM peak period pedestrian movements at the respective intersection legs.

An **intersection leg** refers to each of the roadways that join together to form an intersection. For example, when two roads meet and cross one another, they result in four intersection legs.



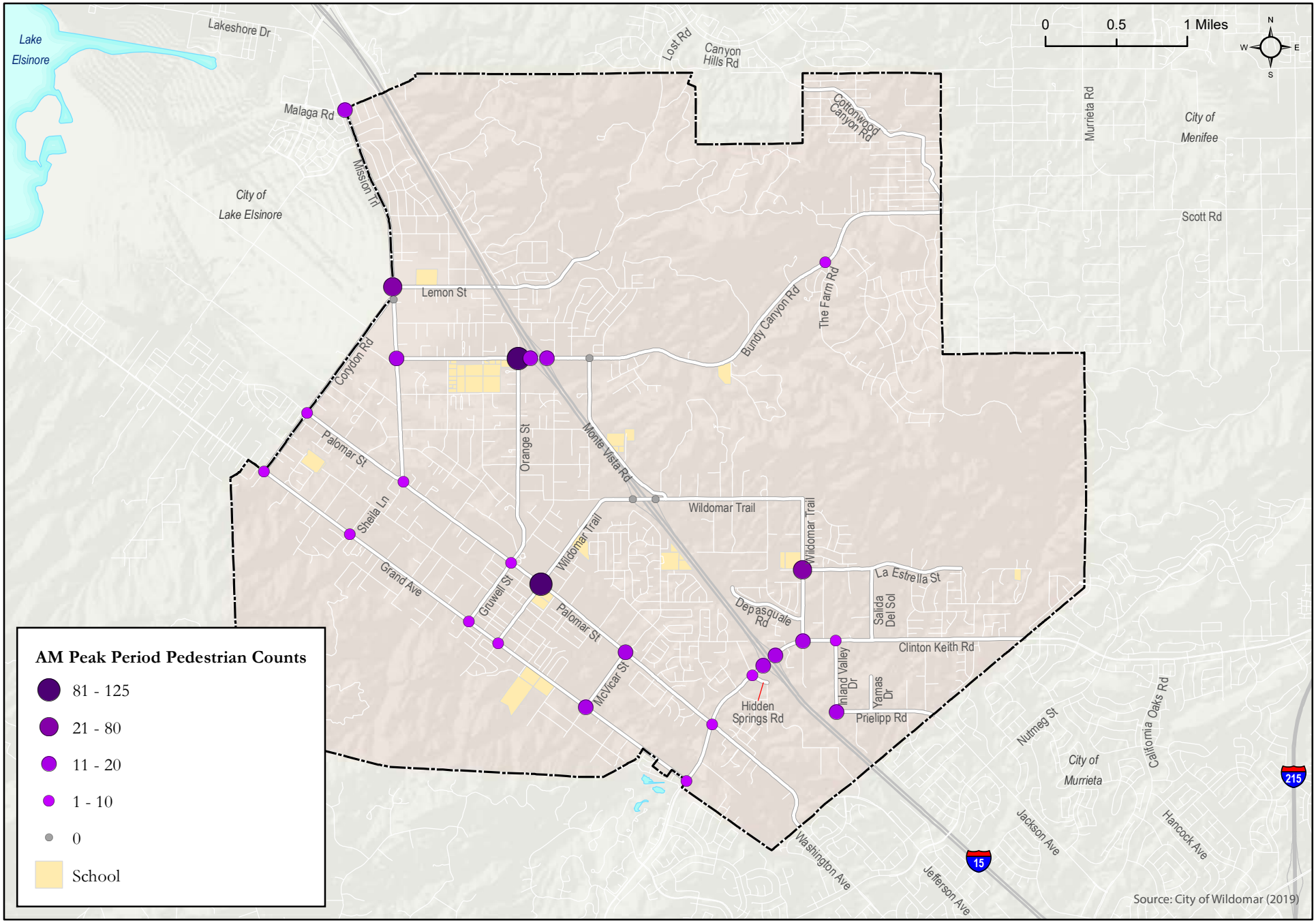


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Figure 4.1
AM Peak Period Pedestrian Counts

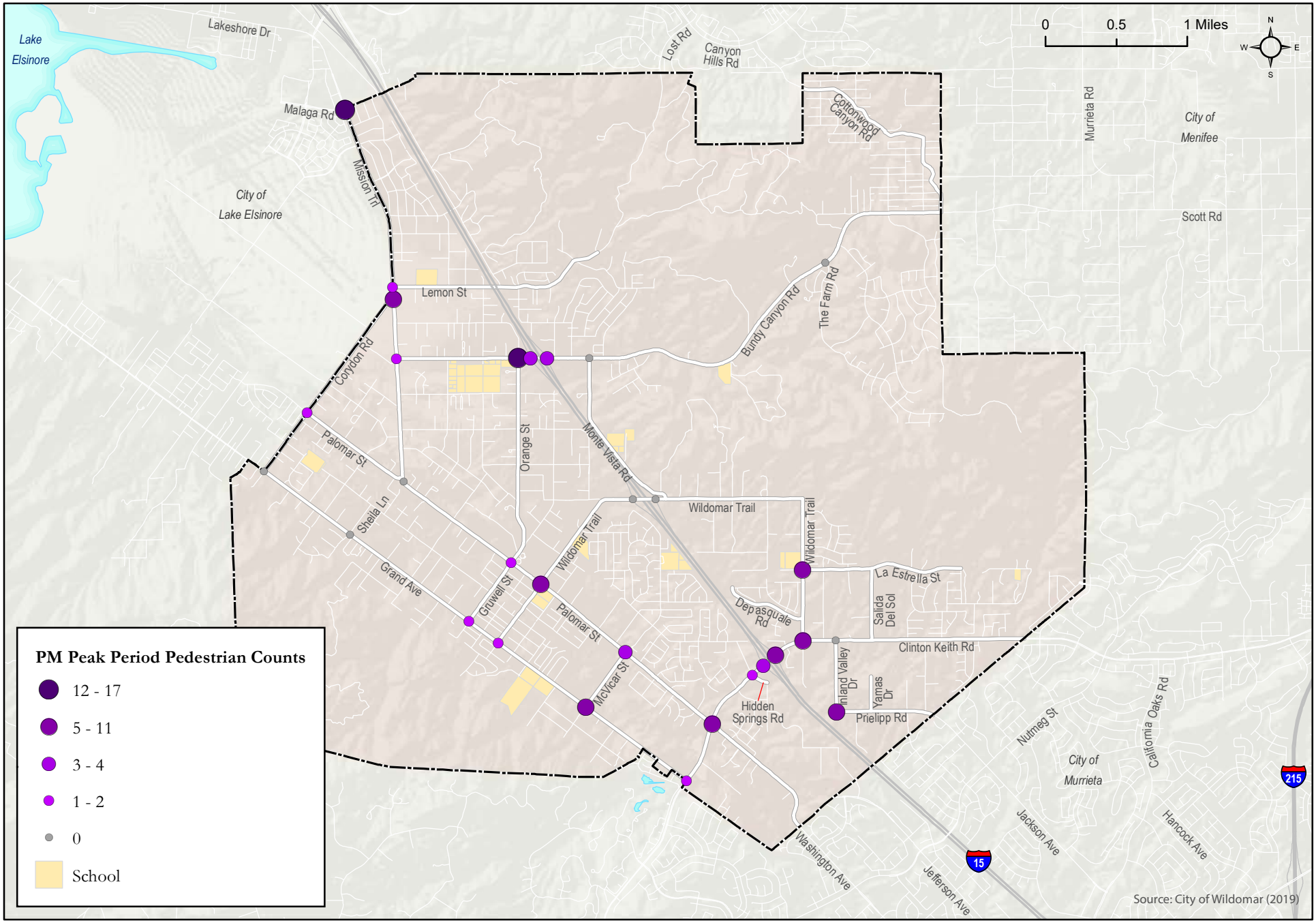

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Figure 4.2
PM Peak Period Pedestrian Counts

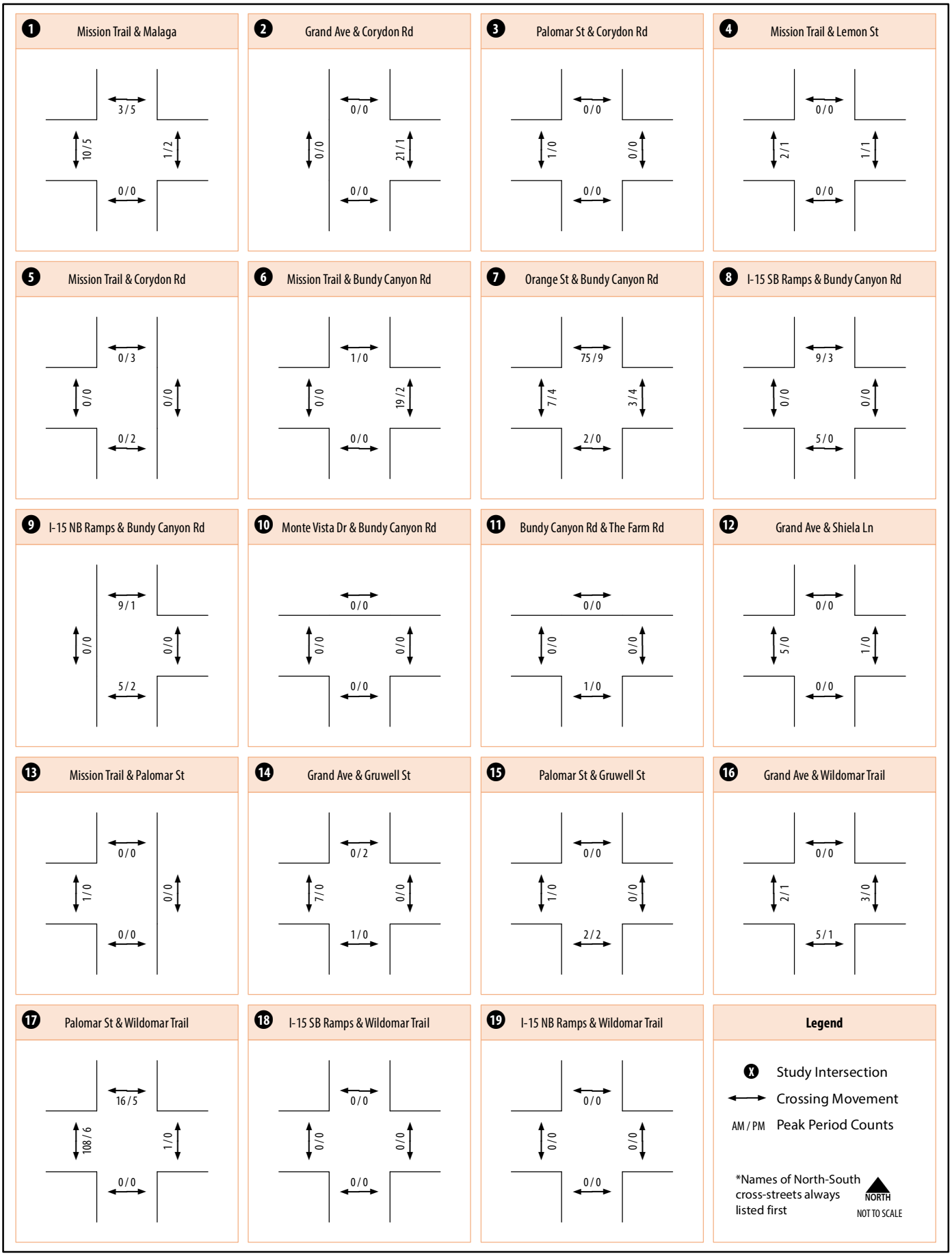

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Figure 4.3
Pedestrian Volumes - Existing Conditions (Intersections 1-19)

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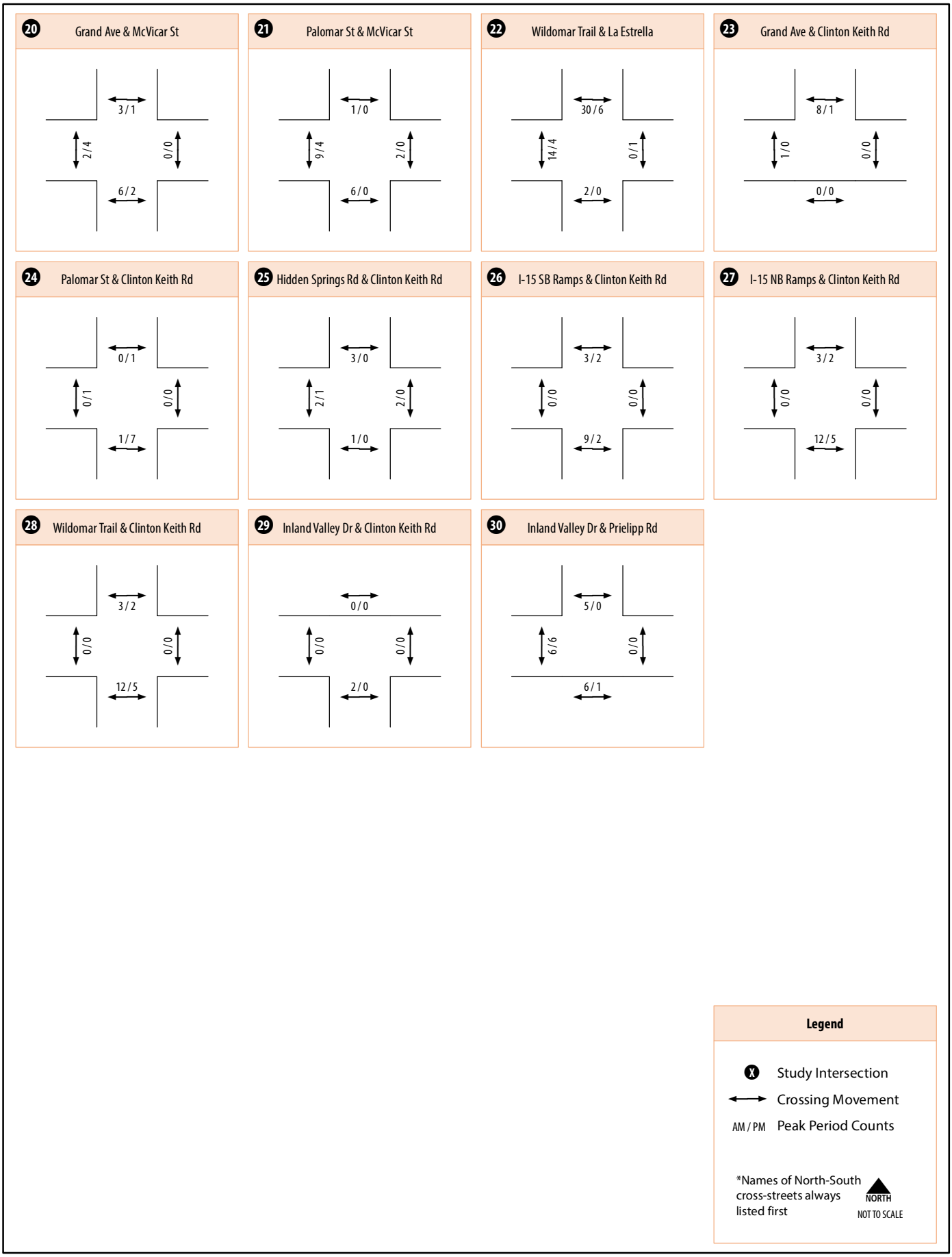

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Figure 4.3
Pedestrian Volumes - Existing Conditions
(Intersections 20-30)

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The highest volume intersections during the AM period are also the highest during the PM peak period with the addition of Mission Trail and Malaga Road. This intersection is adjacent to the Lake Elsinore Town Center, and close to the Lake Elsinore Storm Baseball Stadium, which can explain the flow of pedestrians in the area.

Table 4.1 identifies the number of pedestrians observed during the AM and PM peak periods, and the total combined. Overall, a higher number of pedestrians were counted during the AM peak, due to capturing school arrival hours. The difference between the two periods is very noticeable at the three locations with highest total counts.

Table 4.1 AM and PM Peak Period Pedestrian Counts

Location	AM Peak	PM Peak	Total
Palomar St & Wildomar Trail[1]	125	11	136
Orange St & Bundy Canyon Rd	87	17	104
Wildomar Trail[2] & La Estrella St	46	11	57
Wildomar Trail & Malaga Rd	14	12	26
Inland Valley Dr & Prielipp Rd	17	7	24
Grand Ave & Corydon Rd	21	1	22
Mission Trail & Bundy Canyon Rd	20	2	22
I-15 NB Ramps & Clinton Keith Rd	15	7	22
Wildomar Trail[3] & Clinton Keith Rd	15	7	22
Palomar St & McVicar St	18	4	22
Grand Ave & McVicar St	11	7	18
I-15 SB Ramps & Bundy Canyon Rd	14	3	17
I-15 NB Ramps & Bundy Canyon Rd	14	3	17
I-15 SB Ramps & Clinton Keith Rd	12	4	16
Grand Ave & Wildomar Trail[1]	10	2	12
Grand Ave & Clinton Keith Rd	9	1	10
Palomar St & Clinton Keith Rd	1	9	10
Grand Ave & Gruwell St	8	2	10
Hidden Springs Road & Clinton Keith Rd	8	1	9
Grand Ave & Shiela Ln	6	0	6
Mission Trail & Corydon Rd	0	5	5
Mission Trail & Lemon St	3	2	5
Palomar St & Gruwell St	3	2	5
Inland Valley Dr & Clinton Keith Rd	2	0	2
Palomar St & Corydon Rd	1	0	1
Mission Trail & Palomar St	1	0	1
Bundy Canyon Rd & The Farm Rd	1	0	1
I-15 SB Ramps & Wildomar Trail[4]	0	0	0
I-15 NB Ramps & Wildomar Trail[4]	0	0	0
Monte Vista Dr & Bundy Canyon Rd	0	0	0

Source: Counts Unlimited (2019)

[1] Formerly Central St.
[2] Formerly Porras Rd/George Ave.
[3] Formerly George Ave.
[4] Formerly Baxter Rd.

In addition to pedestrian counts collected at the study intersections, latent demand provides another indicator as where pedestrians could potentially travel. The methodology used to assess latent demand for cycling and walking through an active transportation demand model was discussed in Chapter 3. As noted earlier, the propensity model combines walk and bike trip generator inputs with walk and bike trip attractors. When combined, the active transportation generators and attractors provide a foundation for understanding active transportation demand across the City.

Figure 4.4 shows the active transportation generator submodel results. Higher population and employment densities are associated with potentially higher levels of active transportation trip generation. Bicycle and pedestrian commute rates, as well as zero-vehicle households, are also contributing factors to trip generation propensity. There are two census block groups with high active transportation trip generation propensity. One census block is wedged in-between Interstate 15 and Palomar Street, south of Wildomar Trail (formerly Central Street) with a meandering boundary on the southeastern boundary (north of Reta, east of Charles Street and north of Catt Road). The other census block group is west of Interstate 15 and east of Mission Trail and south of Malaga Road and north of Olive Street. Both census block groups have a high percentage of commuters who walk to work. The census block group bounded by Interstate 15, Palomar Street and Wildomar Trail (formerly Central Street) also has an elevated percentage of commuters who take transit to work.

Figure 4.5 displays the active transportation trip attractor submodel results. Trip attractors include schools, parks, retail and office land uses. The greatest concentrations of trip attractors are shown surrounding the intersection of Palomar Street and Wildomar Trail (formerly Central Street), where Wildomar Elementary School and the Palomar Plaza shopping center are located. Additional trip attractor concentrations are shown to the north and east of this intersection, including Anne Sullivan Preschool and Kindergarten, Windsong Park, California Lutheran High School, Donald Graham Elementary School. Smaller concentrations of trip attractors are shown near the Palomar Street and Mission Trail intersection, including Marna O'Brien Park and Round Up Liquor & Grocery.

Figure 4.6 displays the active transportation propensity model. Higher propensity (red and orange on the figure) is indicative of areas with increased potential for active transportation due to relatively higher levels of trip attractors and trip generators. The census block group with the highest propensity, was the one previously identified as being bounded by Interstate 15, Palomar Street and Wildomar Trail (formerly Central Street). It is particularly important to examine the quality of infrastructure in this high propensity area.

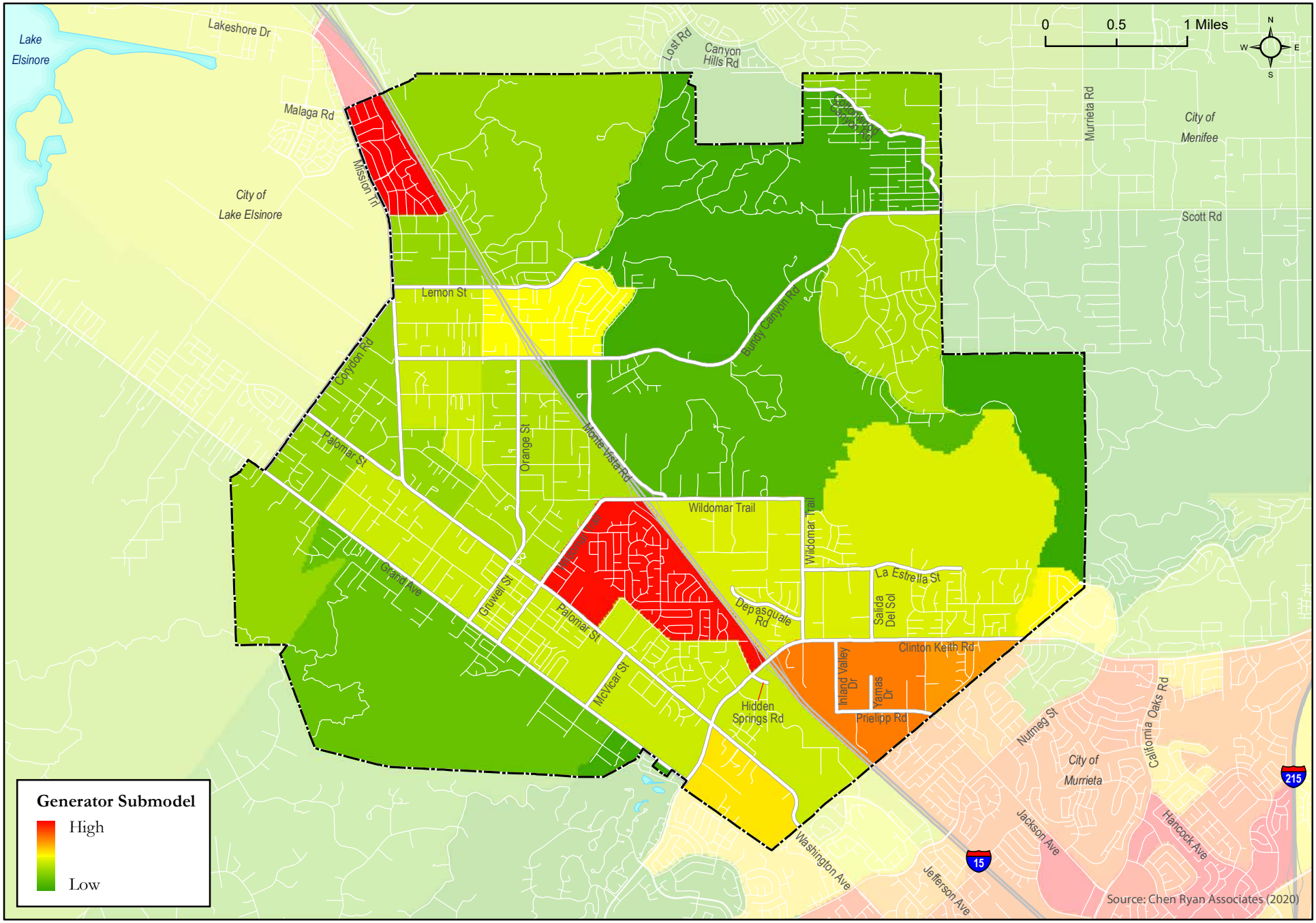

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Figure 4.4
Active Transportation Trip Generator Submodel

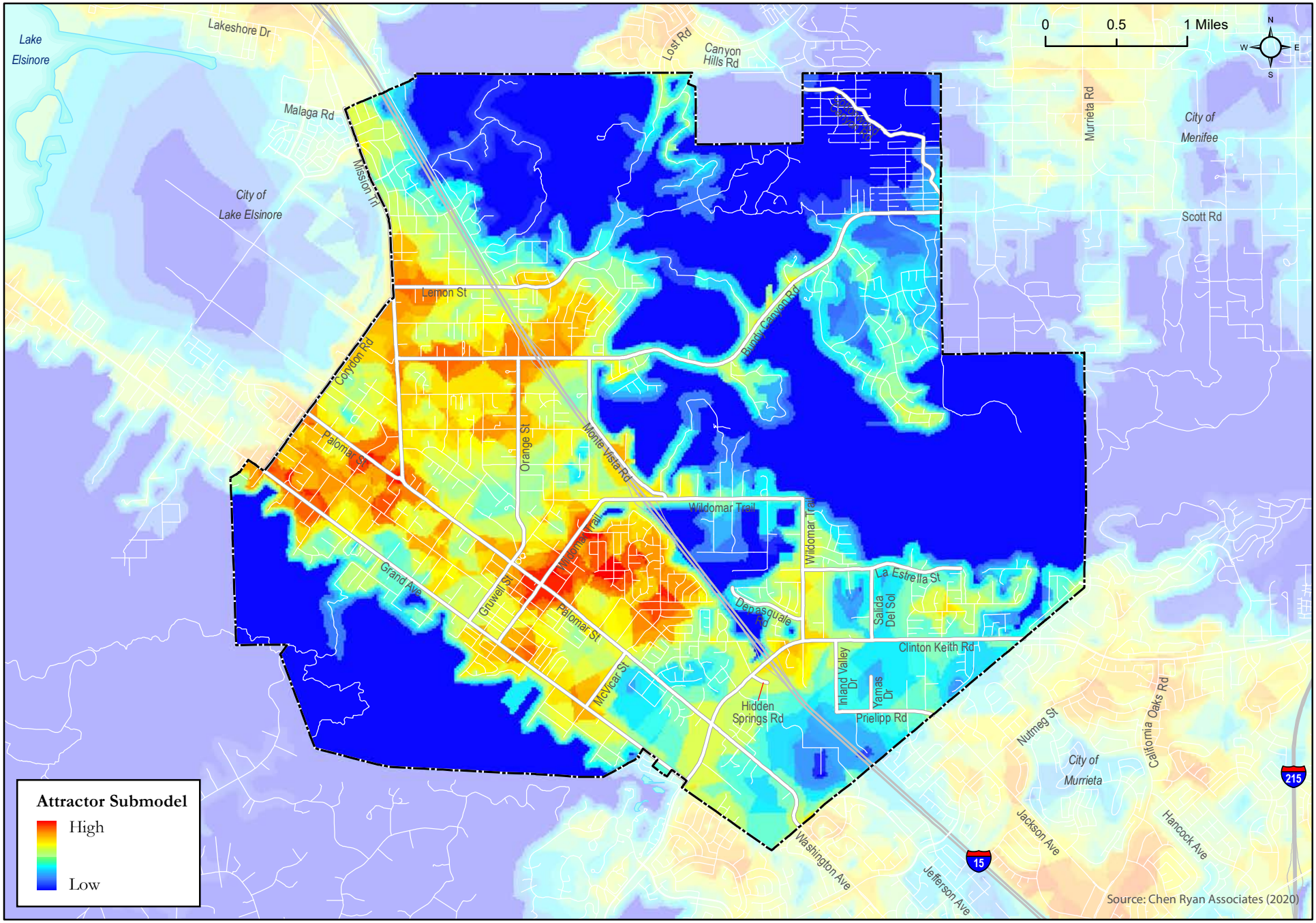

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Figure 4.5
Active Transportation Trip Attractor Submodel

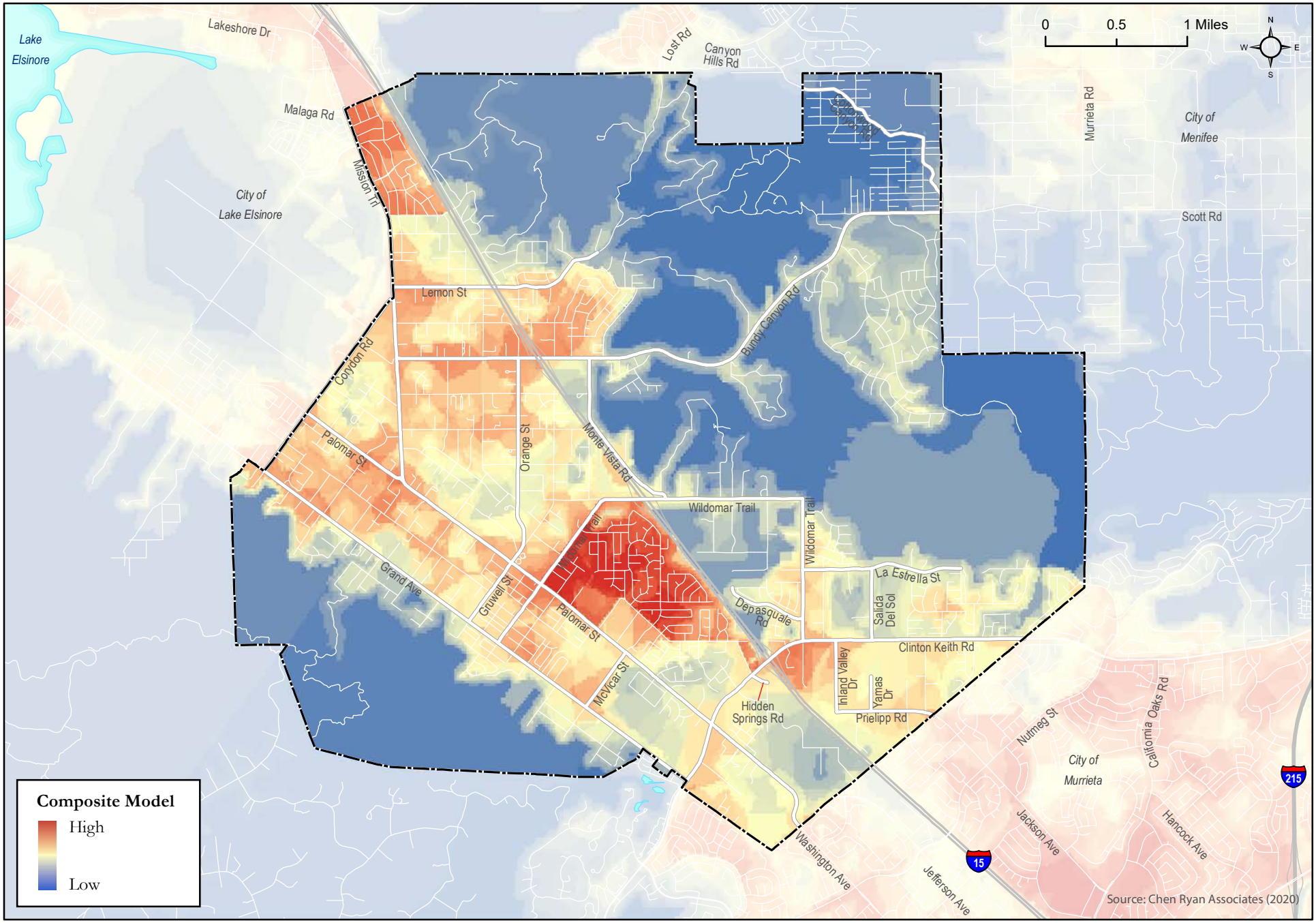

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Figure 4.6
Active Transportation Propensity Model

Pedestrian Network Connectivity

An inventory of existing and missing sidewalks along the City's designated Circulation Element (CE) roadways was performed. Resources used for this evaluation include geographic information system (GIS) data, satellite imagery, and field review confirmations.

Figure 4.7 displays locations of missing sidewalks along CE roadways. As shown, the majority of these roadways do not provide continuous sidewalks, but rather consist of short, intermittent sidewalks that have been constructed as frontage improvements with adjacent property development and City Capital Projects.

The City's CE roadways consist of approximately 62.9 linear miles representing both directions of the CE roadways. Of these 62.9 miles, there are approximately 18 miles of existing sidewalk and approximately 45 miles (72%) of missing sidewalks. Sidewalk infill will become an important step toward building a robust pedestrian mobility network. Missing sidewalks act as gap in the sidewalk network and create potential safety challenges for youth, people traveling in wheelchairs, people using mobility assistive devices, and for people pushing strollers. Providing residents with a safer and more comfortable pedestrian environment by building more sidewalks will be a key factor to help increase walkability levels within the city.

Pedestrian Facility Quality

All CE roadways and study area intersections in Wildomar were evaluated using the Pedestrian Environment Quality Evaluation (PEQE). The PEQE system is intended to aid in the identification of areas in need of additional infrastructural or operational improvements. The PEQE scoring methodology can be found in Chapter 3, with specific attributes influencing scoring evaluation found in Table 3.4.

Figure 4.8 shows the PEQE analysis results across the City, including roadway segments and intersections. They are also summarized in Table 4.2 and Table 4.3. As shown, the majority of PEQE study segments were found to exhibit Medium scoring characteristics, which is appropriate for most environments. A number of segments were identified to have a Low score; due to limited buffer from cars, and streets with high traffic volumes. It is important to note that locations where sidewalks are not currently present were not scored. Only one segment along west side of Yamas Drive resulted in a High score with non-obstructed sidewalk along a low speed roadway.

Although all of the segments offer a clear zone for pedestrians, and most of them have standard lighting, the bigger issues are presented in the categories of horizontal buffer and posted speed limit. 69% of the segments have less than 6 ft of horizontal buffer, while only 14% have a vertical buffer or a horizontal buffer larger than 14 ft. In addition, 62% of the segments have a posted speed limit above 40mph, which can be perceived as unsafe to pedestrians.

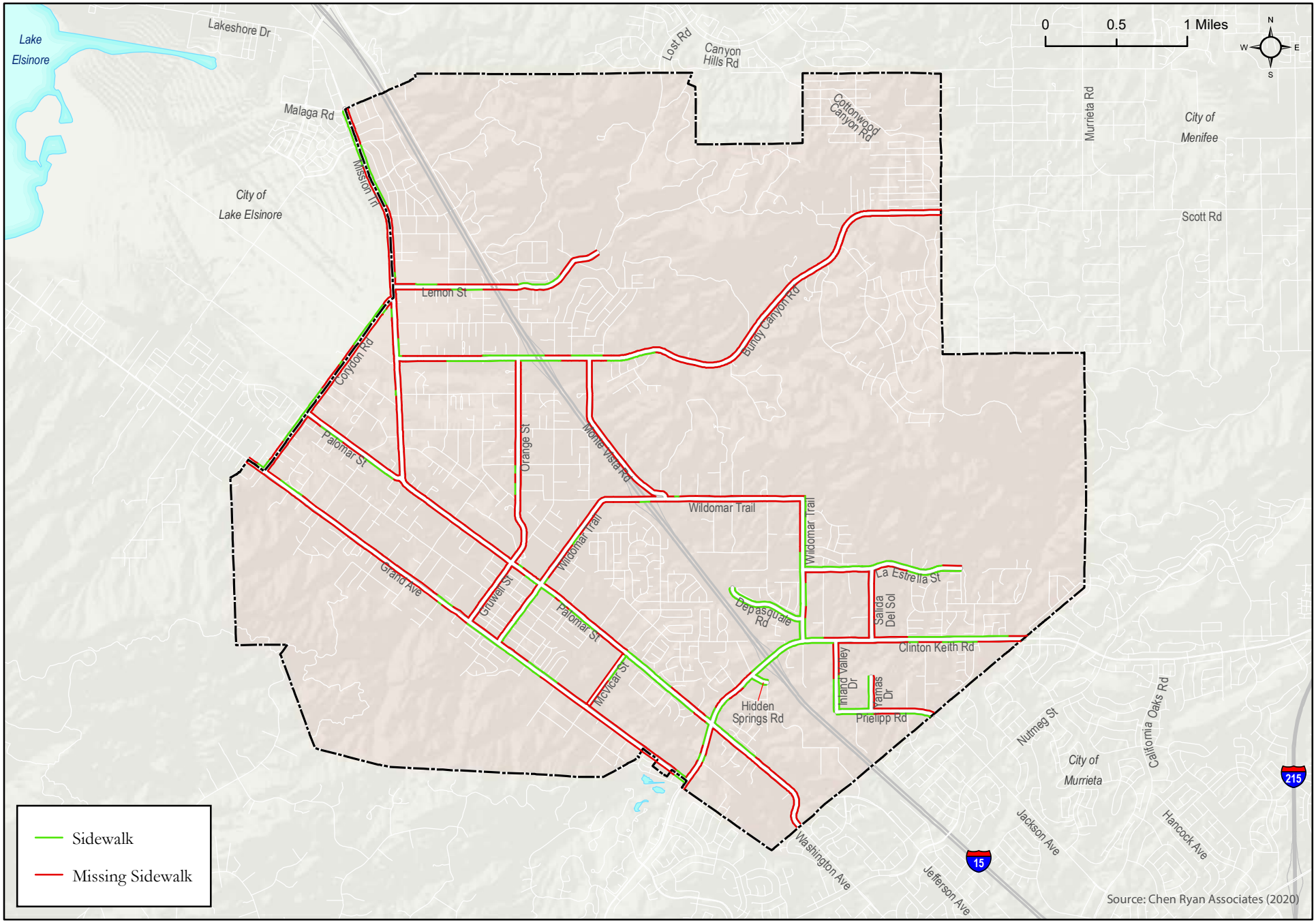

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Figure 4.7
Missing Sidewalk Inventory

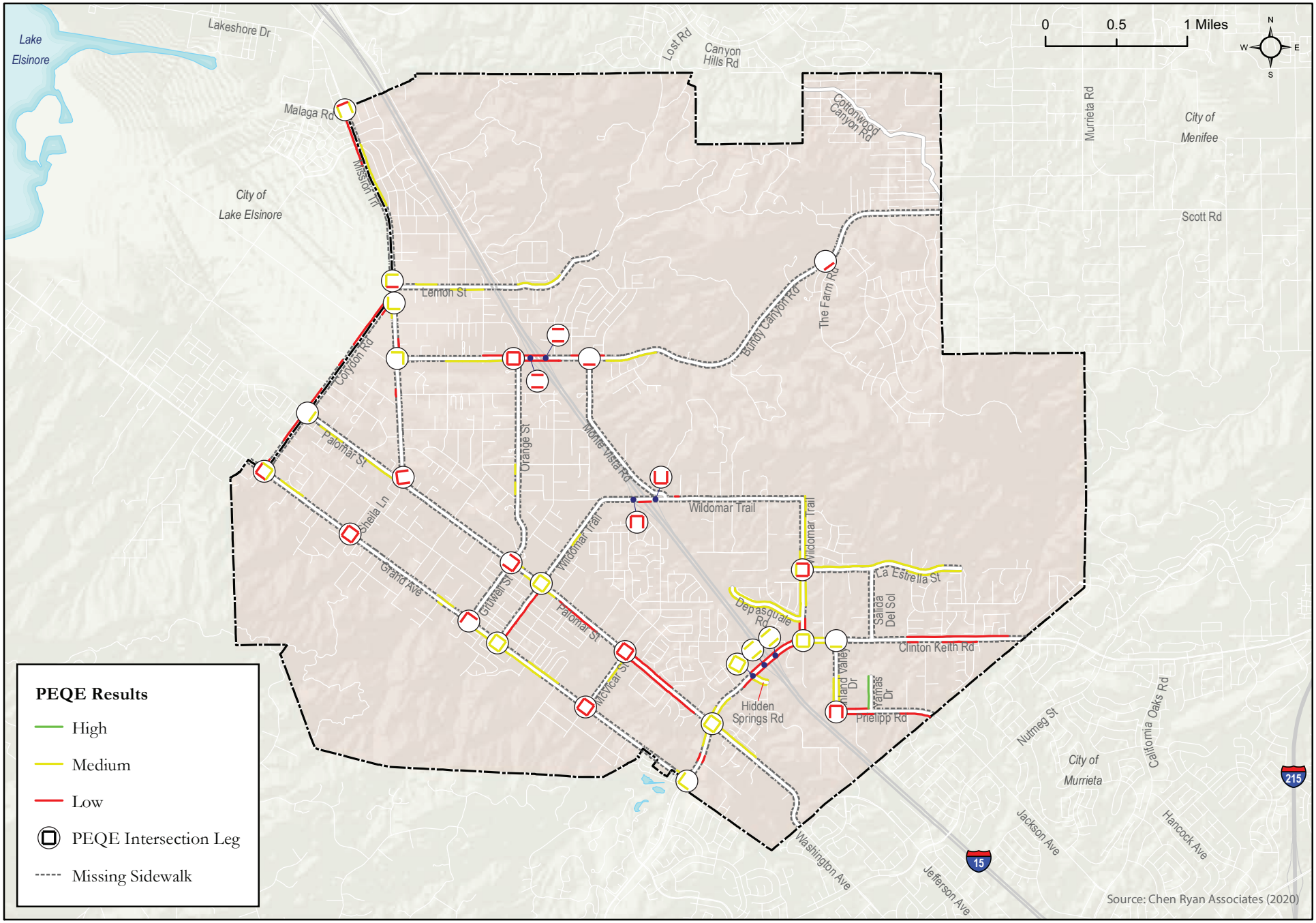

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Figure 4.8
Pedestrian Environmental Quality Evaluation (PEQE) Results

Table 4.2 Sidewalk Inventory by PEQE Rating

Rating	Miles	Percent
High	0.23	1.31%
Medium	9.63	54.93%
Low	7.67	43.75%
Total Evaluated Sidewalk Miles	**17.53**	**100%**

The majority of intersection legs were found to be rated as Low. The main issues involve physical and operational features. Few of the signalized intersections provide operational features, such as countdown signals or no-turn on red signs which could enhance an intersection's PEQE rating. Within the specific PEQE Study Area intersections, high visibility crosswalks are present at three intersections in the City: Clinton Keith Road / Palomar Street (all legs), Wildomar Trail[2] / La Estrella Street (north and west legs), and Central Street / Palomar Street (all legs). All three locations are school crossings, distinguishable by the yellow crosswalk paint.

Table 4.3 Intersection Inventory by PEQE Rating

Rating	Legs	Percent
High	0	0.00%
Medium	40	47.06%
Low	45	52.94%
Total Evaluated Intersection Legs	**85**	**100%**

Pedestrian Safety

Collision data can be used to identify potential deficiencies or safety issues related to pedestrian travel. The collision review draws from 5 years of data (October 31, 2014 – October 31, 2019) obtained from the SWITRS and the City of Wildomar's collision database (Crossroads). The analysis was used to identify trends and patterns related to collision locations, causes, time, and victim age. Ultimately, this information will help inform the identification of potential pedestrian infrastructure improvements and programmatic recommendations.

Figure 4.9 displays the location of the pedestrian-involved collisions across Wildomar. A total of 25 pedestrian-involved collisions were reported in the city during the five-year analysis period. As shown, collisions are mostly located along the CE roadways. Five of the collisions, or almost 25%, occurred on Bundy Canyon Road. Several collisions were reported within a short distance of schools. These locations should be taken into consideration when proposing and prioritizing infrastructure improvements.

Even though no pedestrian-involved collisions were reported at the highest pedestrian count location (Palomar St. & Wildomar Trail[3]), two pedestrian-involved collisions were reported near this intersection. Furthermore, one pedestrian-involved collision was reported at both the second (Orange St & Bundy Canyon Rd.) and third highest (Wildomar Trail[4] & La Estrella St.) count locations.

[2] Formerly George Avenue/Porras Avenue

[3] Formerly Central Street

[4] Formerly George Avenue/Porras Road

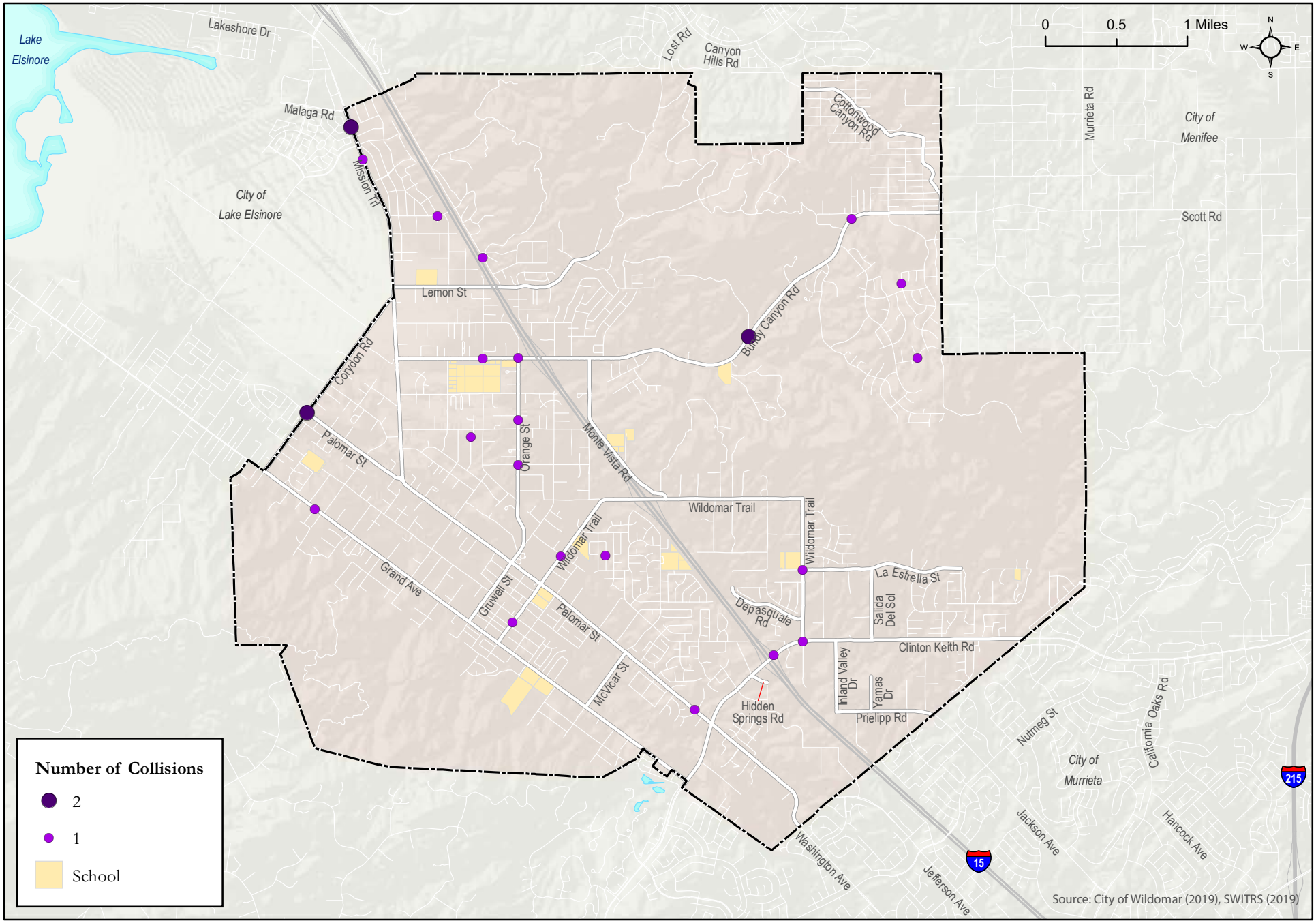

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Figure 4.9
Pedestrian-Involved Collisions (October 2014 - October 2019)

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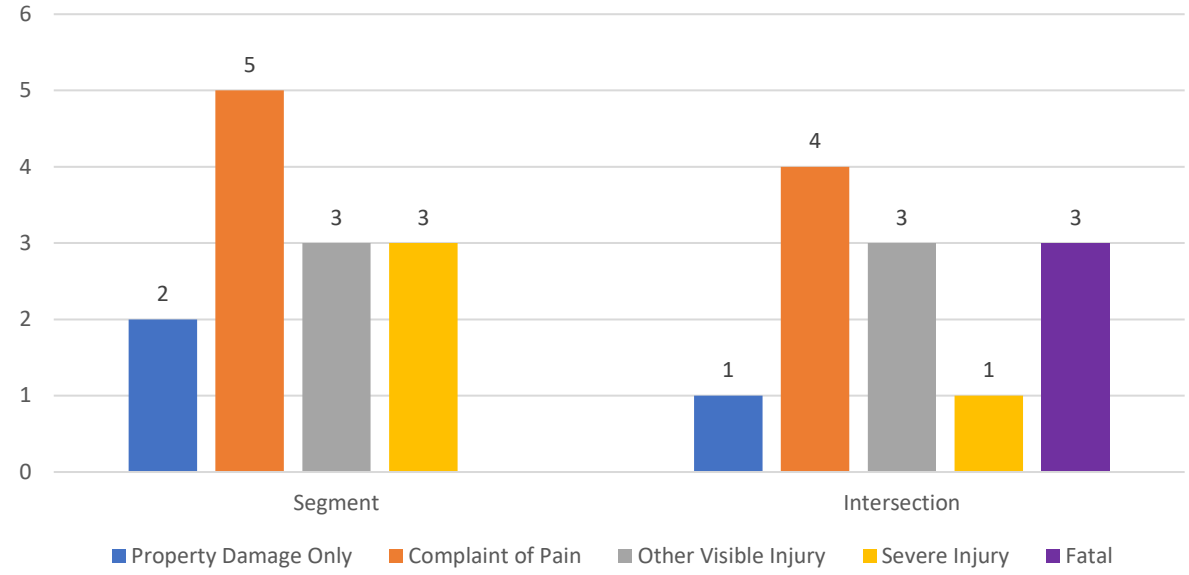
Figure 4.10 summarizes the 25 pedestrian-involved collisions by roadway location and injury severity, differentiating between intersection and segment locations. Thirteen of the collisions were reported at segment locations, while 12 were reported in intersections. As shown, 7 pedestrian-involved collisions resulted in a severe or fatal injury and all the fatal collisions were reported at intersection locations. Two of the three fatal collisions were reported at Mission Trail & Sylvester Road. Mission Trail is a high-speed road, and this intersection does not provide adequate crossing infrastructure for pedestrians. The other fatal collision was reported at Bundy Canyon Rd & Raciti Road, where pedestrian infrastructure is lacking as well.

Figure 4.10 Pedestrian-Involved Collisions by Severity by Roadway Location



Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Table 4.4 presents the violation codes by level of injury severity for the 25 pedestrian-involved collisions. The most frequent violation reported was due to pedestrians crossing the roadway outside of the crosswalk when they did not have the right-of-way (21954(a)). This violation was reported for nearly half (12/25) of the pedestrian-involved collisions, including two collisions resulting in severe injuries.

The second most frequent violation code reported was due to pedestrians not properly positioning themselves along roadways without sidewalks (21956(a)). Outside of a business or residential district, when a roadway lacks a sidewalk, pedestrians are required to walk along the left edge of the roadway, so they are facing on-coming traffic. This violation code was reported for all three collisions resulting in a pedestrian fatality and one collision resulting in a severe injury.

Table 4.4 Pedestrian Collision Violation Code by Injury Severity

	Violation Code and definition	Property Damage Only	Complaint of Pain	Other Visible Injury	Severe Injury	Fatal	Total
21954 (a)	Every pedestrian upon a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway so near as to constitute an immediate hazard.	2	5	3	2	-	**12**
21956 (a)	No pedestrian may walk upon any roadway outside of a business or residence district otherwise than close to his or her left-hand edge of the roadway.	-	-	-	1	3	**4**
22107	No person shall turn a vehicle from a direct course or move right or left upon a roadway until such movement can be made with reasonable safety and then only after the giving of an appropriate signal in the manner provided in this chapter in the event any other vehicle may be affected by the movement.	-	1	2	-	-	**3**
21950 (a)	The driver of a vehicle shall yield the right-of-way to a pedestrian crossing the roadway within any marked crosswalk or within any unmarked crosswalk at an intersection, except as otherwise provided.	-	2	-	-	-	**2**
21453 (a)	A driver facing a steady circular red signal alone shall stop at a marked limit line, but if none, before entering the crosswalk on the near side of the intersection or, if none, then before entering the intersection, and shall remain stopped until an indication to proceed is shown, except as provided in subdivision (b)	-	-	-	1	-	**1**
22350	No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.	-	1	-	-	-	**1**
	Other	1	-	1	-	-	**2**
	Total	**3**	**9**	**6**	**4**	**3**	**25**

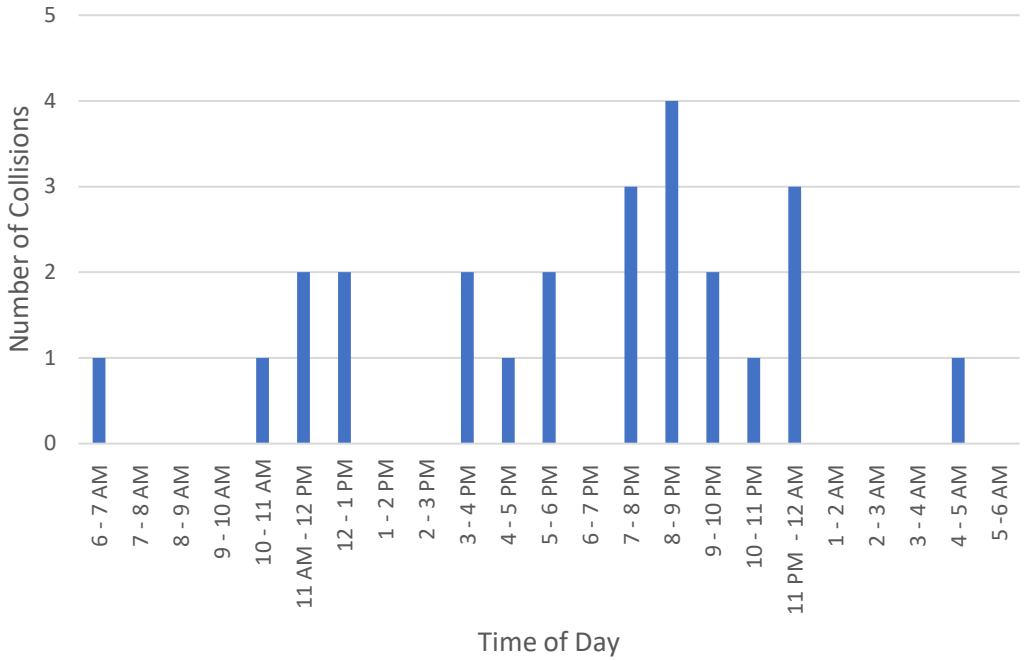
Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Additional Assessment of Pedestrian Collisions

This section presents pedestrian-involved collisions by time of day, age and gender of pedestrian involved. Understanding when collisions occur can help identify potential factors contributing to collisions, such as lack of lighting (collisions occurring at dawn/dusk or at night), or patterns, such as collisions occurring during peak commute hours.

Figure 4.11 shows the time of day for the pedestrian-involved collisions which occurred during the five-year analysis period. Approximately 14 (over half) of the total pedestrian-involved collisions occurred during dawn/dusk or at night.

Figure 4.11 Pedestrian-Involved Collisions by Time of Day

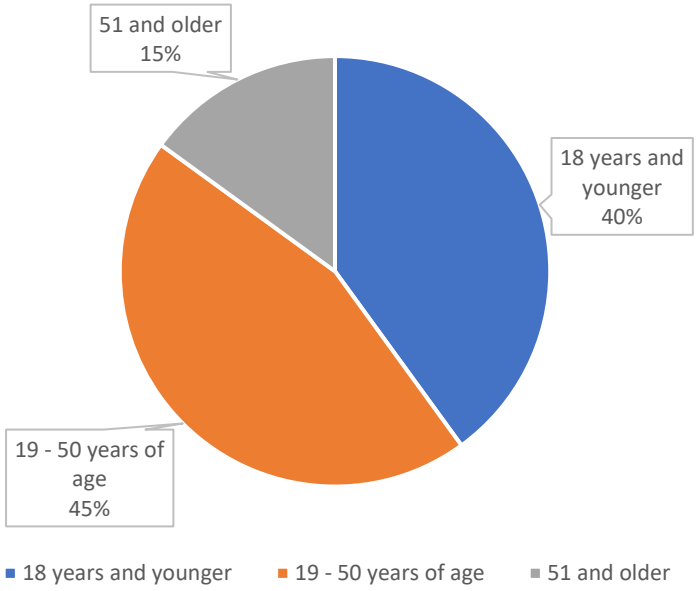


Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

The age group analysis helps determine whether any age group is experiencing a disproportionate number of collisions. **Figure 4.12** shows the age groups of the pedestrian involved in the collisions. Age data was available for 17 of the pedestrians involved in the 25 collisions. Eight of the 20 pedestrians (for which data is available) were 18 years or younger, nine pedestrians were between the ages of 19 – 50 years of age, and three were over 50 years old.

Approximately 26% of Wildomar's residents are 18 years of age or younger, however as shown in **Figure 4.12**, 40% of pedestrians involved in collisions are youth. This is a strong indication that reduced pedestrian-related collisions will greatly benefit the youth population.

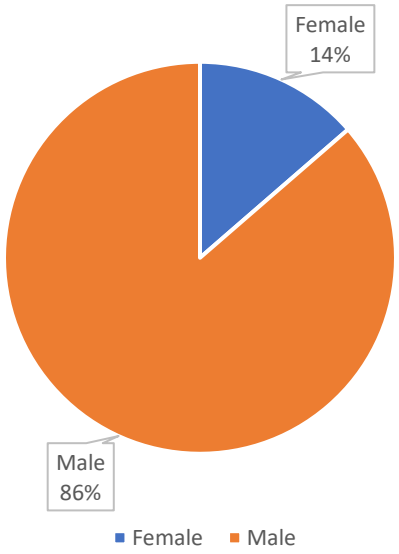
Figure 4.12 Pedestrian-Involved Collisions by Age



Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Figure 4.13 displays the gender of the pedestrians involved in the collisions. Gender information was available for 22 of the 25 pedestrian-involved collisions. As shown, 85% of pedestrian collisions involve males.

Figure 4.13 Pedestrian-Involved Collisions by Gender



Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

4.2 Bicycle Mobility

This section provides an overview of bicycle facility classifications, a description of the types of cyclists, and on overview of the existing bicycle environment related to demand, connectivity, quality, and safety. Table 4.5 identifies the four bicycle facility classifications recognized by Caltrans, including Class I bike paths, Class II bicycle lanes, Class III bicycle routes, and Class IV cycle tracks. These terms will be used throughout this chapter.

Table 4.5 Bicycle Facility Design Classification

Image	Description
	**Class I Bike Path** – Also referred to as a multi-use path or shared-use path, Class I facilities provide a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized. Bike paths can provide connections where roadways are non-existent or unable to support bicycle travel. The minimum paved width for a two-way bike path is considered to be eight-feet (ten-feet preferred), with a two-foot wide graded area adjacent to each side of the pavement.
	**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 when adjacent to on-street parking, or six-feet when posted speeds are greater than 40 miles per hour. Bike lanes can also have striped buffer areas a few feet in width to provide separation from vehicles.
	**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. Bike routes provide network continuity or designate preferred routes through corridors with high demand.
	**Class IV Cycle Track** – Also referred to as a separated or protected bikeway, 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.

Source: Caltrans, Highway Design Manual (2016)

A cyclist's skill level can dictate on which type of facility they feel most comfortable or where they will ride. Cyclists have been generally categorized as belonging to one of four types, based upon their comfort, skill level and interest in cycling (*Dill, et al; Four Types of Cyclists? Examination of Typology for Better Understanding of Bicycling Behavior and Potential, Portland State University, 2013*). Table 4.6 provides a description of the four types of cyclists.

Table 4.6 The Four Types of Cyclists

Image	Description
	The **"Strong and the Fearless"** represent fewer than half of a percent of the population. These are the people who will ride regardless of roadway conditions. They tend to self-identify as "cyclists," and riding is a strong part of their identity. They are generally undeterred by roadway conditions.
	The **"Enthused and Confident"** are those who have been attracted to cycling and are comfortable sharing the roadway with automotive traffic, but prefer to do so operating on their own facilities. They are attracted to riding where streets have been redesigned to make them work well for bicycling. They appreciate bicycle lanes and bicycle boulevards. This demographic comprises approximately seven percent of the population.
	The vast majority of people are the **"Interested but Concerned."** These individuals are curious about bicycling. They like riding a bicycle, and they would like to ride more. However, they are cautious toward most riding conditions, and are uncomfortable with riding in mixed traffic. Very few regularly ride bicycles, and particularly not along arterials, or to major commercial and employment destinations. This group represents approximately 60 percent of the population. They would ride if they felt safer on the roadways—if cars were slower and less frequent, or were physically separated from cars.
	Approximately one third of the population falls into the last category - the **"No Way, No How"** group that is currently not interested in bicycling at all, for reasons of topography, inability, or simply a lack of interest.

Source: Dill, et al (2013)

Bicycle Demand

The number of people on bicycles were counted at the same 30 intersections at which data was collected for all modes and during the same time frames, from 7 – 9 AM and from 4 – 6 PM. As previously noted, this data helps the understanding of how the pedestrian and bicycle networks are currently used. **Figure 4.14** displays the total number of bicyclists observed in the AM peak, **Figure 4.15** displays the total number of bicyclists observed in the PM peak, and **Figure 4.16** displays the AM and PM peak period bicycle movements at the respective intersection legs.

The locations with the highest observed AM bicycle volumes include:

- Palomar St & Clinton Keith Rd (8)
- Palomar St & McVicar St/Frederick St (7)
- Grand Ave & Sheila Ln (7)
- Palomar St & Gruwell St (6)
- Mission Trail & Lemon St (6)
- Mission Trail & Corydon Rd (6)
- Mission Trail & Palomar St (6)
- Grand Ave & Clinton Keith Rd (6)

The locations with the highest observed PM bicycle volumes include:

- Palomar Street & Corydon Rd (11)
- Palomar Street & Wildomar Trail (formerly Central Street) (11)
- Palomar Street & McVicar Street (10)
- Mission Trail & Malaga Rd (7)

Table 4.7 summarizes the volumes by location, identifying the number of bicyclists observed during each peak period and the total number of bicyclists observed. Table 4.7 is sorted by total volume in descending order.

The latent demand for cycling is discussed previously under the Pedestrian Mobility section and displayed in Figures 4.4-4.6.

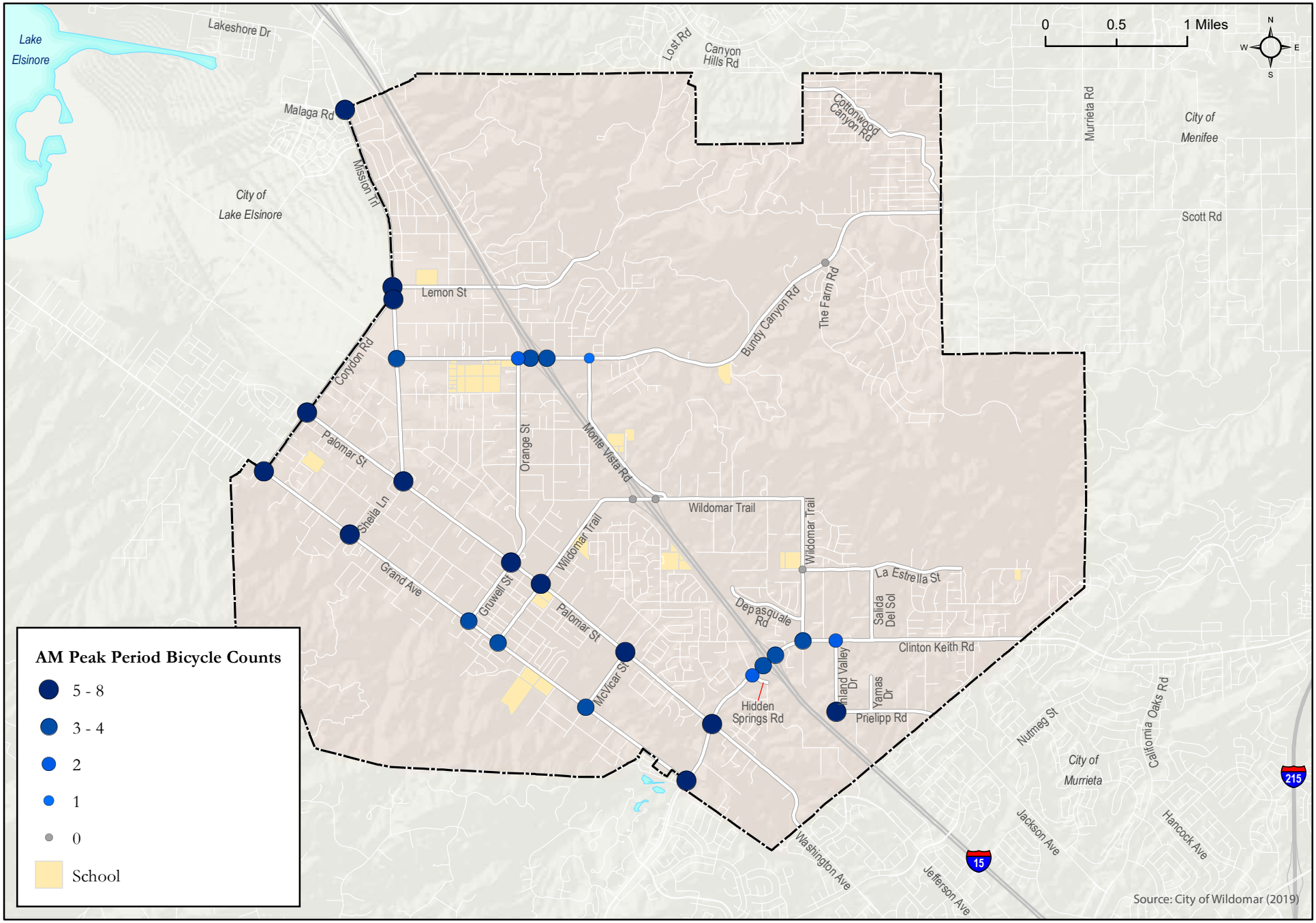


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Figure 4.14
AM Peak Period Bicycle Counts

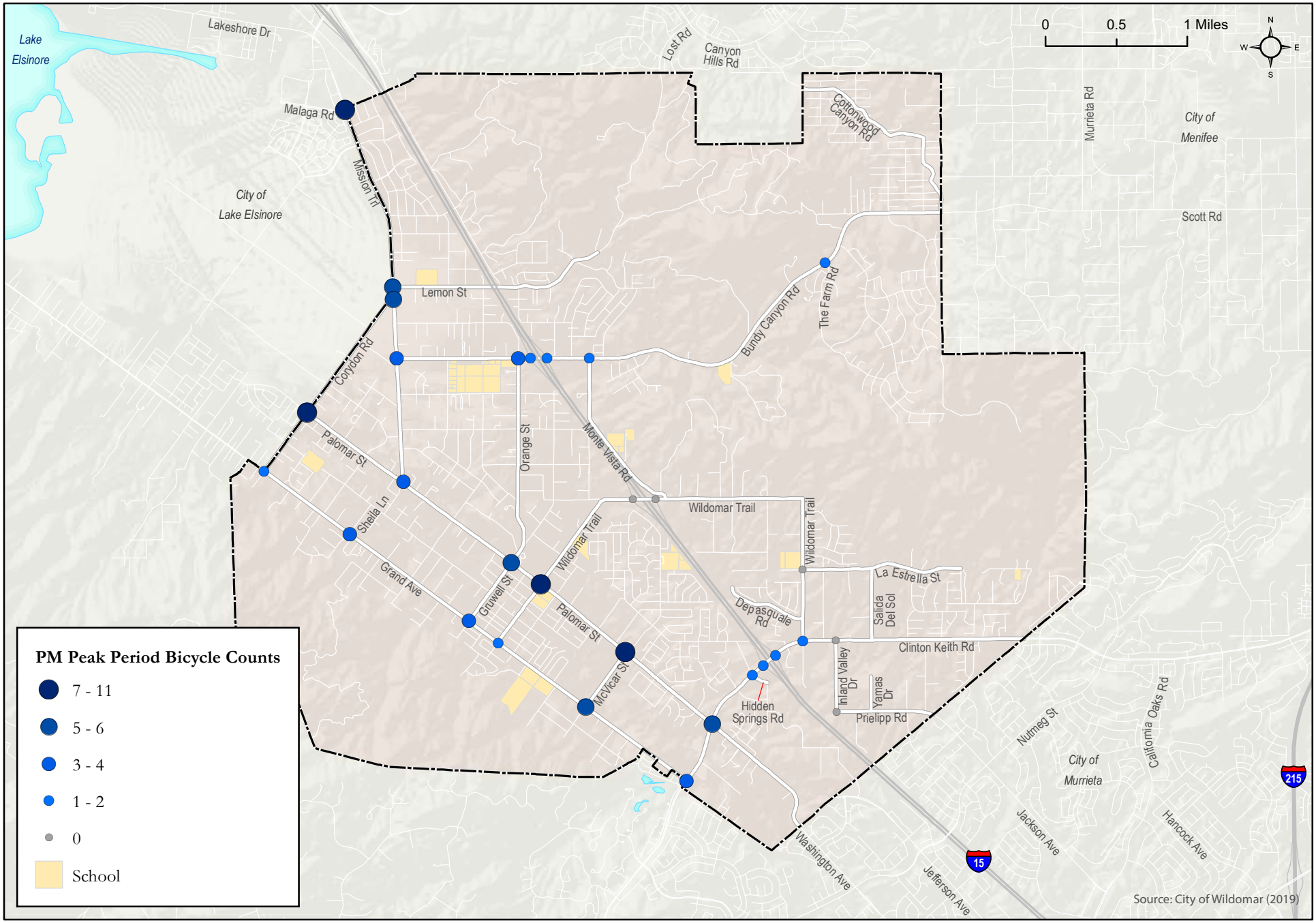

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Figure 4.15
PM Peak Period Bicycle Counts

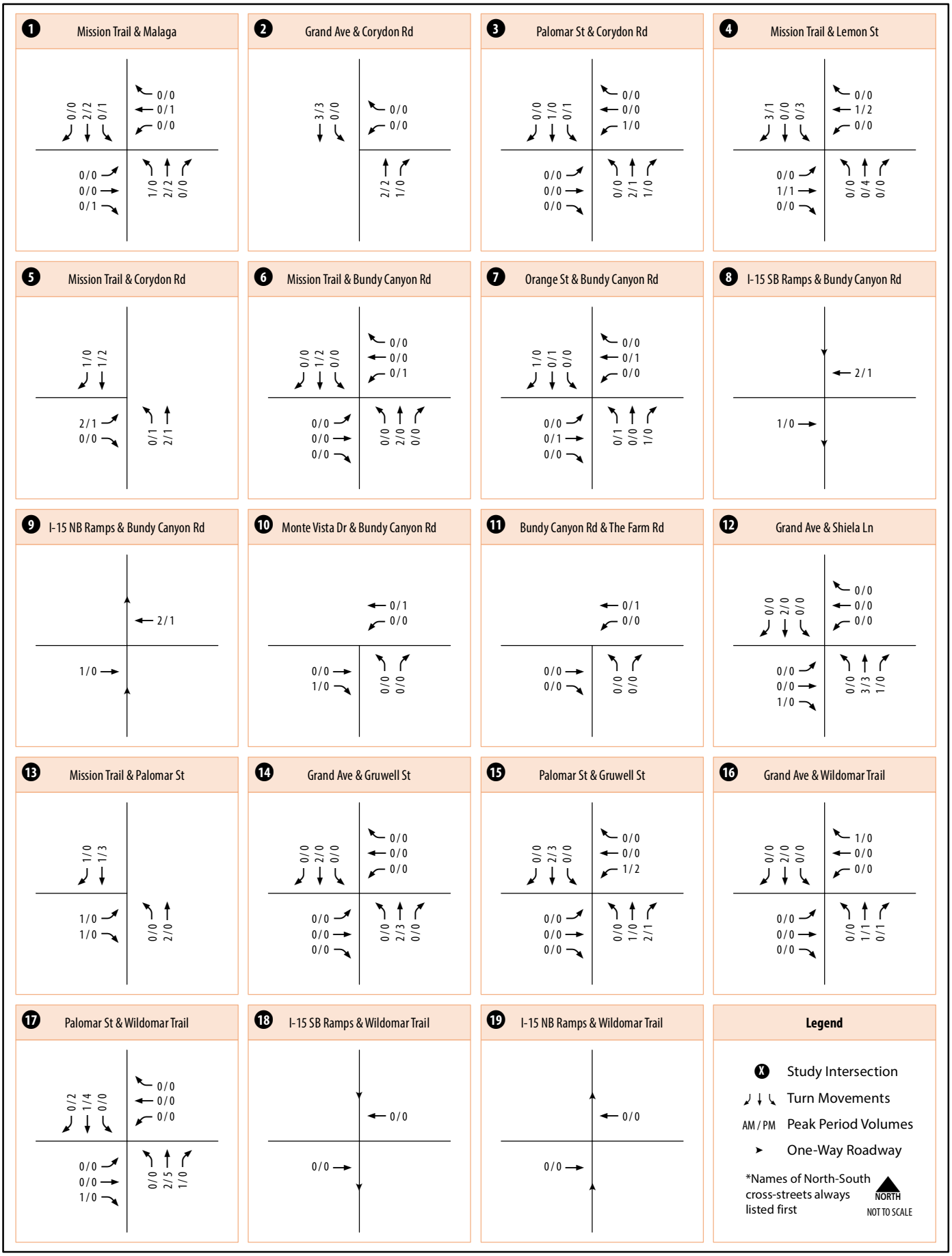

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Figure 4.16
Bicycle Volumes - Existing Conditions
(Intersections 1-19)

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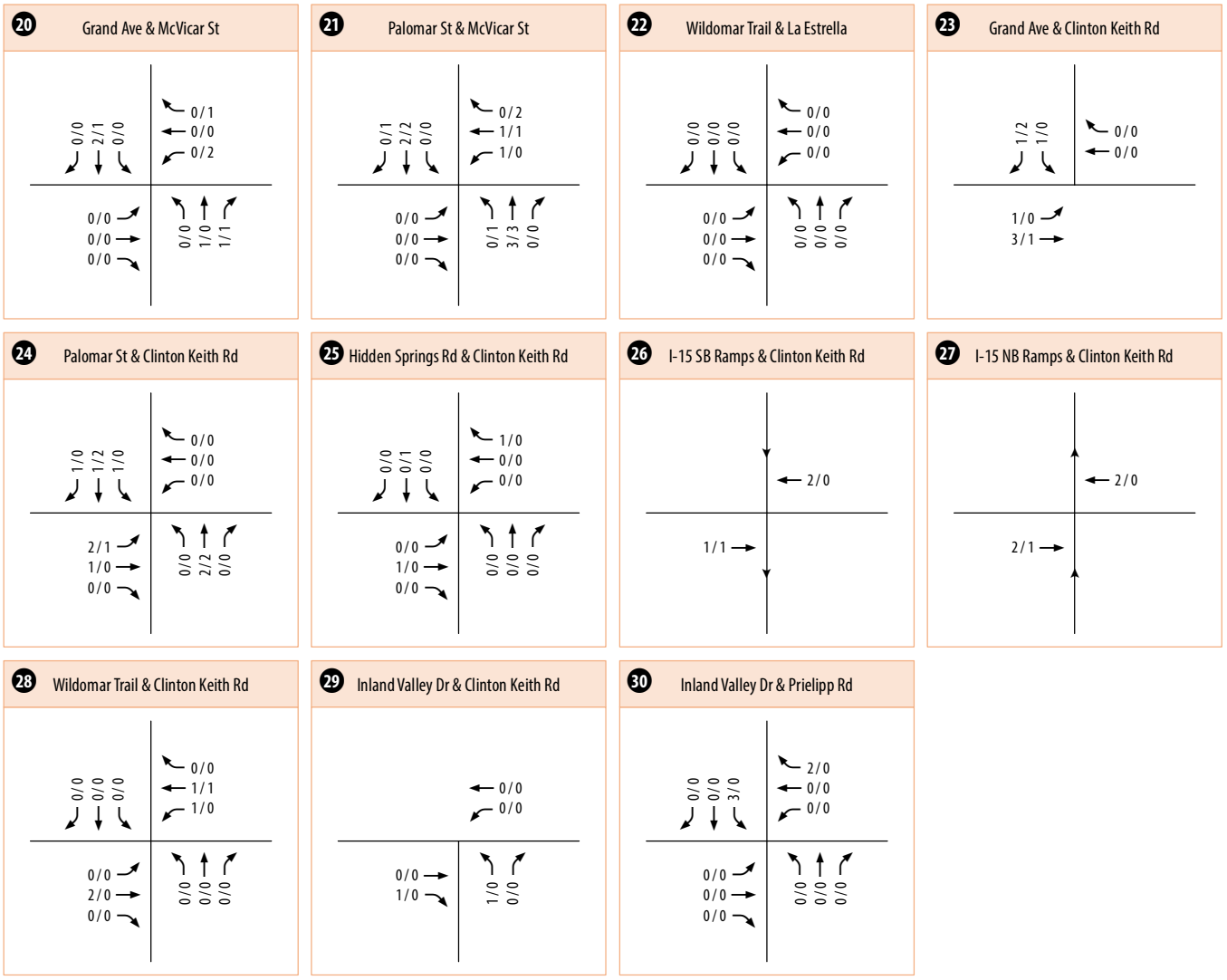

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Figure 4.16
Bicycle Volumes - Existing Conditions
(Intersections 20-30)

Table 4.7 AM and PM Peak Hour Bicycle Counts

Location	AM Peak	PM Peak	Total
Palomar St & McVicar St/Frederick St	7	10	17
Palomar St & Corydon Rd	5	11	16
Palomar St & Wildomar Trail[1]	5	11	16
Palomar St & Clinton Keith Rd	8	5	13
Mission Trail & Malaga Rd	5	7	12
Palomar St & Gruwell St	6	6	12
Mission Trail & Lemon St	6	5	11
Mission Trail & Corydon Rd	6	5	11
Grand Ave & Sheila Ln	7	3	10
Mission Trail & Palomar St	6	3	9
Grand Ave & McVicar St	4	5	9
Grand Ave & Clinton Keith Rd	6	3	9
Grand Ave & Corydon Rd	5	2	7
Grand Ave & Gruwell St	4	3	7
Mission Trail & Bundy Canyon Rd	3	3	6
Orange St & Bundy Canyon Rd	2	4	6
Grand Ave & Wildomar Trail[1]	4	2	6
I-15 NB Ramps & Clinton Keith Rd	4	1	5
Wildomar Trail[2] & Clinton Keith Rd	4	1	5
Inland Valley Dr & Prielipp Rd	5	0	5
I-15 SB Ramps & Bundy Canyon Rd	3	1	4
I-15 NB Ramps & Bundy Canyon Rd	3	1	4
I-15 SB Ramps & Clinton Keith Rd	3	1	4
Hidden Springs Rd & Clinton Keith Rd	2	1	3
Monte Vista Dr & Bundy Canyon Rd	1	1	2
Inland Valley Dr & Clinton Keith Rd	2	0	2
The Farm Rd & Bundy Canyon Rd	0	1	1
I-15 SB Ramps & Wildomar Trail[3]	0	0	0
I-15 NB Ramps & Wildomar Trail[3]	0	0	0
Wildomar Trail[4] & La Estrella St	0	0	0

Source: Counts Unlimited (2019)

[1] Formerly Central St.
[2] Formerly George Ave.
[3] Formerly Baxter Rd.
[4] Formerly Porras Rd/George Ave.

Bicycle Network Connectivity

Figure 4.17 displays the existing bicycle network. Currently, the City of Wildomar's network primarily consists of bicycle lanes along Grand Avenue from the northern city limits to Clinton Keith Road, and along Clinton Keith Road from Grand Avenue to Wildomar Trail (formerly George Avenue). The Clinton Keith Road bridge deck over I-15 is a Class III bike route. Included on Clinton Keith Road is approximately one block of a Class IV cycle track facility. This facility is located on eastbound Clinton Keith Road in front of the northern end of Renaissance Plaza (approximately 400 feet south of the intersection of Clinton Keith Road and Stable Lanes Road).

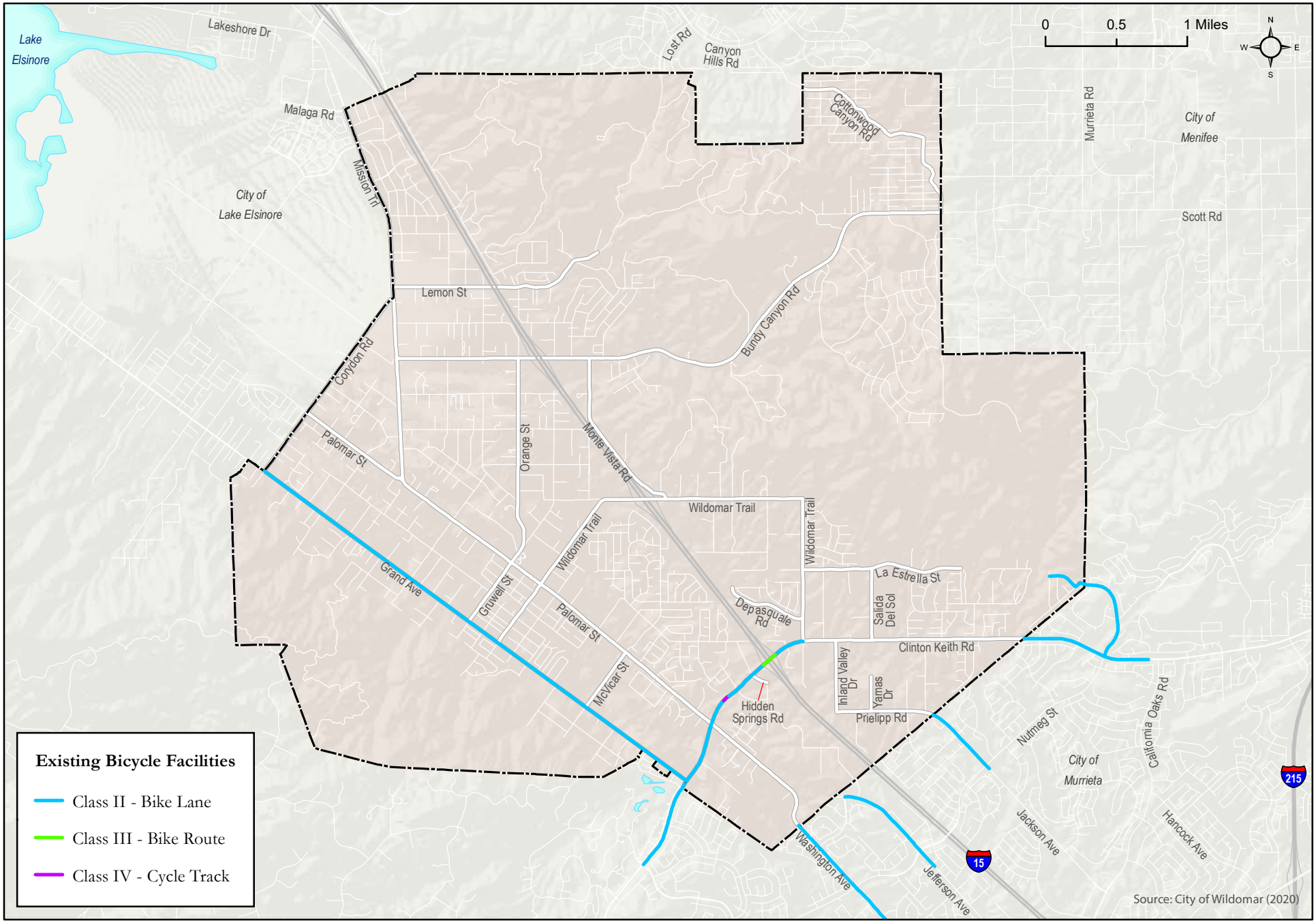

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Figure 4.17
Existing Bicycle Network

An important consideration for bicycle networks is not only the provision of facilities, but ensuring those facilities are comfortable for users and connected to desirable destinations. This Mobility Plan will identify opportunities to expand the network of comfortable facilities through new connections or the enhancement of existing facilities.

Bicycle Facility Quality

The bicycle environment in Wildomar was assessed using the bicycle Level of Traffic Stress (LTS) methodology for characterizing cycling environments, as described in Chapter 3.

Figure 4.18 displays the bicycle LTS results for all CE roadways in the City of Wildomar. Local roads, private roads or those internal to mobile home parks were not evaluated. Roadways with an LTS 1 or 2 are generally collectors, characterized as having one lane in each direction while providing adequate width for cyclists and vehicles, with a low posted speed and low traffic volumes.

The main east-west and north-south connections are LTS 4 due to high posted speed limits and the missing bicycle infrastructure. Though Grand Avenue and a portion of Clinton Keith Road have bicycle lanes, the score is an LTS 4 due to high posted speed limits.

Improving the comfort of cyclists along connecting arterials could be a focus for the portion of the Mobility Plan which focuses on bicycle transportation.

Bicycle Safety

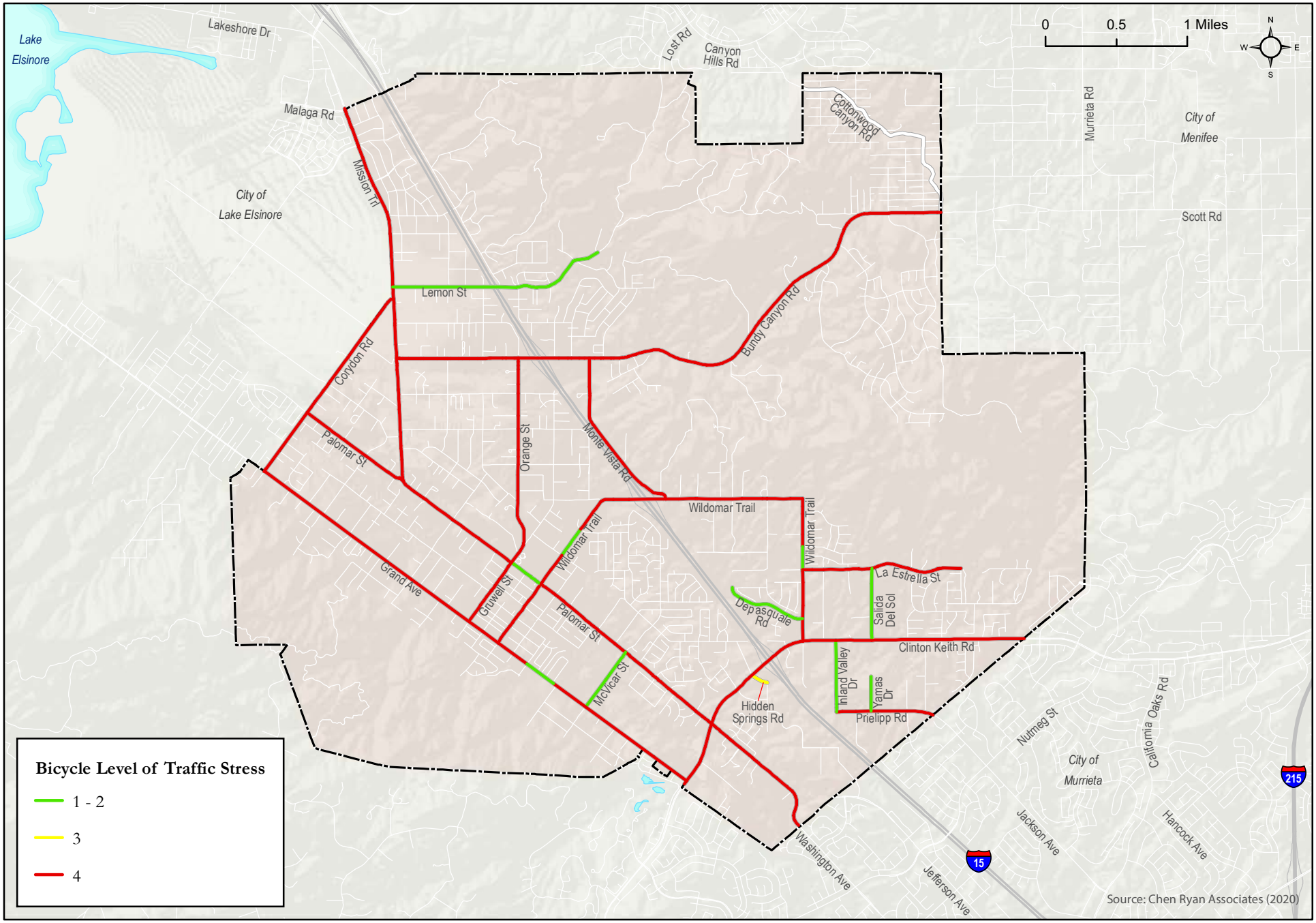
Collision data can be used to identify potential deficiencies or safety issues related to bicycle travel. The collision review draws from 5 years of data (October 31, 2014 – October 31, 2019) obtained from the SWITRS and the City of Wildomar's collision database (Crossroads). The analysis was used to identify trends and patterns related to collision locations, causes, time, and victim age. Ultimately, this information will help inform the identification of potential bicycle infrastructure improvements and programmatic recommendations.

Figure 4.19 displays the location of the bicycle-involved collisions across Wildomar. A total of 13 bicycle-involved collisions were reported in the city during the five-year analysis period. As shown, approximately 70% of the bicycle collisions took place on three corridors: Clinton Keith Road, Mission Trail and Palomar Street.

The corridors with the at least three bicycle collisions are:

- Clinton Keith Road (3)
- Mission Trail (3)
- Palomar Street (3)

Three fatal bicycle-involved collisions were reported, including the intersection of Mission Trail and Malaga Road, along Mission Trail approximately 24' south of Sedco Boulevard, and along Palomar Street approximately 150' south of Bayberry Road. Both of the fatal collisions on Mission Trail were reported as occurring within the City of Lake Elsinore boundary.



Wildomar Mobility Plan

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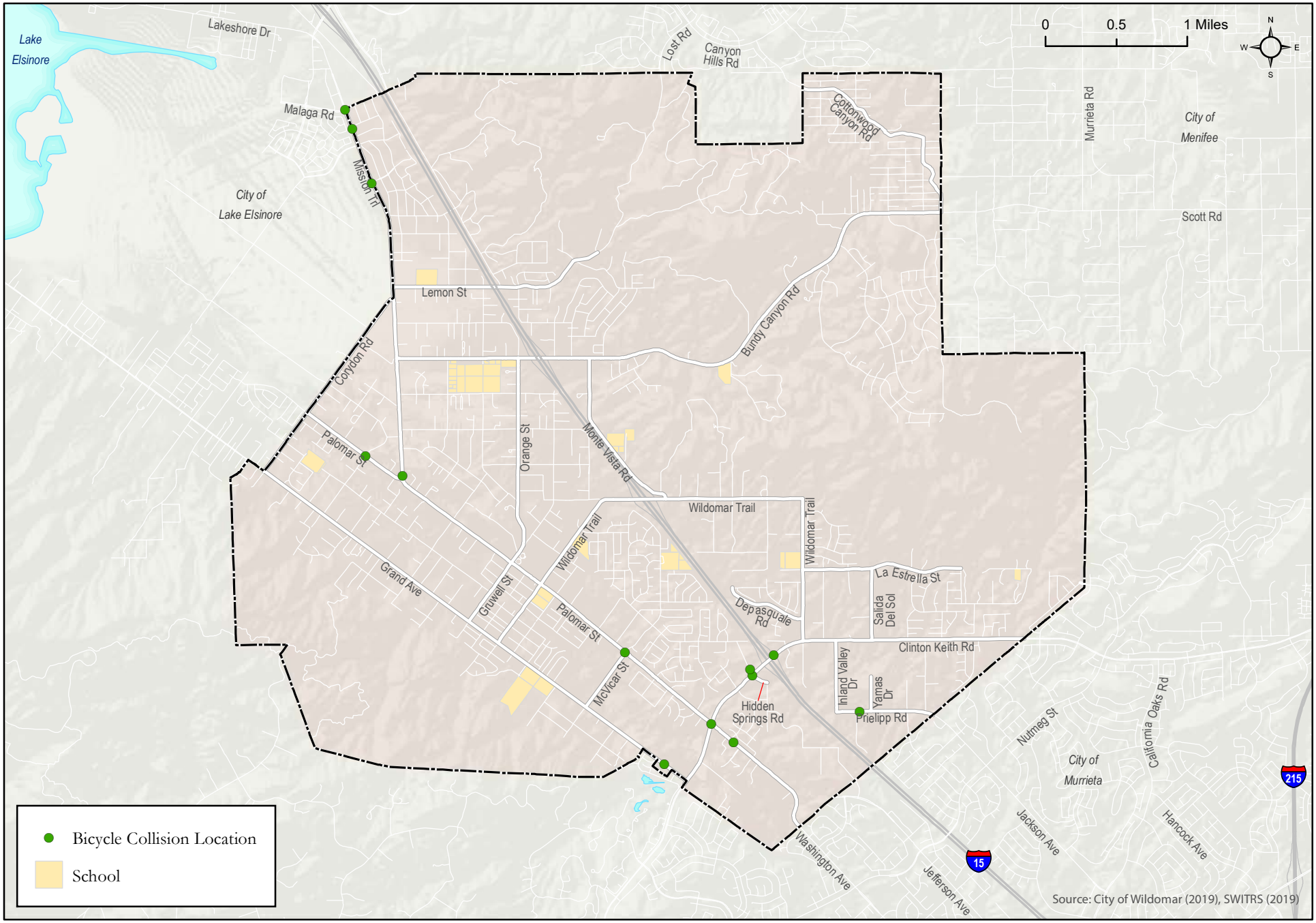
Figure 4.18
Bicycle Level of Traffic Stress



Wildomar Mobility Plan

Figure 4.19
Bicycle-Involved Collisions (October 2014 - October 2019)

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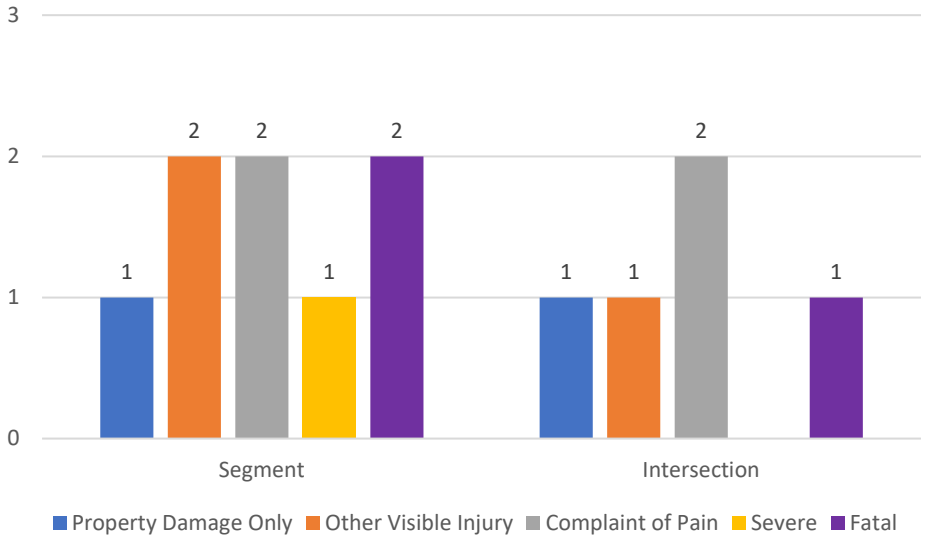
Figure 4.20 presents collision severity by roadway location. Bicycle-involved collisions were more commonly reported along segments (62%) than intersections (38%). Similarly, collisions resulting in a severe injury or fatality were also more prevalent along segments (75% combined).

Figure 4.20 Bicycle-Involved Collision by Severity by Roadway Location



Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Table 4.8 presents violation codes by level of injury severity for 12 (of the 13) bicycle-involved collisions. The most frequently reported codes are 22107 and 22350 at three incidents each.

Table 4.8 Bicycle-Involved Collision Violation Code by Injury Severity

	Violation Code & Definition	Property Damage Only	Other Visible Injury	Complaint of Pain	Severe Injury	Fatal	TOTAL
22107	No person shall turn a vehicle from a direct course or move right or left upon a roadway until such movement can be made with reasonable safety and then only after the giving of an appropriate signal in the manner provided in this chapter in the event any other vehicle may be affected by the movement.	--	1	1	--	1	**3**
21453(a)	A driver facing a steady circular red signal alone shall stop at a marked limit line, but if none, before entering the crosswalk on the near side of the intersection or, if none, then before entering the intersection, and shall remain stopped until an indication to proceed is shown, except as provided in subdivision (b)	--	1	1	--	--	**2**
21453(c)	A driver facing a steady red arrow signal shall not enter the intersection to make the movement indicated by the arrow and, unless entering the intersection to make a movement permitted by another signal, shall stop at a clearly marked limit line, but if none, before entering the crosswalk on the near side of the intersection, or if none, then before entering the intersection, and shall remain stopped until an indication permitting movement is shown.	--	--	--	--	1	**1**
21650.1	A bicycle operated on a roadway, or the shoulder of a highway, shall be operated in the same direction as vehicles are required to be driven upon the roadway.	--	--	1	--	--	**1**
21950(a)	The driver of a vehicle shall yield the right-of-way to a pedestrian crossing the roadway within any marked crosswalk or within any unmarked crosswalk at an intersection, except as otherwise provided in this chapter.	1	--	--	--	--	**1**
22350	No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.	--	1	--	1	1	**3**
24250	During darkness, a vehicle shall be equipped with lighted lighting equipment as required for the vehicle by this chapter.	--	--	1	--	--	**1**
	TOTAL	**1**	**3**	**4**	**1**	**3**	**12***

Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

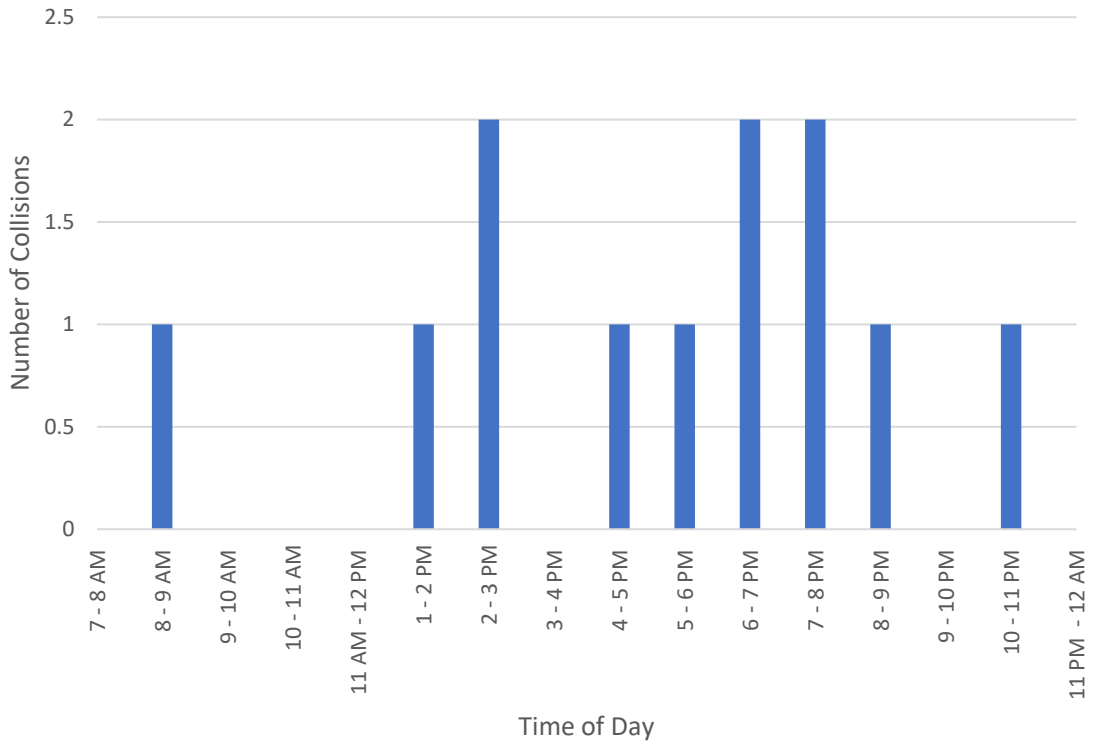
*1 Collision did not have a violation code entered in the database.

Additional Assessment of Bicycle Collisions

This section presents bicycle-involved collisions by time of day, age and gender of bicyclist involved. This information may be used to help identify potential factors contributing to collisions, such as lack of lighting (collisions occurring in the evening), or patterns, such as collisions occurring during peak commute hours. The bicyclist's age is also examined in this section. The age group analysis helps determine whether any age group is experiencing a disproportionate number of collisions.

Figure 4.21 displays the time of day when the bicycle-involved collisions occurred. Two collisions each occurred during the hours of 2 to 3 PM, 6 to 7 PM, and 7 to 8 PM.

Figure 4.21 Bicycle-Involved Collisions by Time of Day

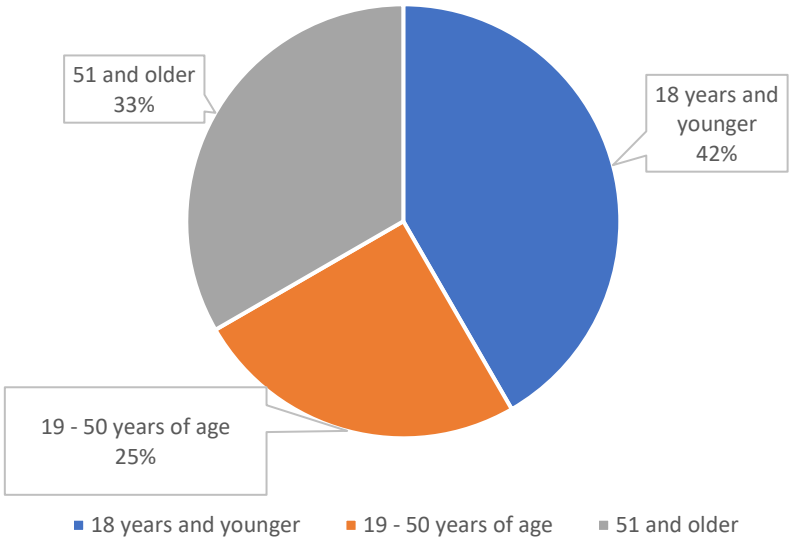


Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Figure 4.22 shows the age of the bicyclists involved in collisions. The data reflects 12 (of 13) bicycle-involved collisions. Five bicyclists (out of a subset of 12 bicyclists) were 18 years and younger. Three bicyclists were between the ages of 19 - 50 years of age and two bicyclists were over the age of 50 years old.

Additionally, several of the bicyclists involved were school-aged. Two bicyclists, aged 12 and 15 years old, were involved in collisions at 2:52 pm and at 4:08 pm respectively (in months and days of the week in which school would have been in session), making the school commute more relevant, as well as the time during or post school dismissal.

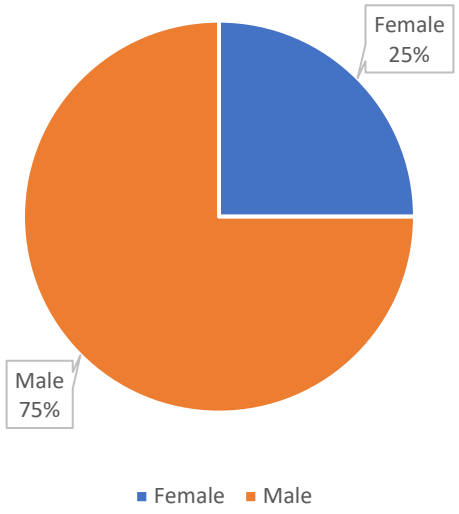
Figure 4.22 Bicycle-Involved Collisions by Age



Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Figure 4.23 displays the gender of the bicycle-involved in the collisions. Gender information was available for 12 of the 13 collisions. As shown, 75% of pedestrian collisions involve males.

Figure 4.23 Bicycle-Involved Collisions by Gender



Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

4.3 Equestrian

Horses are part of the City of Wildomar's past and important to the City of Wildomar's identity. Wildomar was an outpost of the pony express for the Butterfield Stage and more recently, as part of the Old Town Vision (2013) document, a strong desire to keep equestrian trails connected to the Old Town core and to nearby trails was expressed. Similarly, the Wildomar Adopt-a-Trail System Map is used as a guidance document in the planning of future trails.

Figure 4.24 shows the trail types within the City of Wildomar and the connections to the surrounding communities.

Table 4.9 displays the number of miles for each trail category.

Table 4.9 Miles of Existing and Proposed Trail

Trail	Miles
Existing Community Trails	13.2
Existing Historic Trails	1.4
Existing Regional Trails	5.2
Total	19.8

Source: City of Wildomar (2019)

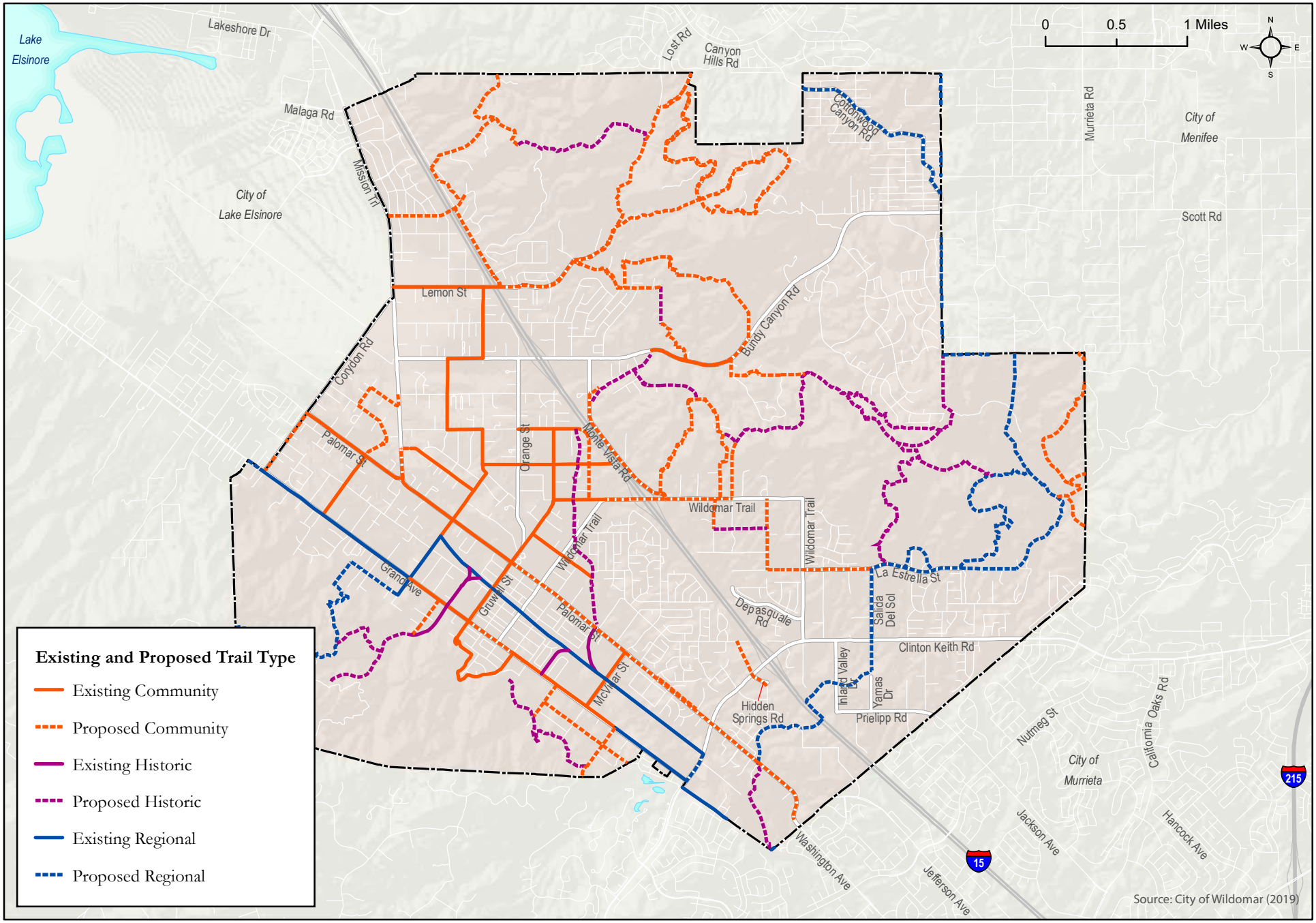


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Figure 4.24
Multi-Use (Equestrian) Trails

4.4 Transit Mobility

Transit Demand

Figure 4.25 displays the boardings and alightings for bus stops in Wildomar, and Table 4.10 summarizes the average daily ridership at the five bus stop locations with the highest ridership. The stops with the highest number of boardings and alightings are located near the Palomar Street & Wildomar Trail (formerly Central Street) intersection. Both Route 8 and Route 23 circulate this area and this area also happens to have the highest population density and most households with zero vehicles within the City of Wildomar.

Table 4.10 High Transit Ridership Locations

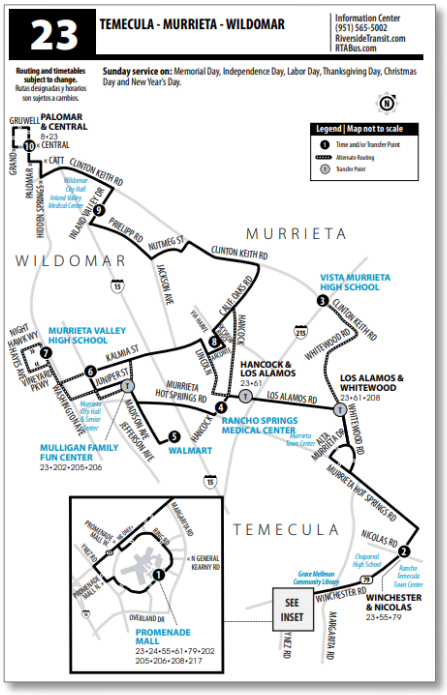
Stop ID	Stop Name	Boardings + Alightings
1284	Palomar NS Wildomar Trail[1]	909
1376	Palomar FS Wildomar Trail[1]	437
1292	Wildomar Trail[1] FS Palomar	154
1382	Mission Trail FS Bundy Canyon	123
1277	Mission Trail FS Corydon	92

Source: Riverside Transit Authority (2019)

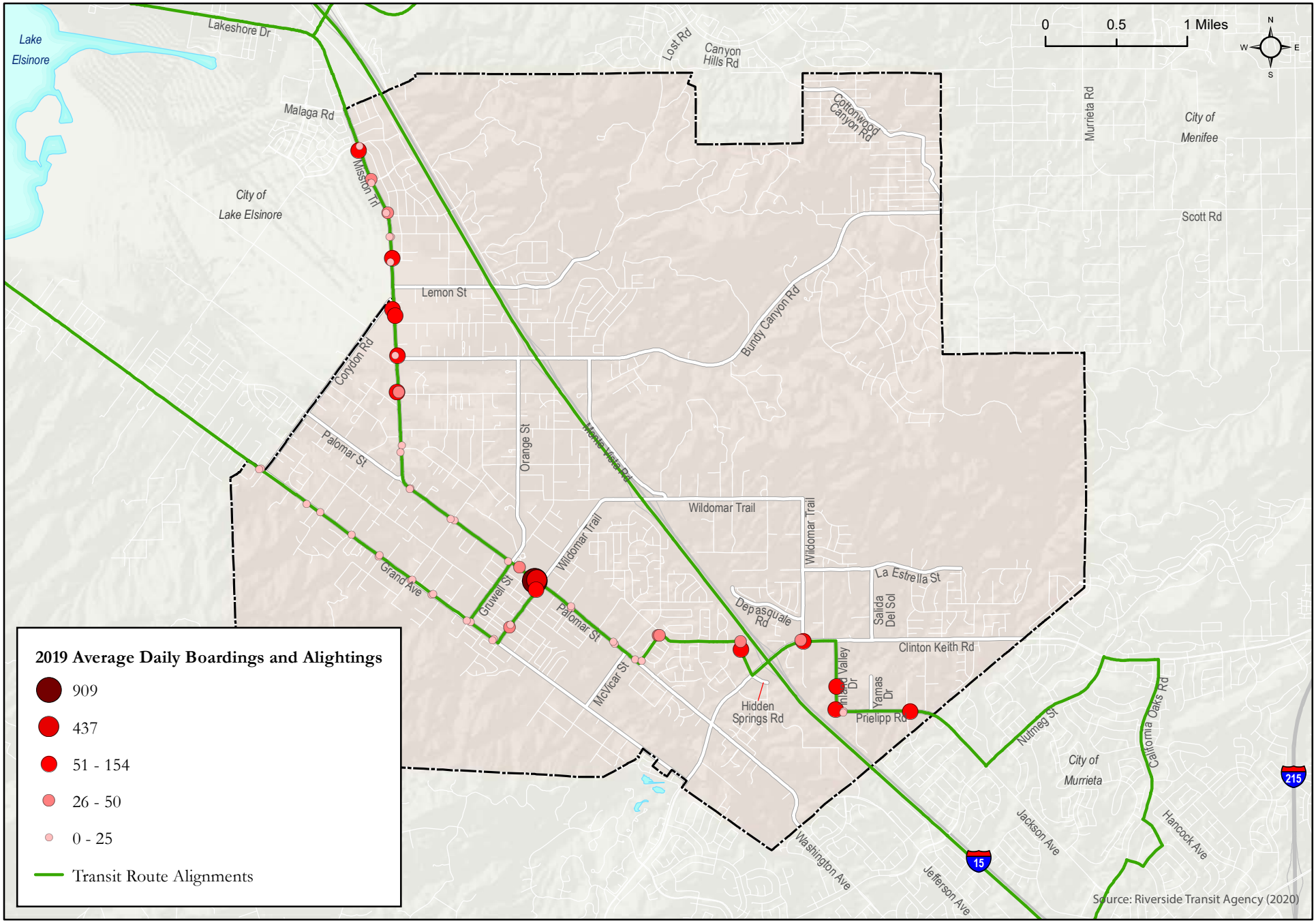
[1] Formerly Central Street.

Transit Network Coverage/Connectivity

Figure 4.26 displays the existing transit routes, stops, and quarter mile walksheds around each stop. Quarter mile walksheds display the distance accessible within a quarter mile of each bus stop, using public roads. A quarter mile is approximately a five-minute walk. The City of Wildomar is served by Bus Routes 23 and 8 operated by the Riverside Transit Authority (RTA). Bus routes 205 and 206 traverse the City along I-15, but do not stop within Wildomar. The City of Wildomar is better served in the North-South direction than in the East-West direction.



Route 23 serves Temecula, Murrieta, and Wildomar and operates between 5:20 AM and 8:30 PM on weekdays with approximate one-hour headways. Weekend service operates between 7:20 AM and 7:20 PM also with approximate one-hour headways. Within Wildomar, Route 23 covers the southern section of the city. Bus route 23 enters the City on Prielipp Road, from there follows Inland Valley Drive to Clinton Keith Road, at Hidden Springs Road, the route jogs west and makes its way to Palomar St and Wildomar Trail (formerly Central St), where it loops down to Grand Ave and over to Gruwell Street. From there Route 23 returns south. Route 23 serves some important destinations, including an elementary school, various commercial centers (which provide services, food, and recreation), the Inland Valley Medical Center, as well as an employment area.



Wildomar Mobility Plan

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Figure 4.25
Average Daily Boardings and Alightings by Transit Stop (December 2019)

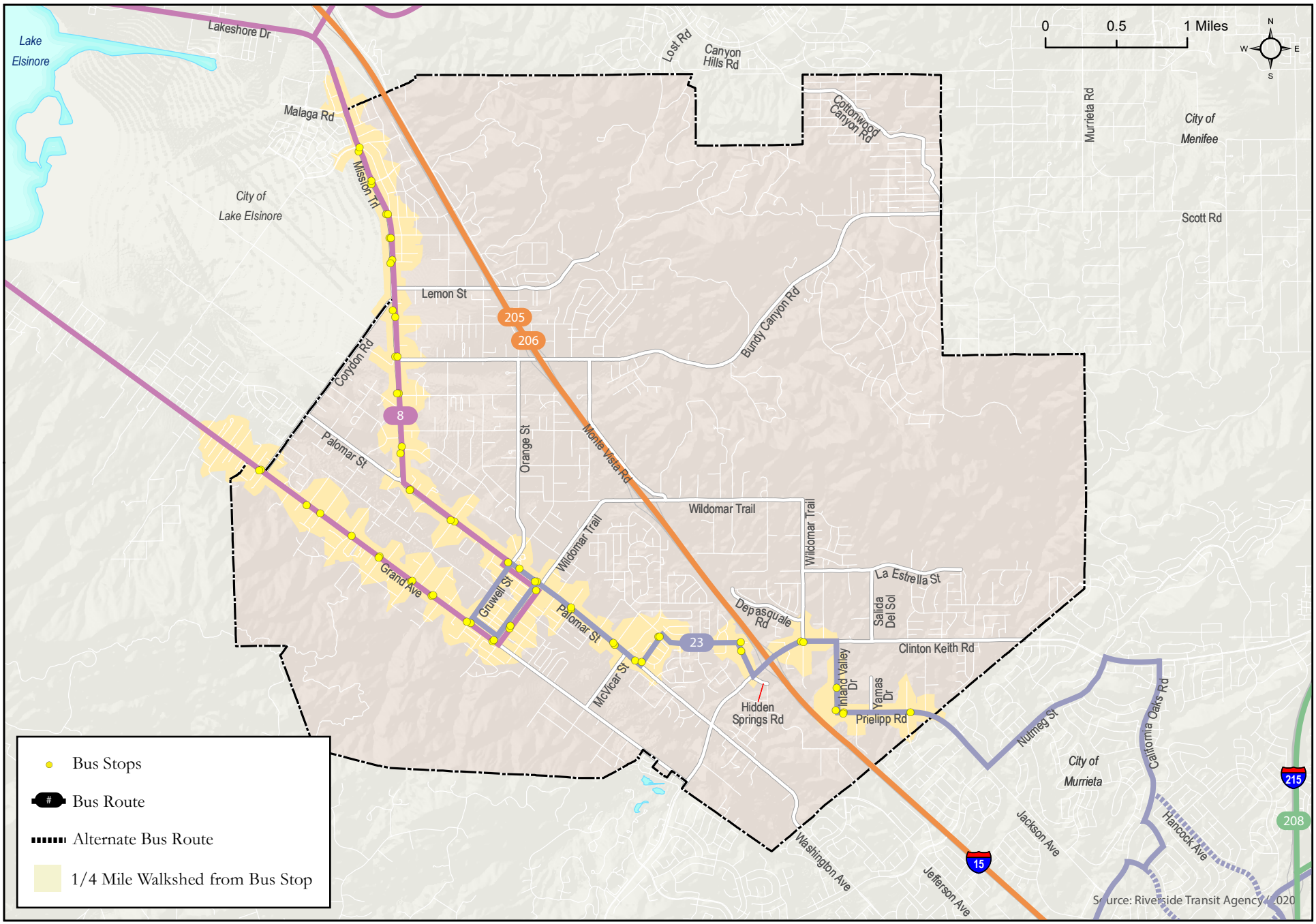

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Figure 4.26
Existing Public Transportation Routes and Stops

Route 8 serves Lake Elsinore and Wildomar and operates between 5:10 AM and 9:00 PM on weekdays with approximate one-hour headways. Weekend service operates between 6:20 AM and 7:00 PM also with approximate one-hour headways. Within Wildomar, Route 8 covers the northern area along Grand Ave, Palomar St, and Wildomar Trail. However, it loops at the same central location as Route 23. Route 8 serves smaller market centers, as well as Marna O'Brien Park and the Wildomar Library within its route.

Transit Facility Quality

On-Time Performance

Based on data provided by the RTA, Route 8 is on time 85.4% of the time and Route 23 is on time 84.5% of the time.

Presence of Amenities

There are 61 bus stops within Wildomar city limits. In its Bus Stop Design Guidelines, RTA provides a series of recommendations to enhance the attractiveness of public transportation through the improvement of physical infrastructure. In 2015, they developed a policy that outlines the process by which amenities are allocated throughout the RTA system. It strives to provide a balance with a percentage of stop improvements focused towards high ridership stops and a percentage targeted towards geographic equity.

Although not every bus stop can be provided with amenities, all stops should have a sign-post containing the route designation and the transit information telephone number at minimum. Other recommended amenities include painted curbs and sidewalks, benches (for stops with more than 5 daily boardings), shelters (for stops with more than 10 daily boardings), bicycle racks, kiosks, electronic messaging, among others.

Table 4.11 displays the inventory of existing amenities for all the bus stops, including daily ridership.

Safety Near Transit Stop/Station

Transit riders frequently access stations by walking or riding a bike, emphasizing the importance of ensuring safe active transportation mobility surrounding transit stop areas. Figure 4.27 displays the locations of pedestrian- and bicycle-involved collisions within 500 ft of a transit stop. Although there were only three pedestrian-involved collisions and one bicycle-involved collision, these might have been due to the lack of complete streets infrastructure. A number of bus stops are located on streets without sidewalks. Lighting and signage could help enhance transit rider safety when accessing stops.

Table 4.11 Existing Amenities by Bus Stop

Stop ID	Intersection	Direction of Travel	Far Side/ Near Side (F/N)	Route	Average Daily Ridership	Sign and Pole	Route Designations	Transit Information	Schedule Display	Route Map	System Map	Red Curb	Seating	Passenger Shelter	ADA Compliant	Bus Pad	Extended Sidewalk	Digital Display	Bicycle Rack	Kiosk	Trash Receptacle
1376	Palomar St & Wildomar Trail[1]	NB	F	8 & 23	437	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓				✓
1284	Palomar St & Wildomar Trail[1]	SB	N	8 & 23	294	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓				✓
1292	Palomar St & Wildomar Trail[1]	EB	N	8	143	✓	✓	✓													
1382	Mission Trail & Bundy Canyon Rd	NB	F	8	123	✓	✓	✓				✓	✓		✓						✓
1277	Mission Trail & Corydon Rd	SB	F	8	92	✓	✓	✓				✓	✓		✓						✓
1342	Inland Valley Dr & Prielipp Rd	SB	N	23	86	✓	✓	✓	✓	✓			✓	✓	✓		✓			✓	✓
1279	Mission Trail & Canyon Dr	SB	N	8	82	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓				✓
1291	Hidden Springs Rd & Catt Rd	NB	N	23	81	✓	✓	✓	✓	✓		✓	✓		✓						✓
1383	Mission Trail & Waite St	NB	F	8	75	✓	✓	✓	✓	✓			✓								
1272	Mission Trail & Hidden Trail	SB	F	8	71	✓	✓	✓				✓	✓		✓		✓				✓
1384	Mission Trail & Lewis St	NB	F	8	70	✓	✓	✓					✓								
2516	Elizabeth Ln & Prielipp Rd	EB	F	23	58	✓	✓	✓				✓	✓		✓	✓					
1337	Wildomar Trail[2] & Clinton Keith Rd	EB	F	23	56	✓	✓	✓					✓	✓	✓	✓	✓				✓
1338	Inland Valley Dr @Hospital	NB	F	23	53	✓	✓	✓	✓	✓		✓	✓		✓	✓					
1339	Wildomar Trail[2] & Clinton Keith Rd	WB	F	23	47	✓	✓	✓	✓	✓			✓		✓	✓					✓
1381	Mission Trail & Canyon Dr	NB	F	8	47	✓	✓	✓	✓	✓			✓								✓
4628	Charles St & Catt Rd	WB	F	23	44		✓														
1289	Catt Rd & Hidden Springs Rd	EB	F	23	41	✓	✓	✓	✓	✓		✓			✓						
1387	Mission Trail & Sedco Blvd	NB	F	8	36	✓							✓								✓
4629	Catt Rd & Catt Rd	WB	N	23	36																
1374	Dunn St & Wildomar Trail[1]	EB	N	8	34	✓	✓	✓							✓		✓				
1377	Palomar St & Gruwell St	NB	N	8	31	✓	✓	✓	✓	✓		✓	✓		✓						✓
1386	Mission Trail & Olive St	NB	F	8	27	✓	✓	✓	✓	✓			✓								
1380	Mission Trail & Como St	NB	F	8	23	✓	✓	✓				✓	✓								

Table 4.11 Existing Amenities by Bus Stop

Stop ID	Intersection	Direction of Travel	Far Side/ Near Side (F/N)	Route	Average Daily Ridership	Sign and Pole	Route Designations	Transit Information	Schedule Display	Route Map	System Map	Red Curb	Seating	Passenger Shelter	ADA Compliant	Bus Pad	Extended Sidewalk	Digital Display	Bicycle Rack	Kiosk	Trash Receptacle
1286	Palomar St & S Pasadena St	SB	F	23	23	✓	✓	✓	✓	✓			✓		✓						
1385	Mission Trail & Vine St	NB	N	8	22	✓	✓	✓					✓								✓
1379	Mission Trail & Palomar St	WB	N	8	21	✓	✓	✓					✓								
1274	Mission Trail & Olive St	SB	N	8	20	✓	✓	✓					✓								
1281	Mission Trail & Palomar St	EB	F	8	17	✓	✓	✓				✓									
1388	Mission Trail & Elberta Rd	NB	N	8	17	✓	✓	✓					✓								
1295	Grand Ave & Gruwell St	NB	N	8	16	✓	✓	✓													
2522	Inland Valley Dr & Prielipp Rd	WB	N	23	15	✓	✓	✓	✓	✓		✓									
1278	Mission Trail & Bundy Canyon Rd	SB	N	8	14	✓	✓	✓					✓								
2524	Inland Valley Dr & Prielipp Rd	EB	F	23	14	✓	✓	✓				✓									
1293	Dunn St & Wildomar Trail[1]	WB	N	8	14	✓	✓	✓	✓	✓											
1294	Grand Ave & Wildomar Trail[1]	NB	F	8	14	✓	✓	✓													
1290	Palomar St & Catt Rd	NB	F	23	13	✓	✓	✓	✓	✓		✓									
1369	Grand Ave & Hixon St	SB	N	8	13	✓	✓	✓													
1299	Grand Ave & Sheila Ln	NB	N	8	12	✓	✓	✓													
1288	Palomar St & Catt Rd	EB	F	23	10	✓	✓	✓	✓	✓		✓									
1371	Grand Ave & Celeste Wy	SB	F	8	8	✓	✓	✓	✓	✓			✓								✓
1372	Grand Ave & Gruwell St	SB	N	8	8	✓	✓	✓													
1373	Grand Ave & Wildomar Trail[1]	SB	N	8	7	✓	✓	✓	✓	✓											
1276	Mission Trail & Lewis St	SB	F	8	6	✓	✓	✓					✓								
1378	Palomar St & Wesley St	NB	N	8	5	✓	✓	✓													
1273	Mission Trail & Sedco Blvd	SB	F	8	5	✓	✓	✓													
1368	Grand Ave & Batson Ln	SB	N	8	4	✓	✓	✓													
1275	Mission Trail & Vine St	SB	F	8	4	✓	✓	✓					✓								

Table 4.11 Existing Amenities by Bus Stop

Stop ID	Intersection	Direction of Travel	Far Side/ Near Side (F/N)	Route	Average Daily Ridership	Sign and Pole	Route Designations	Transit Information	Schedule Display	Route Map	System Map	Red Curb	Seating	Passenger Shelter	ADA Compliant	Bus Pad	Extended Sidewalk	Digital Display	Bicycle Rack	Kiosk	Trash Receptacle
1300	Grand Ave & Bryant St	NB	F	8	4	✓	✓	✓	✓	✓							✓				
1296	Grand Ave & Celeste Wy	NB	N	8	3	✓	✓	✓					✓								
1280	Mission Trail & Como St	SB	F	8	3	✓	✓	✓				✓									
1341	Palomar St & S Pasadena St	NB	N	23	2	✓	✓	✓					✓		✓						
1298	Grand Ave & Hixon St	NB	F	8	1	✓	✓	✓	✓	✓											
1287	Palomar St & Arnold Ln	SB	N	23	1	✓	✓	✓													
1370	Grand Ave & Wesley St	SB	F	8	1	✓	✓	✓					✓								
1297	Grand Ave & Wesley St	NB	N	8	1	✓	✓	✓													
1301	Grand Ave & Corydon Rd	NB	F	8	0	✓	✓	✓				✓	✓		✓						✓
1367	Grand Ave & Corydon Rd	SB	N	8	0	✓	✓	✓	✓	✓			✓								
1282	Palomar St & Wesley St	SB	N	8	0	✓	✓	✓					✓								
1340	Palomar St & Arnold Ln	NB	F	23	0	✓	✓	✓	✓	✓											
1283	Palomar St & Gruwell St	SB	N	8	0	✓	✓	✓													

Source: Riverside Transit Authority (2019)

[1] Formerly Central St.

[2] Formerly George Ave.

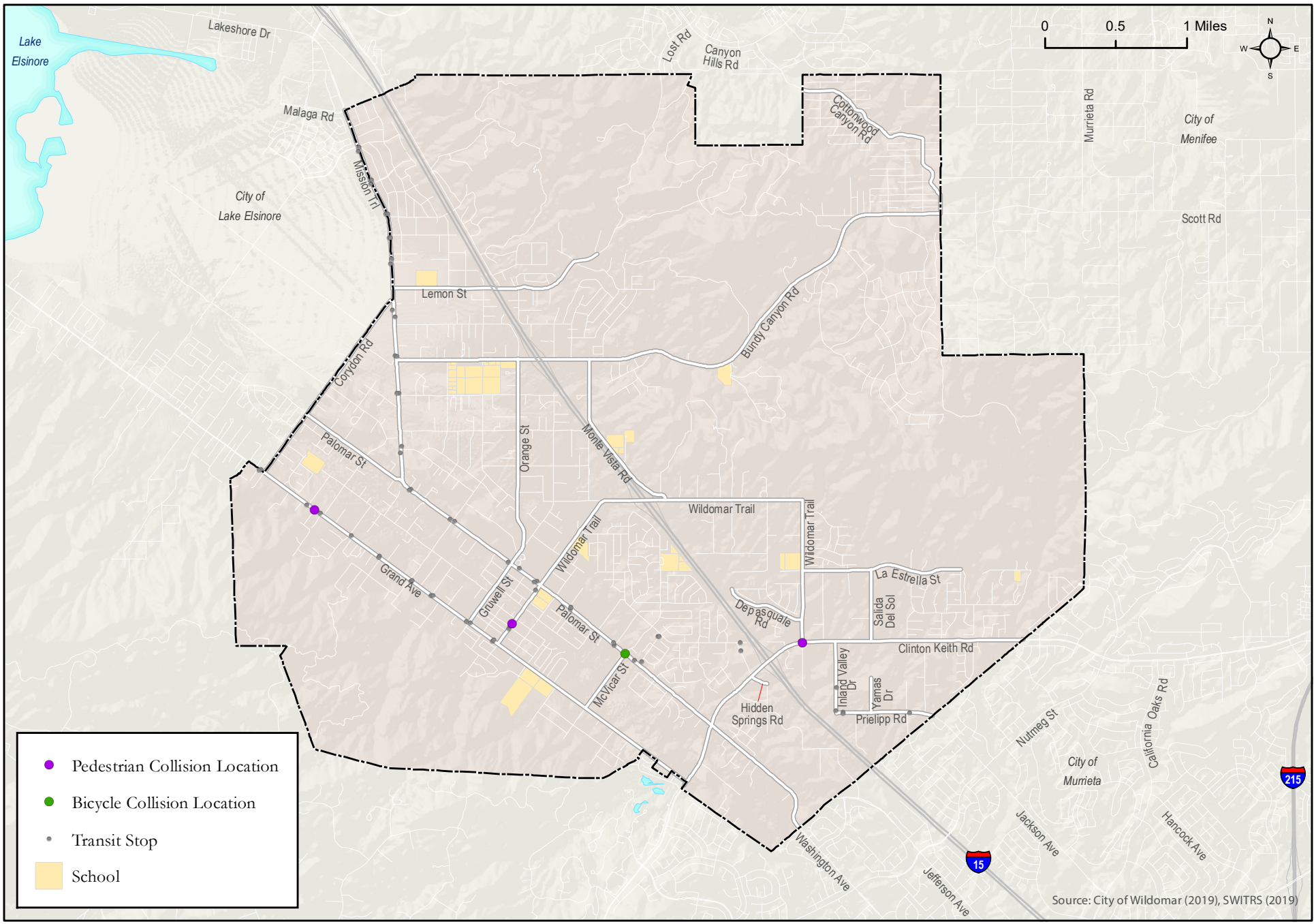

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Figure 4.27
Pedestrian and Bicycle-Involved Collisions within 500 Feet of Transit Stops

4.5 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. This section describes the key study roadways, intersections, and freeways that support Wildomar's vehicular mobility, including an assessment of physical characteristics, level of service conditions, and collisions.

Vehicular Demand

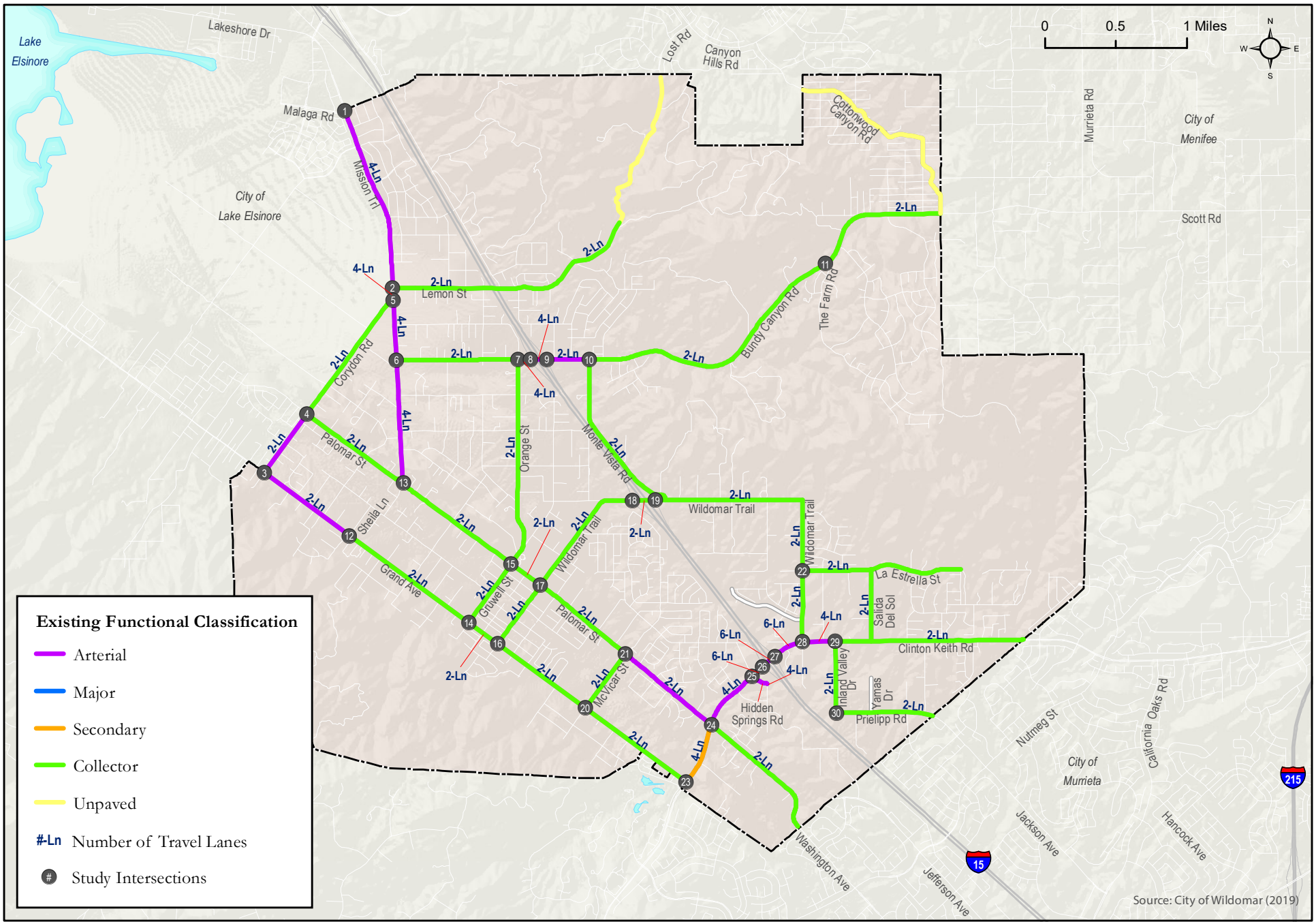
To assess the current demand on the vehicular system, weekday count data was collected throughout the City of Wildomar at 30 intersections (7-9 AM and 4-6 PM) and along 48 roadway segments (48-hour). The count sheets are provided in Appendix B. Roadway segments were counted on two days, with the higher volume utilized in a conservative analysis.

Both the existing average daily traffic volumes for study roadway segments and AM/PM peak hour turning movements are displayed in a later section entitled "Vehicular Facility Quality", where traffic operations are discussed.

Vehicular Network Connectivity

Figure 4.28 presents the existing functional classifications for study area roadways based on the City of Wildomar's standards. A description of each study roadway is in provided Table 4.12, including number of travel lanes, median type, posted speed limit, parking availability, presence of sidewalks, and bicycle facilities. Note that the 48 roadway segments identified for data collection were further broken down into 56 segments and this is due to variation in the number of travel lanes within a counted segment.

Existing intersection configurations are displayed in Figure 4.29.



Wildomar Mobility Plan

Figure 4.28
Existing Functional Classifications

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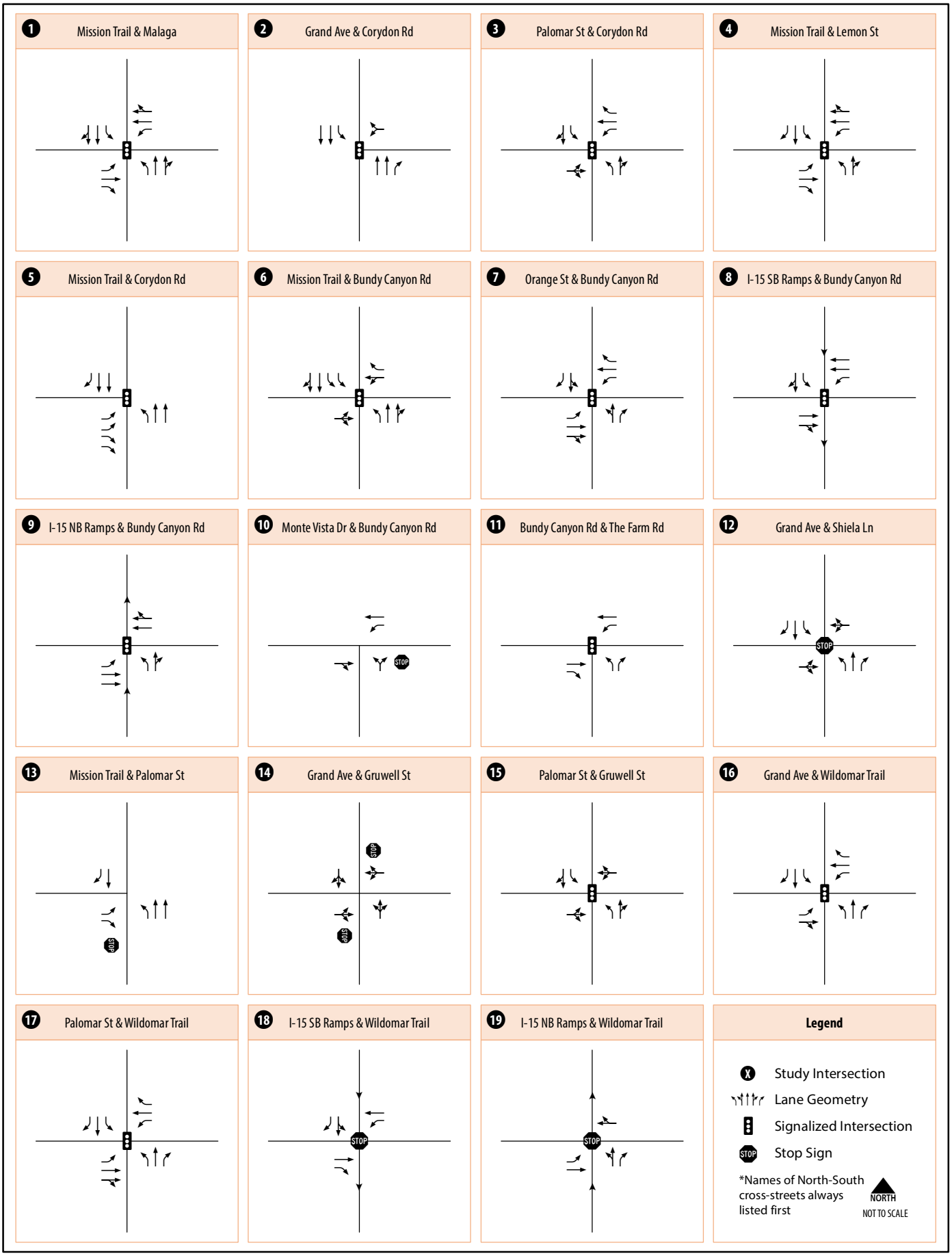

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Figure 4.29
Existing Intersection Geometrics
(Intersections 1-19)

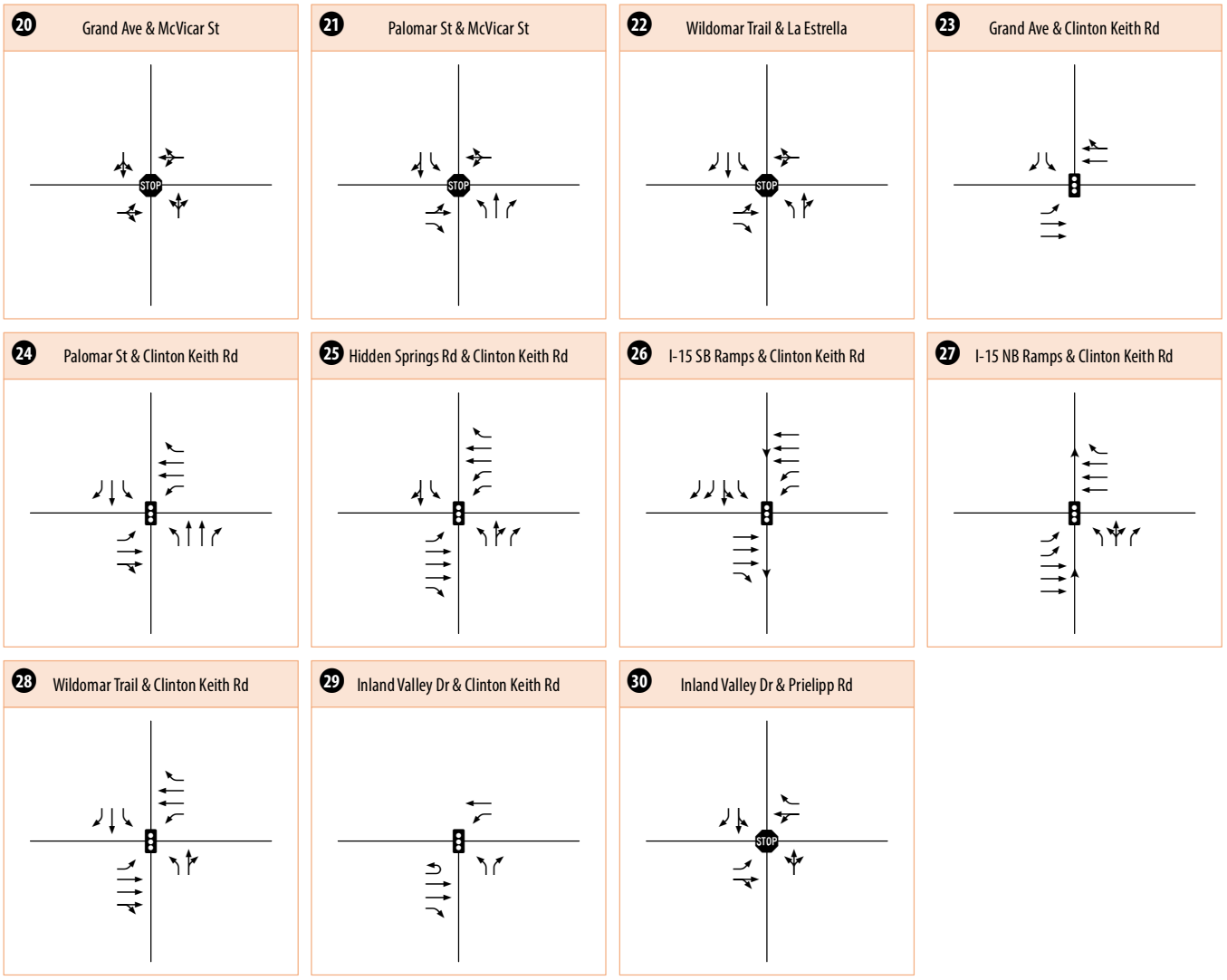

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Figure 4.29
Existing Intersection Geometrics
(Intersections 20-30)

Table 4.12 Roadway Segment Descriptions

No.	Roadway	From	To	Functional Classification	Median Type	Posted Speed (mph)	On-Street Parking	Sidewalks	Bicycle Facilities
1	Corydon Road	Grand Avenue	Palomar Street	2-Ln	None	45	Prohibited	Non-Contiguous	None
2	Corydon Road	Palomar Street	Mission Trail	2-Ln	None	45	Prohibited	Non-Contiguous	None
3	Lemon Street	Mission Trail	I-15	2-Ln	None	25	Prohibited	Non-Contiguous	None
4	Lemon Street	I-15	Lost Road	2-Ln	None	-	Prohibited	Non-Contiguous	None
5	Bundy Canyon Road	Mission Trail	Orange Street	2-Ln	None	45	Prohibited	Non-Contiguous	None
6	Bundy Canyon Road	Orange Street	I-15 SB Ramps	4-Ln	Striped	45	Prohibited	Contiguous	None
7	Bundy Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	Raised	40	Prohibited	Contiguous	None
8	Bundy Canyon Road	I-15 NB Ramps	Monte Vista Road	2-Ln	CLTL	40	Prohibited	Non-Contiguous	None
9	Bundy Canyon Road	Monte Vista Road	The Farm Road	2-Ln	None	40	Prohibited	Mostly Non-Contiguous	None
10	Bundy Canyon Road	The Farm Road	City Limit	2-Ln	None	40	Prohibited	Mostly Non-Contiguous	None
11	Gruwell Street	Grand Avenue	Palomar Street	2-Ln	None	40	Prohibited	Mostly Non-Contiguous	None
12	Wildomar Trail[1]	Grand Avenue	Palomar Street	2-Ln	None	40	Prohibited	Non-Contiguous	None
13	Wildomar Trail[1]	Palomar Street	I-15 SB Ramps	2-Ln	None	40	Prohibited	Non-Contiguous	None
14	Wildomar Trail[2]	I-15 SB Ramps	I-15 NB Ramps	2-Ln	None	45	Prohibited	Non-Contiguous	None
15	Wildomar Trail[2]	I-15 NB Ramps	Wildomar Trail[3]	2-Ln	None	45	Prohibited	Non-Contiguous	None
16	La Estrella Street	Wildomar Trail[3]	Eastern Terminus	2-Ln	None	40	Prohibited	EB: Non-Contiguous WB: Contiguous	None
17	McVicar Street	Grand Avenue	Palomar Street	2-Ln	None	-	Prohibited	Non-Contiguous	None
18	Clinton Keith Road	Grand Avenue	Palomar Street	4-Ln	None	45	Prohibited	Non-Contiguous	Class II
19	Clinton Keith Road	Palomar Street	Hidden Springs Road	4-Ln	Raised	35	Prohibited	Non-Contiguous	Class IV
20	Clinton Keith Road	Hidden Springs Road	I-15 SB Ramps	6-Ln	Striped	-	Prohibited	EB: Mostly Contiguous WB: Non-Contiguous	Class II
21	Clinton Keith Road	I-15 SB Ramps	I-15 NB Ramps	6-Ln	Striped	-	Prohibited	Contiguous	None
22	Clinton Keith Road	I-15 NB Ramps	Wildomar Trail[4]	6-Ln	Raised	35	Prohibited	Contiguous	Class II
23	Clinton Keith Road	Wildomar Trail[4]	Inland Valley Drive	4-Ln	Raised	35	Prohibited	EB: Contiguous WB: Non-Contiguous	None

Table 4.12 Roadway Segment Descriptions

No.	Roadway	From	To	Functional Classification	Median Type	Posted Speed (mph)	On-Street Parking	Sidewalks	Bicycle Facilities
24	Clinton Keith Road	Inland Valley Drive	City Limit	2-Ln	None	45	Prohibited	Non-Contiguous	None
25	Prielipp Road	Inland Valley Drive	City Limit	2-Ln	None	40	Parallel (Intermittent)	Non-Contiguous	None
26	Grand Avenue	Corydon Road	Sheila Lane	2-Ln	CLTL	50	Prohibited	Non-Contiguous	Class II (Buffered)
27	Grand Avenue	Sheila Lane	Gruwell Street	2-Ln	None	50	Prohibited	Non-Contiguous	Class II (Buffered)
28	Grand Avenue	Gruwell Street	Wildomar Trail[1]	2-Ln	None	40	Prohibited	Non-Contiguous	Class II (Buffered)
29	Grand Avenue	Wildomar Trail[1]	McVicar Street	2-Ln	None	40	Prohibited	Non-Contiguous	Class II (Buffered)
30	Grand Avenue	McVicar Street	Clinton Keith Road	2-Ln	None	45	Prohibited	Non-Contiguous	Class II (Buffered)
31	Palomar Street	Corydon Road	Mission Trail	2-Ln	None	35	Prohibited	Non-Contiguous	None
32	Palomar Street	Mission Trail	Orange Street/Gruwell Street	2-Ln	None	50	Prohibited	Non-Contiguous	None
33	Palomar Street	Orange Street/Gruwell Street	Wildomar Trail[1]	2-Ln	None	25	Prohibited	Non-Contiguous	None
34	Palomar Street	Wildomar Trail[1]	McVicar Street	2-Ln	None	50	Prohibited	Non-Contiguous	None
35	Palomar Street	McVicar Street	Clinton Keith Road	2-Ln	None	50	Prohibited	EB: Contiguous WB: Non-Contiguous	None
36	Palomar Street	Clinton Keith Road	City Limit	2-Ln	None	45	Prohibited	Non-Contiguous	None
37	Mission Trail	City Limit	Lemon Street	4-Ln	Striped / CLTL	50	Prohibited	Non-Contiguous	None
38	Mission Trail	Lemon Street	Corydon Road	4-Ln	None	50	Prohibited	Non-Contiguous	None
39	Mission Trail	Corydon Road	Bundy Canyon Road	4-Ln	CLTL	50	Prohibited	Non-Contiguous	None
40	Mission Trail	Bundy Canyon Road	Palomar Street	4-Ln	CLTL	50	Prohibited	Non-Contiguous	None
41	Orange Street	Bundy Canyon Road	Palomar Street	2-Ln	None	40	Prohibited	Non-Contiguous	None

Table 4.12 Roadway Segment Descriptions

No.	Roadway	From	To	Functional Classification	Median Type	Posted Speed (mph)	On-Street Parking	Sidewalks	Bicycle Facilities
42	Monte Vista Road	Bundy Canyon Road	Wildomar Trail[2]	2-Ln	None	55	Prohibited	Non-Contiguous	None
43	Hidden Springs Road	Clinton Keith Road	South of Clinton Keith Road	4-Ln	CLTL	-	Prohibited	Contiguous	None
44	Wildomar Trail[3]	Wildomar Trail[1]	La Estrella Street	2-Ln	None	40	Prohibited	NB: Contiguous SB: Non-Contiguous	None
45	Wildomar Trail[4]	La Estrella Street	Clinton Keith Road	2-Ln	None	35	Prohibited	NB: Non-Contiguous SB: Contiguous	None
46	Inland Valley Drive	Clinton Keith Road	Prielipp Road	2-Ln	CLTL	-	Parallel (Intermittent)	Non-Contiguous	None
47	Salida Del Sol	La Estrella Street	Clinton Keith Road	2-Ln	None	-	Prohibited	Non-Contiguous	None
48	Cottonwood Canyon Road	City Limit	Bundy Canyon Road	2-Ln Unpaved	None	-	Prohibited	Non-Contiguous	None

Notes:
CLTL = Center left-turn lane.
[1] Formerly Central Street.
[2] Formerly Baxter Road.
[3] Formerly Porras Road.
[4] Formerly George Avenue.

Vehicular Facility Quality

Roadway Segment Level of Service Analysis

Figure 4.30 displays existing average daily traffic volumes for study roadway segments and associated level of service. Table 4.13 presents the functional classification for each roadway, substandard capacity threshold, highest daily traffic volume, volume to capacity ratio and resulting level of service.

As shown, 8 out of the 48 study segments currently operate at a substandard level of service (LOS E or F), including the following:

- Corydon Road[5], from Palomar Street to Mission Trail (LOS F)
- Bundy Canyon Road, from I-15 NB Ramps to Monte Vista Road (LOS F)
- Bundy Canyon Road, from Monte Vista Road to The Farm Road (LOS F)
- Bundy Canyon Road, from The Farm Road to City Limit (LOS F)
- Wildomar Trail (formerly Central Street), from Palomar Street to I-15 SB Ramps (LOS F)
- Clinton Keith Road, from Inland Valley Drive to City Limit (LOS F)
- Palomar Street, from Orange Street/Gruwell Street to Wildomar Trail (formerly Central Street) (LOS E)
- Inland Valley Drive, from Clinton Keith Road to Prielipp Road (LOS E)

[5] The west/north side of this segment is within the City of Lake Elsinore's jurisdiction.

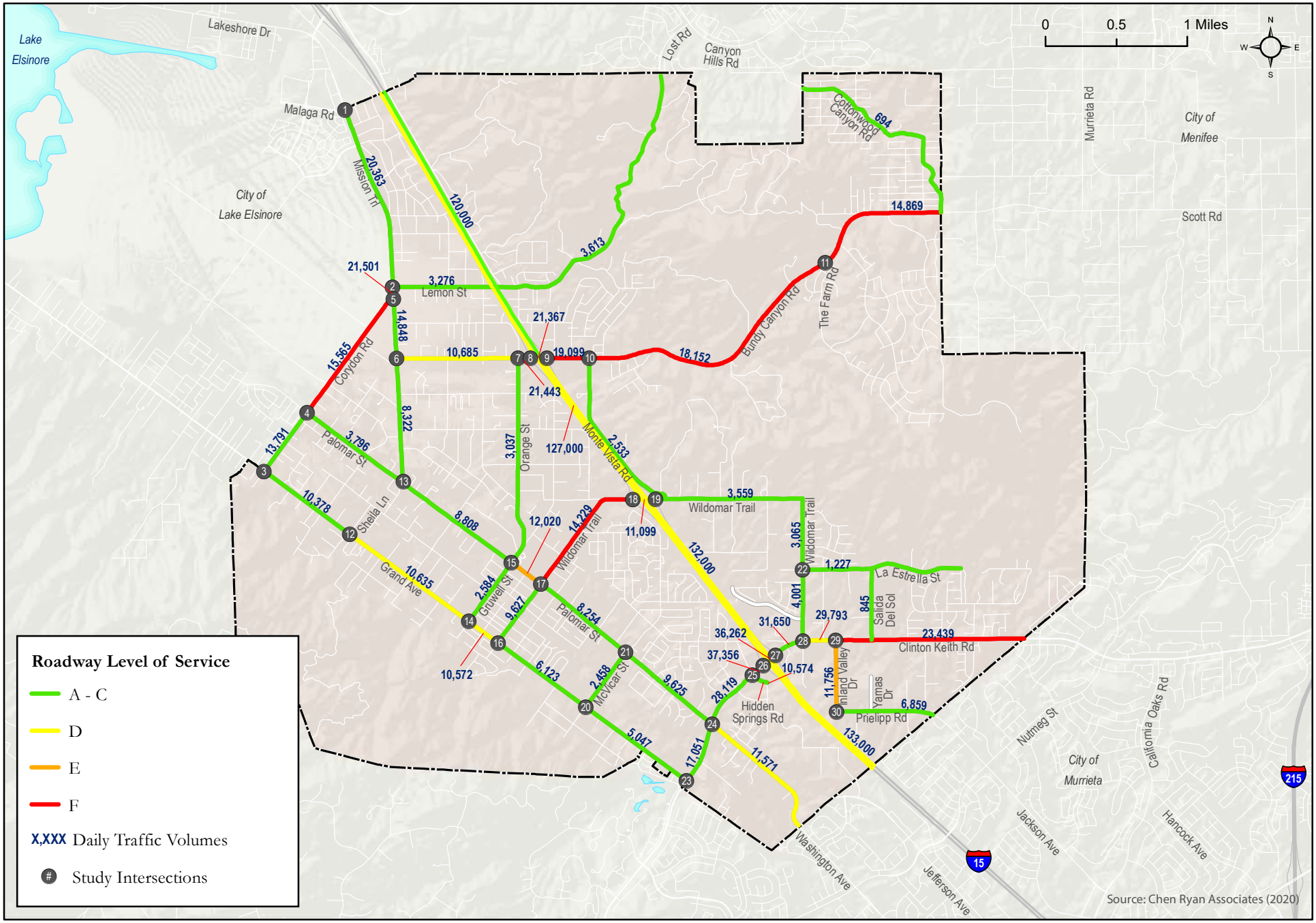

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Figure 4.30
Daily Traffic Volumes and Roadway Level of Service

Table 4.13 Existing Roadway Level of Service

Roadway	Segment	Count Dates	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS
Corydon Road	Grand Avenue to Palomar Street	9/24/2019 & 9/25/2019	2-Lane Arterial	18,000	13,791	0.766	C
Corydon Road	Palomar Street to Mission Trail	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	15,565	1.197	**F**
Lemon Street	Mission Trail to I-15	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	3,276	0.252	C
Lemon Street	I-15 to Lost Road	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	3,613	0.278	C
Bundy Canyon Road	Mission Trail to Orange Street	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	10,685	0.822	D
Bundy Canyon Road	Orange Street to I-15 SB Ramps	9/25/2019 & 9/26/2019	4-Lane Urban Arterial	35,900	21,443	0.597	C
Bundy Canyon Road	I-15 SB Ramps to I-15 NB Ramps	9/25/2019 & 9/26/2019	4-Lane Urban Arterial	35,900	21,367	0.595	C
Bundy Canyon Road	I-15 NB Ramps to Monte Vista Road	9/25/2019 & 9/26/2019	2-Lane Arterial	18,000	19,099	1.061	**F**
Bundy Canyon Road	Monte Vista Road to The Farm Road	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	18,152	1.396	**F**
Bundy Canyon Road	The Farm Road to City Limit	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	14,869	1.144	**F**
Gruwell Street	Grand Avenue to Palomar Street	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	2,584	0.199	C
Wildomar Trail[1]	Grand Avenue to Palomar Street	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	9,627	0.741	C
Wildomar Trail[1]	Palomar Street to I-15 SB Ramps	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	14,229	1.095	**F**
Wildomar Trail[2]	I-15 SB Ramps to I-15 NB Ramps	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	11,099	0.854	D
Wildomar Trail[2]	I-15 NB Ramps to Wildomar Trail[3]	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	3,559	0.274	C
La Estrella Street	Wildomar Trail[3] to Eastern Terminus	10/1/2019 & 10/2/2019	2-Lane Collector	13,000	1,227	0.094	C
McVicar Street	Grand Avenue to Palomar Street	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	2,458	0.189	C
Clinton Keith Road	Grand Avenue to Palomar Street	9/25/2019 & 9/26/2019	4-Lane Secondary	25,900	17,051	0.658	C
Clinton Keith Road	Palomar Street to Hidden Springs Road	10/1/2019 & 10/2/2019	4-Lane Urban Arterial	35,900	28,119	0.783	C
Clinton Keith Road	Hidden Springs Road to I-15 SB Ramps	9/25/2019 & 9/26/2019	6-Lane Urban Arterial	53,850	37,356	0.694	C
Clinton Keith Road	I-15 SB Ramps to I-15 NB Ramps	9/25/2019 & 9/26/2019	6-Lane Urban Arterial	53,850	36,262	0.673	C
Clinton Keith Road	I-15 NB Ramps to Wildomar Trail[4]	9/25/2019 & 9/26/2019	6-Lane Urban Arterial	53,850	31,650	0.588	C
Clinton Keith Road	Wildomar Trail[4] to Inland Valley Drive	9/25/2019 & 9/26/2019	4-Lane Urban Arterial	35,900	29,793	0.830	D
Clinton Keith Road	Inland Valley Drive to City Limit	10/1/2019 & 10/2/2019	2-Lane Collector	13,000	23,439	1.803	**F**
Prielipp Road	Inland Valley Drive to City Limit	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	6,859	0.528	C
Grand Avenue	Corydon Road to Sheila Lane	9/24/2019 & 9/25/2019	2-Lane Arterial	18,000	10,378	0.577	C
Grand Avenue	Sheila Lane to Gruwell Street	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	10,635	0.818	D
Grand Avenue	Gruwell Street to Wildomar Trail[1]	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	10,572	0.813	D

Table 4.13 Existing Roadway Level of Service

Roadway	Segment	Count Dates	Functional Classification	Capacity (LOS E)	ADT	V/C	LOS
Grand Avenue	Wildomar Trail[1] to McVicar Street	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	6,123	0.471	C
Grand Avenue	McVicar Street to Clinton Keith Road	10/9/2019 & 10/10/2019	2-Lane Collector	13,000	5,047	0.388	C
Palomar Street	Corydon Road to Mission Trail	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	3,796	0.292	C
Palomar Street	Mission Trail to Orange Street/Gruwell Street	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	8,808	0.678	C
Palomar Street	Orange Street/Gruwell Street to Wildomar Trail[1]	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	12,020	0.925	**E**
Palomar Street	Wildomar Trail[1] to McVicar Street	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	8,254	0.635	C
Palomar Street	McVicar Street to Clinton Keith Road	9/24/2019 & 9/25/2019	2-Lane Arterial	18,000	9,625	0.535	C
Palomar Street	Clinton Keith Road to City Limit	9/24/2019 & 9/25/2019	2-Lane Collector	13,000	11,571	0.890	D
Mission Trail	City Limit to Lemon Street	9/24/2019 & 9/25/2019	4-Lane Arterial	35,900	20,363	0.567	C
Mission Trail	Lemon Street to Corydon Road	10/9/2019 & 10/10/2019	4-Lane Major	34,100	21,501	0.631	C
Mission Trail	Corydon Road to Bundy Canyon Road	9/24/2019 & 9/25/2019	4-Lane Arterial	35,900	14,848	0.414	C
Mission Trail	Bundy Canyon Road to Palomar Street	9/24/2019 & 9/25/2019	4-Lane Arterial	35,900	8,322	0.232	C
Orange Street	Bundy Canyon Road to Palomar Street	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	3,037	0.234	C
Monte Vista Road	Bundy Canyon Road to Wildomar Trail[2]	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	2,533	0.195	C
Hidden Springs Road	Clinton Keith Road to South of Clinton Keith Road	9/25/2019 & 9/26/2019	4-Lane Arterial	35,900	10,574	0.295	C
Wildomar Trail[3]	Wildomar Trail[1] to La Estrella Street	10/9/2019 & 10/10/2019	2-Lane Collector	13,000	3,065	0.236	C
Wildomar Trail[4]	La Estrella Street to Clinton Keith Road	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	4,001	0.308	C
Inland Valley Drive	Clinton Keith Road to Prielipp Road	9/25/2019 & 9/26/2019	2-Lane Collector	13,000	11,756	0.904	**E**
Salida Del Sol	La Estrella Street to Clinton Keith Road	10/1/2019 & 10/2/2019	2-Lane Collector	13,000	845	0.065	C
Cottonwood Canyon Road	City Limit to Bundy Canyon Road	9/25/2019 & 9/26/2019	Unpaved Road	N/A	694		C or better

Source: Counts Unlimited, Inc. (September-October 2019)

Note:
Bold letter indicates substandard LOS E and F.
[1] Formerly Central Street.
[2] Formerly Baxter Road.
[3] Formerly Porras Road.
[4] Formerly George Avenue.

Intersection Level of Service Analysis

An analysis of the peak vehicular traffic operations was conducted for the 30 identified study intersections, as described in Section 3.1. **Figure 4.31** displays the existing AM/PM peak hour turning movement, while **Figure 4.32** presents the intersection level of service analysis results.

Table 4.14 identifies the traffic control type, provides the intersection level of service results, and presents the average intersection delay for AM and PM peak hours for all study intersections. Intersection level of service calculation worksheets are provided in **Appendix E.**

The following 6 intersections were found to operate at substandard (LOS E or F) levels of service during the AM and/or PM peak hour:

- #14 Grand Avenue & Gruwell Street – LOS F during the AM peak hour
- #18 I-15 SB Ramps & Wildomar Trail (formerly Baxter Road) – LOS E during the PM peak hour
- #19 I-15 NB Ramps & Wildomar Trail (formerly Baxter Road) – LOS E during the PM peak hour
- #21 McVicar Street & Palomar Street – LOS E during the AM peak hour
- #24 Palomar Street & Clinton Keith Road – LOS E during the AM peak hour
- #25 Hidden Springs Road & Clinton Keith Road – LOS E during the AM peak hour

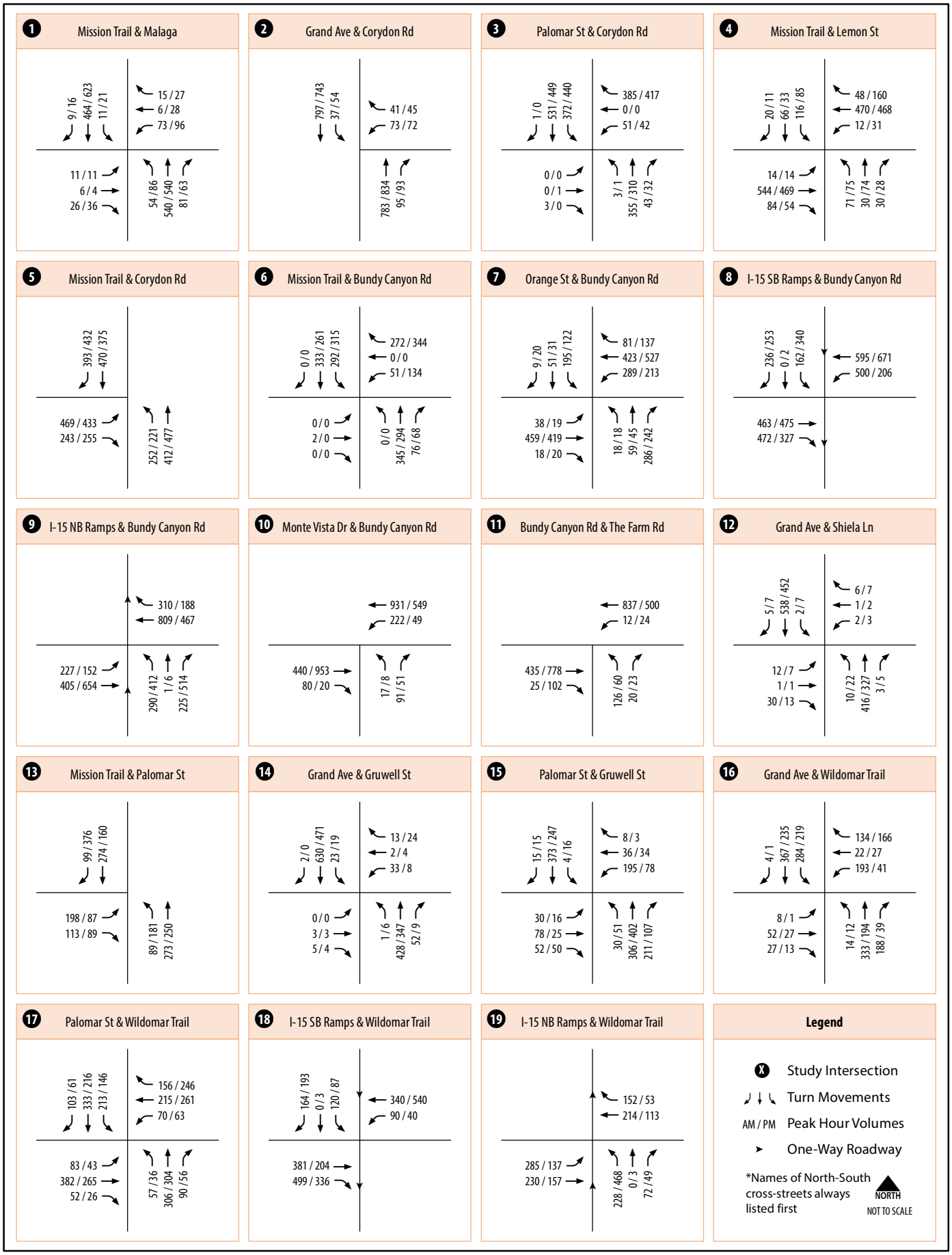

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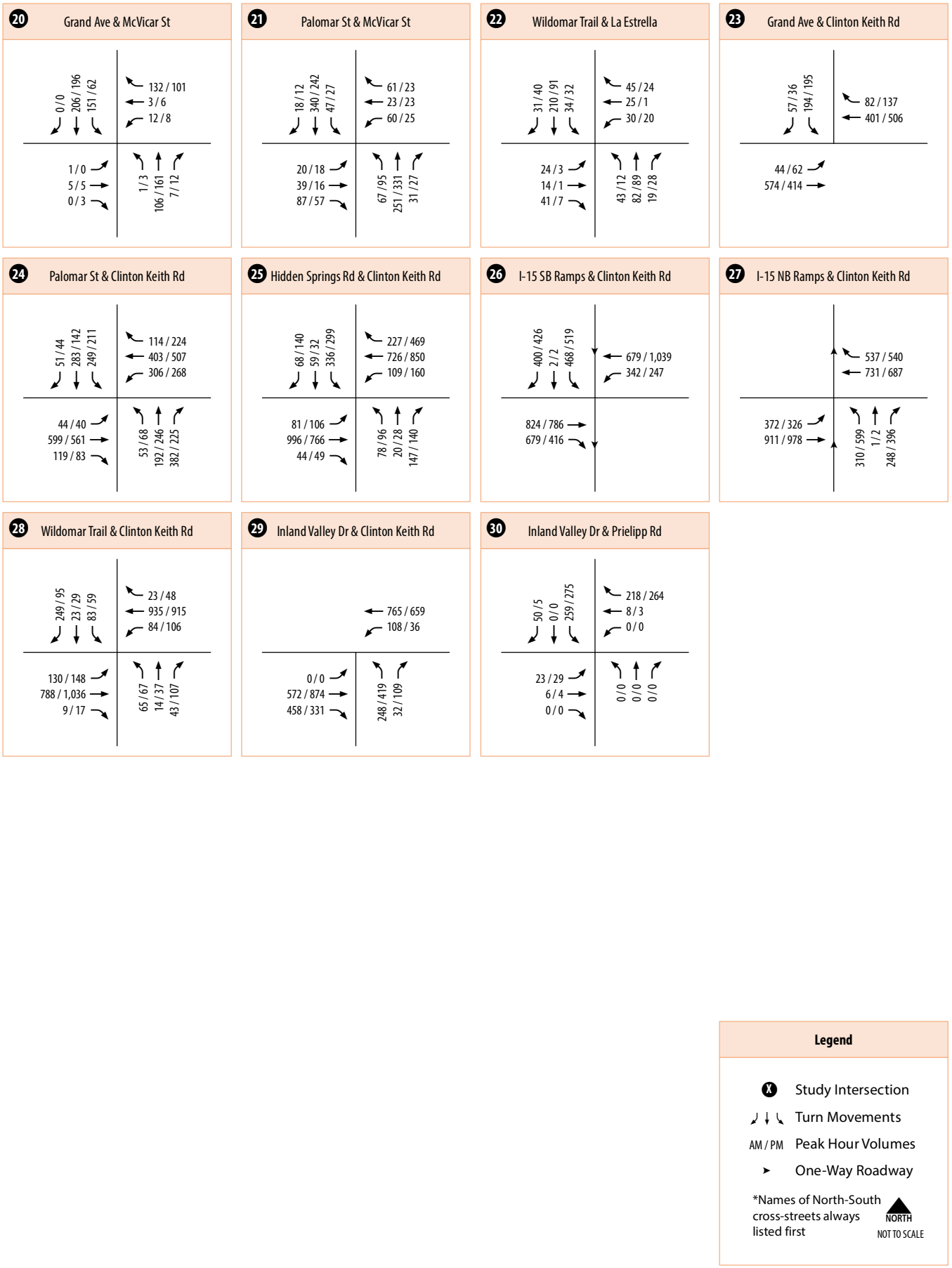
Figure 4.31
Traffic Volumes - Existing Conditions
(Intersections 1-19)



Wildomar Mobility Plan

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Figure 4.31
Traffic Volumes - Existing Conditions
(Intersections 20-30)

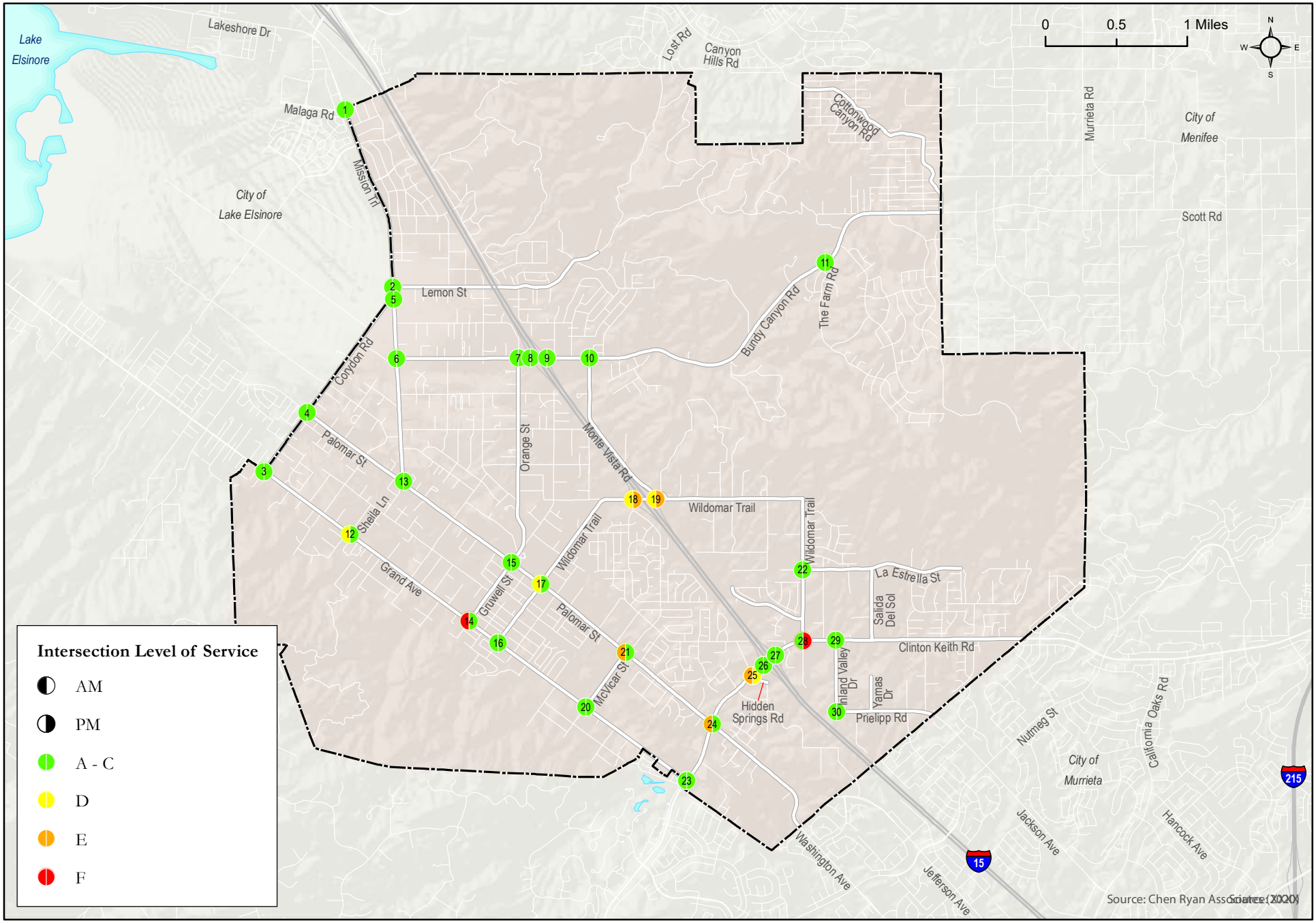

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Figure 4.32
Existing AM/PM Intersection Level of Service

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Table 4.14 Existing Intersection Level of Service

ID	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1	Mission Trail & Malaga Road	Signal	10.8	B	12.1	B
2	Mission Trail & Lemon Street	Signal	6.8	A	7.5	A
3	Grand Avenue & Corydon Street/Corydon Road	Signal	21.3	C	18.2	B
4	Corydon Road & Palomar Street	Signal	11.5	B	11.1	B
5	Mission Trail & Corydon Road	Signal	15.9	B	13.2	B
6	Mission Trail & Driveway/Bundy Canyon Road	Signal	17.2	B	12.4	B
7	Orange Street & Bundy Canyon Road	Signal	18.7	B	13.8	B
8	I-15 SB Ramps & Bundy Canyon Road	Signal	33.4	C	15.2	B
9	I-15 NB Ramps & Bundy Canyon Road	Signal	23.2	C	21.8	C
10	Monte Vista Drive & Bundy Canyon Road	SSSC	19.3	A	22.0	C
11	The Farm Road & Bundy Canyon Road	Signal	9.6	A	8.8	A
12	Grand Avenue & Sheila Lane	AWSC	33.7	D	17.3	C
13	Palomar Street & Mission Trail	SSSC	16.0	C	13.0	B
14	Grand Avenue & Gruwell Street	SSSC	67.9	**F**	15.8	C
15	Palomar Street & Gruwell Street	Signal	11.6	B	7.7	A
16	Grand Avenue & Wildomar Trail[1]	Signal	33.9	C	14.8	B
17	Palomar Street & Wildomar Trail[1]	Signal	37.4	D	33.3	C
18	I-15 SB Ramps & Wildomar Trail[2]	AWSC	30.5	D	35.2	**E**
19	I-15 NB Ramps & Wildomar Trail[2]	AWSC	26.1	D	39.5	**E**
20	Grand Avenue & McVicar Street	AWSC	11.9	B	9.6	A
21	McVicar Street & Palomar Street	AWSC	49.3	**E**	14.7	B
22	Wildomar Trail[3] & La Estrella Street	AWSC	14.3	B	8.6	A
23	Clinton Keith Road & Grand Avenue	Signal	9.4	A	14.1	B
24	Palomar Street & Clinton Keith Road	Signal	61.5	**E**	31.9	C
25	Hidden Springs Road & Clinton Keith Road	Signal	72.2	**E**	48.9	D
26	I-15 SB Ramps & Clinton Keith Road	Signal	27.0	C	20.5	C
27	I-15 NB Ramps & Clinton Keith Road	Signal	21.6	C	26.8	C
28	Wildomar Trail[3] & Clinton Keith Road	Signal	19.4	B	30.5	C
29	Inland Valley Drive & Clinton Keith Road	Signal	20.8	C	37.8	D
30	Driveway/Inland Valley Drive & Prielipp Road	AWSC	11.3	B	12.6	B

Source: Count Unlimited, Inc. (2019)

Notes:
Bold letter indicates substandard LOS E or F.
AWSC = All-way stop controlled. For AWSC intersections, the delay shown is the average delay experienced at all of the approaches.
SSSC = Side-street stop controlled. For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.
[1] Formerly Central Street.
[2] Formerly Baxter Road.
[3] Formerly Oak Creek Mall/George Avenue.

Freeway Segment Level of Service Analysis

Interstate 15 (I-15) runs through the City of Wildomar, carrying significant traffic volumes while providing regional mobility. A description of Interstate 15 is provided, within the City of Wildomar study area context, followed by an operational analysis of freeway segments.

Interstate 15

I-15 is a north-south facility running from San Diego County to San Bernardino County. The freeway is maintained and operated by Caltrans. In the City of Wildomar, I-15 has six mixed-flow/general purpose lanes (3 northbound lanes, 3 southbound lanes) and zero auxiliary lanes within the study area. Within the City of Wildomar, I-15 is accessible at Clinton Keith Road, Wildomar Trail (formerly Baxter Road), and Bundy Canyon Road. In 2017, I-15 carried between 120,000 and 133,000 AADT along segments within the City of Wildomar study area.

Table 4.15 presents freeway characteristics and the level of service analysis results for segments within the vicinity of the City of Wildomar during AM and PM peak periods, respectively. Data was obtained from Caltrans and is representative of year 2017 and is provided in Appendix F. As shown, all mainline freeway segments currently operate at LOS D or better under existing conditions.

Table 4.15 Freeway Segment Level of Service Results – Existing Conditions

Freeway	Segment	Peak Hour	Direction	Lanes[1]	D[2]	K[3]	HVF[4]	AADT	Peak Hr. Volume	Speed	Density	LOS
I-15	California Oaks Road to Clinton Keith Road	AM	NB	3M	39.07%	6.65%	8.70%	133,000	3,456	71.0	18.6	C
			SB	3M	60.93%	6.65%	8.70%	133,000	5,389	61.8	33.3	D
		PM	NB	3M	56.59%	6.59%	8.70%	133,000	4,960	65.0	29.1	D
			SB	3M	43.41%	6.59%	8.70%	133,000	3,805	70.0	20.7	C
	Clinton Keith Road to Wildomar Trail[5]	AM	NB	3M	39.07%	6.65%	8.70%	132,000	3,430	71.8	18.2	C
			SB	3M	60.93%	6.65%	8.70%	132,000	5,348	62.4	32.7	D
		PM	NB	3M	56.59%	6.59%	8.70%	132,000	4,923	65.5	28.7	D
			SB	3M	43.41%	6.59%	8.70%	132,000	3,776	71.0	20.3	C
	Wildomar Trail[5] to Bundy Canyon Road	AM	NB	3M	39.07%	6.65%	8.70%	127,000	3,300	72.0	17.5	B
			SB	3M	60.93%	6.65%	8.70%	127,000	5,146	64.0	30.7	D
		PM	NB	3M	56.59%	6.59%	8.70%	127,000	4,736	66.7	27.1	D
			SB	3M	43.41%	6.59%	8.70%	127,000	3,633	71.3	19.4	C
	Bundy Canyon Road to Diamond Drive/Railroad Canyon Road	AM	NB	3M	39.07%	6.65%	8.70%	120,000	3,118	71.7	16.6	B
			SB	3M	60.93%	6.65%	8.70%	120,000	4,862	65.7	28.2	D
		PM	NB	3M	56.59%	6.59%	8.70%	120,000	4,475	67.9	25.1	C
			SB	3M	43.41%	6.59%	8.70%	120,000	3,433	71.3	18.4	C

Source: Caltrans

Notes:
[1] M = Mainline.
[2] Directional Split.
[3] Peak Hour Percentage.
[4] Heavy Vehicle Factor.
[5] Formerly Baxter Road.

Vehicular Safety

Collision data can be used to identify potential deficiencies or safety issues related to vehicular travel. The collision review draws from 5 years of data (October 31, 2014 – October 31, 2019) obtained from the SWITRS and the City of Wildomar's collision database (Crossroads). Figure 4.33 displays the vehicular collisions; these are collisions between automobiles. A total of 696 vehicular collisions occurred during the 5-year period.

The top five corridors, representing over 55% of the total vehicular collisions, are shown in Table 4.16. The highest vehicular crash locations overlap with pedestrian and bicycle travel modes. 24% percent of pedestrian collisions occurred on Bundy Canyon Road. The top three corridors for bicycle collisions are Clinton Keith Road, Mission Trail and Palomar Street.

Table 4.16 Top Five Corridors – Automobile Collisions

Locations	Number of Collisions
Bundy Canyon	129
Clinton Keith Road	100
Mission Trail	74
Palomar Street	56
Grand Avenue	41

Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

The intersections with 10 or more vehicle collisions are list in Table 4.17.

Table 4.17 Intersections – Automobile Collisions

Locations	Number of Collisions
Clinton Keith Rd & Wildomar Trail (formerly George Ave)	15
Clinton Keith Rd & Hidden Springs	13
Bundy Canyon Rd & Orange St	11
Palomar St & Gruwell St	11
Clinton Keith Rd & Wildomar Trail (formerly Oak Creek Mall/George Ave)	11
Bundy Canyon Rd & Harvest Way	11

Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

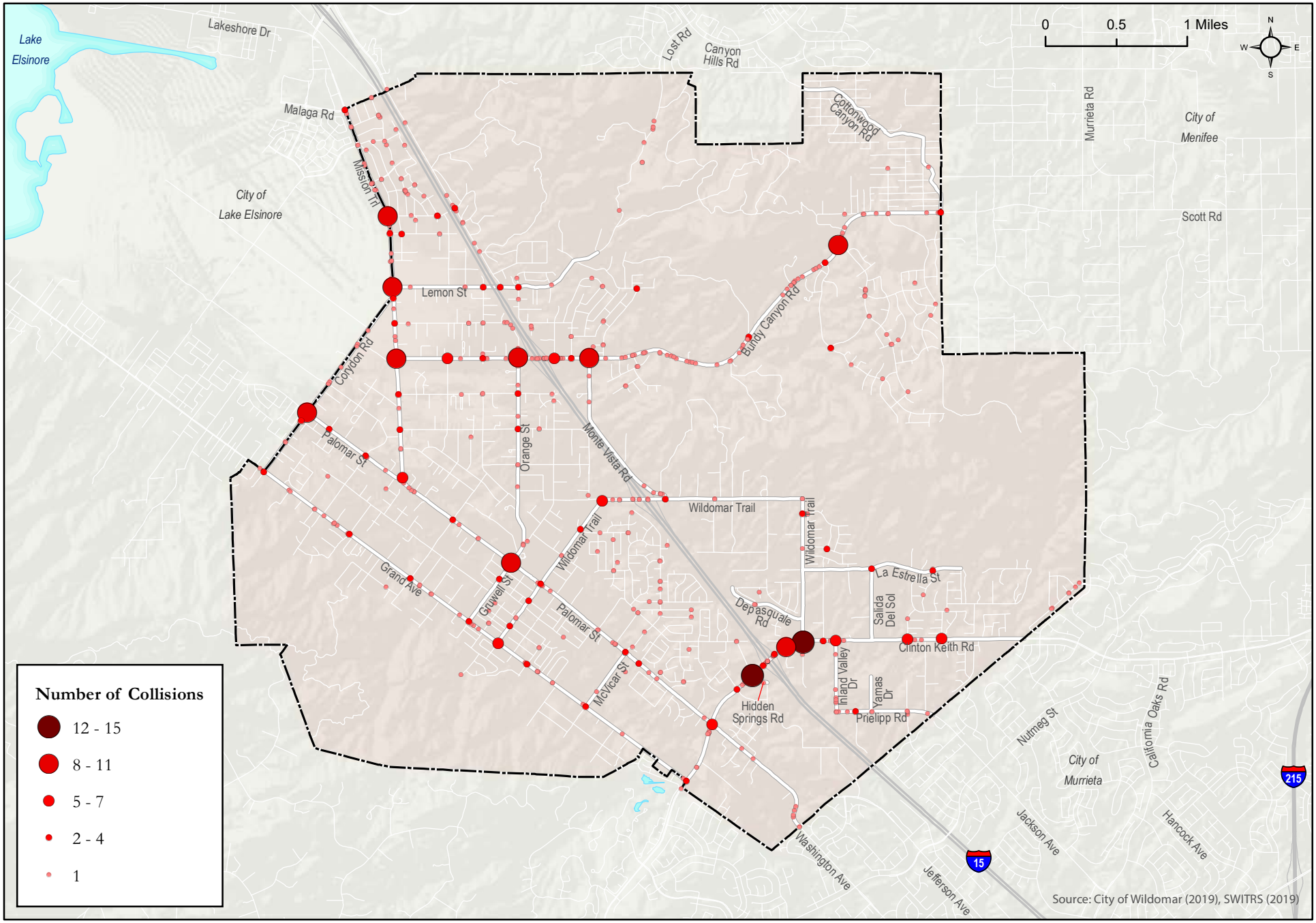

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Figure 4.33
Automobile Collisions (October 2014 - October 2019)

Table 4.18 summarize vehicular collisions by the type of collision. As shown, "Broadside" (23%) and "Hit Object" (22.6%) collisions were reported as the most frequent collision types during the five year period, accounting for almost half of all vehicular collisions combined. "Rear-End" collisions were the third most frequent type of vehicle collision, representing 21.3% of all reported records.

Table 4.18 Vehicle Collision Type

Collision Type	Number of Collisions	Percent
Broadside	160	23.0%
Hit Object	157	22.6%
Rear-End	148	21.3%
Sideswipe	107	15.4%
Head On	63	9.1%
Overturned	26	3.7%
Not Stated	22	3.2%
Other	13	1.9%
Total	**696**	**100%**

Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Table 4.19 summarizes the primary collision factor for vehicle collisions reported in Wildomar in the previous five years. As shown, the most common primary collision factor violations were "Improper Turning," and "Unsafe Speed," which accounted for 23.4% and 23.1% of all vehicle collisions, respectively.

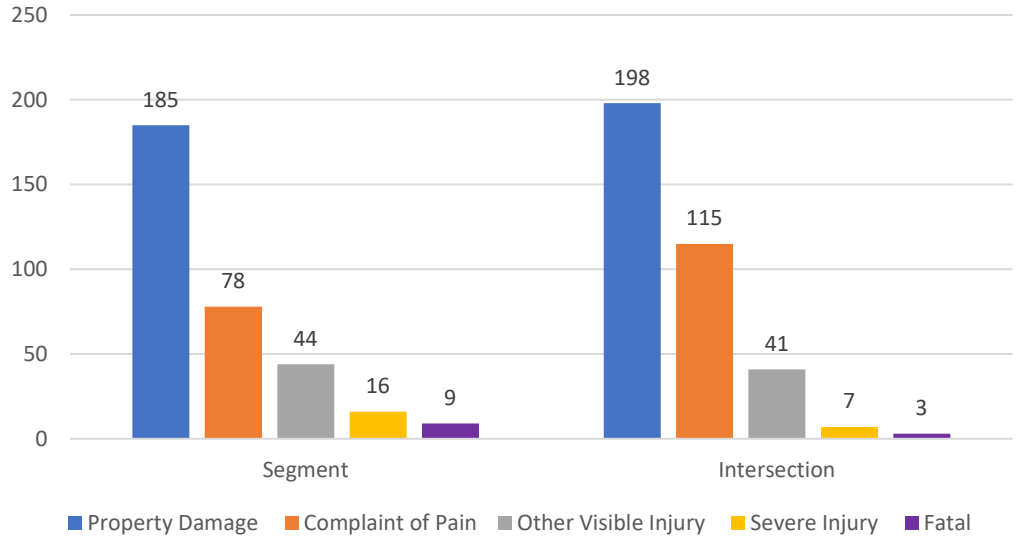
Table 4.19 Primary Vehicle Collision Factor

Primary Collision Factor	Number of Collisions	Percent
Improper Turning	163	23.4%
Unsafe Speed	161	23.1%
Not Stated	97	13.9%
Driving Under Influence	78	11.2%
Automobile Right-of-Way Violation	52	7.5%
Ran Traffic Signal or Stop Sign	38	5.5%
Unknown	35	5.0%
Other	30	4.3%
Following Too Closely	16	2.3%
Unsafe Starting or Backing	13	1.9%
Driving on Wrong Side of Road	13	1.9%
Total	**696**	**100%**

Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Figure 4.34 presents collision severity by roadway location. As shown, vehicle collisions occurred more frequently within the City at intersection locations, with 364 occurring at intersection locations (just over 52%) and 332 occurring at segment locations. Despite the greater overall frequency of intersection collisions, collisions with fatal and severe injury outcomes occurred over twice as often at segment locations.

Figure 4.34 Vehicular Collision by Severity by Roadway Location



Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

Table 4.20 presents violation codes by level of injury severity for automobile collisions. The violation codes listed are for categories which either included a fatal collision or had 20 or more collisions with an injury (property damage only collisions were excluded). It should be noted that there were automobile collisions which involved fatalities and injuries for which no violation code was reported.

Table 4.20 Violation Codes and Severity of Injury for Automobile Collisions

	Violation Code & Definition	Other Visible Injury	Complaint of Pain	Severe Injury	Fatal	TOTAL
21453(a)	A driver facing a steady circular red signal alone shall stop at a marked limit line, but if none, before entering the crosswalk on the near side of the intersection or, if none, then before entering the intersection, and shall remain stopped until an indication to proceed is shown, except as provided in subdivision (b)	2	20	2	1	**25**
21453(c)	A driver facing a steady red arrow signal shall not enter the intersection to make the movement indicated by the arrow and, unless entering the intersection to make a movement permitted by another signal, shall stop at a clearly marked limit line, but if none, before entering the crosswalk on the near side of the intersection, or if none, then before entering the intersection, and shall remain stopped until an indication permitting movement is shown.	1	2	2	1	**6**
21703	The driver of a motor vehicle shall not follow another vehicle more closely than is reasonable and prudent, having due regard for the speed of such vehicle and the traffic upon, and the condition of, the roadway.	--	--	--	1	**1**
21801(a)	The driver of a vehicle intending to turn to the left or to complete a U-turn upon a highway, or to turn left into public or private property, or an alley, shall yield the right-of-way to all vehicles approaching from the opposite direction which are close enough to constitute a hazard at any time during the turning movement, and shall continue to yield the right-of-way to the approaching vehicles until the left turn or U-turn can be made with reasonable safety.	--	13	1	1	**15**
21802(a)	The driver of any vehicle approaching a stop sign at the entrance to, or within, an intersection shall stop as required by Section 22450. The driver shall then yield the right-of-way to any vehicles which have approached from another highway, or which are approaching so closely as to constitute an immediate hazard, and shall continue to yield the right-of-way to those vehicles until he or she can proceed with reasonable safety.	--	4	1	1	**6**
21804(a)	The driver of any vehicle about to enter or cross a highway from any public or private property, or from an alley, shall yield the right-of-way to all traffic, as defined in Section 620, approaching on the highway close enough to constitute an immediate hazard, and shall continue to yield the right-of-way to that traffic until he or she can proceed with reasonable safety.	--	--	--	1	**1**

Table 4.20 Violation Codes and Severity of Injury for Automobile Collisions

	Violation Code & Definition	Other Visible Injury	Complaint of Pain	Severe Injury	Fatal	TOTAL
22107	No person shall turn a vehicle from a direct course or move right or left upon a roadway until such movement can be made with reasonable safety and then only after the giving of an appropriate signal in the manner provided in this chapter in the event any other vehicle may be affected by the movement.	14	26	8	2	**50**
22350	No person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of, the highway, and in no event at a speed which endangers the safety of persons or property.	30	53	8	9	**100**
22450(a)	The driver of any vehicle approaching a stop sign at the entrance to, or within, an intersection shall stop at a limit line, if marked, otherwise before entering the crosswalk on the near side of the intersection. If there is no limit line or crosswalk, the driver shall stop at the entrance to the intersecting roadway.	1	2	--	2	**5**
23152*	(Governs driving under the influence)	1	--	--	--	**1**
23152(a)	It is unlawful for a person who is under the influence of any alcoholic beverage to drive a vehicle.	7	6	1	8	**22**
23152(b)	It is unlawful for a person who has 0.08 percent or more, by weight, of alcohol in his or her blood to drive a vehicle.		1	1	1	**3**
	TOTAL	**56**	**127**	**24**	**28**	**235**

Source: SWITRS and Crossroads (Oct. 31, 2014 – Oct. 31, 2019)

*One collision was entered under this violation code without a subsection attributed to it. This functions as a catch-all for the violation without a subsection and is not the overall total.

5.0 Opportunities and Constraints

This chapter summarizes the opportunities and constraints identified through the existing conditions analysis. The synthesis incorporates information derived from the review of existing documents, review of existing demand, connectivity, quality and safety analyses.

5.1 Currently Planned or Identified Improvements

The document review included city-wide, as well as, regional documents. The Western Regional Council of Governments (WRCOG) Active Transportation Plan includes 4 proposed regional connections which will directly benefit the City of Wildomar: Bautista Creek – Mission Trail, Lake Elsinore – Murrieta Creek, I-215 South, and Lake Elsinore Loop. These facilities are identified on pages 3-5 of the document review provided in Appendix A. The Riverside Transit Agency First & Last Mile Mobility Plan provides a station typology and implementation plan which could be applied to the City of Wildomar and help grow ridership within the City.

The City of Lake Elsinore's recently adopted Active Transportation Plan includes recommendations adjacent to – or intersecting with – the jurisdictional boundary with the City of Wildomar. These recommendations include a proposed bicycle lane on Grand Avenue and proposed multi-use paths on along Corydon Road and Mission Trail.

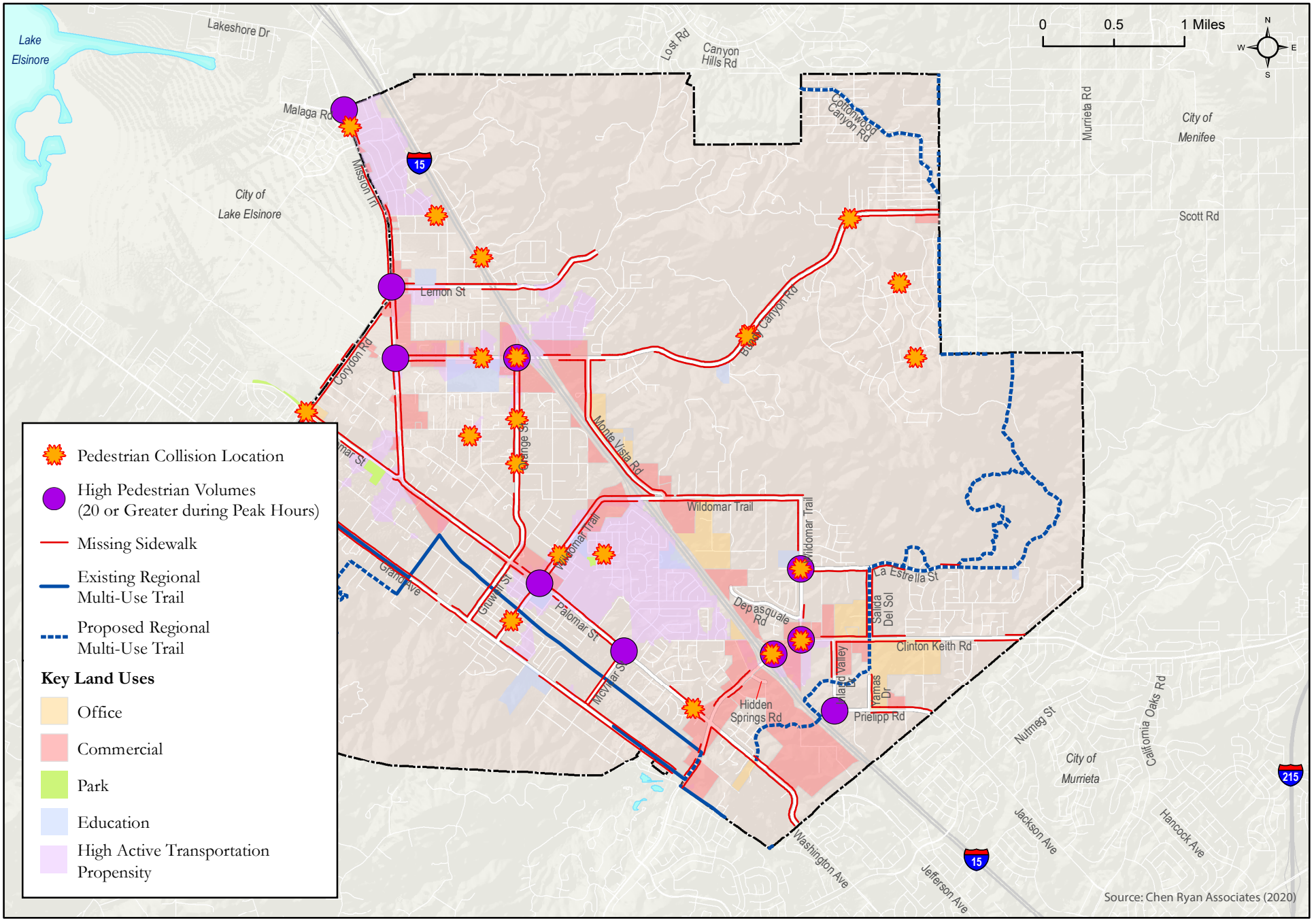
5.2 Pedestrian Mobility

Figure 5.1 displays the opportunities and constraints for pedestrians. A current constraint is the lack of a complete sidewalk network. The high number of missing sidewalks can create safety issues for people trying to move through the City on foot. Additionally, incomplete networks can deter active transportation trips. As the City plans and designs future pedestrian facilities, multi-purpose trails may be considered in some locations in-lieu of sidewalks to serve the City's Equestrian Heritage while improving mobility for both pedestrians and equestrian users.

The limited number of opportunities to cross Interstate 15 creates a barrier to pedestrian travel. Two of the four roadways which cross the freeway lack sidewalks, resulting in uncomfortable pedestrian environments. Lemon Street lacks sidewalks on both sides of the road under Interstate 15. Wildomar Trail (formerly Baxter Road) goes over Interstate 15 but only has a sidewalk on one side of the roadway.

Areas with multiple pedestrian-involved collisions will be revisited to determine the need for policy-level recommendations or priority infill sidewalk locations. Similarly, the prioritization of improvements will consider observed pedestrian volumes and/or areas with high active transportation propensity. Focusing improvements in high collision and high demand areas will ensure investments address the greatest needs facing Wildomar.

The City was recently successful in the pursuit of Highway Safety Improvement Project (HSIP) funds to install countdown signal heads at most signalized intersections throughout Wildomar. These enhancements will help communicate to pedestrians the amount of time remaining in the crossing phase, thereby improving pedestrian safety and comfort.



Wildomar Active Transportation Plan

Figure 5.1
Pedestrian Opportunities and Constraints

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5.3 Bicycle Mobility

Figure 5.2 displays the opportunities and constraints for bicyclists. Currently, Wildomar's bicycle network is very limited, with facilities only located on Grand Avenue and Clinton Keith Road west of Wildomar Trail (formerly George Avenue). The lack of a well-connected bicycle network may discourage bicycle trips or result in unsafe behaviors. Four bicycle collisions were reported along Clinton Keith Road and Grand Avenue, however, only one collision occurred following implementation of the bike lanes. The existing facilities serve as a base to build from and seek to connect to destinations throughout the City.

The wide and undeveloped roadways/shoulders present a great opportunity to expand the bicycle network. This undeveloped space creates the opportunity to develop bicycle facilities, multi-use, and/or dedicated equestrian paths. Dedicating excess roadway space to active transportation users would benefit safety for all travel modes. Narrowing vehicular travel lanes is an effective traffic calming mechanism understood to help reduce vehicle speeds.

Like pedestrian travel, the freeway serves as a barrier to bicycle travel. Three of the four roadways which cross the freeway have an LTS score of 4 (most stressful). Only Lemon Street presents a low stress opportunity for this east-west crossing, however, it is located in the northern portion of the City, making it unlikely that a person on bicycle would travel that far out of direction to take advantage of a low stress crossing.

5.4 Equestrian Mobility

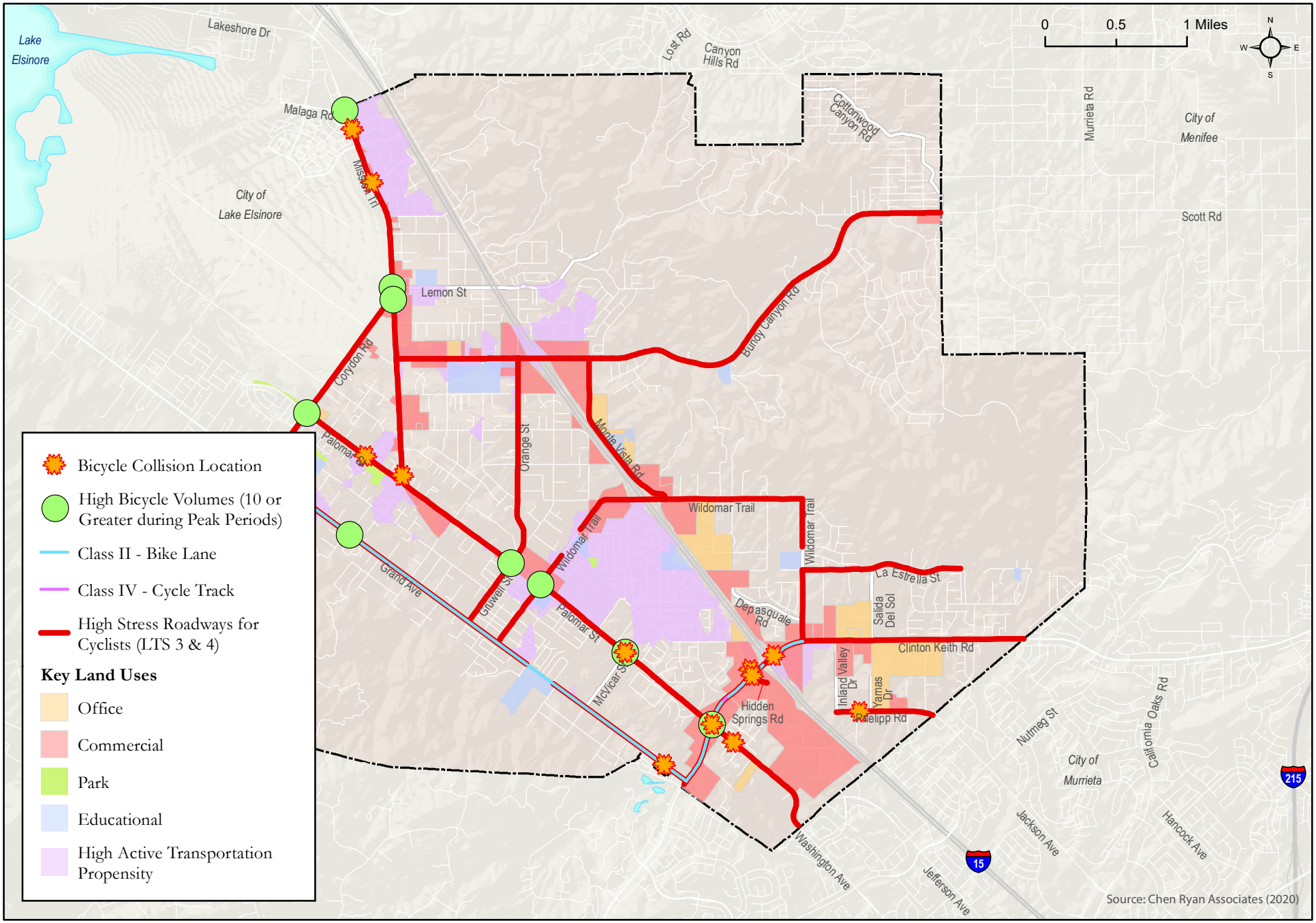
The Equestrian Heritage and on-going use in Wildomar is noted throughout this Existing Conditions Report and will be carried forward into the development of recommendations. As stated under the pedestrian and bicycle subsections within this chapter, the undeveloped shoulders and wide right-of-way available along many Wildomar roadways provides a unique opportunity to plan and develop a multimodal transportation network.

Grand Avenue is a recent example of an improvement project that transformed the roadway to serve pedestrians, bicyclists, equestrian users, and drivers. This success is something that can be replicated across Wildomar. The Wildomar Adopt-a-Trail System Map will serve as a starting point for identifying corridors that should be preserved for equestrian use. These alignments will be reviewed in tandem with forecast vehicular volumes and available rights-of-way to develop Mobility Plan recommendations.

5.5 Transit Mobility

Figure 5.3 displays opportunities and constraints for transit. A constraint is the limited number of transit routes and frequency currently offered. Transit ridership or transit proximity may also be used as an input to prioritize future recommendations. Transit users frequently start and end their trip as pedestrians or bicyclists, emphasizing the importance of providing comfortable connections for these modes.

The transit stop at Wildomar Trail (formerly Central Street) and Palomar Street was reported as having the highest number of daily boardings and alightings. This bus stop is close to retail opportunities and areas with high active transportation propensity. However, this bus stop is surrounded by several roadway segments with missing sidewalks and there are no designated bicycle lanes on either street. This is an example of a location where enhanced bicycle and pedestrian connections may benefit many users.



Wildomar Active Transportation Plan

Figure 5.2
Bicycle Opportunities and Constraints

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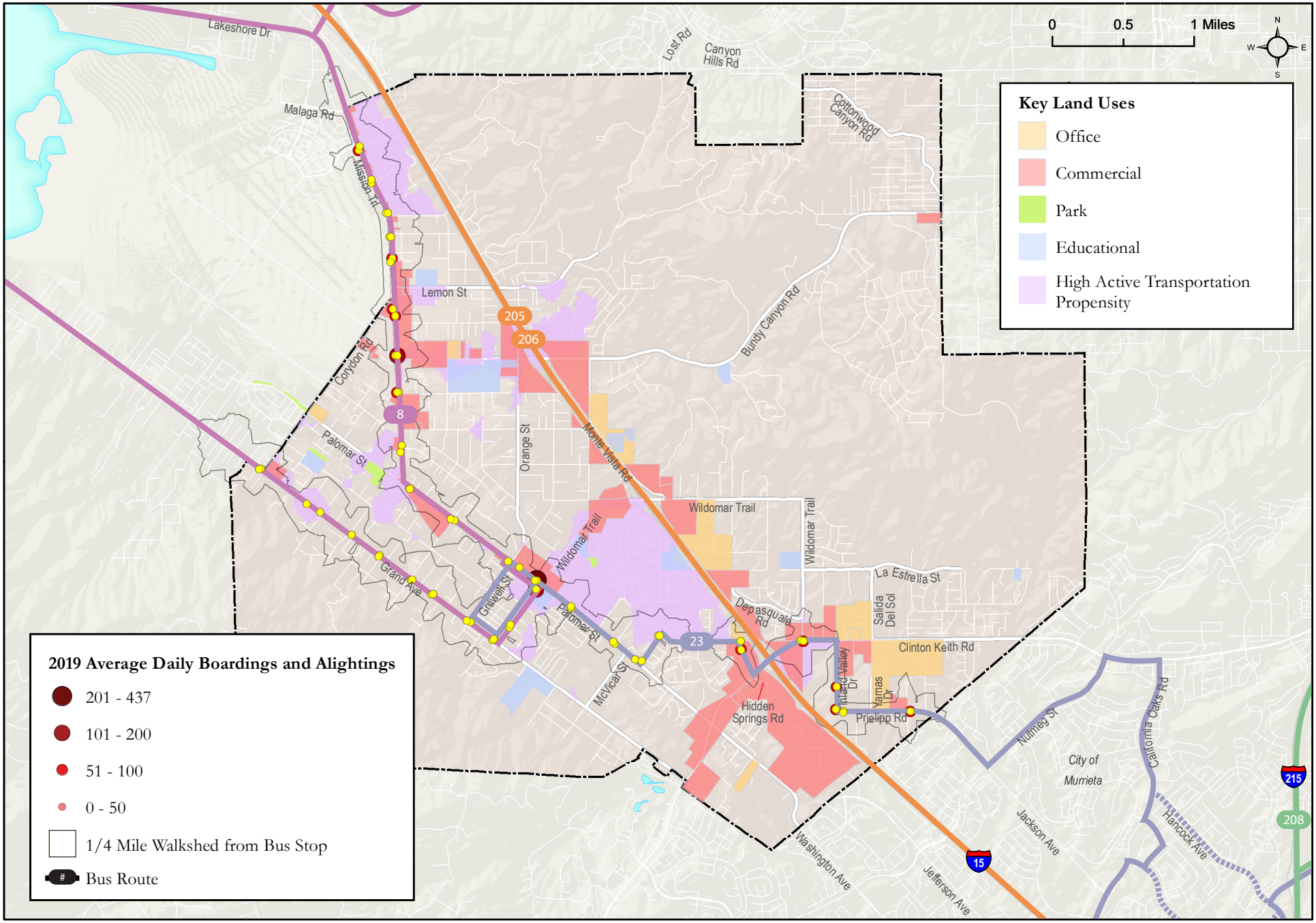

Wildomar Mobility Plan

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Figure 5.3
Transit Opportunities and Constraints

5.6 Vehicular Mobility

Figure 5.4 displays the opportunities and constraints for automobiles. Segments along four roadways were found to operate at unacceptable levels of service under existing conditions, including Corydon Road, Bundy Canyon Road, Wildomar Trail (formerly Central Street) and Clinton Keith Road.

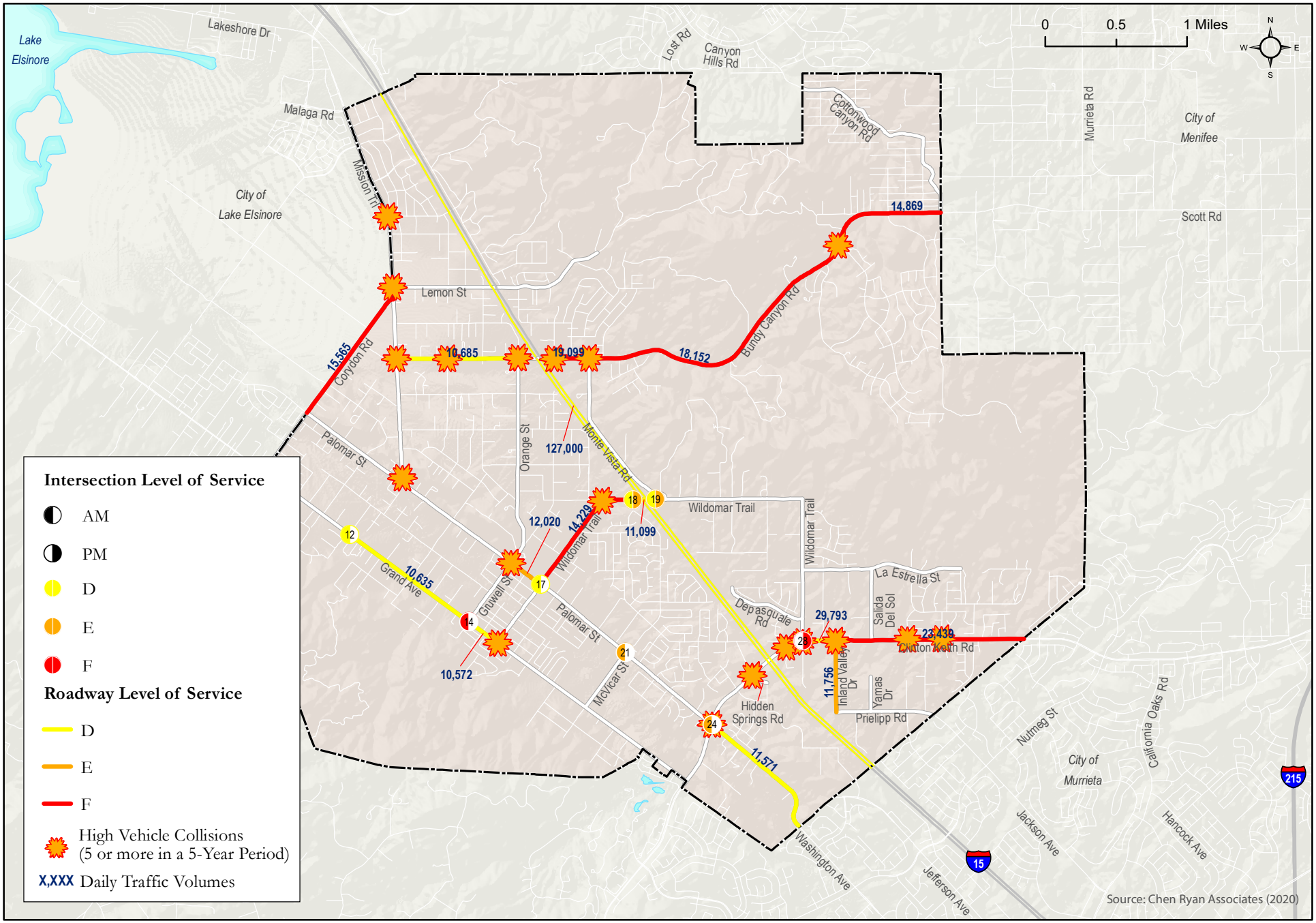
Additionally, two intersections were found to operate at LOS F during one of the peak hours, with an additional four intersections operating at LOS E during one of the peak hours. The control type and signal timing for these locations will be reevaluated during the network planning phase to identify opportunities for operational improvements.

Multiple projects are planned or underway that will improve operations along segments or at intersection locations currently operating below acceptable levels of service, including:

- CIP 025-1: Clinton Keith Road Widening Phase I (I-15 to Eastern City Limit)
- CIP 026-1: Bundy Canyon Road Widening – Segment 1 & 2 (I-15 to East of Oak Canyon Drive)
    - Segment 3 to be widened as an adjacent development condition
- CIP 028-1: Palomar Street Widening Phase I (Clinton Keith Road to Eastern City Limit)
- CIP 074: I-15 NB & SB Ramps at Wildomar Trail (formerly Baxter Road) Intersection Improvements
- TR 31667: McVicar Street & Palomar Street Signalization
- TR 32035: Widen South Side of Palomar Street, North of McVicar Street

There are 19 locations where five or more collisions were reported in the five-year analysis period. Approximately half of these 19 locations are located on two corridors: Bundy Canyon Road and Clinton Keith Road. The intersections along these roadways will be reviewed to determine if improvements such as protected left-turns, no-right-turn on red signage, or other recommendations are appropriate.

The leading violations reported for collisions resulting in fatalities were due to speeding and driving under the influence. These issues will be revisited to determine the suitability for establishing policies to address these collision causes.



Wildomar Active Transportation Plan

Figure 5.4
Automobile Opportunities and Constraints

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Appendix A
Document Review

Appendix B
Roadway and Intersection Volume Counts

Appendix C
Signal Timing Sheets

Appendix D
Adjustments in Intersection Configurations

Appendix E
Intersection Level of Service Worksheets

Appendix F
Freeway Volumes from Caltrans