

CHAPTER 2 MOBILITY



2 MOBILITY

This chapter describes the regulatory framework and existing transportation conditions in the City of San Marcos. A discussion of pertinent federal, state, regional, and local regulations and plans is presented first. This is followed by a discussion of transportation facilities in San Marcos that accommodate pedestrians, bicycles, transit, freight, and automobiles, plus an assessment of commute trip patterns, roadway operations, and collisions. At the end, new technologies in transportation are recommended.

The Mobility Element portion of the General Plan Update addresses active transportation modes, complete streets, vehicular operations, and mobility options for transit-dependent populations. In addition, transformational technologies, like transportation network companies (e.g., Uber, Lyft, Bird, Lime) and the future advent of connected/autonomous vehicles will also be addressed. In particular, connected/autonomous vehicles may affect the parking demand for various uses, allow for changes to the need for public parking facilities and therefore the City's parking requirements.

Finally, Senate Bill (SB) 743 provides the Vehicle Miles Traveled (VMT) metric for environmental review impact analyses, while Level of Service (LOS) remains the metric to measure operating conditions of roadways and impacts to local circulation outside the realm of the CEQA analysis. The Mobility Element will consider the projected increases in City population and employment through 2040 and the resulting increase in demand on transportation facilities.

2.1 REGIONAL AND LOCAL REGULATORY FRAMEWORK

2.1.1 Regional Regulations

San Diego Association of Governments (SANDAG)

SANDAG is a federally-designated Metropolitan Planning Organization (MPO) comprised of the County of San Diego and 18 city governments, including the City of San Marcos. SANDAG develops long-range regional transportation plans including sustainable communities strategies and growth forecast components, regional transportation improvement programs, and regional housing needs allocations.

SANDAG approved its most recent Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) in October 2011, referred to as the 2050 RTP/SCS. This document outlines the long-range vision and the region's transportation system planned investments through 2050. A selection of 2050 RTP/SCS transportation-related goals are:

- Provide 156 new miles of trolley service
- Provide 130 miles of managed lanes to facilitate carpools, vanpools, and premium bus service
- Invest \$2.7 billion for regional and local bicycle and pedestrian projects and programs
- Create new carpool and telework incentive programs to reduce single-occupancy vehicles
- Double the homes and jobs within one-half of a mile of transit
- Build nearly three-quarters of multifamily housing on redevelopment or infill sites
- Plan for 84 percent of new housing units to be multifamily
- Double transit service miles and increase transit frequency in key corridors

The 2050 RTP/SCS plans for an estimated \$214 billion investment in local, state, and federal transportation needs over the next 40 years. The percentage dedicated to transit is expected to grow each decade, up to 44 percent from 2021 to 2030, 47 percent in the third decade, and 57 percent in the last decade of the plan.

2035 Potential Transit Priority Project Areas

The 2050 RTP/SCS identifies potential High-Quality Transit Corridors, which are corridors that include major transit stops and/or 15-minute peak period service as defined in SB 375. The 2050 RTP/SCS includes Figure 3.23,¹ showing the relationship of higher-density land uses (residential, employment, and mixed use) to planned high-quality transit corridors. These areas are considered “priority project areas” because they play a special role in connecting jobs and housing and other major activity centers. The following streets within San Marcos are High-Quality Transit Corridors in SANDAG’s 2050 RTP/SCS:

- West and East Mission Road
- South Las Posas Road
- South Santa Fe Avenue
- Via Vera Cruz
- West San Marcos Boulevard (partial)
- Craven Road
- East Barham Drive (partial)
- Discovery Road (existing and future)
- Knoll Road
- Los Vallecitos Boulevard
- West Lake Drive
- Campus View Drive

¹ 2050 RTP/SCS Figure 3.23: 2050 Transit Network and Higher Density Land Uses. Page 3-67

iCommute

SANDAG operates iCommute, a Transportation Demand Management (TDM) program for the San Diego region. TDM programs typically encourage ridesharing, transit use, biking, and walking as alternatives to single-occupancy vehicle trips. iCommute aims to reduce overall vehicle miles traveled, make more efficient use of existing roadways, maximize the movement of people and goods, and reduce traffic congestion and associated greenhouse gas emissions and other environmental pollutants.²

Riding to 2050: The San Diego Regional Bicycle Plan

In 2010, SANDAG adopted the San Diego Regional Bike Plan to support the implementation of San Diego Forward: The Regional Plan. The Regional Bicycle Plan provides strategies to increase everyday bicycling with the goal of a more balanced and sustainable regional transportation network. The plan provides local jurisdictions with information about the structure of the Regional Bike Network, the supporting policies and programs, and the benefits of implementation.

2.1.2 Local Regulations

With the exception of State highways that are under Caltrans' jurisdiction, streets in San Marcos are generally under the jurisdiction of the City.

San Marcos General Plan

The current San Marcos General Plan, adopted in 2012, is the primary planning document for the City and serves to guide new development and infrastructure. The General Plan Circulation Element, updated in 2012, provides the policy framework for the regulation and development of transportation systems, balancing demands for moving people and goods within the city. In particular, the Circulation Element addresses vehicular, pedestrian, bicycle, transit, truck, neighborhood electric vehicle (NEV), and rail transportation. Table 2-1 includes the General Plan goals related to transportation and traffic.

² SANDAG Transportation Demand Management Fact Sheet. 2019

Table 2-1: San Marcos General Plan Transportation Goals

Goal	Description
M-1	Provide a comprehensive multimodal circulation system that serves the City land uses and provides for the safe and effective movement of people and goods.
M-2	Protect neighborhoods by improving safety for all modes of travel and calming traffic where appropriate.
M-3	Promote and encourage use of alternative transportation modes, including transit, bicycles, neighborhood electric vehicles (NEVs), and walking, within the city.
M-4	Provide efficient parking within the city.
M-5	Provide for the safe and efficient movement of goods throughout the City.

Source: City of San Marcos General Plan, February 2012

San Marcos Trails Master Plan

The San Marcos Trails Master Plan, currently pending approval, envisions a 108-mile, interconnected trail system. The City of San Marcos currently owns and manages 70.4 miles of completed trails. Trails that are planned or under construction will connect key recreational destinations throughout the City, such as San Marcos Creek, Owens Peak, Discovery Park, Twin Oaks Valley Road, Sunset Park, and the Rail Trail.

San Marcos Capital Improvement Plan

The City of San Marcos Capital Improvement Plan (CIP) provides a financial strategy for implementing infrastructure improvements. In particular, the CIP keeps a list of projects programmed for funding for a five-year period. Current and upcoming projects include road widenings, road improvements, street realignments, traffic signal timing plans, sidewalk installation, bikeway installation, interchange improvements, and park improvements.

2.2 EXISTING SETTING






2.2.1 Resident and Worker Travel Behavior

According to data obtained from the 2012 California Household Travel Survey,³ most San Marcos residents use motor vehicles as the primary mode of travel, accounting for 89 percent of all trips (54 percent as a driver, 35 percent as a passenger in a vehicle). In contrast, all trips by other modes include one percent by transit, five percent by bike, and five percent by walking. For school trips, 19 percent are made by walking, compared to zero to five percent of trips walking to other destinations listed in Table 2-2. The mode share by general trip purpose for San Marcos is shown in Table 2-2.

³ California Household Travel Survey. Caltrans, 2013.






For comparison, mode share at the County level is shown in Table 2-3. Generally, San Marcos experiences higher levels of driving, carpooling and bicycling than the county, and corresponding lower levels of transit and walking.

Table 2-2: San Marcos Mode Share by Trip Type

					
Home	48%	39%	0%	9%	5%
Work	93%	0%	0%	7%	0%
School	42%	37%	2%	0%	19%
Other	54%	37%	2%	1%	5%
Overall	54%	35%	1%	5%	5%

Source: California Household Travel Survey, 2013

Table 2-3: San Diego County Mode Share by Trip Type

					
Home	55%	27%	1%	2%	15%
Work	85%	7%	1%	1%	6%
School	16%	55%	7%	2%	20%
Other	49%	25%	9%	1%	16%
Overall	53%	26%	5%	1%	15%

Source: California Household Travel Survey, 2013

The mode share for San Marcos commuters has slightly changed in recent years according to data obtained from the U.S. Census Bureau American Community Survey (ACS). Commuting mode share estimates from the ACS over the years 2013 through 2017 (Table 2-4) show that commuters driving alone and those who carpool, comprise around 90 percent of commuter trips. The shares of biking, working from home and by taxi, motorcycle or other have increased over this period, while public transit share remained the same.

Table 2-4: San Marcos Share Commute Mode Share by Year (2013-2017)






	2013	2014	2015	2016	2017	% Change (2013-2017)
Drove alone	79.9	81.8	81	80.8	79.7	-0.3%
Carpooled	12.2	10.4	10	8.1	8.2	-48.8%
Public transportation (excluding taxicab)	1.6	1.1	1.4	1.7	1.6	0.0%
Walked	1.3	1.4	1.8	1.9	2.4	45.8%
Bicycle	0	0.1	0.1	0.2	0.3	100.0%
Taxicab, motorcycle, or other means	0.8	0.8	1.2	1.9	2.2	63.6%
Worked at home	4.3	4.4	4.5	5.4	5.6	23.2%



Source: US Census, ACS 5-year estimates (2013-2017)

2.2.2 Pedestrian Facilities

San Marcos offers several types of facilities and amenities that support walking in the city. The availability and quality of pedestrian facilities vary throughout the city and have been analyzed using seven key factors as shown in Table 2-5.

Table 2-5: Pedestrian Facility Conditions in San Marcos

Factor	Description	Assessment
 <p>Sidewalk Availability</p>	<p>Sidewalk availability is core to supporting walkability and safety separating pedestrians from vehicles and other modes. In addition, it is important that sidewalks are present on both sides of the roadway and are contiguous along the entire segment rather than ending midblock.</p>	<p>The City strives to have sidewalks generally provided on both sides of arterial and local streets. However, gaps exist where sidewalk is not present on at least one side of the street. Examples include:</p> <ul style="list-style-type: none"> • Twin Oaks Valley Road: Barham Drive and SR-78 • North Rancho Santa Fe Road overpass at SR-78 • Borden Ranch Road: Via Barquero and Comet Circle • Linda Vista Drive: South Pacific Street and South Las Posas Road • Barham Drive: SR-78 offramp to Woodland Parkway • Barham Drive: La Moree to Venture Street • Barham Drive: Bennett Court to Meyers Avenue <p>Missing segments of sidewalk increase in older residential areas of town as well as in industrial areas, where sidewalk was implemented inconsistently. The widths and accessibility features such as pedestrian ramps vary widely.</p>
 <p>Sidewalk Conditions</p>	<p>Cracked, broken, or otherwise damaged sidewalks can pose a safety hazard and discourage walking.</p>	<p>Sidewalks in the city are generally in good condition, free of cracks or uplifts.</p>
 <p>Crosswalk Availability</p>	<p>Marked crosswalks can safely accommodate pedestrians that need to cross streets. A lack of marked crosswalks could hinder walkability since pedestrians need to travel greater distances to reach a safe marked crossing point. Drivers may also be less likely to yield to intersections at unmarked crossings.</p>	<p>Marked crosswalks are consistently provided at intersections across the city.</p>
 <p>Shading</p>	<p>Shading, whether natural or artificial, can encourage walking in areas such as Southern California which are relatively warm with limited rainfall, especially in the summer.</p>	<p>Shading is inconsistently provided across the city in the form of tree landscaping within the parkways or on adjacent property along roadways. City trail standards call for the implementation of landscape buffers to provide additional shading.</p>
 <p>Flat Grade</p>	<p>Steep hills and ravines can discourage walking, especially for pedestrians with limited mobility.</p>	<p>Within the City core, many portions of the road network are generally flat without steep grade changes at the pedestrian level. Outside the City core, many residential areas are generally hilly. Locations with noticeable grade changes include Borden Road, Craven Road, La Moree Road, South Twin Oaks Valley Road between Santa Barbara Drive and Duncan Court, San Elijo Road</p>

		between Rancho Santa Fe Road and Duncan Court, and Elfin Forest Road between Crescent Place and the city's western boundary.
 <p>Buffer</p>	<p>Buffers which provide separation between pedestrians and moving vehicles can help improve the walking experience, and can include landscaping, parked vehicles, and bulbouts, which serve to both reduce pedestrian crossing distances at intersections and as a traffic calming measure.</p>	<p>Some residential neighborhoods include buffers with grass, trees, and other landscaping. Street-adjacent trails typically include a landscape buffer and lodge pole fencing. "Paseos" providing for separated pedestrian and bicycle access with landscaping exist within the University District area between SR-78 and Barham Drive, and they are planned within the San Marcos Creek Specific Plan area. Arterial roads tend to include contiguous sidewalk with no physical buffers; on-street parking is generally prohibited, and Class II bike lanes are usually present.</p>
 <p>Amenities</p>	<p>In addition to physical facilities that accommodate walking, useful or interesting amenities along sidewalks create a more interesting walking environment and increase pedestrian comfort. Amenities can include sidewalk-adjacent retail and restaurants, landscaping, and street furniture.</p>	<p>Within San Marcos's residential neighborhoods, the primary amenity is street-adjacent landscaping. At the intersection of San Elijo Road and Elfin Forest Road, there is a road median park. Additional wide landscaped park areas south of the San Marcos Boulevard multi-way are planned in the San Marcos Creek Specific Plan. Some trail segments include street furnishing amenities, such as benches and drinking fountains. Arterial roads offer few pedestrian-level amenities, and retail is generally not pedestrian-facing.</p>

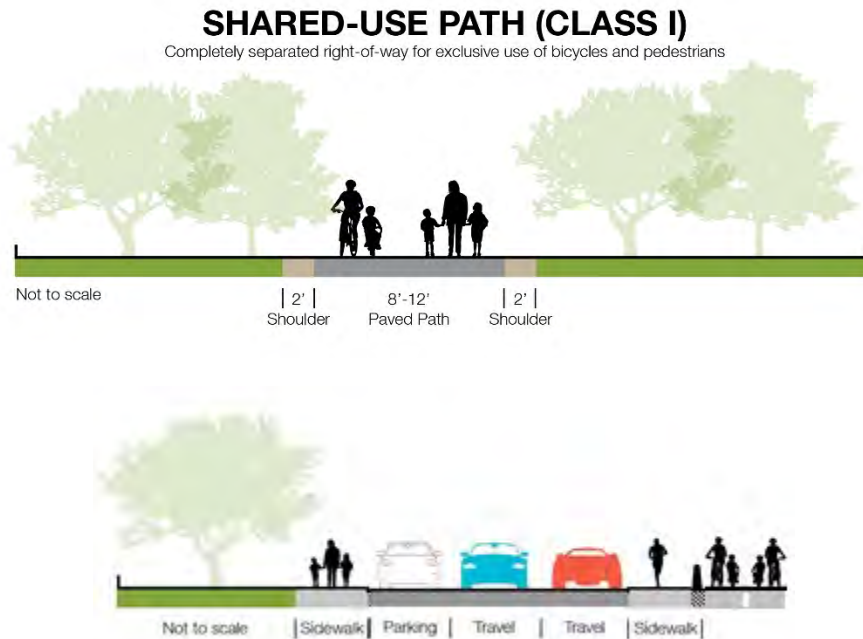
Note: This is not an exhaustive inventory
Source: Kittelson & Associates, Inc., 2020

In addition to on-street facilities, San Marcos offers several off-road multi-use trails comprising of over 55 miles designed for non-motorized commuting and recreational use. These multi-use paths have a typical width of 7 feet to 10 feet. The City of San Marcos Master Trails Plan includes a projected 72 miles of interconnected trails. The current system includes the Old Creek Ranch/Canyon Trail, Las Posas/Borden Trail, and Twin Oaks Valley Trail as well as other trails in and around the city, as shown in Figure 2-1.

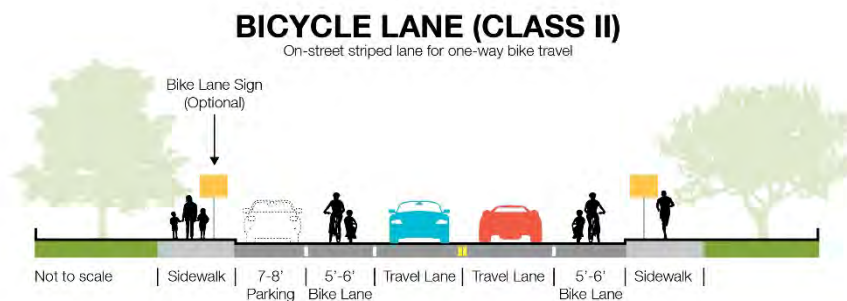
2.2.3 Bicycle Facilities

The City of San Marcos has a network of bicycle facilities that consists of dedicated off-street paths and on-street bicycle lanes and bicycle routes. Figure 2-1 displays the existing designated bicycle facilities in the city. Bicycle facilities are categorized into four types, as described and depicted in illustrations below. Note that while the graphics include typical widths for the various facilities, the exact configuration of a bike facility can vary depending on its location and the jurisdiction's preferences.

- Class I Bikeway (Bike Path).** Also known as a shared path or multi-use path, a bike path is a paved right-of-way for bicycle travel that is completely separate from any street or highway.



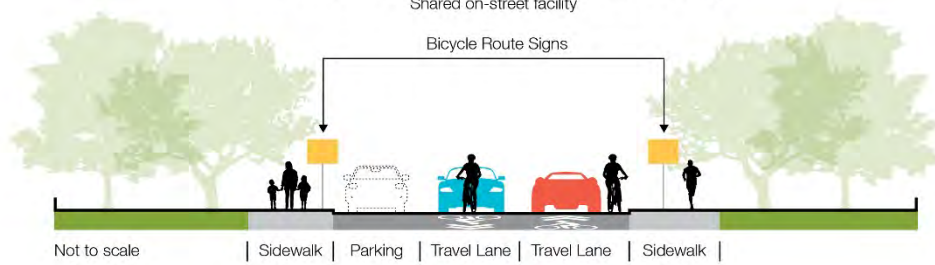
- Class II Bikeway (Bike Lane).** A striped and stenciled lane for one-way bicycle travel on a street or highway. This facility could include a buffered space between the bike lane and vehicle lane and the bike lane could be adjacent to on-street parking.



- Class III Bikeway (Bike Route).** A signed route along a street where the bicyclist shares the right-of-way with motor vehicles. This facility can also be designated using a shared-lane marking (sharrow).

BICYCLE ROUTE (CLASS III)

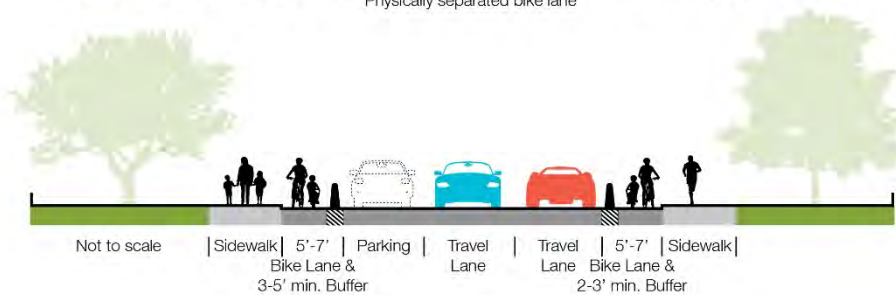
Shared on-street facility



- Class IV Bikeway (Separated Bike Lane).** A bikeway for the exclusive use of bicycles including a separation required between the separated bikeway and the through vehicular traffic. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

CYCLE TRACK/SEPARATED BIKEWAY (CLASS IV)

Physically separated bike lane



As shown in Figure 2-1, the existing bicycle facilities in San Marcos include, but are not limited to, the following:

- Class I:**
 - o Inland Rail Trail along West Mission Road and south of East Mission Road
 - o East of North Twin Oaks Valley Road
 - o North along most of San Elijo Road
 - o Along Melrose Drive from San Elijo Road to access road west of Diamond Street
 - o Along Craven Road
- Class II:**
 - o West San Marcos Boulevard
 - o Grand Avenue, portion buffered from Creekside Drive to east terminus
 - o East Mission Road, including buffered lanes on some segments such as near Mission Hills Court
 - o West Mission Road- buffered from Woodward Street to N Rancho Santa Fe Road
 - o North Twin Oaks Valley Road including buffered lanes on some segments
 - o Rancho Santa Fe Road, including portions of buffered lanes from Linda Vista Drive to La Mirada Drive, First Street to Lake Ridge Drive, and Island Drive to Via Cancion
 - o East Barham Drive with buffers proposed by a private development to be installed between Twin Oaks Valley Road and Campus Way

- South Twin Oaks Valley Road
- Borden Road
- South Las Posas Road
- San Elijo Road
- Rancheros Drive
- Vineyard Road
- Mulberry Drive
- Rock Springs Road
- Bennet Road
- Woodland Parkway Class III:
 - Campus Way
 - West Mission Road from N Pacific Street to N Ranch Santa Fe Rd includes a portion with sharrows
 - Melrose Drive from San Elijo Road to Boulderidge Drive
- Class IV:
 - Armormite Drive
 - A multi-use trail with fencing along the curb line, a soft-surface pedestrian path, and a paved pathway suitable for bicycling exists on Twin Oaks Valley Road from Windy Way to La Cienega.
- San Marcos has various paved and soft surface multi-use trails citywide.

The iCommute program offers free bike education classes, group rides, and safety checks for employers and schools in San Diego County to encourage biking as an everyday transportation choice. The program also manages more than 750 bike parking spaces at more than 60 locations throughout San Diego County. Secure bike parking spaces are available at all SPRINTER stations, including the three stations in San Marcos: Palomar College, San Marcos Civic Center, and Cal State San Marcos.

The SANDAG Household Travel Behavior Survey (2016) offers data based on a volunteer group of residents across the San Diego region. Their trips were weighted to reflect the overall regional population, to calculate the top walking and biking trip destinations in the region. Survey respondents who were walking reported an average trip length of 0.7 miles, and those traveling by bike reported an average trip length of 3.4 miles.

2.2.4 Transit Service

North County Transit District (NCTD) provides train and bus service and shared-ride paratransit service throughout the North County region of San Diego County. NCTD was established in 1975 to provide public transportation for North San Diego County and serves more than 10 million passengers every year.⁴ NCTD offers six types of public transit operations, of which SPRINTER and

⁴ NCTD 2020 <<https://www.gonctd.com/about-nctd/about-us/>>, accessed on February 2, 2020

BREEZE service San Marcos. Existing transit service is shown in Figure 2-2; ridership is shown in Figure 2-3.

SPRINTER

SPRINTER is a diesel hybrid rail connection between Escondido and Oceanside. The line spans 22 miles and connects Oceanside, Vista, San Marcos and Escondido along the SR-78 corridor. San Marcos is served by three of the 15 total stations: San Marcos Civic Center Station, Cal State San Marcos, and Palomar College Station. In addition, the Nordahl Road station is located just east of the City boundaries, in the City of Escondido. The SPRINTER has 30-minute headways in each direction Monday through Friday, operating from approximately 4:00 AM to 9:30 PM. On weekend days and holidays, the trains run every 30 minutes between 10:00 AM and 6:00 PM and hourly before and after these times, generally 4:30 AM to 9:30 PM. In addition, there is supplemental late-night service on Friday and Saturday nights. Weekday average boardings and alightings at the stations within San Marcos are shown in Table 2-6.

In addition to serving as transit points and hubs for local bus service, the SPRINTER stations provide secure bike parking. The Palomar College Station on Amorlite also includes restrooms and a free park-and-ride parking lot that also allows access to the Palomar College transit station across Mission Road.

Table 2-6: Fiscal Year 2019 (October through April) Weekday SPRINTER Ridership

Sprinter Station	Weekday Average Boardings	Weekday Average Alightings	Total
Cal State San Marcos Station	492	504	996
Palomar College Station	760	774	1534
San Marcos Civic Center Station	344	318	662
Total	1,595	1,596	3,192

Source: NCTD, 2019

BREEZE

BREEZE is a bus service is a public road transportation network for residents of North San Diego County. Since 2010, the service has been operated by First Transit, Inc. The fleet comprises 161 vehicles, including 120 compressed natural gas (CNG) buses, and operates along 30 routes. Transit riders can access BREEZE bus routes which operates within San Marcos and connect to several destinations in the region. The five routes that operate within San Marcos:

- 304 (Encinitas to San Marcos via Rancho Santa Fe Road)
- 305 (Escondido to Vista via Mission Road & South Santa Fe Avenue)
- 347 (Cal State San Marcos to Palomar College)
- 353 (Escondido Transit Center to Nordahl Marketplace via Citracado Parkway)
- 445 (Carlsbad Poinsettia COASTER Connection to Palomar College)

While some bus stops in the city include amenities such as benches and/or shelters, most do not include amenities and generally consist of a signpost.

In addition to the Palomar College Station park-and-ride lot is the Barham park-and-ride located near SR-78 at Barham Drive. It has a capacity of 89 parking spaces and is not adjacent to transit. There are several other park-and-ride lots adjacent to San Marcos, most of which are in Escondido.

2.2.5 Freight and Goods Movement

Freight and goods movement plays an important role in San Marcos's circulation network, given the City's proximity to SR-78 and Interstate 15 (I-15). The freight and goods movement system in San Marcos consists of a rail system and designated truck routes on local roads.

Freight Rail System

Freight rail runs through San Marcos and generally follows SR-78, including a portion that is parallel to East and West Mission Road. Freight rail service is operated by Burlington Northern Santa Fe (BNSF). The mainline of the BNSF freight rail service runs along the I-5 corridor, while the area around San Marcos is served by handling carrier.⁵

Truck Routes

The Surface Transportation Assistance Act (STAA) of 1982 defines a network of state facilities as truck routes which accommodate large trucks. SR-78, which runs through San Marcos, is an STAA-designated truck route. I-15, which runs north-south and about 5 miles east of the city limits, is also an STAA-designated truck route.

The City has also designated several local roads as local truck routes and has been in the process of updating the network (including eliminating, modifying or adding routes), which are outlined below and in Figure 2-4. Changes to the truck route network are subject to public hearings and consideration by the Traffic Safety Commission and City Council prior to their adoption.

Current routes:

- Mission Road: from South Rancho Santa Fe Road to the eastern City limits
- South Santa Fe Avenue: from South Rancho Santa Fe Road to Smilax Road
- Grand Avenue: from South Rancho Santa Fe Road to South Las Posas Road
- Linda Vista Drive: from South Rancho Santa Fe Road to South Las Posas Road
- West San Marcos Boulevard: from Grand Avenue to Knoll Road
- South Rancho Santa Fe Road: from Mission Road to the southern City limits
- Las Posas Road: from Linda Vista Drive to Mission Road
- Woodland Parkway: from East Mission Road to East Barham Road
- Barham Road: from South Twin Oaks Valley Road to eastern City limits
- Twin Oaks Valley Road/San Elijo Road: from the northern City limits to South Rancho Santa Fe Road

Planned routes:

- Discovery Street extension: from Grand Avenue extension to Twin Oaks Valley Road

⁵ BNSF, 2018. BNSF Railway Fact Sheet. Accessed through https://www.bnsf.com/about-bnsf/pdf/fact_sheet.pdf

Mobility

- Grand Avenue: from South Las Posas Road to future Discovery Street extension
- San Marcos Boulevard from Mission Road to Twin Oaks Valley Road

Routes to be eliminated:

- West San Marcos Boulevard: from Knoll Road to South Twin Oaks Valley Road
- San Marcos Boulevard: from Rancho Santa Fe Road to Grand Avenue
- South Las Posas Road: from West San Marcos Boulevard to Linda Vista Drive
- Grand Avenue: from South Las Posas Road to West San Marcos Boulevard
- Pico Avenue: from West San Marcos to West Mission Road
- Linda Vista Drive: from Rancho Santa Fe Road to Grand Avenue
- Via Vera Cruz: from Grand Avenue to West San Marcos Boulevard

2.2.6 Roadway System

The 2012 General Plan focuses on “Street Typologies” instead of roadway classifications in recognition of the 2012 San Marcos Mobility Element focuses on “connecting people to places” and that “utilization of Roadway Classification all but ignores the other modes of travel...”⁶ such as walking, bicycling, and taking transit.

Street Typologies

Street Typologies is a term that relates to the concept of Complete Streets and considers how streets facilitate movement for all users and provide a system for all modes, and are defined below.

- **Multi-Way Boulevard.** Multi-lane boulevards provide through travel lanes near the center of the roadway (next to the median or without a median) to serve through traffic, while local traffic is served via a local circulator roadway that is buffered (by a landscape barrier) from the through trips along the main roadway. Wide sidewalks are provided adjacent to the travel lane, and the local circulator street is low-speed to be compatible with parking, driveway accessibility, and bicycle/pedestrian activity. There are no current multi-way boulevards in the city; however, San Marcos Boulevard between Discovery Street and Bent Avenue was proposed as one in the 2012 Mobility Element.
- **Arterial.** Arterials provide mobility for all modes of travel, but are primary links in the City’s vehicular transportation system and provide sidewalks plus Class II and Class III bike facilities. Key arterial facilities include Rancho Santa Fe Road, Las Posas Road, and Twin Oaks Valley Road (near SR-78).
- **Arterial with Enhanced Bike/Pedestrian Facilities.** These facilities are key links for all modes of travel within the city. All modes are prioritized, with higher vehicle speeds and a separate/enhanced right-of-way for bicyclists and pedestrians. Mission Road is an example of these facilities.

⁶ City of San Marcos General Plan 2012 | Mobility | Page 3-6 to Page 3-12

- **Collectors.** These are intermediate facilities to connect local areas to regional mobility corridors, prioritizing bicycles and pedestrians.
- **Neighborhood Streets.** Connecting people to their residences, these streets are meant to serve bicycles, pedestrians, and vehicles. These streets are focused on the person scale and can include traffic calming techniques.
- **Industrial Streets.** While these facilities can serve all modes of travel, their primary purpose is to connect industrial uses to regional facilities, with design focused on heavy vehicles.
- **Main Street.** These facilities provide access to key activity centers. They are complete streets which emphasize walking and bicycling and have slow vehicle travel, such as the Main Street typology constructed in the University District.
- **Highway.** State Route-78 serves regional vehicular travel to and from the city and can provide regional bus transit connectivity.

The City's typologies also include Class I facilities, designated bicycle and pedestrian trails.

Roadway Descriptions

Key roadways within the city are described below. In general, the east-west roadways provide connections to neighboring cities such as Escondido and Vista, and the north-south roadways connect San Marcos to SR-78 and I-15.

San Marcos Boulevard is an east-west connection providing connectivity to retail centers and SR-78. Ultimately, it is designated as a future Multi-way Boulevard between Discovery Street and Bent Avenue. The Multi-Way concept will include a median-separated access lane for slower vehicles accessing curbside parallel and diagonal parking. Currently, San Marcos Boulevard is classified as an Arterial throughout its length. There are two to three travel lanes in each direction with a landscaped median. On-street parking is prohibited and there are bike lanes in each direction. The posted speed limit is 40 miles per hour.

Twin Oaks Valley Road is a north-south connection to retail centers, SR-78, and adjacent cities such as Encinitas. It is classified as an Arterial. North of Borden Road, the corridor is a four-lane Rural Major Arterial with enhanced bicycle and pedestrian facilities. From San Elijo Road to Borden Road, Twin Oaks Valley Road is a four to six-lane Major Arterial. Bicycle facilities along Twin Oaks Valley Road include bike paths and bike lanes, and a multi-use trail with a soft-surface pedestrian path and a paved surface suitable for biking is provided from Windy Way to La Cienega. On-street parking is prohibited. There is one travel lane in each direction with a two-way left-turn lane north of Cassou Road, two travel lanes in each direction with a landscape median or two-way left-turn lane between Cassou Road and San Marcos Boulevard, three travel lanes in each direction with a landscaped median between San Marcos Boulevard and Village Drive, two northbound and three southbound travel lanes with a landscaped median between Village Drive and Duncan Court, and two travel lanes in each direction with a landscaped median south of Duncan Court. The posted speed limit is 45 miles per hour.

Mission Road (known as Santa Fe Avenue west of Rancho Santa Fe Road) is classified as an Arterial west of N Twin Oaks Valley Road and as an Arterial with Enhanced Bike/Pedestrian Facilities east of N Twin Oaks Valley Road. It is an east-west facility connecting to the cities of Vista and Escondido. A Class I shared path runs along this arterial and a portion of the street's

bike lanes are buffered; on-street parking is prohibited. There are two to three travel lanes in each direction with a landscape median or two-way left-turn lane. The posted speed limit is 45 miles per hour.

Rancho Santa Fe Road is a north-south Arterial connecting to Lake San Marcos and Encinitas. It includes bike lanes, including buffered bike lanes from Camino del Arroyo to La Mirada Drive and on-street parking is prohibited. There are two travel lanes in each direction with a landscaped median or a center two-way turn lane. The posted speed limit is 45 miles per hour.

Barham Drive is an east-west Arterial connecting to Cal State San Marcos and SR-78. Bike lanes are provided on most segments but are missing in areas such as east of the eastbound SR-78 onramp. Sidewalks are absent on Barham Drive from the SR-78 offramp to Woodland Parkway, from La Moree to Venture Street, and from Bennett Court to Meyers Avenue. On-street parking is prohibited. Depending on the available right-of-way, the number of travel lanes in each direction fluctuates between one to three lanes, as does the presence of landscaped medians, two-way left-turn lanes, and painted centerlines. The posted speed limit is 45 miles per hour between Twin Oaks Valley Road and SR-78 EB on-ramp, with the exception of section between EB SR-78 off-ramp and Woodland Parkway, where it is 40 miles per hour. The posted speed limit is again 40 miles per hour from SR-78 EB on-ramp to the eastern City Limits.

2.2.7 Study Roadway Segments

Operations on 15 key roadway segments throughout the city were determined on a daily traffic volume basis. Operations were assessed and assigned a level of service (LOS) letter grade ranging from LOS A to LOS F (from better to worse congestion), with LOS A signifying free-flow traffic and LOS F signifying volumes that are over roadway capacity. The roadway segment LOS thresholds are shown in Table 2-7. These thresholds are based on the roadway classifications and capacities recommended for use in the San Diego Region by the Institute of Transportation Engineers (ITE) San Diego Section (January 2019).

Table 2-7: Daily Roadway Capacity Values for Arterial Level of Service

	A	B	C	D	E
 Prime Arterial 6 Lane	25,000	35,000	50,000	55,000	60,000
 Secondary Arterial 4 lanes	10,000	14,000	20,000	25,000	30,000
 Major Arterial 4 Lane	15,000	21,000	30,000	35,000	40,000

Source: Institute of Transportation Engineers San Diego Section

All 24-hour vehicle volumes were collected at the study roadway segments in March 2020. Table 2-8 provides the study roadway segments, existing daily volumes, and the resulting levels of service. As shown in the table, all roadways currently operate at LOS D or better. Roadway segment daily volumes and LOS are shown in Figure 2-6.

Table 2-8: Existing (2020) Study Roadway Segment Level of Service

Roadway	Extent	Roadway Type	ADT ¹	LOS
S Santa Fe Ave	N Rancho Santa Fe Rd to Las Flores Dr	Prime Arterial 4 Lane	18,436	B
San Marcos Blvd	S Las Posas Rd to S Pacific St	Prime Arterial 4 Lane	36,340	D
	Avenida Cielo to Cascade	Prime Arterial 5 Lane	34,613	C
E Mission Rd	Mulberry Dr to Falcon Pl	Prime Arterial 6 Lane	24,977	A
Grand Ave	Linda Vista Dr to Via Vera Cruz	Secondary Arterial 4 Lane	10,770	B
W Mission Rd	Palomar College to Comet Cir East	Major Arterial 4 Lane	17,843	B
S Twin Oaks Valley Rd	Village Dr to Duncan Ct	Major Arterial 5 Lane	22,437	B
S Rancho Santa Fe Rd ²	Linda Vista Dr and La Mirada Dr	Prime Arterial 4 Lane	N/A	N/A
Twin Oaks Valley Rd	Buena Creek Rd to Olive St	Rural Major Arterial 2 Lane	16,241	D
Twin Oaks Valley Rd	Del Roy Dr to Legacy Dr	Rural Major Arterial 4 Lane	19,237	B
Craven Rd	Lupine Dr to Foxhall Dr	Major Arterial 4 Lane	18,267	B
Rock Springs Rd	Woodland Pkwy to Lancer Park Ave	Secondary Arterial 2 Lane	6,698	B
E Barham Dr	Campus Way to La Moree Rd	Prime Arterial 5 Lane	14,053	A

Mobility

Rancho Santa Fe Rd	Island Dr to Via Allondra	Prime Arterial 4 Lane	30,000	C
Twins Oaks Valley Rd	Barham Dr to SR-78	Prime Arterial 8 Lane	45,143	B

Source: Kittelson & Associates, Inc, 2020

Notes:

1. ADT signifies average daily traffic.
2. Data was not collected at this location due to construction. Data will be collected at a later time.

2.2.8 Study Intersections

Weekday AM and PM peak hour operations were assessed at 31 key intersections within the city, shown in Figure 2-7. Vehicle turning movement data was collected during the week of March 2 through March 6, 2020 when schools were in session, during the weekday morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak periods. The study locations, traffic control devices, and governing jurisdictions are shown in Table 2-9; the count data is shown in Figure 2-8.

Table 2-9: Study Intersections

Int. #	Location	Traffic Control	Jurisdiction
1	Twin Oaks Valley Rd and E La Cienega Rd	Signalized	San Marcos
2	Twin Oaks Valley Rd and W Borden Rd	Signalized	San Marcos
3	Rose Ranch Rd and Borden Rd	Signalized	San Marcos
4	Rancho Santa Fe Road/Santa Fe Road and Mission Road	Signalized	San Marcos
5	W Mission Rd and N Las Posas Rd	Signalized	San Marcos
6	E Mission Rd and E San Marcos Blvd	Signalized	San Marcos
7	E Mission Rd and Woodland Pkwy	Signalized	San Marcos
8	Nordahl Rd and Montiel Rd	Signalized	San Marcos
9	W San Marcos Blvd and N Twin Oaks Valley Rd	Signalized	San Marcos
10	SR-78 WB ramp and S Rancho Santa Fe Rd	Signalized	Caltrans
11	SR-78 EB ramp and S Rancho Santa Fe Rd	Signalized	Caltrans
12	S Las Posas Rd and SR-78 WB ramp	Signalized	Caltrans
13	Las Posas Rd and Grand Ave	Signalized	San Marcos
14	Grand Ave and SR-78 EB ramp	Signalized	Caltrans
15	Knoll Rd/SR-78 WB ramp and San Marcos Blvd	Signalized	Caltrans
16	SR-78 EB ramps and San Marcos Blvd	Signalized	Caltrans
17	Grand Ave and San Marcos Blvd	Signalized	San Marcos
18	N Twin Oak Valley Rd and SR-78 WB ramp	Signalized	Caltrans
19	S Twin Oaks Valley Rd and SR-78 EB ramp	Signalized	Caltrans
20	Rancheros Dr and SR-78 WB ramp	AWSC ¹	Caltrans
21	Barham Dr and SR-78 EB Ramp	Signalized	Caltrans
22	E Mission Rd and Rancheros Dr	Signalized	San Marcos

23	SR-78 WB Ramps and Nordahl Rd	Signalized	Caltrans
24	W San Marcos Blvd and Via Vera Cruz	Signalized	San Marcos
25	S Twin Oaks Valley Rd and Barham Dr	Signalized	San Marcos
26	Rancho Santa Fe Rd and San Marcos Blvd	Signalized	San Marcos
27	S Twin Oaks Valley Rd and Craven Rd	Signalized	San Marcos
28	San Elijo Rd N and Elfin Forest Rd E	Signalized	San Marcos
29	San Elijo Rd S and Elfin Forest Rd E	Signalized	San Marcos
30	San Elijo Rd N and Elfin Forest Rd W	Signalized	San Marcos
31	San Elijo Rd S and Elfin Forest Rd W	Signalized	San Marcos

Source: Kittelson & Associates, Inc, 2020

Notes:

1. AWSC signifies an all-way stop-controlled intersection

Study intersections were analyzed using the Highway Capacity (HCM) 6th Edition methodology. The HCM methodology assigns a level of service grade to an intersection based on the average control delay for vehicles at the intersection, ranging from LOS A to LOS F; LOS A signifies very slight delay with no approach phase fully utilized while LOS F signifies very high delays and congestion, frequent cycle failures, and long queues. LOS grades and corresponding delay values under the HCM methodology are provided in Table 2-10.

Table 2-10: Intersection Level of Service and Delay Thresholds (HCM Methodology)

Level of Service	Average Control Delay Per Vehicle (Seconds)	
	Signalized	Unsignalized
A	< 10.0	< 10.0
B	> 10.0 to 20.0	> 10.0 to 15.0
C	> 20.0 to 35.0	> 15.0 to 25.0
D	> 35.0 to 55.0	> 25.0 to 35.0
E	> 55.0 to 80.0	> 35.0 to 50.0
F	> 80.0	> 50.0

Source: Highway Capacity Manual

Mobility

Table 2-11 shows the existing weekday AM and PM peak hour intersection LOS, which are also shown in Figure 2-9 and Figure 2-10. As shown in the table, the following intersections currently operate at LOS E or F during either or both of the study periods:

- W Mission Rd and N Las Posas Rd (AM/PM)
- E Mission Rd and E San Marcos Blvd (AM/PM)
- W San Marcos Blvd and N Twin Oaks Valley Rd (AM/PM)
- S Las Posas Rd and SR-78 EB ramp (AM)
- Las Posas Rd and Grand Ave (AM/PM)
- Grand Ave and SR-78 EB ramp (AM/PM)
- Grand Ave and San Marcos Blvd (PM)
- Rancheros Dr and SR-78 WB ramp (AM/PM)
- E Mission Rd and Rancheros Dr (PM)
- S Twin Oaks Valley Rd and Barham Dr (AM/PM)
- Rancho Santa Fe Rd and San Marcos Blvd (AM/PM)
- S Twin Oaks Valley Rd and Craven Rd (PM)

In general, during the weekday AM and PM peak hours, most of intersections with LOS E/F conditions are located near the SR-78 freeway, including at the freeway ramp terminal intersections. Major intersections on Twin Oaks Valley Road and San Marcos Boulevard are also operating at LOS E/F during AM and PM peak hours.

Table 2-11 Existing (2020) Intersection Level of Service – Weekday AM/PM Peak Hours

#	Intersection	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1	Twin Oaks Valley Rd and E La Cienega Rd	12.3	B	11.7	B
2	Twin Oaks Valley Rd and W Borden Rd	37.8	D	32.9	C
3	Rose Ranch Rd and Borden Rd	22.7	C	26.7	C
4	Rancho Santa Fe Road/Santa Fe Road and Mission Road	10.9	B	14.7	B
5	W Mission Rd and N Las Posas Rd	71.7	E	79.8	E
6	E Mission Rd and E San Marcos Blvd	55.2	E	61.7	E
7	E Mission Rd and Woodland Pkwy	54.3	D	34.5	C
8	Nordahl Rd and Montiel Rd	13.0	B	28.7	C
9	W San Marcos Blvd and N Twin Oaks Valley Rd	60.3	E	51.1	D
10	SR-78 WB ramp and S Rancho Santa Fe Rd	49.7	D	30.2	C
11	SR-78 EB ramp and S Rancho Santa Fe Rd	20.3	C	26.8	C
12	S Las Posas Rd and SR-78 WB ramp	61.6	E	15.7	B
13	Las Posas Rd and Grand Ave	76.6	E	72.1	E
14	Grand Ave and SR-78 EB ramp	72.6	E	>80.0	F
15	Knoll Rd and San Marcos Blvd	26.3	C	25.4	C
16	SR-78 EB ramps and San Marcos Blvd	9.7	A	10.1	B
17	Grand Ave and San Marcos Blvd	25.7	C	63.1	E
18	N Twin Oak Valley Rd and SR-78 WB ramp	19.2	B	18.5	B
19 ¹	S Twin Oaks Valley Rd and SR-78 EB ramp	16.0	C	16.0	C
20 ²	Rancheros Dr and SR-78 WB ramp	64.6	F	55.2	F
21	Barham Dr and SR-78 EB Ramp	36.6	D	11.7	B
22	E Mission Rd and Rancheros Dr	34.9	C	>80.0	F
23	SR-78 WB Ramps and Nordahl Rd	14.9	B	34.1	C
24	W San Marcos Blvd and Via Vera Cruz	25.4	C	44.3	D
25	S Twin Oaks Valley Rd and Barham Dr	56.9	E	>80.0	F
26	Rancho Santa Fe Rd and San Marcos Blvd	68.6	E	>80.0	F
27	S Twin Oaks Valley Rd and Craven Rd	46.9	D	>80.0	F
28	San Elijo Rd N and Elfin Forest Rd E	35.6	D	41.6	D
29 ³	San Elijo Rd S and Elfin Forest Rd E	NA	NA	NA	NA
30	San Elijo Rd N and Elfin Forest Rd W	40.1	D	44.0	D
31	San Elijo Rd S and Elfin Forest Rd W	12.8	B	11.1	B

Source: Kittelson & Associates, Inc, 2020

Note:

1. This intersection was analyzed using the HCM 2000 methodology instead of the HCM 6th Edition methodology due to its unique signal phasing.
2. This is an unsignalized intersection. The delay and LOS are based the worst approach.
3. Data was not collected at this location due to technical issue. Data will be collected at a later time for the general plan update transportation impact analysis.

2.2.9 Collision Analysis

Analysis for vehicle, bicycle, and pedestrian collisions that occurred in San Marcos was conducted using the most recently available data for a five-year period (2013-2017) from the Transportation Injury Mapping System (TIMS) and the Statewide Integrated Traffic Records System (SWITRS).

Collision Type and Severity

The number of total collisions has increased over the study period, with the most collisions occurring in 2017 – an increase in total crashes of 50 percent compared to the number of collisions in 2013. The general percentage of each collision category has stayed about the same over the five-year period. Table 2-12 shows the number of collisions per year and their severity breakdown. The proportion of collisions resulting in a fatality or severe injury remained at a range of three to six percent.

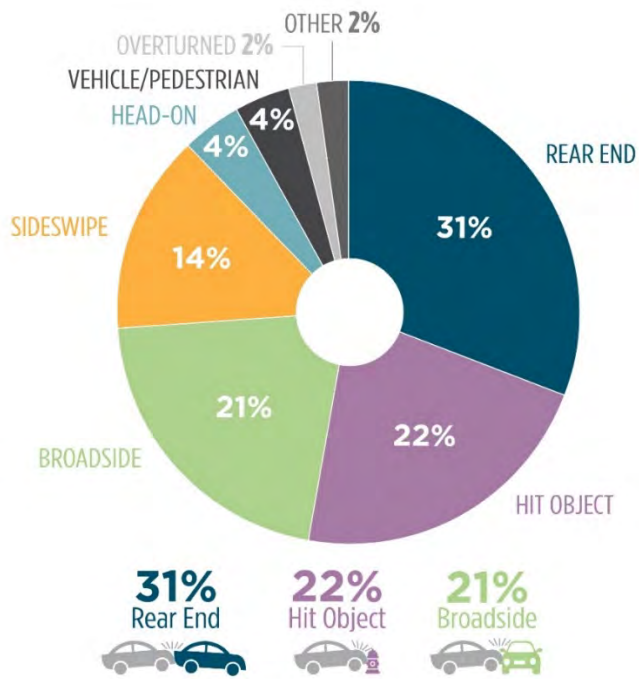
Table 2-12: San Marcos Collision Severity by Year (2013-2017)

YEAR	FATAL/SEVERE INJURY CRASHES	OTHER INJURY CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES
2013	4%	40%	56%	379
2014	6%	39%	55%	371
2015	5%	42%	53%	413
2016	6%	43%	51%	523
2017	3%	39%	58%	570

Source: SWITRS, 2013-2017

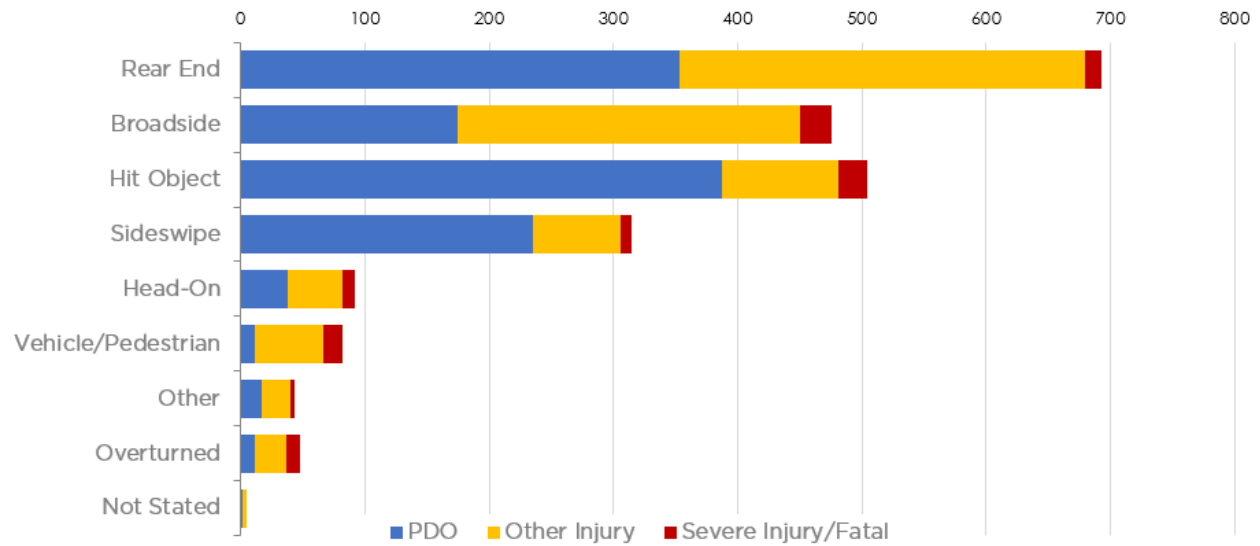
Table 2-13 and Table 2-14 show collisions by type and collisions by type and severity during the 2013-2017 period. The three most common collision types were rear end collisions (31 percent), hit object collisions (22 percent), and broadside collisions (21 percent). Collisions that resulted in a fatality or severe injury were present for all types of collisions but made up a larger proportion for vehicle-pedestrian collisions (26 percent), overturned vehicle collisions (24 percent), broadside collisions (10 percent), and head-on collisions (10 percent).

Table 2-13: San Marcos Collisions by Type (2013-2017)



Source: SWITRS, 2013-2017

Table 2-14: San Marcos Collisions by Type and Severity (2013-2017)



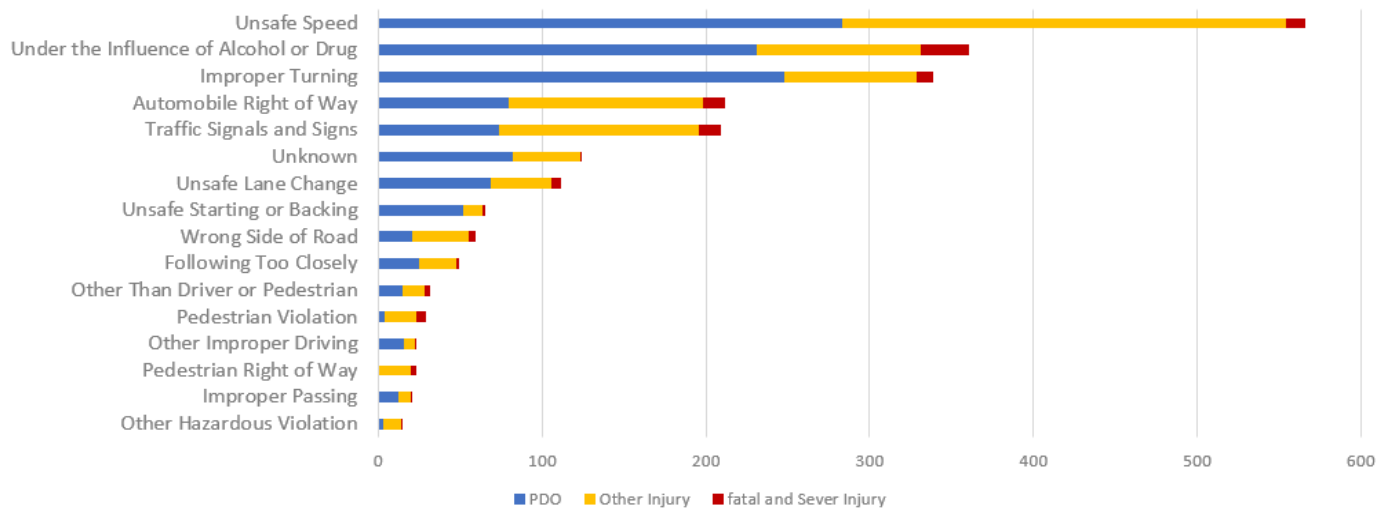
Source: SWITRS, 2013-2017

Table 2-15 shows the primary collision factors. The top five primary contributing factors to these collisions included unsafe speed (25 percent), driving or bicycling under the influence of alcohol or drugs (16 percent), improper turning (15 percent), automobile right of way⁷ (9 percent), and traffic signals and signs⁸ (9 percent). Other contributing factors accounted for between one and five percent of collisions.

⁷ *Automobile right of way* refers to a crash resulting from one motorist's failure to yield to another motorist who had the right of way.

⁸ *Traffic Signals and Signs* refer to a crash resulting from a motorist's failure to comply with a traffic control device (traffic signal, yield sign, or stop sign).

Table 2-15: San Marcos Primary Collision Factors (2013-2017)



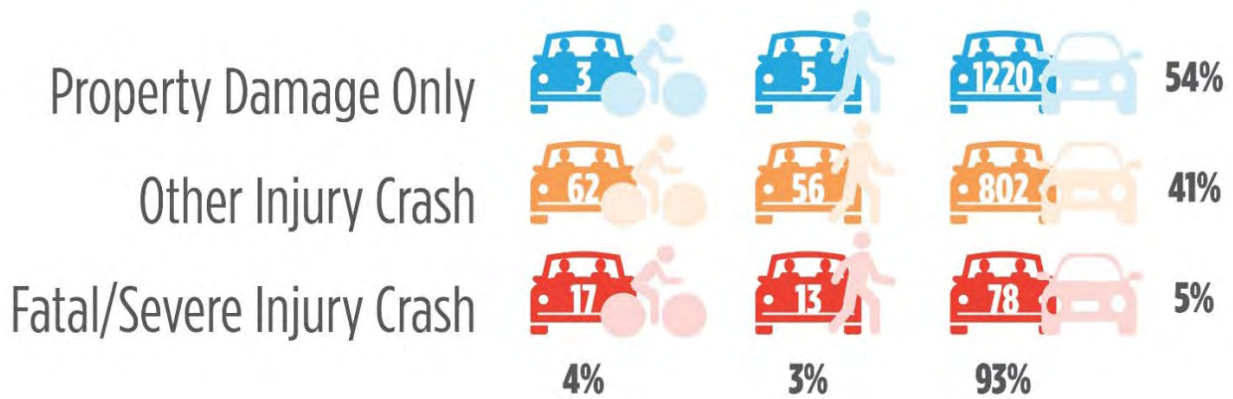
Note: PDO = property damage only

Source: SWITRS, 2013-2017

Bicycle and Pedestrian Collisions

While bicycle and pedestrian collisions with vehicles make up a small portion of the overall collisions (7 percent), these collisions more often result in severe injuries and fatalities. Table 2-16 shows the severity by road user involved. The fatal/severe injury ratios are 21 percent (17 out of 82) for bicyclist-involved collisions, 18 percent (13 out of 74) for pedestrian-involved collisions, and four percent (78 out of 2100) for vehicular collisions.

Table 2-16: San Marcos Road Users Involved and Crash Severity (2013-2017)

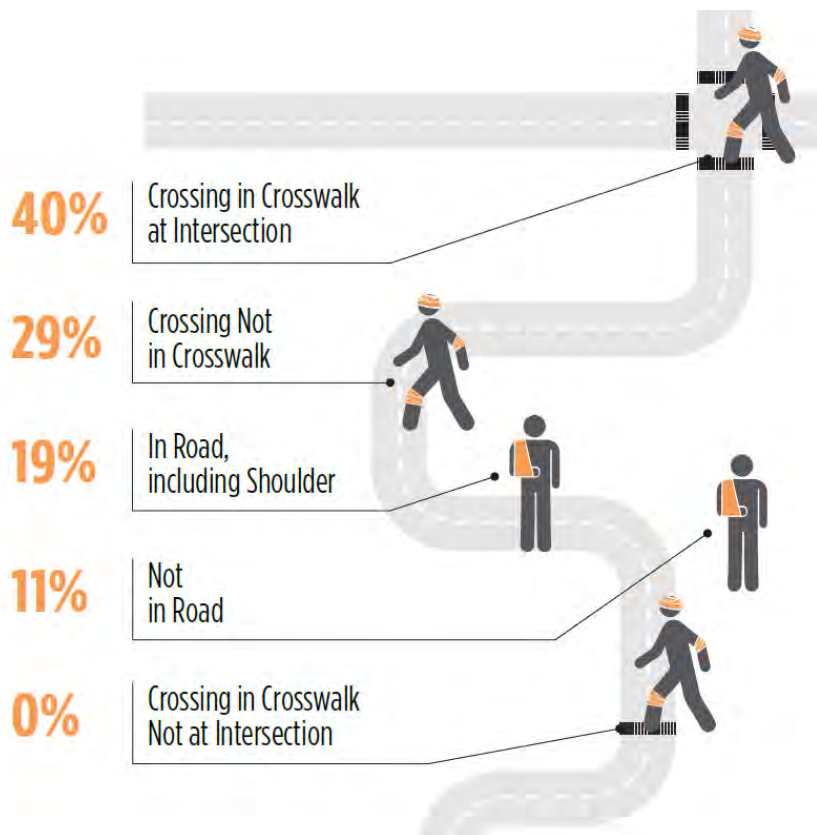


Source: SWITRS, 2013-2017

For pedestrian collisions, it is also important to note exactly where the pedestrians were walking when the collision occurred. Table 2-17 shows the pedestrian collisions by pedestrian action. For pedestrian-involved collisions, the location in relation to the roadway was recorded. The largest share (40 percent) of this type of collision occurred while the pedestrian was crossing at an

intersection in the crosswalk. In addition, 29 percent of pedestrian-involved collisions occurred when the pedestrian was crossing where a crosswalk was not present, and 19 percent of pedestrian-involved collisions occurred on the road (including the shoulder). Finally, 11 percent of pedestrian collisions with a vehicle at a location that was not a roadway. As shown in the figure, there were no pedestrian-involved collisions recorded in crosswalks not at an intersection (e.g., at a mid-block crosswalk).

Table 2-17: San Marcos Pedestrian Collisions by Pedestrian Action (2013-2017)



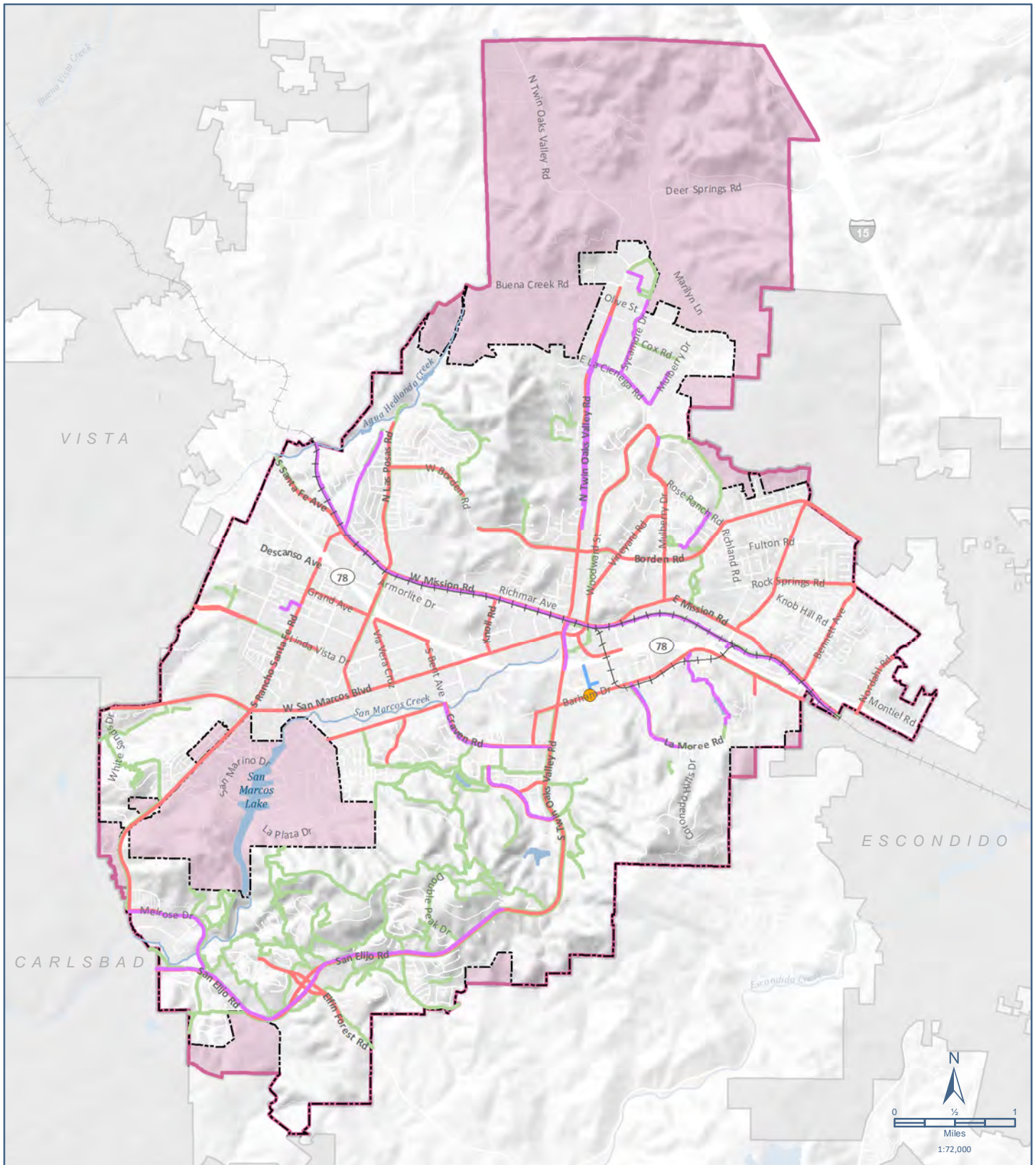
Source: SWITRS, 2013-2017

San Marcos' Collision Locations

Collisions of for all roadway users that resulted in an injury or fatality are shown in Figure 2-11. Collisions occurred primarily on San Marcos' arterial roads, with fewer collisions occurring on local residential streets. In addition, fatalities occurred at West San Marcos Boulevard, North Twin Oaks Valley Road, Mission Road, South Santa Fe Avenue, and Grand Avenue. A noticeable concentration of collisions occurred at South Rancho Santa Fe Road.

Pedestrian Collision Locations

Bicycle and pedestrian-involved collisions are shown in Figure 2-12. Bicycle and pedestrian collisions mainly occurred on West San Marcos Boulevard, Twin Oaks Valley Road, Mission Road, South Santa Fe Avenue, Grand Avenue and South Rancho Santa Fe Road.



LEGEND

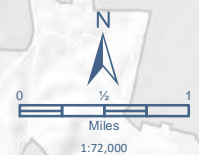
- Class I Bike Path
- Class II Bike Lane
- Class III Bike Route
- Multi-Use Path
- Pedestrian Bridge
- City of San Marcos
- Sphere of Influence
- Areas within the Sphere of Influence
- Neighboring City

Data sources: City of San Marcos; SANGIS; CalAtlas. Map date: February 24, 2020.

City of San Marcos
General Plan

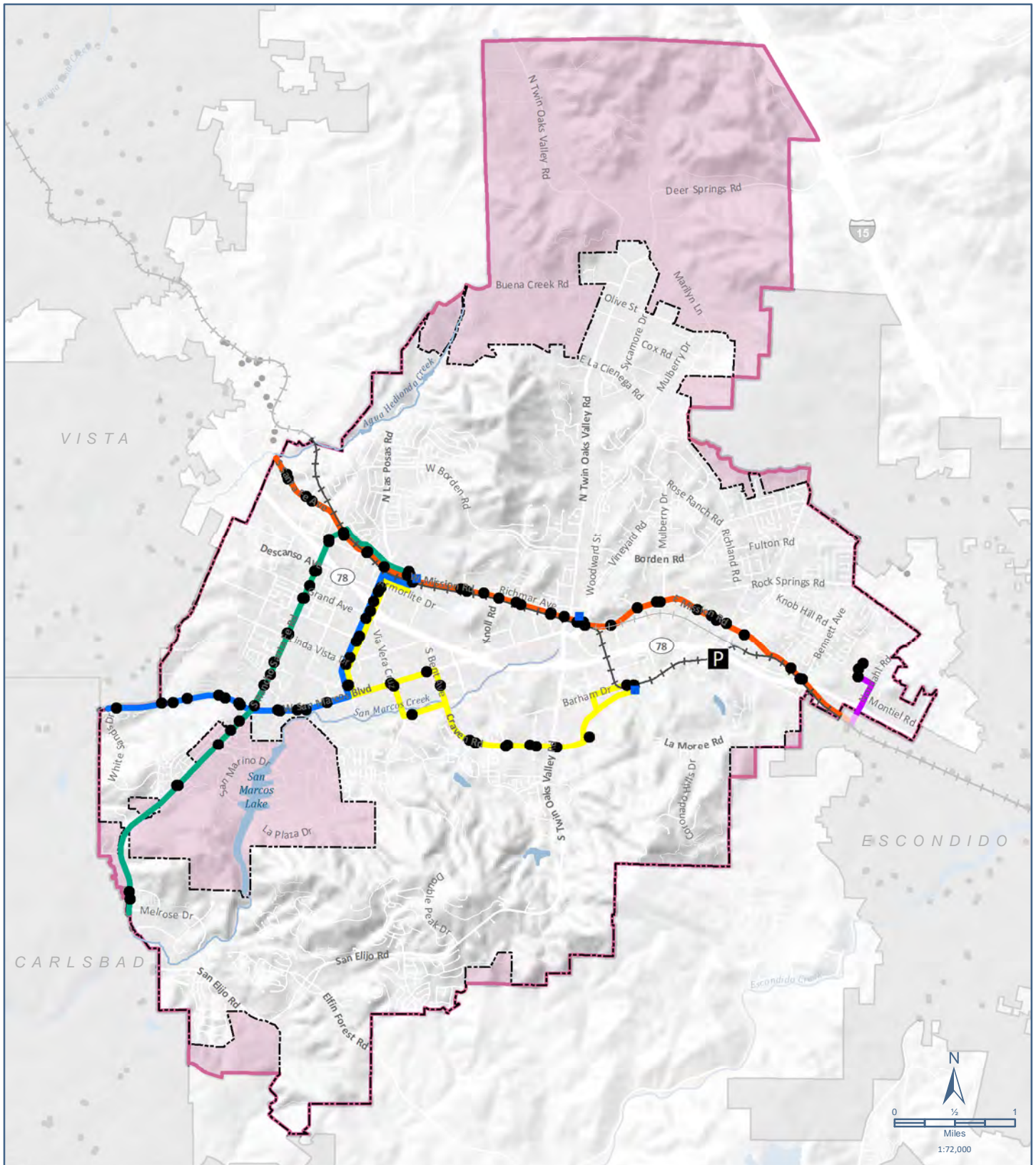
FIGURE 2-1.

**Existing Bicycle
& Pedestrian
Facilities**



Mobility

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LEGEND

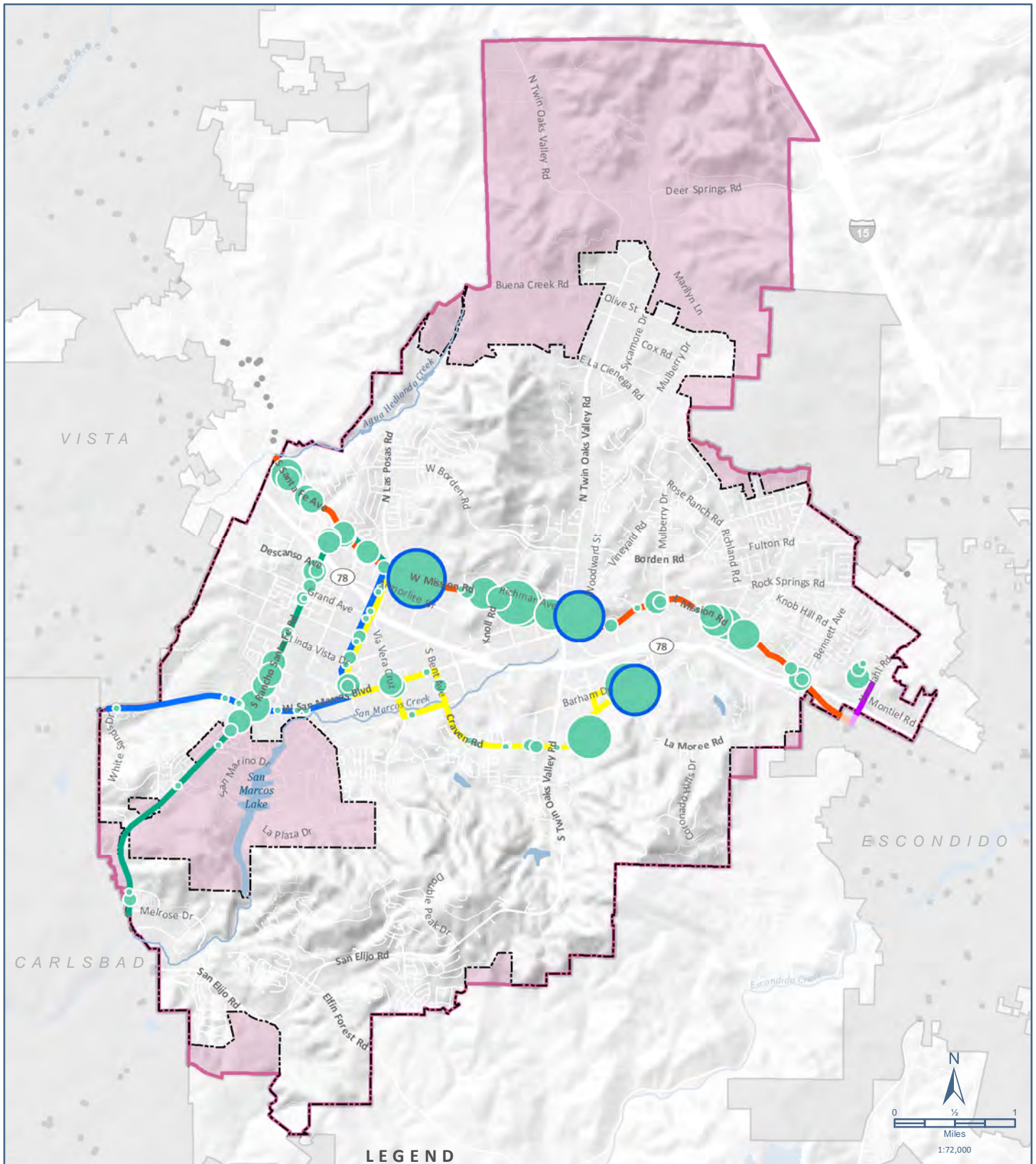
- | | | | |
|---------------------------|------------|---|---|
| NCTD Breeze Routes | | NCTD SPRINTER Rail Line
Park & Ride
SPRINTER Stations
NCTD Bus Stops | City of San Marcos
Sphere of Influence
Areas within the Sphere of Influence
Neighboring City |
| 304
305
347 | 353
445 | | |

Data sources: SANGIS; CalAtlas. Map date: February 24, 2020.

City of San Marcos
 General Plan
FIGURE 2-2.
Existing
Transit Facilities

Mobility

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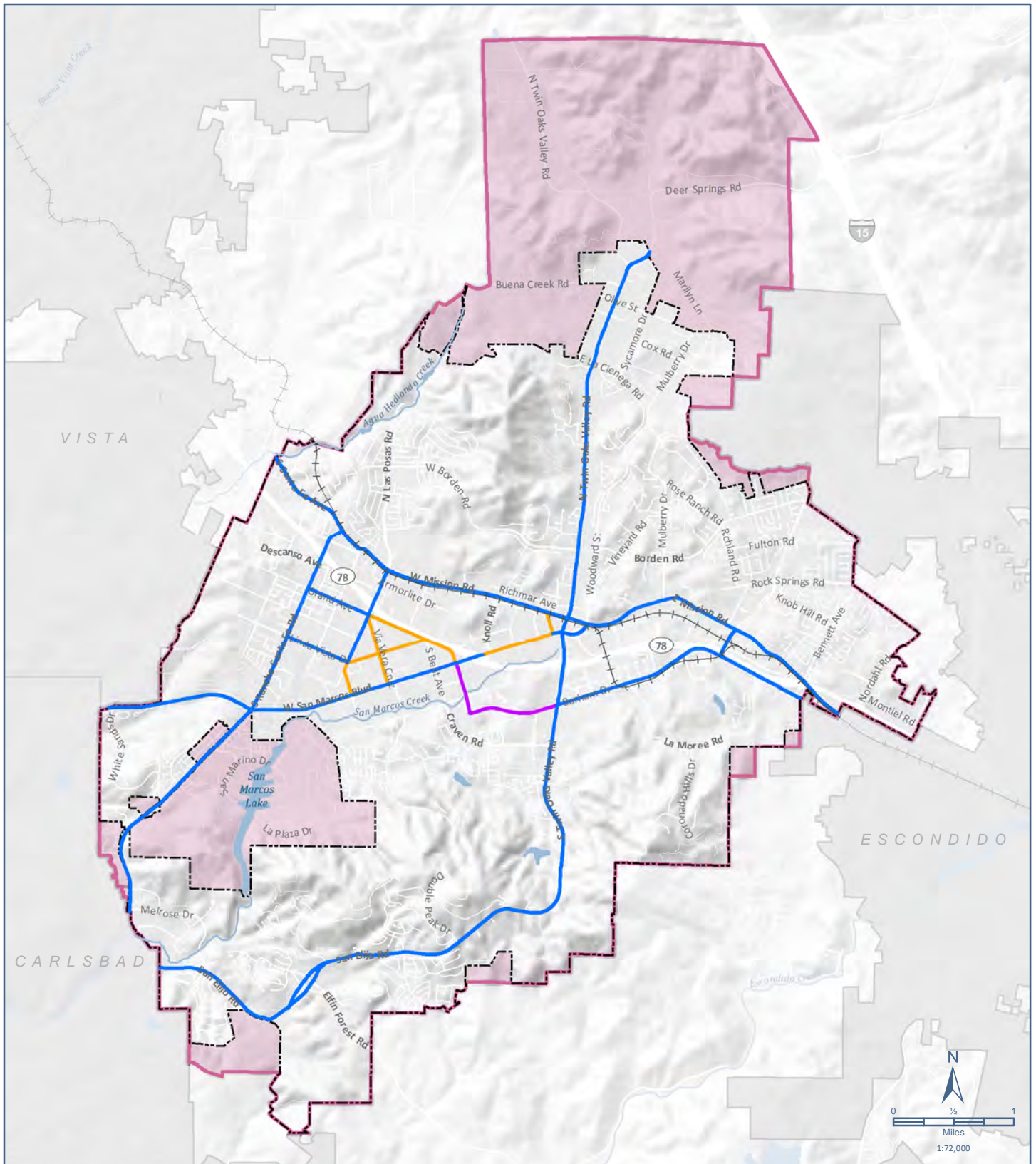


Data sources: SANGIS; CalAtlas. Map date: February 24, 2020.

City of San Marcos
General Plan
FIGURE 2-3.
Existing
Transit Ridership

Mobility

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LEGEND

- Existing Freight Route
- Existing Freight Route (To be eliminated)
- Proposed Freight Route
- City of San Marcos
- Sphere of Influence
- Areas within the Sphere of Influence
- Neighboring City

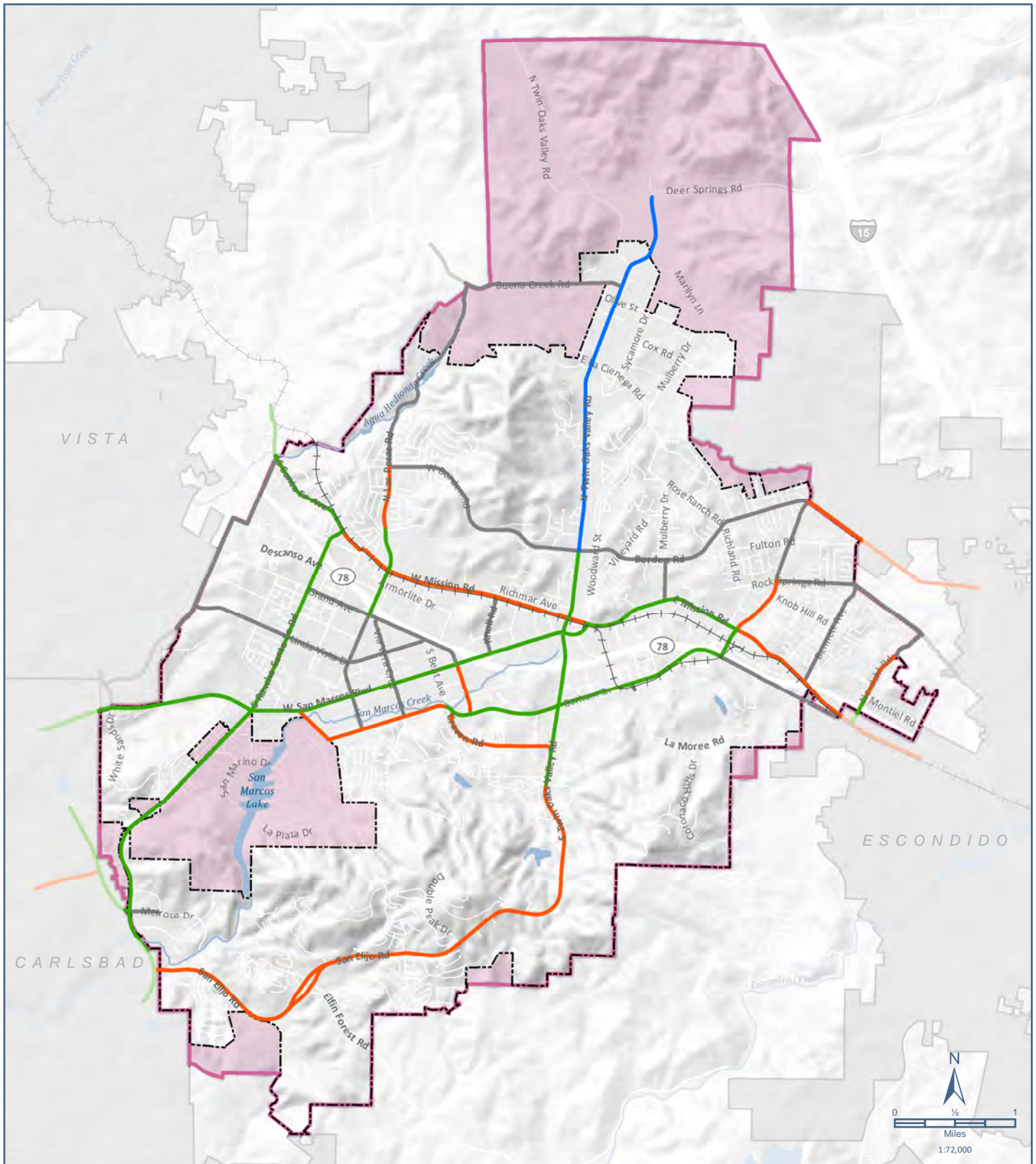
Data sources: City of San Marcos; SANGIS; CalAtlas. Map date: February 24, 2020.

City of San Marcos
General Plan

FIGURE 2-4.
**Existing & Future
Freight Routes**

Mobility

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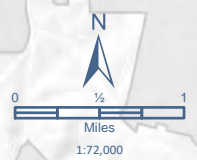


LEGEND

- Prime Arterial
- Major Arterial
- Rural Major Arterial
- Secondary Arterial
- City of San Marcos
- Sphere of Influence
- Areas within the Sphere of Influence
- Neighboring City

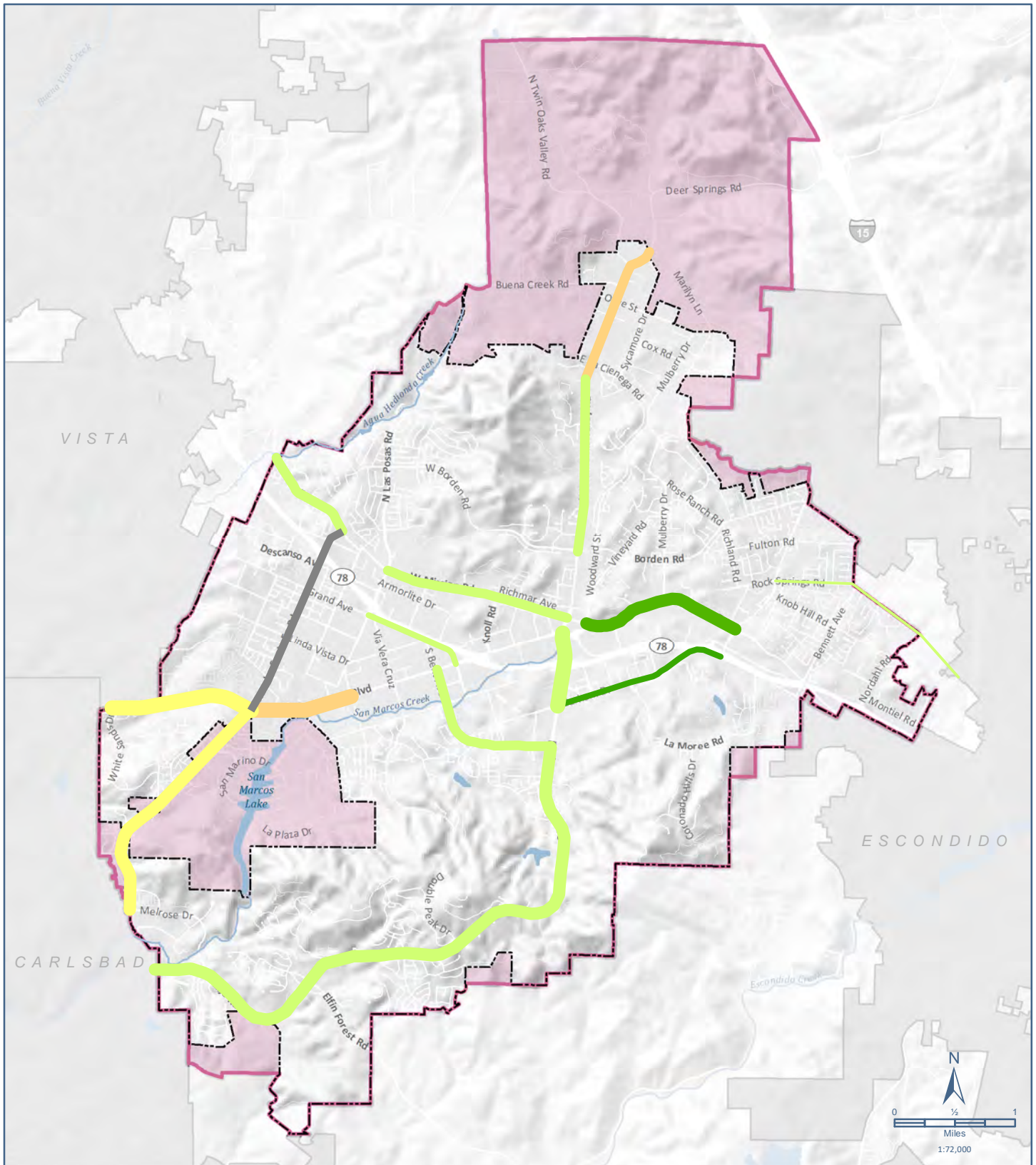
Data sources: City of San Marcos; SANGIS; CalAtlas. Map date: February 30, 2020.

City of San Marcos
General Plan
FIGURE 2-5.
Existing
Roadway
Classifications



Mobility

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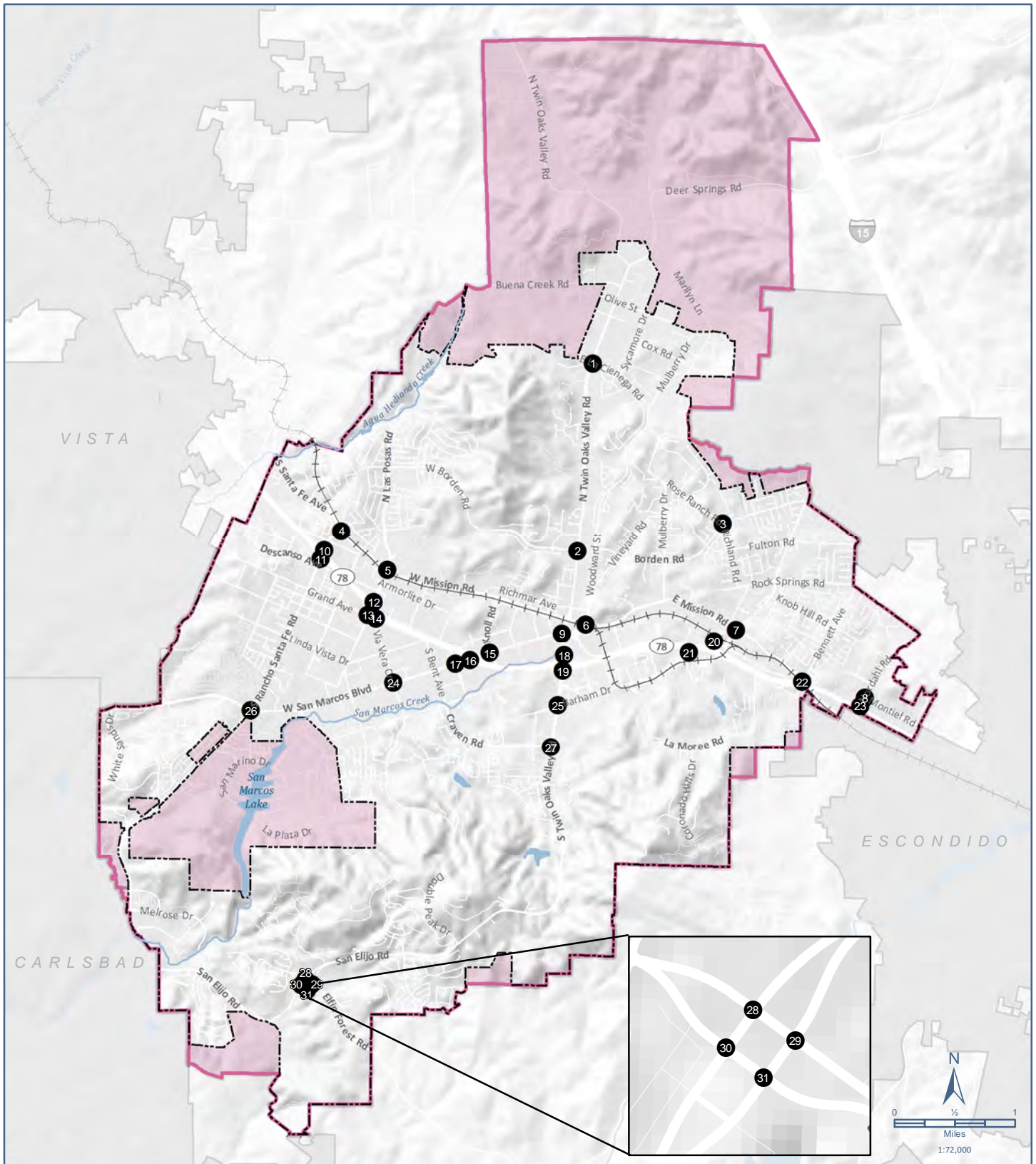
LEGEND			
	Data is missing		< 10,000 ADT
	LOS A		10,000 - 15,000 ADT
	LOS B		15,000 - 20,000 ADT
	LOS C		20,000 - 30,000 ADT
	LOS D		> 30,000 ADT
	LOS E		City of San Marcos
	LOS F		Sphere of Influence
			Neighboring City

Data sources: City of San Marcos; SANGIS; CalAtlas. Map date: February 30, 2020.

City of San Marcos
General Plan
FIGURE 2-6.
Existing
Roadway
ADT and LOS

Mobility

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LEGEND

- Study Intersection
- ▭ City of San Marcos
- ▭ Sphere of Influence
- ▭ Areas within the Sphere of Influence
- ▭ Neighboring City

City of San Marcos
General Plan

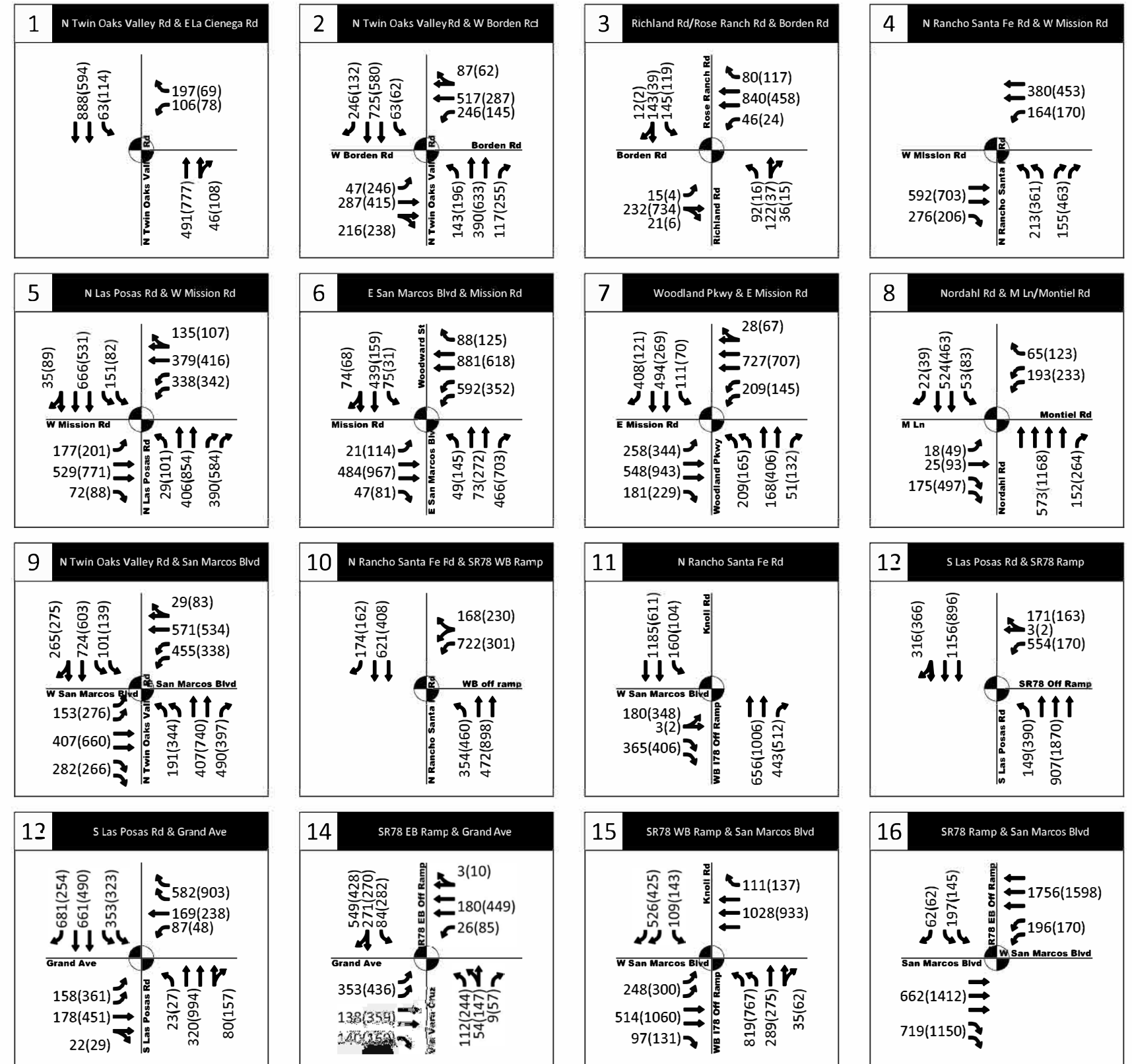
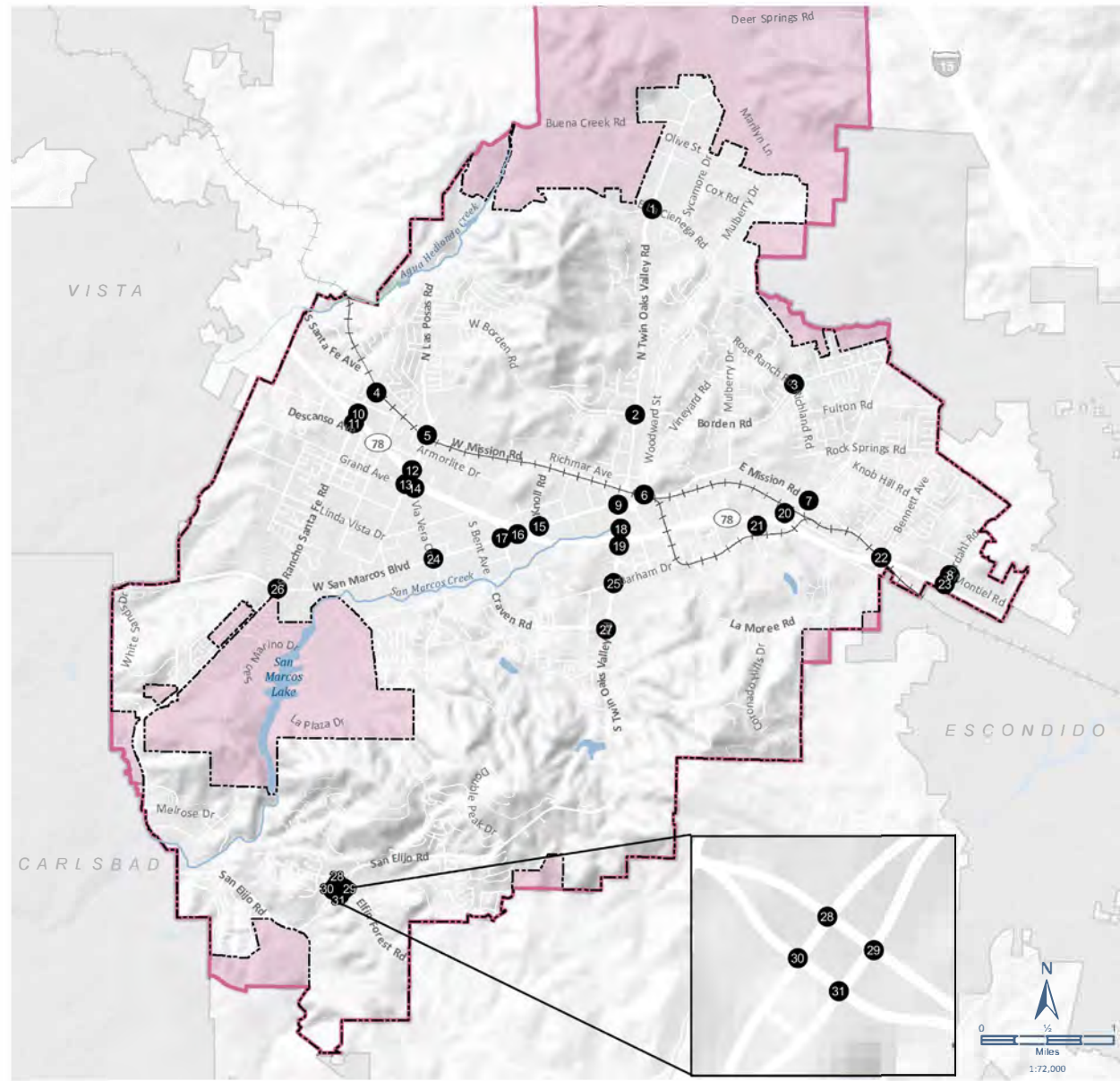
FIGURE 2-7.

**Intersection
Study Locations**

Data sources: SANGIS; CalAtlas. Map date: March 2, 2020.

Mobility

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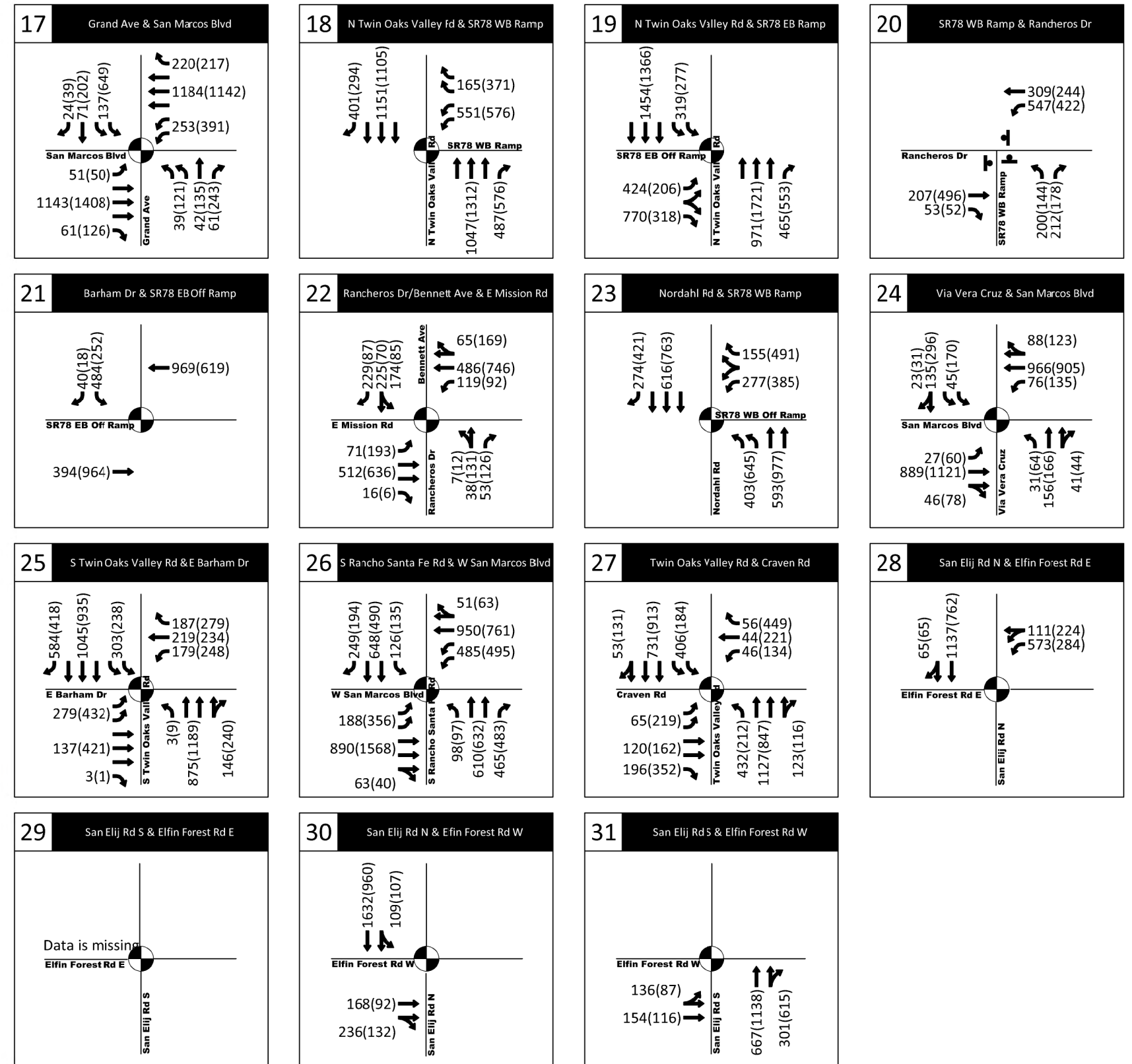
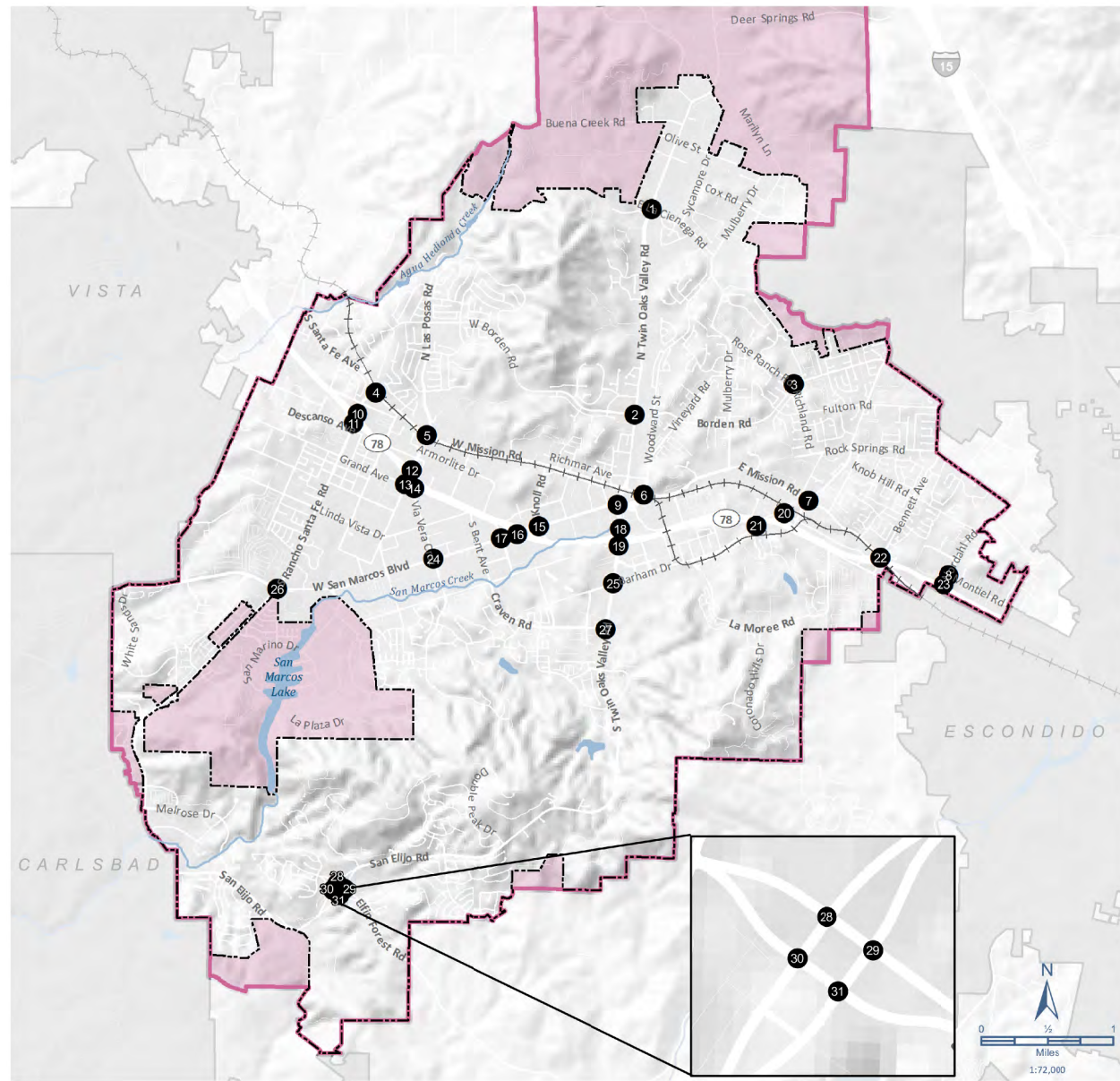


AM(PM) - Traffic Volume
 - Traffic Signal

Existing Weekday AM & PM Peak Hour Traffic Volumes and Lane Geometries San Marcos, CA Figure 2-8

Mobility

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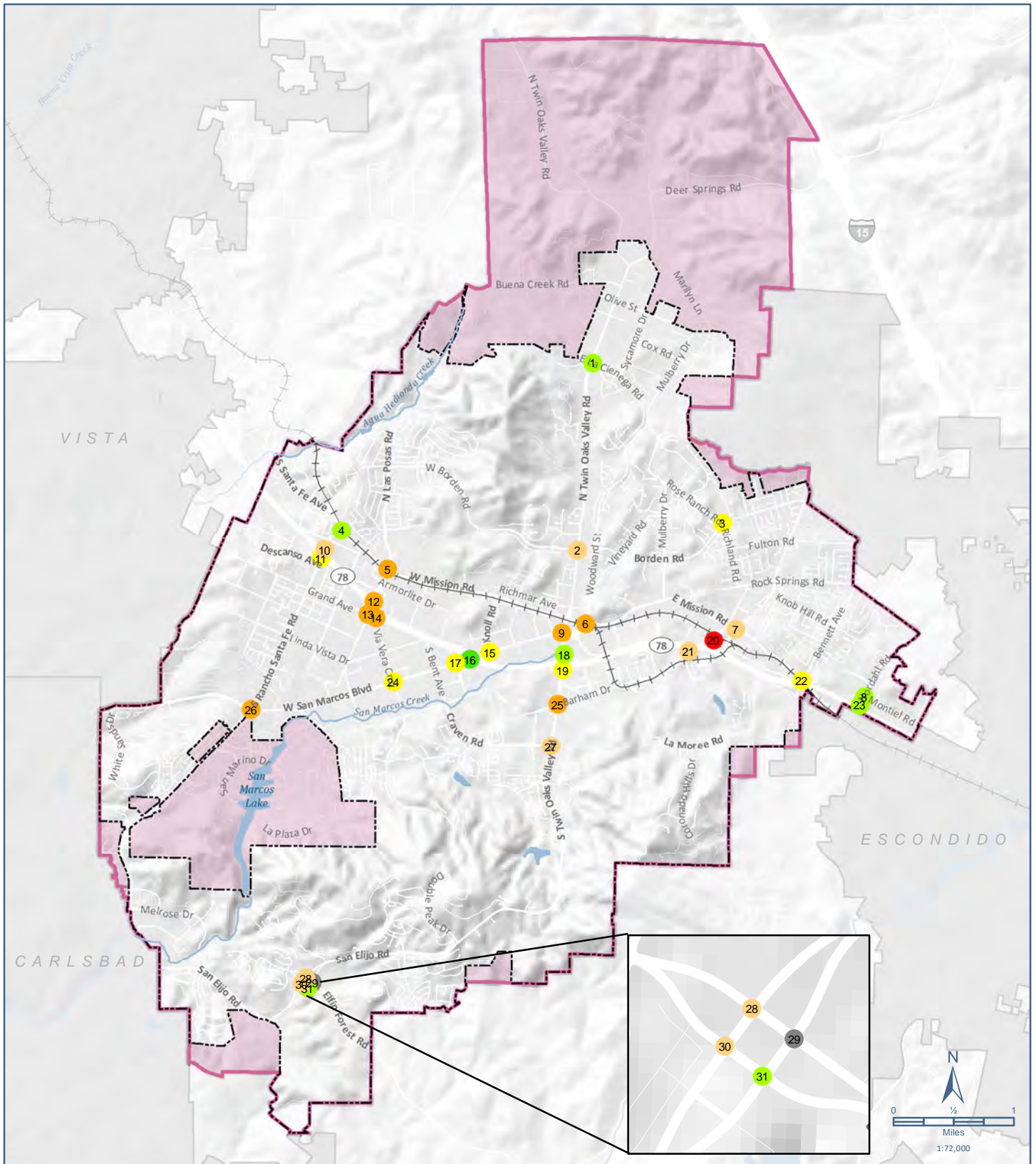
AM(PM) - Traffic Volume
 - Traffic Signal

Existing Weekday AM & PM Peak Hour Traffic Volumes and Lane Geometries
 San Marcos, CA

Figure
 2-8

Mobility

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LEGEND

- Data is missing
- LOS A
- LOS B
- LOS C
- LOS D
- LOS E
- LOS F
- City of San Marcos
- Sphere of Influence
- Areas within the Sphere of Influence
- Neighboring City

City of San Marcos
General Plan

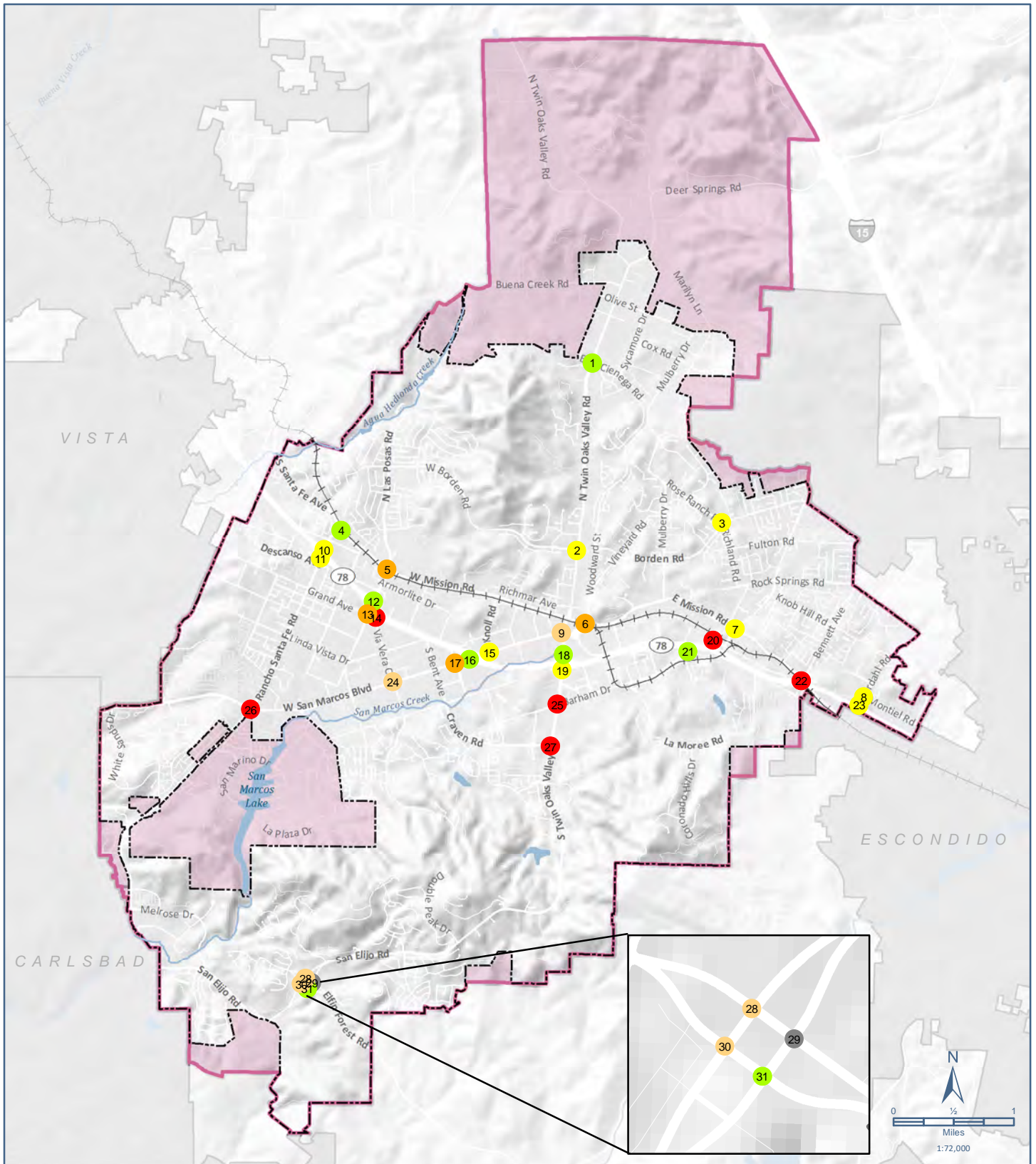
FIGURE 2-9.

**Weekday
AM Peak Hour
Intersection LOS**

Data sources: SANGIS; CalAtlas. Map date: March 2, 2020.

Mobility

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Data sources: SANGIS; CalAtlas. Map date: March 2, 2020.

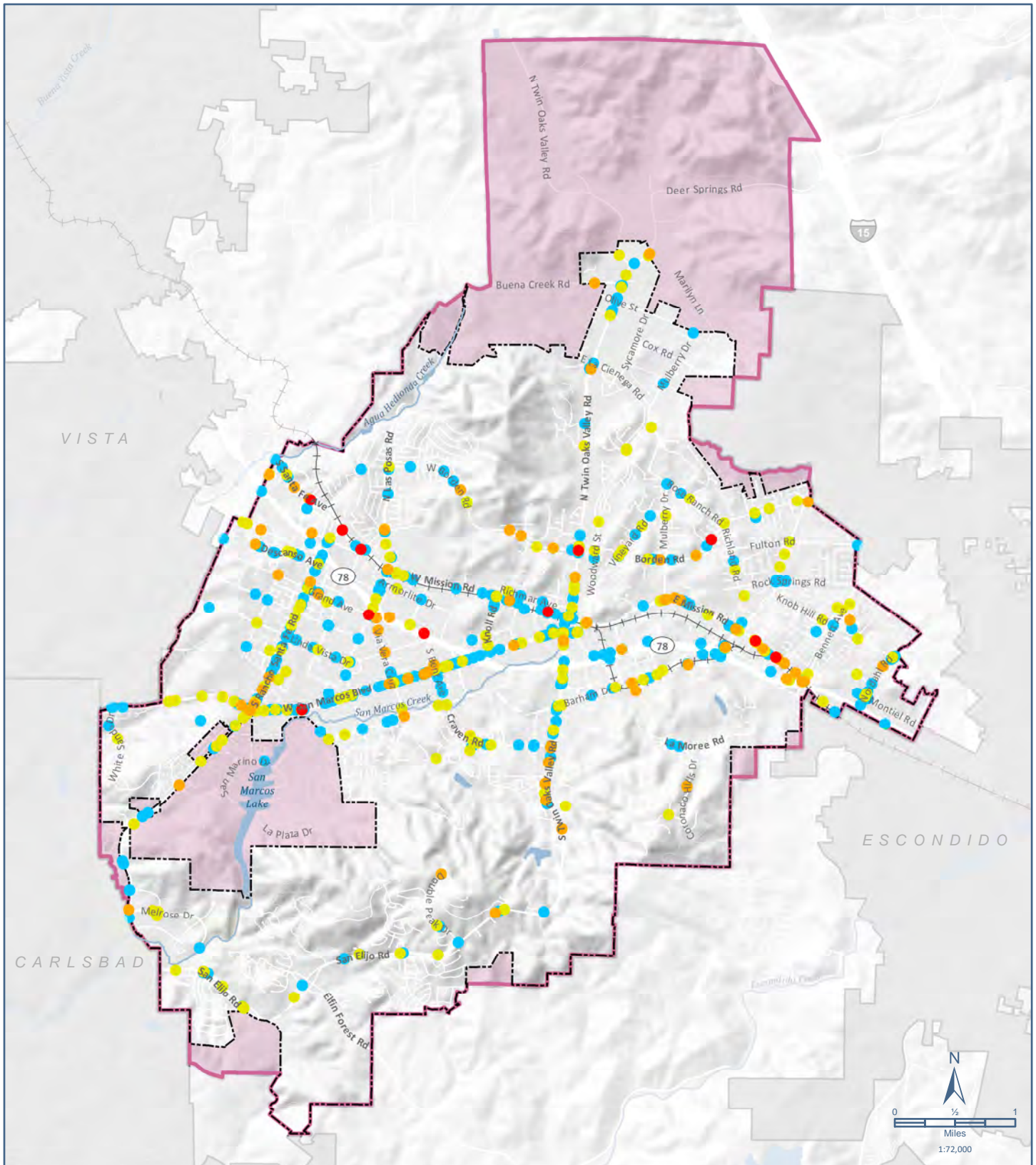
City of San Marcos
General Plan

FIGURE 2-10.

Weekday
PM Peak Hour
Intersection LOS

Mobility

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LEGEND

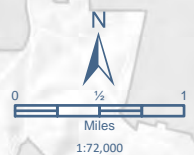
Collision Severity

- Fatal
- Injury (Severe)
- Injury (Other Visible)
- Injury (Complaint of Pain)
- City of San Marcos
- Sphere of Influence
- Areas within the Sphere of Influence
- Neighboring City

Data sources: SWITRS; SANGIS; CalAtlas. Map date: February 24, 2020.

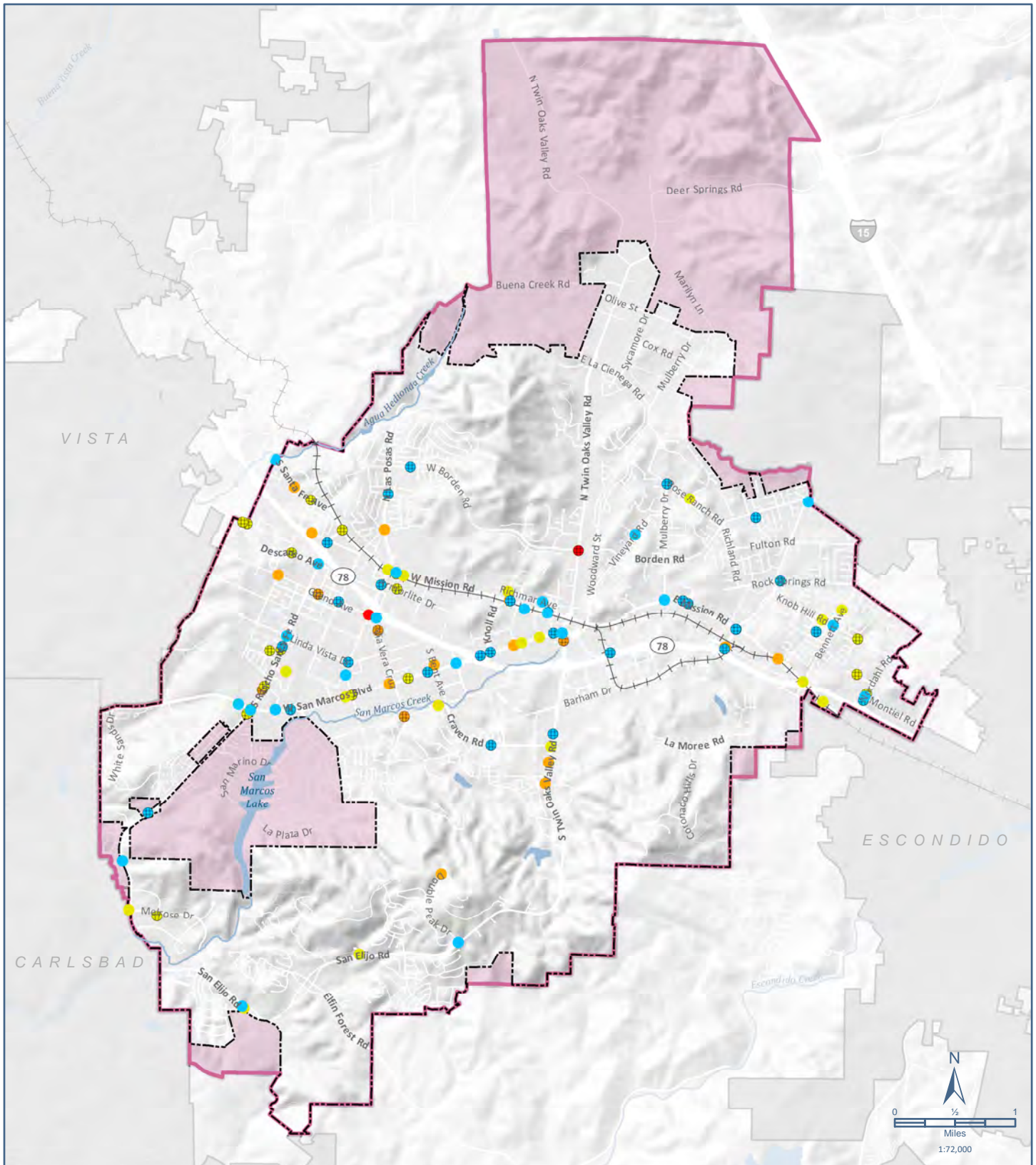
City of San Marcos
General Plan

FIGURE 2-11.
Existing
Collision Data
(2013 - 2017)



Mobility

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LEGEND

● Fatal	● Bicycle Collision	▭ City of San Marcos
● Injury (Severe)	⊕ Pedestrian Collision	▭ Sphere of Influence
● Injury (Other Visible)		▭ Areas within the Sphere of Influence
● Injury (Complaint of Pain)		▭ Neighboring City

Data sources: SWITRS; SANGIS; CalAtlas. Map date: February 24, 2020.

City of San Marcos
 General Plan
FIGURE 2-12.
 Existing
**Bicycle & Pedestrian
 Collision Data
 (2013 - 2017)**

Mobility

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