

2.0 CIRCULATION

The following section describes the existing regulatory, physical, and operational characteristics affecting the City of Manteca's transportation system. An overview of the regulatory framework is presented first, followed by an overview of the circulation network's setting, descriptions of each transportation mode, and an analysis of existing segment level of service.

REGULATORY FRAMEWORK

The City of Manteca General Plan, along with a variety of regional, state and federal plans, legislation, and policy directives, provide guidelines for the safe operation of streets and transportation facilities in Manteca. While the City of Manteca has primary responsibility for the maintenance and operation of transportation facilities within the City, Manteca staff works on a continual basis with responsible regional, state, and federal agencies including the County of San Joaquin, the San Joaquin Council of Governments (SJCOG), the California Department of Transportation (Caltrans), the Federal Highway Administration (FHWA), and others, to maintain, improve, and balance the competing transportation needs of the community and the region.

STATE

Assembly Bill 1358: State of California Complete Streets Act

On September 30, 2008, Governor Schwarzenegger signed Assembly Bill (AB) 1358, the California Complete Streets Act of 2008, into law. AB 1358 requires any substantive revision of the circulation element of a city or county's general plan to identify how they will safely accommodate the circulation of all users of the roadway including pedestrians, bicyclists, children, seniors, individuals with disabilities, and transit riders, as well as motorists.

Caltrans Deputy Directive 64-R1: Complete Streets – Integrating the Transportation System

In 2001, Caltrans adopted Deputy Directive (DD) 64, a policy directive related to non-motorized travel throughout the state. In October 2008, DD 64 was strengthened to reflect changing priorities and challenges. DD 64-R1 states:

The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.

The Department develops integrated multimodal projects in balance with community goals, plans, and values. Addressing the safety and mobility needs of bicyclists, pedestrians, and transit users in all projects, regardless of funding, is implicit in these objectives. Bicycle, pedestrian, and transit travel is facilitated by creating "complete streets" beginning early in system planning and continuing through project delivery and maintenance and operations. Developing a network of "complete streets" requires collaboration among all Department functional units and stakeholders to establish effective partnerships.

Complete Street
A transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, truckers, and motorists, appropriate to the function and context of the facility. Complete street concepts apply to rural, suburban, and urban areas.

Providing safe mobility for all users, including motorists, bicyclists, pedestrians and transit riders, contributes to the Department's vision: "Improving Mobility Across California."

Successful long-term implementation of this policy is intended to result in more options for people to go from one place to another, less traffic congestion and greenhouse gas emissions, more walkable communities (with healthier, more active people), and fewer barriers for older adults, children, and people with disabilities.

Economically, complete streets can help revitalize communities, and they can give families the option to lower transportation costs by using transit, walking or bicycling rather than driving to reach their destinations. The Department is actively engaged in implementing its complete streets policy in all planning, programming, design, construction, operations, and maintenance activities and products on the State Highway System.

Caltrans Director's Policy 22 (DP-22), "Director's Policy on Context Sensitive Solutions"

Director's Policy 22, a policy regarding the use of "Context Sensitive Solutions" on all state highways, was adopted by Caltrans in November of 2001. The policy reads:

The Department uses "Context Sensitive Solutions" as an approach to plan, design, construct, maintain, and operate its transportation system. These solutions use innovative and inclusive approaches that integrate and balance community, aesthetic, historic, and environmental values with transportation safety, maintenance, and performance goals. Context sensitive solutions are reached through a collaborative, interdisciplinary approach involving all stakeholders.

The context of all projects and activities is a key factor in reaching decisions. It is considered for all State transportation and support facilities when defining, developing, and evaluating options. When considering the context, issues such as funding feasibility, maintenance feasibility, traffic demand, impact on alternate routes, impact on safety, and relevant laws, rules, and regulations must be addressed.

The policy recognizes that "in towns and cities across California, the State highway may be the only through street or may function as a local street," that "these communities desire that their main street be an economic, social, and cultural asset as well as provide for the safe and efficient movement of people and goods," and that "communities want transportation projects to provide opportunities for enhanced non-motorized travel and visual quality." The policy acknowledges that addressing these needs will assure that transportation solutions meet more than just traffic and operational objectives.

Senate Bill 743: Environmental Quality: Transit Oriented Infill Projects And Judicial Review Streamlining for Environmental Leadership Development Projects

On September 27, 2013, California Governor Jerry Brown signed Senate Bill (SB) 743 into law. SB 743 will change transportation impact analysis as part of CEQA compliance when the rulemaking process is complete. These changes will include elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts in many or all parts of California. The draft CEQA guidelines developed by the Governor's Office of Planning and Research utilize VMT as the primary means of measuring transportation impacts. Furthermore, parking impacts will not be considered significant impacts on the environment for select development projects within infill areas with nearby frequent transit service. According to the legislative intent

contained in SB 743, these changes to current practice were necessary to more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.

LOCAL

San Joaquin Council of Governments

REGIONAL TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITY STRATEGY

The current Regional Transportation Plan and Sustainable Community Strategy (RTP/SCS) produced by SJCOG was adopted in 2014. The RTP/SCS sets forth regional transportation policy and provides capital program planning for all regional, state, and federally funded projects. The RTP/SCS also demonstrates how land use development and transportation can work together to meet greenhouse gas emission reduction targets for cars and light trucks. The RTP can be considered the San Joaquin region's "statement of priorities" for the future transportation system. The RTP/SCS states that its policies, supportive strategies, and performance indicators are all designed to articulate what the region wants the future transportation system to look like, what types of decisions will help the region attain its vision, and the performance measures or indicators by which the region can assess its progress.

MEASURE K: SAN JOAQUIN COUNTY LOCAL TRANSPORTATION IMPROVEMENT PLAN

Measure K, the San Joaquin County Local Transportation Improvement Plan, was passed by San Joaquin County voters in November 1990 and renewed in November 2006. Measure K assesses a half-cent sales tax on purchases made throughout the County to provide direct funding for local transportation projects. The funds are dedicated to the specific programs and projects specified in the Measure K expenditure plan, including improved highways and local streets, new passenger rail service, regional and interregional bus routes, park-and-ride lots, new bicycle facilities, and railroad crossings. The renewal of Measure K is estimated to generate \$2.552 billion for these transportation programs. Funding from Measure K has been used to help widen SR 99 through Manteca to six lanes and for pavement maintenance on local Manteca streets, among other projects.

City of Manteca General Plan

The Manteca General Plan is a long-range comprehensive planning document required by state law to set policy and guide future growth, development and conservation of resources. The Plan was adopted by the City in 2003 and amended most recently in 2016. The following goals are relevant to circulation in Manteca.

Circulation Element

GOAL C-1. Provide for a circulation system that allows for the efficient movement of people, goods, and services within and through Manteca while minimizing public costs to build and maintain the system.

GOAL C-2. Provide complete streets designed to serve a broad spectrum of travel modes, including automobiles, public transit, walking, and bicycling.

GOAL C-3. Develop attractive streetscapes that include landscaping, street trees, planted berms, and landscaped medians.

GOAL C-4. Support the development of a Downtown area that is highly accessible to all modes of travel, focusing primarily on pedestrians, bicyclists, and transit riders.

GOAL C-5. Balance the level of service for all modes so that residents and visitors have a variety of transportation choices.

GOAL C-6. Maintain a safe transportation system for all modes.

GOAL C-7. Accommodate truck and freight movements by developing city-wide truck routes and encouraging the development of freight and warehousing centers near existing rail lines and spurs.

GOAL C-8. Establish reasonable parking requirements (minimum and maximum rates for uses) that limit parking encroachment while minimizing the amount of land consumed by parking lots.

GOAL C-9. Provide a safe, secure, and convenient bicycle route system that connects to retail, employment centers, public facilities, and parks.

GOAL C-10. Provide for safe and convenient pedestrian circulation.

GOAL C-11. Maintain a coordinated, efficient bus service that provides both an effective alternative to automobile use and serves members of the community that cannot drive.

GOAL C-12. Support and encourage regional transit connections that link Manteca to other cities.

Policies in the Circulation Element are organized by topic. Policies for each topic most relevant to this report are summarized below.

Level of Service: Policies C-P-1 through CP-3 promote balanced LOS across all modes and vehicular LOS of D or better, except in downtown and certain other locations where other goals predominate.

Street System: Policies C-P-8 through C-P-11 and C-P-17 promote access and connectivity for all modes. Policy C-P-12 promotes use of roundabouts.

Transportation Safety: Policies C-P-20 through C-P-22 promote hazard reduction, maintenance of sight distances, and development of landscape separated sidewalks, respectively.

Parking: Policy C-P-23 notes that future growth in traffic volumes may require removal of on-street parking.

Bikeways and Pedestrian Facilities: Policies C-P-29 through C-P-40 promote development of safe and complete bicycle and pedestrian networks across the city.

Public Transportation: Policies C-P-41 through C-P-43 promote interregional bus and rail connections. Policy C-P-44 promotes intermodal connectivity. Policy C-P-45 and C-P-46 promote ridesharing. Policy C-P-48 promotes inclusion of transit on future roadways.

Goods Movement: Policies C-P-50 and C-P-52 promote truck access where appropriate. Policy C-P-51 promotes rail access within the City.

Transportation Demand Management: Policies C-P-53 through C-P-56 support programs which encourage alternatives to reduce the number and length of automobile trips.

Manteca Public Facilities Implementation Plan

The Manteca Public Facilities Implementation Plan (PFIP) is the implementing program for public infrastructure policies identified in the City's General Plan Policy Document. The purpose of the PFIP is to ensure that water, wastewater, storm drainage, and transportation facilities within the City are sufficient to support the City's growth in accordance with its General Plan. The PFIP also helps ensure that infrastructure is constructed in a timely manner and financed equitably, in proportion to the demands placed on the new facilities. In most cases, developers pay their proportionate share to reimburse the City for the cost to finance and construct the infrastructure.

The 2013 PFIP addressed water, storm drainage, and sewer collection facilities. An update addressing the transportation system was developed in 2015 and is being updated in early 2017 for adoption by the City Council.

Manteca Bicycle Master Plan

The 2003 Manteca Bicycle Master Plan was developed as a blueprint for a system of bikeways within the City of Manteca. The envisioned system builds upon existing on-street and off-street bicycle facilities throughout the City with enhancements to overall connectivity, support facilities, safety and education programs. The Plan establishes bicycle goals, objectives, and policies; identifies future bicycle infrastructure projects; and promotes support facilities and educational programs. The following seven goals are established by the Plan.

Goal 1: To expand transportation alternatives within the City of Manteca, establish a comprehensive, convenient, and safe bikeway system for travel within the City and connection to the rest of the region.

Goal 2: Include bikeway facilities in all new development projects within the City of Manteca to facilitate on-site circulation for bicycle travel, on-site bicycle planning, and connections to the proposed bikeway system.

Goal 3: Develop a bikeway system that enhances connections to employment, schools, shopping and other centers of activity within the City of Manteca.

Goal 4: Develop a bikeway system that is safe and comfortable for a wide range of users to improve personal physical fitness, health, and enjoyment for all residents and visitors of the City of Manteca.

Goal 5: Improve bicycling conditions in the City of Manteca by implementing safe bikeways and providing educational resources to facilitate their use.

Goal 6: Avoid adverse environmental impacts associated with implementation of the proposed system.

Goal 7: Acquire sufficient funding to construct the proposed bikeway system within the next 20 years.

EXISTING SETTING

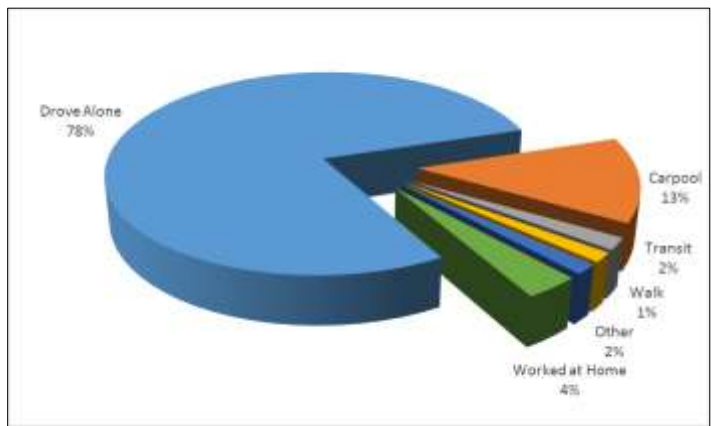
Urban Context

The City of Manteca is located within California’s Central Valley in the southern portion of San Joaquin County. State Route (SR) 99 connects Manteca to Stockton and Sacramento to the north and Modesto and Fresno to the south. SR 120 connects Manteca to Interstate 5 (I-5), I-205, Tracy, and the Bay Area to the west and foothill communities and Yosemite National Park to the east. I-5 also provides access to Stockton and Sacramento to the north.

Travel Characteristics

CENSUS JOURNEY TO WORK

Data from the 2016 California Department of Finance (DOF) Population and Housing Estimate Report and 2011-2015 American Community Survey (ACS) were utilized to illustrate journey to work (JTW) statistics for Manteca. According to the DOF, Manteca’s population was 73,841 people in 2016. The ACS reports Manteca had 29,043 employed residents 16 years of age or older. The ACS also reports that the majority of workers living in Manteca, 78.5 percent, drove to work alone, whereas alternative modes of transportation



accounted for approximately 18 percent of commute trips, with 13.2 percent of workers in carpools, 1.8 percent using public transit systems, 1.5 percent of commuters walking to work, 0.3 percent bicycling to work, and 3.5 percent of workers working at home. Table 2.0-1 provides an overview of Manteca’s JTW mode split data compared to countywide statistics for San Joaquin County and the State of California.

TABLE 2.0-1: DEMOGRAPHIC AND JOURNEY TO WORK DATA

	MANTECA		SAN JOAQUIN COUNTY		CALIFORNIA	
Population ¹	73,841		733,383		39,255,883	
Employed persons ²	29,043		271,491		16,869,052	
MODE SPLIT	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE
Drove Alone	22,792	78.5%	207,891	76.6%	12,380,153	73.4%
Bike	83	0.3%	1,437	0.5%	188,736	1.1%
Walk	423	1.5%	5,069	1.9%	458,523	2.7%
Public Transit	528	1.8%	4,010	1.5%	881,550	5.2%
Carpool	3,827	13.2%	40,122	14.8%	1,823,481	10.8%
Motorcycle	106	0.4%	664	0.2%	59,537	0.4%
Other	265	0.9%	2,235	0.8%	176,744	1.0%
Worked at Home	1,019	3.5%	10,063	3.7%	900,328	5.3%

¹POPULATION DATA OBTAINED FROM 2016 CALIFORNIA DEPARTMENT OF FINANCE POPULATION AND HOUSING ESTIMATE REPORT.

²EMPLOYMENT AND MODAL CHOICE DATA OBTAINED FROM 2011-2015 AMERICAN COMMUNITY SURVEY 5-YEAR ESTIMATES.

SOURCE: FEHR & PEERS, 2017.

POPULATION AND EMPLOYMENT

The ACS also reports characteristics of Manteca's employed residents 16 years of age or older. Of these workers, 27.8 percent work within Manteca, 39.0 percent work within San Joaquin County but outside of Manteca, and 32.9 percent work in other California counties. The mean travel time to work is 33.9 minutes, and 21.4 percent of residents have a travel time of 60 minutes or longer.

The US Census OnTheMap reported 14,312 jobs within Manteca in 2014. Combining OnTheMap data with ACS data, about 8,074 of these jobs were staffed by people living within Manteca, and 6,238 were staffed by people living outside of Manteca.

Additionally, Manteca had 23,470 occupied households with an average of 3.13 persons per household, according to the 2016 California DOF Population and Housing Estimate Report.

Vehicle Miles Traveled

A common indicator used to quantify the amount of motor vehicle use in a specified area is Vehicle Miles Traveled (VMT). One VMT is defined as any type of motor vehicle being driven one mile. VMT is typically reported for an average weekday. Many factors affect VMT including the average distance residents commute to work, school, and shopping, as well as the proportion of trips that are made by non-automobile modes. Areas that have a diverse land use mix and ample facilities for non-automobile modes, including transit, tend to generate lower VMT than auto-oriented suburban areas more distant from metropolitan centers.

The travel demand model developed by SJCOG will be adapted during the General Plan Update to estimate the changes in VMT resulting from buildout of the Plan. . Since it is not known at this time exactly how VMT will be used to measure the efficiency of the City's assumed land use growth and circulation network, a broad array of potential VMT metrics are presented in Table 2.0-2. By one of these measures, the model's "base condition" scenario, which relies on existing travel characteristics and the built environment (such as land use quantities and patterns), estimates that approximately 2,781,582 vehicle miles of travel are generated daily within the City of Manteca. This estimate reflects trips beginning or ending within the City of Manteca and does not include regional traffic passing through the area (such as traffic on SR 99 or SR 120).

It is customary for city or regional-wide studies to include the ratio values shown in rows 7 and 8 of Table 2.0-2, which represent all travel generated by Manteca land uses on a per capita or employee basis. However, the VMT values are most meaningful when compared to the City's future year model or regional conditions (regional VMT is not yet readily available). Row 9 is a more meaningful statistic because it combines both trip generators in the denominator of the equation.

2.0 CIRCULATION

TABLE 2.0-2: CITY OF MANTECA VEHICLE MILES TRAVELED (VMT) – EXISTING CONDITIONS

ROW	CATEGORY	AMOUNT	NOTE
1	Total VMT Within Manteca City Limits	1,186,971	Includes all vehicle travel within City Limits regardless of trip origin/destination (including all travel on SR 99 and SR 120 within the City Limits)
2	Total VMT Generated by Manteca Land Uses	2,781,582	VMT for all vehicle trips with an origin and/or destination within the City of Manteca. For Manteca trips that leave the City, portion of trip beyond City Limits also included.
3	Total Home-Based VMT for Manteca Households	1,777,267	All home-based production trips including any portion of trip beyond City Limits
4	City of Manteca Residents	73,841	Source: 2016 California Department of Finance Population and Housing Estimate Report
5	Estimated Employment Within City of Manteca	14,831	Source: Travel Demand Model
6	Service Population	88,672	Residents plus employees
7	VMT per Capita (Resident)	37.7	Citywide ratio: row 2 divided by row 3
8	VMT per Employee	187.6	Citywide ratio: row 2 divided by row 4
9	VMT per Service Population	31.4	Citywide ratio: row 2 divided by row 5
10	Home-based VMT per Household	$1,777,267 / 22,955 = 77.4$	All home-based production trips including any portion of trip beyond City Limits
11	Home-based VMT per Capita	$1,777,267 / 73,841 = 24.1$	All home-based production trips including any portion of trip beyond City Limits

SOURCE: FEHR & PEERS, 2017.

ROADWAY SYSTEM

This section describes the physical characteristics of Manteca’s roadway network. Figure 2.0-1 shows the roadway classification system in Manteca. Figure 2.0-2 shows the number of lanes on arterials and collectors.

State Highways

Two highways operated and maintained by Caltrans pass through Manteca, SR 99 and SR 120.

SR 99 is a six-lane freeway running through the eastern portion of the City. SR 99 is a primary route, along with I-5, connecting the City of Manteca with Stockton and Sacramento to the north. SR 99 is the primary route connecting the City of Manteca to Modesto and Fresno to the south. SR 99 has interchanges at the following City streets:

- Lathrop Road
- Yosemite Avenue
- Austin Road

SR 120 is a four-lane freeway running through the southern portion of the City. It is coincident with SR 99 from the western city limit to Yosemite Avenue, where it continues as an arterial east of SR 99 and as an expressway east of the city limit. SR 120 connects with I-5 in Lathrop at its west terminus approximately 1.5 miles west of the city limit, and to the east SR 120 connects to Yosemite National Park and the Sierra. SR 120 has interchanges at the following City streets:

- Airport Way
- Union Road
- Main Street

Arterials

Arterial streets are designed to serve through traffic and major local traffic generators such as residential, commercial, industrial, and institutional uses. (Traffic volumes provided for each segment below are based on counts collected by National Data and Surveying Services on October 25 and 26 or November 9 and 10, 2016.)

Manteca's north-south arterials described below generally connect from Stockton to the north to rural San Joaquin County to the south:

Airport Way is primarily a two-lane road within the City. Outside Manteca, the facility operates as a two-lane rural highway, passing primarily through rural residential and agricultural uses. North of SR 120, Airport Way carries approximately 17,300 vehicles per day.

Union Road is primarily a four-lane street within the City. Outside Manteca, the facility operates as a two-lane rural highway, passing primarily through rural residential and agricultural uses. North of SR 120, Union Road carries approximately 20,000 vehicles per day.

Main Street begins at Lathrop Road and continues south through the City into rural San Joaquin County. Main Street is primarily a four-lane street within the City, with sections of two-lane street near Lathrop Road, downtown, and SR 120. Outside Manteca, the facility operates as a two-lane rural highway, passing primarily through rural residential and agricultural uses. North of SR 120, Main Street carries approximately 26,600 vehicles per day.

Spreckels Avenue begins at Lathrop Road and continues south through the City until it becomes Industrial Park Drive at the intersection of Moffat Boulevard. Spreckels Avenue is a four-lane street north of Yosemite Avenue and a two-lane street south of Yosemite Avenue. Between Yosemite Avenue and Moffat Boulevard, Spreckels Avenue carries approximately 15,300 vehicles per day.

Van Ryn Avenue begins at Industrial Park Drive and continues south until it terminates at Woodward Avenue. The street has two lanes and carries approximately 7,700 vehicles per day.

Austin Road is primarily a two-lane road within the City. Outside Manteca, the facility operates as a two-lane rural highway, passing primarily through rural residential and agricultural uses. South of Yosemite Avenue, Austin Road carries approximately 3,900 vehicles per day.

Manteca's east-west arterials described below generally connect from Lathrop to the west to rural San Joaquin County to the east:

Lathrop Road is primarily a two-lane street, with sections of four-lane street west of Union Road and near Main Street. West of Union Road, Lathrop Road carries approximately 19,300 vehicles per day.

Louise Avenue is primarily a four-lane street, with some sections of two-lane street east of Main Street and other short sections throughout. Between Union Road and Main Street, Louise Avenue carries approximately 17,300 vehicles per day.

2.0 CIRCULATION

Yosemite Avenue is primarily a four-lane street, with some sections of two lanes near downtown and five lanes (three westbound and two eastbound) near SR 99. Between Airport Way and Union Road, Yosemite Avenue carries approximately 20,000 vehicles per day.

In addition to these arterials, Daniels Street, Atherton Drive, and Woodward Avenue are collectors which provide significant east-west links in the City.

Truck Route

One local Surface Transportation Assistance Act (STAA) truck route exists within Manteca. STAA routes have specific signage and are designed with street widths, curb return radii, and other features to accommodate STAA trucks, which have longer wheel bases than other trucks. The Manteca STAA route starts on Main Street at SR 120, continues onto Industrial Park Drive then Spreckels Avenue, then continues on Yosemite Avenue until it rejoins SR 120 at the SR 99 interchange.

At-Grade Railroad Crossings

At-grade railroad crossings exist on the following streets.

1. Airport Way south of Northgate Drive
2. Louise Avenue at west city limit
3. Yosemite Avenue at west city limit
4. Louise Avenue west of Philips Drive
5. Union Road south of Alameda Street
6. Walnut Avenue south of Jackolyn Drive
7. Center Street west of Elm Avenue
8. Yosemite Avenue at Manteca Avenue
9. Main Street south of Moffat Boulevard
10. Spreckels Avenue south of Moffat Boulevard
11. Moffat Boulevard east of Spreckels Avenue
12. Woodward Avenue west of Moffat Boulevard
13. Austin Road south of Moffat Boulevard

All of the aforementioned crossings include advanced signage, flashing signals, and crossing arms.

Traffic Volume Patterns

As in many communities, vehicular traffic volumes in Manteca tend to peak during weekday commute periods. Twenty-four-hour traffic volume counts on arterials and collectors collected for this report reveal these trends. On these streets, the peak hour typically occurs in the afternoon and represents 9 percent of daily traffic. Arterials and collectors have similar daily trends, and nearly all arterials and collectors have a peak hour volume representing between 8 percent and 10 percent of daily traffic. The volume trends are included in Appendix A at the end of this section.

PUBLIC TRANSPORTATION SYSTEM

Bus Transit Operations

Manteca Transit provides most bus service within the City. The San Joaquin Regional Transit District also provides connections from Manteca to Stockton and Ripon.

MANTECA TRANSIT

Manteca Transit is the primary transit provider in the City; it provides regularly-scheduled fixed-route service to major activity centers and transit hubs within the City limits. Three routes provide hourly service weekdays from 6 AM to 7 PM. An exhibit showing bus routes is provided in Figure 2.0-3.

Route 1 is primarily an east-west route traveling along Yosemite Avenue. Stops include Stadium Center, Kaiser Permanente Hospital, SaveMart, City Hall, the Senior Center, Manteca High School, Doctors Hospital, Target, and the Laurel Glen Apartments.

Route 2 and **Route 3** both serve a large loop around the City, with Route 2 operating in a clockwise direction and Route 3 operating in a counterclockwise direction. Stops include City Hall, the Senior Center, Walmart, the Promenade Shops at Orchard Falls, Stadium Center, Sierra High School, East Union High School, and Kmart.

Front loading bicycle racks, which typically accommodate two bicycles, are provided on all fixed route transit buses. Bicycle rack spaces are available on a first come, first served basis.

The City has a multimodal transit center near downtown Manteca at the corner of Main Street and Moffat Boulevard. All Manteca Transit routes serve this center, which also connects to the Tidewater Bike Path. The transit center could also serve future passenger rail service along the adjacent Union Pacific Railroad corridor, if such service is developed.

SAN JOAQUIN REGIONAL TRANSIT DISTRICT

Route 91 connects Manteca to Stockton and Ripon with service weekdays between 6 AM and 9 PM. Stops are provided at Main Street and Industrial Park Drive, the Manteca Transit Center, Main Street, and Northgate Drive.

The San Joaquin Regional Transit District has mounted exterior bicycle racks on all fixed route interregional buses.

PARATRANSIT

Manteca Transit provides paratransit, also known as dial-a-ride or door-to-door service, for people who are unable to independently use the transit system due to a physical or mental disability. Manteca paratransit service also provides service to the general public on Saturdays when fixed-route service is not available. Except on Saturdays, individuals must be registered and certified as ADA eligible before using the service. Paratransit operators are required by the ADA to service areas within three-quarters of a mile of their respective, public fixed-route service. Service hours are Monday through Friday from 6 AM to 7 PM and Saturday from 9 AM to 4 PM. Ride reservations can be scheduled daily.

Taxi Services

Taxi service in Manteca is provided by private operators that serve the City and the greater San Joaquin County area. Taxi service is available 24 hours a day, seven days a week by calling in a service request.

Ride Sharing Services

Lyft and Uber provide connections to local and regional destinations. Availability varies depending on driver availability, and service may not be available at all times. Service is requested by smartphone applications for each provider.

Altamont Corridor Express Rail Transit

The Altamont Corridor Express (ACE) rail service connects Manteca to San Jose and the Bay Area and also connects Stockton to Manteca. During weekdays, four westbound trains serve Manteca between 4:39 AM and 7:24 AM and four eastbound trains serve Manteca between 5:23 PM and 8:26 PM. The Lathrop/Manteca station is located just off Yosemite Avenue, west of the city limit. ACE trains allow bicycles on designated passenger train cars.

BICYCLE AND PEDESTRIAN SYSTEM

The following section describes the bicycle and pedestrian network in Manteca.

Bicycle Facilities

Bicycle circulation in Manteca is supported by an existing network of multi-use off-street (Class I) paths, on-street (Class II) bike lanes, and bicycle routes (Class III). The most notable City bicycle facility is the Tidewater Bike Path, which serves as the backbone of Manteca's bicycle network. The Tidewater Bike Path (Class I) begins north of Lathrop Road and continues south to the Union Pacific Railroad corridor, where it turns southeast and continues to Spreckels Avenue where it meets the Spreckels Bike Path (Class I). The Spreckels Bike Path connects from Yosemite Avenue south to Atherton Drive where it ends at the Atherton Bike Path. Additional multi-use paths, bike lanes, and bike routes connect to destinations around the City.

The City's Bicycle Master Plan, shown in Figure 2.0-4, expands upon the existing bicycle network to create a robust bicycle circulation system. The Plan includes important bicycle facility improvements such as extension of the Atherton Bike Path from the west city limit to the east city limit, connections across SR 99 and SR 120, and Class II bike lanes and Class III bike routes on other major connector roads in the City.

In general, most Manteca schools, parks, and public buildings are equipped with bike racks for short-term bicycle parking. Section 17.15.110 of the Manteca Municipal Code specifies bicycle parking requirements, including number of spaces and locations.

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal infrastructure, curb ramps, and streetscape amenities. Most developed arterial streets in Manteca provide sidewalk coverage, accessible curb ramps, and marked crosswalks.

Sidewalks and a variety of pedestrian amenities are provided throughout the downtown including accessible pedestrian ramps, decorative paving and crosswalk treatments, curb extensions, benches, and street trees. Sidewalks are also provided in most of Manteca's single-family residential neighborhoods, in multi-family residential developments, and in commercial developments.

While the pedestrian network is generally well developed in Manteca, there are some locations where gaps in the sidewalk network can be found. In general, facilities along developing arterials vary depending on the level of development along the street. In some locations where adjacent parcels have not been developed, the street is not fully built-out and hence sidewalks have not been constructed.

ROADWAY SEGMENT LEVEL OF SERVICE

Level of Service (LOS) is used to describe traffic operations on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, LOS A represents free flow conditions and LOS F represents forced flow or breakdown conditions. The various levels of service and their corresponding operating descriptions are described in Table 2.0-3.

TABLE 2.0-3: ROADWAY SEGMENT LEVEL OF SERVICE CRITERIA

<i>LOS</i>	<i>DESCRIPTION</i>	<i>TRAVEL SPEED AS A PERCENTAGE OF BASE FREE-FLOW SPEED</i>
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at the boundary intersections is minimal.	>85
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.	>67-85
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.	>50-67
D	A 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.	>40-50
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections.	>30-40
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing.	≤30

SOURCE: HIGHWAY CAPACITY MANUAL, TRANSPORTATION RESEARCH BOARD, 2010

As discussed in the Regulatory Framework section, SB 743 is changing how traffic impacts of development are being analyzed in California. In the past, CEQA impact analysis focused on intersection LOS during peak hours. Under rules being developed for SB 743, intersection LOS will no longer be required by CEQA. However, this does not preclude cities from continuing to adopt peak hour intersection LOS policies in their general plans. Rather, it places a greater emphasis on ensuring that travel demand models are able to accurately estimate VMT. Because VMT is the number of vehicle miles driven per day, the focus of traffic impacts is on daily conditions, including daily roadway segment operations and VMT.

Study Segments

The following 44 study segments were identified as those most critical to Manteca's local circulation system and its connectivity to the regional transportation network. The locations of the study roadways are shown in Figure 2.0-5.

1. Airport Way north of Daniels Street
2. Union Road south of Mission Ridge Drive
3. Main Street north of SR 120 westbound (WB) ramps
4. Moffat Boulevard east of Powers Avenue
5. Spreckels Avenue south of Phoenix Drive
6. Austin Road south of Yosemite Avenue

2.0 CIRCULATION

7. Airport Way north of Crom Street
8. Union Road north of Crom Street
9. Main Street south of Alameda Street
10. Cottage Avenue south of Aldwina Lane
11. Airport Way south of Northgate Drive
12. Union Road south of Northgate Drive
13. Main Street north of Northgate Drive
14. Airport Way north of Daisywood Drive
15. Union Road north of Del Webb Boulevard
16. Airport Way south of SR 120 eastbound (EB) ramps
17. Union Road south of SR 120 EB ramps
18. Main Street south of Quintal Road
19. Austin Road south of Moffat Boulevard
20. Moffat Boulevard north of Woodward Avenue
21. Woodward Avenue west of Laurie Avenue
22. Yosemite Avenue west of Airport Way
23. Yosemite Avenue west of Pacific Road
24. Yosemite Avenue west of Almond Avenue
25. Yosemite Avenue west of Washington Avenue
26. Yosemite Avenue east of Cottage Avenue
27. Yosemite Avenue west of El Rancho Drive
28. Louise Avenue west of Airport Way
29. Louise Avenue east of Marguerite Avenue
30. Louise Avenue west of Yvonne Avenue
31. Louise Avenue east of Tulip Place
32. Louise Avenue west of Cottage Avenue
33. Lathrop Avenue west of Airport Way
34. Lathrop Avenue west of Madison Grove Drive
35. Lathrop Avenue west of Sherwood Avenue
36. Daniels Street west of Airport Way
37. Woodward Avenue west of Airport Way
38. Union Road south of Woodward Avenue
39. Atherton Drive east of Union Road
40. Main Street (Manteca Rd) north of Sedan Avenue
41. Atherton Drive east of Main Street
42. Woodward Avenue west of Moffat Boulevard
43. Louise Avenue west of Austin Road
44. Van Ryn Avenue north of Atherton Drive

Count data for each segment was collected on October 25 and 26 or November 9 and 10, 2016, while schools were in session. No unusual traffic conditions were observed, and weather conditions were generally dry.

The existing average daily traffic (ADT) volumes are shown in Figure 2.0-5. The mean ADT for all segments was 12,360. During peak hours, the mean directionality (D, the share of traffic in the predominate travel direction) was 0.58. The mean peak factor (K, the share of daily traffic during the highest peak hour) was 0.09.

Vehicle classification counts were collected on segments 3, 5, 7, 22, 26, 27, 28, and 33 listed above to estimate the proportion of the traffic flow that consisted of heavy vehicles (i.e., defined as three-axle or greater vehicles). Daily estimated heavy duty vehicle share ranged from 2 percent to 5 percent, with a mean of 3 percent.

Level of Service Methodology

LOS thresholds were developed for each segment based on Highway Capacity Manual (Transportation Research Board, 2010) methodologies and are presented in Table 2.0-3. These thresholds considered K-factor, D-factor, speed limit, number of lanes, and presence or absence of a median. Typical assumptions for signal spacing, access points, signal timing, and other factors were made as described on page 16-27 of the Highway Capacity Manual. Presence of either a raised median or two-way left-turn lane (TWLTL) increase capacity (versus undivided streets) based on reduced lane blockages due to turning vehicles.

Table 2.0-4 shows that a four-lane arterial with a median and a posted speed limit of 40 mph would operate at LOS C with a maximum volume of 18,000 ADT. Operations would remain at LOS D until the volume exceeds 35,300 ADT. The practical operating capacity of this road would be reached when the volume reaches 37,900 ADT. A similar road with a slightly higher speed would enable slightly greater LOS C and D volumes, but would not change the street’s capacity.

TABLE 2.0-4: SEGMENT LEVEL OF SERVICE THRESHOLDS

NUMBER OF LANES	TWO-WAY LEFT-TURN LANE OR RESTRICTED MEDIAN PRESENT	POSTED SPEED LIMIT	MAXIMUM ADT AT LOS LEVEL		
			C	D	E
2	Yes	25	4,400	14,300	19,900
		30	5,900	15,400	19,900
		35	7,400	16,500	19,900
		40	8,800	17,500	19,900
		45	10,300	18,600	19,900
	No	55	13,200	19,600	19,900
		25	4,200	13,600	18,900
		30	5,600	14,600	18,900
		35	7,000	15,700	18,900
		40	8,400	16,600	18,900
4	Yes	45	9,800	17,700	18,900
		55	12,500	18,600	18,900
		30	11,300	31,400	37,900
		35	14,700	33,300	37,900
	No	40	18,000	35,300	37,900
		45	21,400	37,200	37,900
		30	10,700	29,800	36,000
		35	14,000	31,600	36,000
6	Yes	40	17,100	33,500	36,000
		45	20,300	35,300	36,000
		30	16,300	46,400	54,300
		35	21,500	48,900	54,300
		40	26,700	51,500	54,300
		45	31,900	54,000	54,300

NOTES: ADT = AVERAGE DAILY TRAFFIC; LOS = LEVEL OF SERVICE
 SOURCE: FEHR & PEERS, 2017

2.0 CIRCULATION

Level of Service Standards

Policy C-P-2 of the Manteca General Plan states:

To the extent feasible, the City shall strive for a vehicular LOS of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular LOS is not a consideration....

Policy C-P-3 states:

At the discretion of City staff, certain locations may be allowed to fall below the City's LOS standard under the following circumstances:

- a. Where constructing facilities with enough capacity to provide LOS D is found to be unreasonably expensive....*
- b. Where it is difficult or impossible to maintain LOS D because surrounding facilities in other jurisdictions operate at LOS E or worse.*
- c. Where maintaining LOS D will be a disincentive to use of existing alternative modes or to the implementation of new transportation modes that would reduce vehicle travel. Examples include roadway or intersection widening in areas with substantial pedestrian activity or near major transit centers.*
- d. In the Downtown area the City cannot maintain the vehicular LOS D standard because of the historic nature of development and limited street right-of-way....*

Level of Service Analysis

Currently, 43 of the 44 study segments are operating acceptably. The two-lane arterial segment with a two-way left-turn median at Lathrop Avenue west of Sherwood Avenue is operating unacceptably at LOS E, with an ADT of 19,300 above the maximum LOS D threshold of 18,600. Some downtown segments also operate at LOS E, but this is acceptable according to General Plan Policy C-P-2, which allows LOS E in downtown. Table 2.0-5 and Figure 2.0-5 present ADT and LOS for each study segment.

TABLE 2.0-5: SUMMARY OF EXISTING SEGMENT LEVELS OF SERVICE

SEGMENT	NUMBER OF LANES	ADT (x 1,000)	LOS
1. Airport Way north of Daniels Street	2	17.3	D
2. Union Road south of Mission Ridge Drive	4	20.0	D
3. Main Street north of SR 120 WB ramps	4	26.6	D
4. Moffat Boulevard east of Powers Avenue	2	6.1	C
5. Spreckels Avenue south of Phoenix Drive	4	15.3	C
6. Austin Road south of Yosemite Avenue	2	3.9	C
7. Airport Way north of Crom Street	2	14.3	D
8. Union Road north of Crom Street	4	17.5	C
9. Main Street south of Alameda Street	2	16.2	E ¹
10. Cottage Avenue south of Aldwina Lane	2	11.4	D
11. Airport Way south of Northgate Drive	2	10.0	D
12. Union Road south of Northgate Drive	4	14.7	C
13. Main Street north of Northgate Drive	4	11.2	C
14. Airport Way north of Daisywood Drive	2	7.2	C
15. Union Road north of Del Webb Boulevard	4	6.8	C
16. Airport Way south of SR 120 EB ramps	2	15.6	D
17. Union Road south of SR 120 EB ramps	2	13.9	D

2.0 CIRCULATION

<i>SEGMENT</i>	<i>NUMBER OF LANES</i>	<i>ADT (x 1,000)</i>	<i>LOS</i>
18. Main Street south of Quintal Road	2	15.0	D
19. Austin Road south of Moffat Boulevard	2	3.4	C
20. Moffat Boulevard north of Woodward Avenue	2	5.8	C
21. Woodward Avenue west of Laurie Avenue	2	4.4	C
22. Yosemite Avenue west of Airport Way	4	11.6	C
23. Yosemite Avenue west of Pacific Road	4	20.0	C
24. Yosemite Avenue west of Almond Avenue	2	14.1	D
25. Yosemite Avenue west of Washington Avenue	2	15.9	E ¹
26. Yosemite Avenue east of Cottage Avenue	5	25.2	D
27. Yosemite Avenue west of El Rancho Drive	5	25.4	D
28. Louise Avenue west of Airport Way	2	12.7	D
29. Louise Avenue east of Marguerite Avenue	4	13.2	C
30. Louise Avenue west of Yvonne Avenue	4	17.3	C
31. Louise Avenue east of Tulip Place	4	13.3	C
32. Louise Avenue west of Cottage Avenue	4	12.4	C
33. Lathrop Avenue west of Airport Way	2	12.2	D
34. Lathrop Avenue west of Madison Grove Drive	4	16.1	C
35. Lathrop Avenue west of Sherwood Avenue	2	19.3	E
36. Daniels Street west of Airport Way	4	18.1	D
37. Woodward Avenue west of Airport Way	2	4.2	C
38. Union Road south of Woodward Avenue	2	4.8	C
39. Atherton Drive east of Union Road	4	7.0	C
40. Main Street (Manteca Rd) north of Sedan Avenue	2	2.6	C
41. Atherton Drive east of Main Street	4	4.6	C
42. Woodward Avenue west of Moffat Boulevard	2	5.6	C
43. Louise Avenue west of Austin Road	4	4.0	C
44. Van Ryn Avenue north of Atherton Drive	2	7.7	D

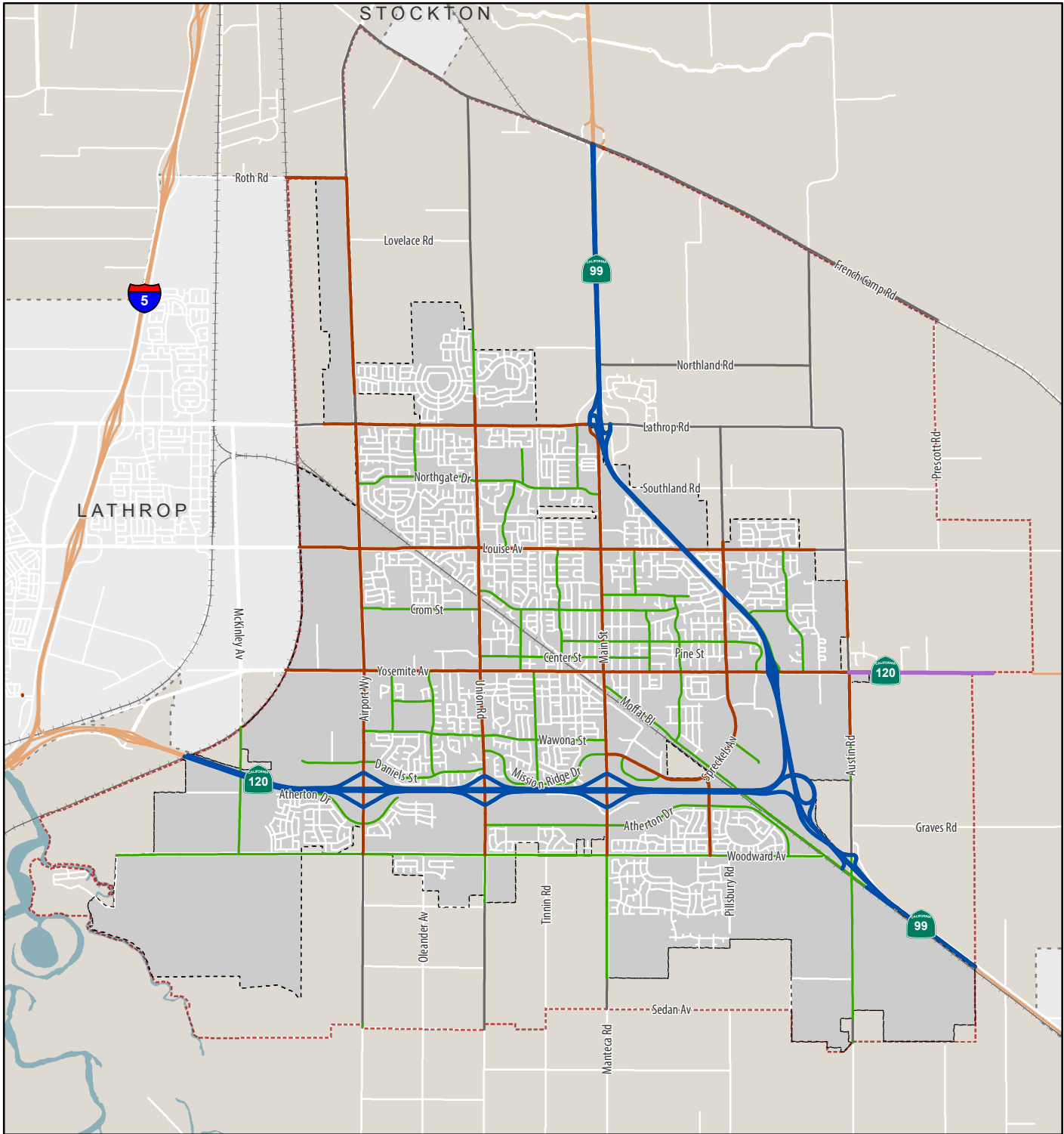
NOTES: ¹LOS E ACCEPTABLE IN DOWNTOWN ACCORDING TO GENERAL PLAN POLICY C-P-2

BOLD = UNACCEPTABLE OPERATION ACCORDING TO GENERAL PLAN POLICY C-P-2

ADT = AVERAGE DAILY TRAFFIC; LOS = LEVEL OF SERVICE

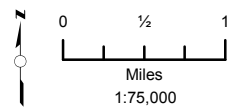
SOURCE: FEHR & PEERS, 2017

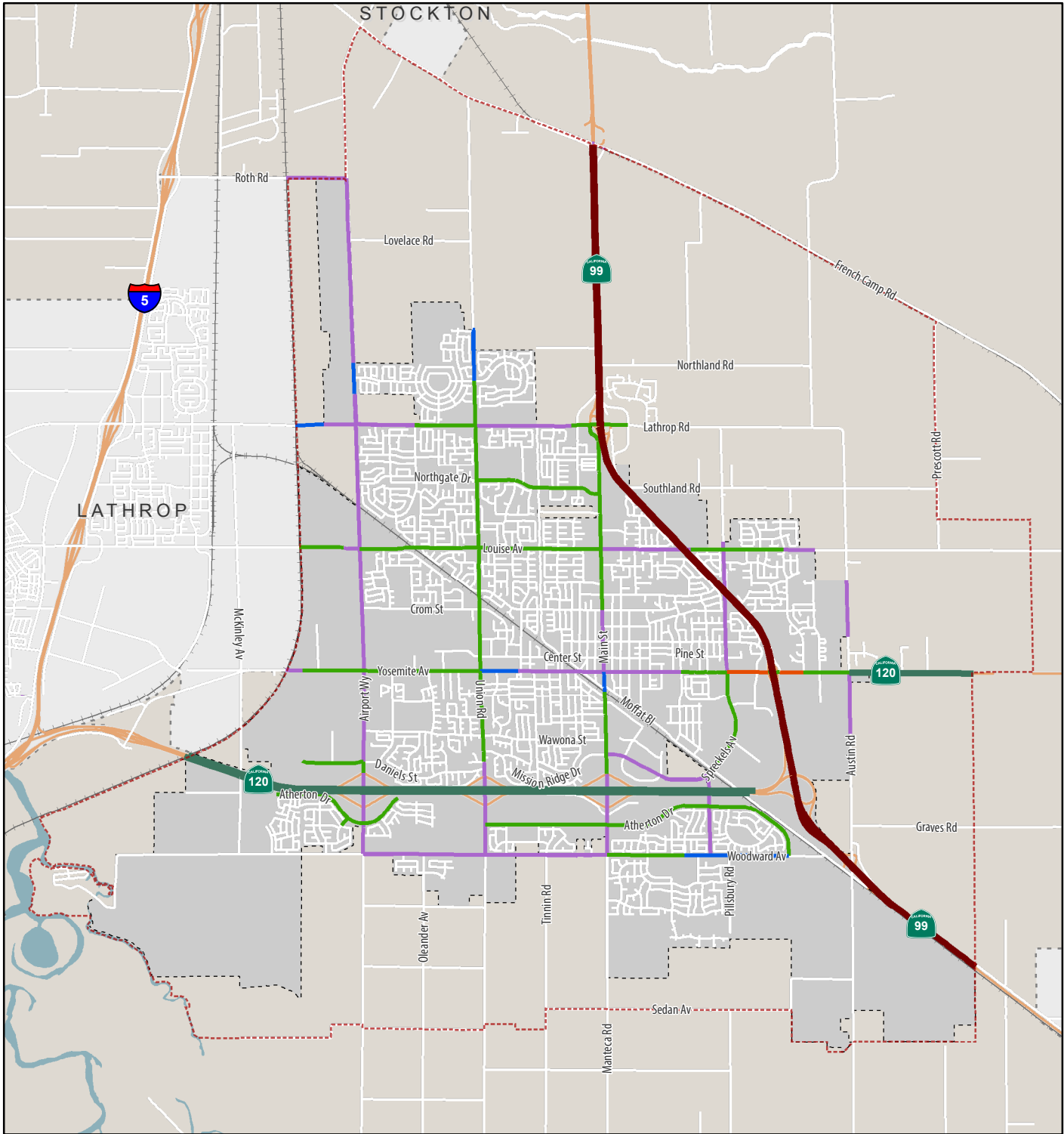
This page left intentionally blank.



- | | | |
|----------------------------------|------------|-----------------------------|
| Functional Classification | Arterial | Manteca City Limits |
| Freeway/Ramps | Collector | Manteca Sphere of Influence |
| Expressway | Rural Road | |

CITY OF MANTECA GENERAL PLAN UPDATE
Figure 2.0-1: Functional Classification - Existing Conditions





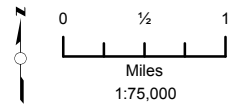
Number of Lanes

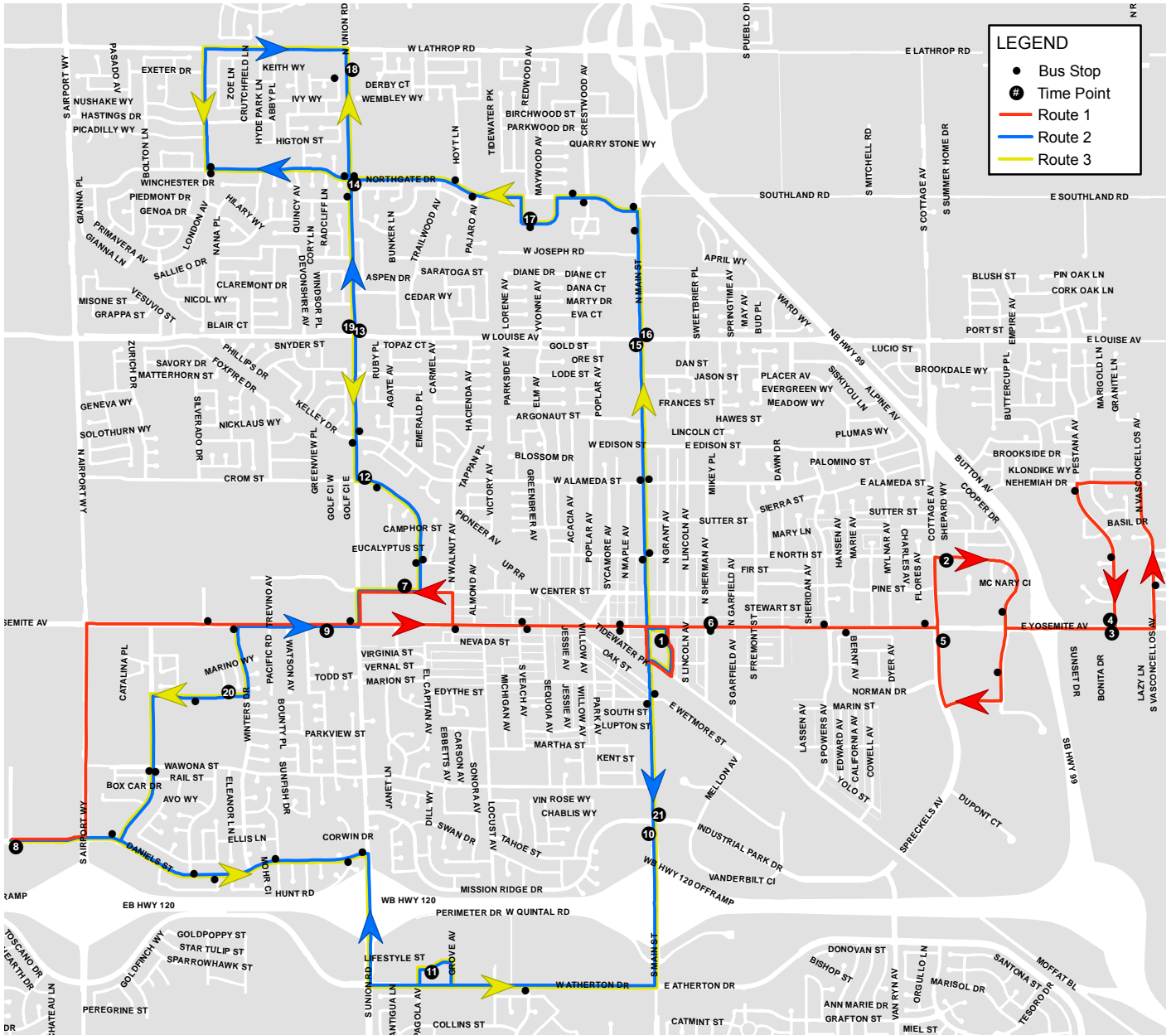
- 2
- 3
- 4
- 5
- 4-lane Freeway/Expressway
- 6-lane Freeway

- Manteca City Limits
- Manteca Sphere of Influence

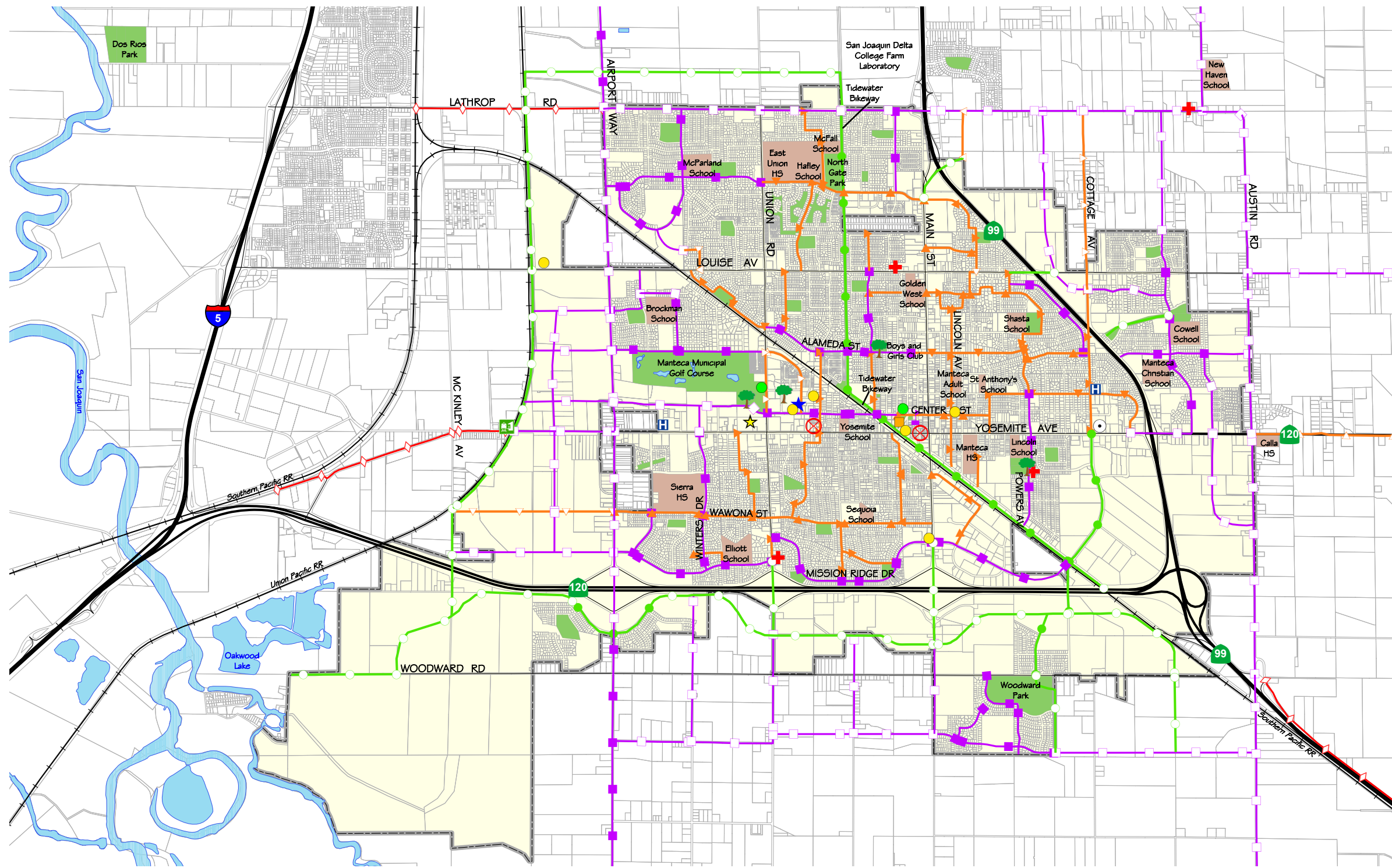
Note: Streets shown in white primarily residential.

CITY OF MANTECA GENERAL PLAN UPDATE
Figure 2.0-2: Number of Lanes - Existing Conditions





CITY OF MANTECA GENERAL PLAN UPDATE
 Figure 2.0-3: Manteca Transit System Map

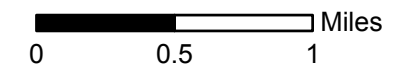


Legend

- Class I Bike Path
- Class II Bike Lane
- ▲ Class III Bike Route
- Proposed Class I Bike Path
- Proposed Class II Bike Lane
- △ Proposed Class III Bike Route
- ◇ Suggested Regional Route

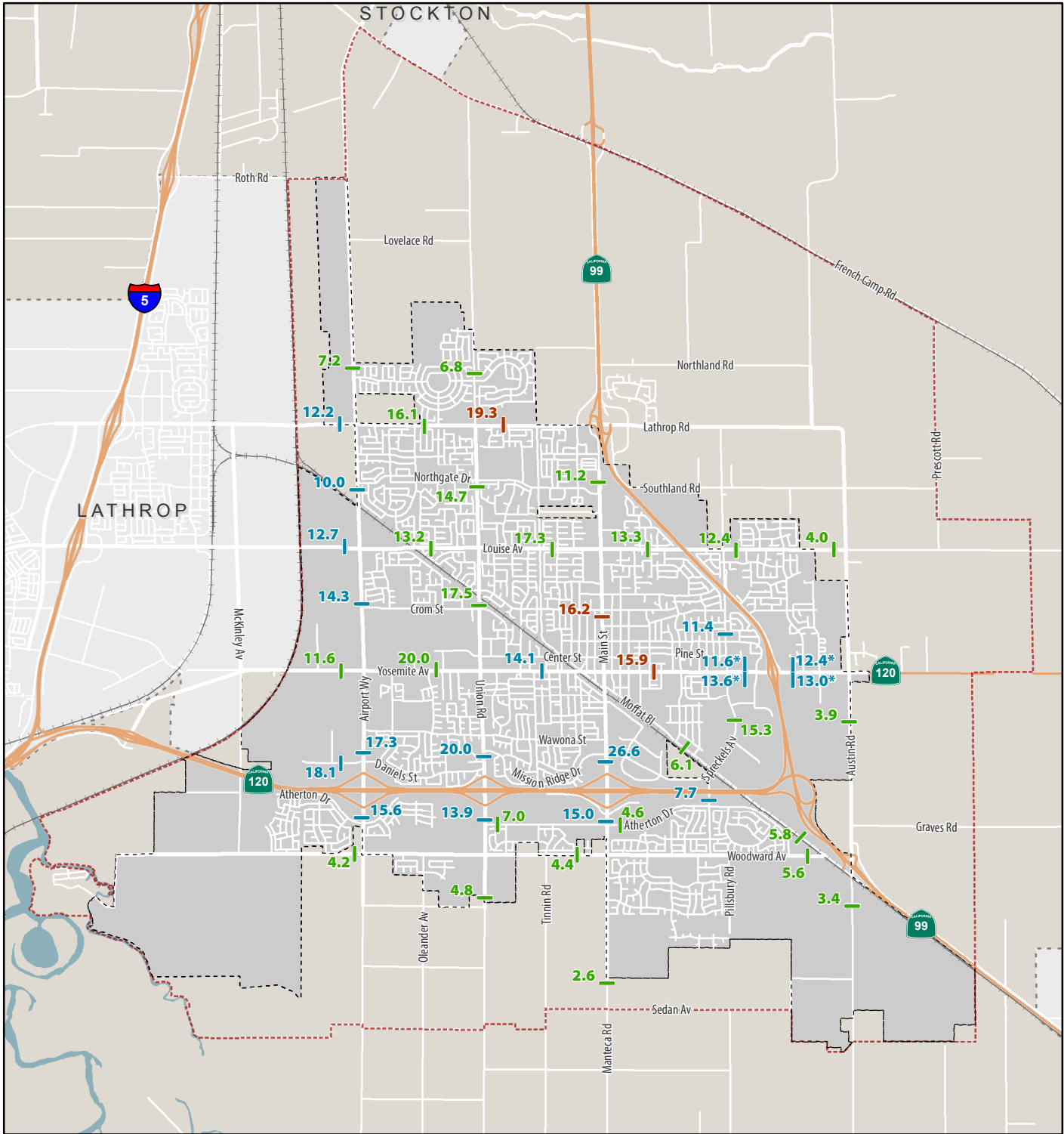
Community Services

- Bowling Alley
- Tennis Courts
- ★ Cinema
- + Fire Department
- ★ Police Department
- Post Office
- Library
- H Hospital
- Municipal Office
- 🌳 Recreational
- 🚉 Train Station
- ⊗ Bike shop
- Park
- School



CITY OF MANTECA GENERAL PLAN UPDATE
 Figure 2.0-4: Existing and Proposed Bicycle Route System
 2003 Manteca Bicycle Master Plan

Sources: City of Manteca; San Joaquin County, Manteca Bicycle Route Master Plan, 2003
 Map date: 2/2/2017



Level of Service LOS

- C
- D
- E

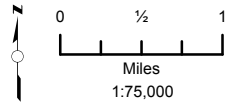
Manteca City Limits

Manteca Sphere of Influence

X.X Average Daily Traffic Volume (x 1,000)
Rounded to nearest 100

* Volumes for 3 eastbound lanes and 2 westbound lanes provided separately.

CITY OF MANTECA GENERAL PLAN UPDATE
Figure 2.0-5: Average Daily Traffic (ADT) - Existing Conditions



Note: Counts conducted on October 25th and 26th, 2016.

Sources: City of Manteca; San Joaquin County
Map date: 3/17/2017

APPENDIX A: SUMMARY OF EXISTING PEAK FACTORS

SEGMENT	ADT (x 1,000)	PEAK FACTOR
1. Airport Way north of Daniels Street	17.3	8.0%
2. Union Road south of Mission Ridge Drive	20.0	8.4%
3. Main Street north of SR 120 WB ramps	26.6	7.7%
4. Moffat Boulevard east of Powers Avenue	6.1	10.3%
5. Spreckels Avenue south of Phoenix Drive	15.3	8.8%
6. Austin Road south of Yosemite Avenue	3.9	12.6%
7. Airport Way north of Crom Street	14.3	8.6%
8. Union Road north of Crom Street	17.5	8.6%
9. Main Street south of Alameda Street	16.2	8.0%
10. Cottage Avenue south of Aldwina Lane	11.4	8.3%
11. Airport Way south of Northgate Drive	10.0	9.1%
12. Union Road south of Northgate Drive	14.7	8.7%
13. Main Street north of Northgate Drive	11.2	8.6%
14. Airport Way north of Daisywood Drive	7.2	10.4%
15. Union Road north of Del Webb Boulevard	6.8	9.2%
16. Airport Way south of SR 120 EB ramps	15.6	9.1%
17. Union Road south of SR 120 EB ramps	13.9	10.4%
18. Main Street south of Quintal Road	15.0	8.9%
19. Austin Road south of Moffat Boulevard	3.4	11.1%
20. Moffat Boulevard north of Woodward Avenue	5.8	8.1%
21. Woodward Avenue west of Laurie Avenue	4.4	11.2%
22. Yosemite Avenue west of Airport Way	11.6	9.1%
23. Yosemite Avenue west of Pacific Road	20.0	8.8%
24. Yosemite Avenue west of Almond Avenue	14.1	8.4%
25. Yosemite Avenue west of Washington Avenue	15.9	8.1%
26. Yosemite Avenue east of Cottage Avenue	25.2	7.9%
27. Yosemite Avenue west of El Rancho Drive	25.4	8.7%
28. Louise Avenue west of Airport Way	12.7	8.1%
29. Louise Avenue east of Marguerite Avenue	13.2	8.2%
30. Louise Avenue west of Yvonne Avenue	17.3	8.6%
31. Louise Avenue east of Tulip Place	13.3	9.1%
32. Louise Avenue west of Cottage Avenue	12.4	9.0%
33. Lathrop Avenue west of Airport Way	12.2	9.2%
34. Lathrop Avenue west of Madison Grove Drive	16.1	8.3%
35. Lathrop Avenue west of Sherwood Avenue	19.3	8.2%
36. Daniels Street west of Airport Way	18.1	9.2%
37. Woodward Avenue west of Airport Way	4.2	9.2%
38. Union Road south of Woodward Avenue	4.8	12.3%
39. Atherton Drive east of Union Road	7.0	10.9%
40. Main Street (Manteca Rd) north of Sedan Avenue	2.6	12.2%
41. Atherton Drive east of Main Street	4.6	8.6%
42. Woodward Avenue west of Moffat Boulevard	5.6	9.9%
43. Louise Avenue west of Austin Road	4.0	10.3%
44. Van Ryn Avenue north of Atherton Drive	7.7	9.8%

NOTES: ADT= AVERAGE DAILY TRAFFIC; PEAK FACTOR (K) = PEAK HOUR VOLUME / ADT;

SOURCE: FEHR & PEERS, 2017