

CITY OF MANTECA
DRAFT: BICYCLE AND PEDESTRIAN MASTER PLAN
APRIL 2014



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ES. EXECUTIVE SUMMARY

The City of Manteca has updated its existing Bicycle Master Plan which was created and approved by the City back in September of 2003. This update is prompted by the City's updated General Plan Circulation Element adopted in 2011 which includes new goals and policies requiring "complete streets" for all forms of transportation not just automobiles. The Bicycle Master Plan was updated to include all of the changes that have occurred since 2003 including the additional needs of pedestrians. The City of Manteca Bicycle & Pedestrian Master Plan was prepared by the Community Development Department to continue to build upon the existing on-street and off-street facilities throughout the City and to continue to provide enhancements to the overall connectivity, support facilities, safety and education programs. This document also satisfies the requirements of the California Bicycle Transportation Act (BTA;1994), enabling the City of Manteca to obtain eligibility for state bicycle funding.

Through discussions with City staff and data gathered from a highly successful online survey, it is clear there are many recreational cyclists and pedestrians that use the City's existing facilities. We have found that the community enjoys the City's comprehensive bikeway system documented in 2003 and desires more connectivity and the planned future extensions to the very popular Tidewater facility. Safety also continues to be a concern of the community which was described to include proper maintenance of existing facilities, the lack of bike lanes or sidewalks on the overpasses of State Route 120 (SR 120) and State Route 99 (SR 99), the many railroad crossings throughout Manteca, and the gaps in the system where the sidewalks and bikeways end. These concerns apply to the community as a whole but are a greater issue for the planned areas of growth south of SR 120 and east of SR 99 because gaps are inherent in areas of growth and these gaps in the system may discourage or even prevent cycling and walking and may segregate these areas from the greater Manteca area. New developments will be required to install sidewalks and planned bikeway facilities within the boundary of the specific project which may or may not connect to anything.

Proposed Bikeway System

The proposed bikeway system for the City of Manteca was developed based on the City's current Bicycle Route Master Plan (September 2003), and input from the public.

Figure ES-1 illustrates the proposed bikeway system that expands on the existing and anticipates development of approved projects, those that are under review, and generally illustrates facilities anticipated under the buildout of the City's General Plan, Circulation Element.

The proposed system includes a total of approximately 66 miles of new bikeway facilities in addition to the 48.3 miles currently in place. Table ES-1 shows the number of existing and proposed miles for each bikeway classification.

Bikeway Classification	Existing	Proposed	Total
Class I	10.0	9	19
Class II	19.4	50.1	69.5
Class III	18.9	6.9	25.8
TOTAL	48.3	66	114.3

A summary of system costs for each bikeway classification is presented in Table ES-2. Conceptual cost estimates for individual routes are provided in Appendix A.

TABLE ES-2 Conceptual Cost Estimate Summary	
Bikeway Classification	Cost
Class I Bike Path	\$5,800,000
Class II Bike Lane	\$2,136,000
Class III Bike Route	\$55,800
TOTAL	\$7,991,800

Linkages Across SR 120 and SR 99

The proposed system includes several connections across SR 120 and SR 99, as shown on Figure ES-1 Existing and Proposed Route System. These crossings will include: (1) Sidewalks and Bike Lanes (Class II); (2) the ends of the overcrossings will be signed to inform bicyclists of continuing, connecting, and parallel facilities. Each of these elements will be considered in the design of each crossing and modified as necessary to fully address the unique characteristics of the crossing. The over crossings are at Lathrop Rd./SR99, Louise Ave./SR99, Cottage Ave./SR99, Austin Rd./SR99, Union Rd./SR120, Main St./SR120, Airport Wy./SR210, and the future interchange of Antone Raymus Expressway and SR99. The other ways across SR120 and SR99 are at the Yosemite Av./SR99 interchange underpass, the McKinley Av./SR120 interchange underpass, and the Van Ryn/SR120 underpass.

New Development Areas

As new residential and non-residential development areas are planned and constructed, these individual projects should be reviewed to ensure consistency with the proposed bike and pedestrian systems. In addition, development projects should adhere to the policy statements below regarding access, mobility, and support facilities.

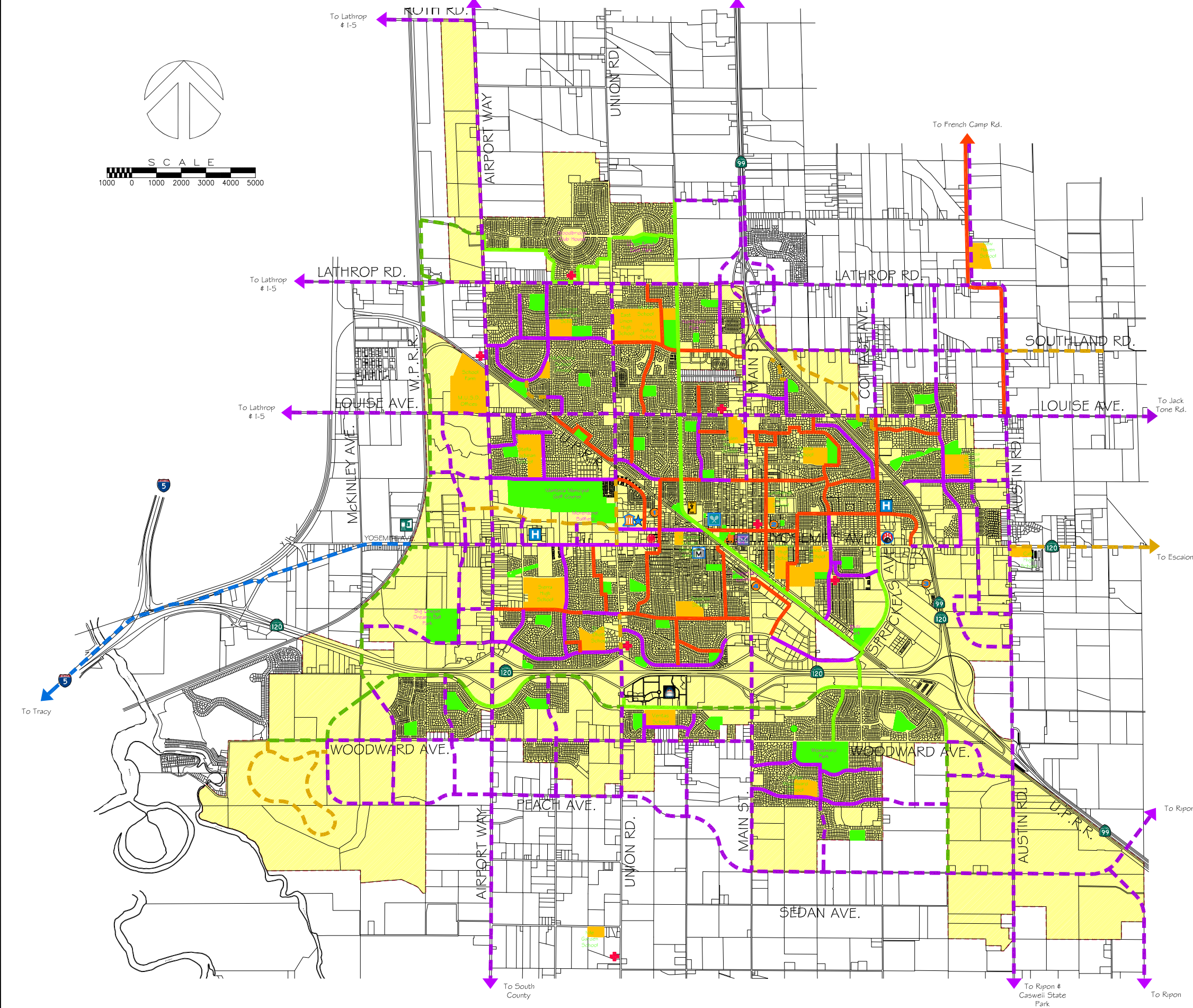
Goal: Include bikeways and sidewalks in all new development projects within the City of Manteca to facilitate on-site circulation and access within non-residential developments, and close gaps and remove barriers in the system to increase connectivity and the overall convenience of bicycling and walking.

Objective: Maximize the number of daily trips made by bicycle and/or pedestrian to and from new development projects within the City.

Policies:

- Ensure consistency with the City of Manteca General Plan and consider landowner concerns when planning and acquiring bikeway easements.
- Require new development to construct bikeways and sidewalks included in the proposed system along all roadways included within or adjacent to that development.
- Require new development to provide support facilities such as bicycle racks, personal lockers, and showers at appropriate locations such as parks, major recreational destinations, park-and-ride facilities, employment centers, schools, and commercial centers.
- Require all residential projects to provide sidewalks on both sides of every street, and incorporate traffic calming measures on residential collectors to increase pedestrian safety.
- Require new developments to consider the safest and most direct routes to parks and schools when designing circulation plans for subdivisions and other developments.

FIGURE - ES-1 Existing and Proposed Bikeway System



**CITY OF MANTECA
BICYCLE MASTER PLAN
EXISTING AND PROPOSED ROUTE SYSTEM
2013**



Legend

- Class I Bike Path Existing
- Class II Bike Lane Existing
- Class III Bike Route Existing
- - - Proposed Class I Bike Path
- - - Proposed Class II Bike Lane
- - - Proposed Class III Bike Route
- - - Suggested Regional Route

Community Services

- + Fire/Emergency Services
- ★ Police Station
- ✉ Post Office
- 📖 Library
- H Hospital
- 🏛️ Municipal Offices
- 📍 State, County & Federal Offices
 - 1 DMV
 - 2 S.J. Courts
 - 3 Social Security
 - 4 Animal Shelter
- 🚉 ACE Train Station
- 🌳 Parks
- 🏖️ Picnic Area
- 🎓 Schools
- 🎬 Cinema
- 🎾 Tennis Courts
- 🎳 Bowling Alley
- 🚲 Bike Shop
- 🛹 Skate Park

I. INTRODUCTION

The City of Manteca has updated its existing Bicycle Master Plan which was created and approved by the City back in September of 2003. This update is prompted by the City's updated General Plan Circulation Element adopted in 2011 which includes new goals and policies requiring "complete streets" for all forms of transportation not just automobiles. The original document remains a valuable tool that has served its purpose over the last 10-years, but much has changed and needs to be freshened up. The Bicycle Master Plan was updated to include all of the changes that have occurred since 2003 including the additional needs of pedestrians.

The City of Manteca Bicycle & Pedestrian Master Plan Update (BPMP) was prepared by the Community Development Department to continue building upon the existing on-and off-street facilities throughout the City and to continue to provide enhancements to the overall connectivity, support facilities, safety and education programs.

Benefits of Walking and Bicycling

The City of Manteca understands and is committed to supporting bicycling and walking as an important component of the city's transportation system. A few of the benefits of bicycling and walking are:

- Bicycling and walking are low-cost forms of recreation and transportation available to all income levels.
- Physical activity such as walking and bicycling are associated with a lower risk of many chronic health problems such as obesity and asthma. Manteca is within the San Joaquin region that has higher incidences of these conditions than other regions and supporting active transportation is a key strategy for improving public health.
- Air quality is an important issue for the health of people and their environment. Whenever residents of Manteca choose to walk or bike instead of drive, they are reducing air pollution and traffic congestion.

Planning Area

The planning area includes the City of Manteca and areas directly adjacent to the City in San Joaquin County (Figure 1). The planning area is generally flat and conducive to bicycle travel. Population, employment, and activity centers are dispersed throughout the City. The areas of San Joaquin County adjacent to the City limits consist primarily of agriculture uses. These agricultural uses are the separation between the City of Manteca and the neighboring communities of Lathrop to the west, Ripon to the south, and Stockton to the north. The BPMP does not include the neighboring cities as part of the planning area, but acknowledges their individual plans for establishing bicycle networks and attempts to provide for regional connections. New development in Manteca is occurring throughout the City limits with the majority of development activity south of State Route 120 (SR120) along the Atherton Drive and Woodward Avenue alignments and the areas north of Lathrop Road between State Route 99 (SR99) on the east and Airport Way on the west. There is also a fairly recent addition to the City in the southeastern quadrant of the City south of SR99 and along Austin Road. This area has been master planned (Austin Road Business Park and Residential Community Master Plan) and plans for bike paths and lanes for the project area as well as connection with the City of Ripon's bicycle system and destinations south of the Stanislaus River.

Bikeway Design

Policy, regulatory, and legislative documents that affect bikeway and pedestrian planning and design include the California Streets and Highways Code, California Vehicle Code, the California Bicycle Transportation Act (BTA), as well as the City's General Plan.

Bikeway planning and design in California typically relies on the guidelines and design standards established by Caltrans as documented in "Chapter 1000: Bikeway Planning and Design" of the Highway Design Manual (6th Edition, California Department of Transportation, June 2006). This chapter provides the basis for standards of the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA), and identifies specific design standards for various conditions and bikeway-to-roadway relationships. The Caltrans standards provide for three distinct types of bikeway facilities, as generally described below and shown on Figure 2.

- Class I Bikeway (Bike Path) provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.
- Class II Bikeway (Bike Lane) provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Vehicle parking and vehicle/pedestrian cross-flow are permitted.
- Class III Bikeway (Bike Route) provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.

The City's General Plan has several goals, policies, and implementation programs that take into account and consider bicyclists and pedestrians. The General Plan Circulation Element also contains basic information to help define the different types of roadways in the City and expectations of what these roadways should accommodate. These roadways are described as follows:

Expressways:

Expressways are high-capacity routes designed to serve through traffic. Expressway access would be limited to intersections with arterials and collectors with intersection spacing of no less than one-half mile. Based on the posted speed limit of the expressway, bicycle travel should be accommodated with either Class II bike lanes or a parallel off-street bike trail. Sidewalks should be provided on both sides of the street (or on one side if a bike trail is present on the opposite side). Roundabouts should be considered at intersections to reduce maintenance and operations costs associated with traffic signals.

Arterial Streets:

Arterial streets are designed to serve through traffic and major local traffic generators such as high density housing areas, commercial, industrial, and institutional uses. Examples of arterials include Airport Way and Lathrop Road. Arterial streets are intended to provide high-capacity routes to serve vehicle, transit, and goods movement. The streets should have an aesthetically appealing character with curbside landscaping and landscaped medians where appropriate. Existing arterial streets should provide sidewalks and bike lanes where space is available. Additional space may be provided by re-striping with narrower lanes to accommodate sidewalks and bike lanes to complete connections or close gaps in the bicycle and pedestrian systems. In general, new arterial streets should be designed to accommodate both bike and pedestrian facilities on both sides of the street while balancing concerns regarding traffic volumes, operations, and the safety of drivers, bicyclists, and pedestrians. Arterial streets shall also be designed to accommodate public transit routes by providing adequate lane widths and corner radii for safe operation of trucks and buses and bus turnouts where deemed appropriate.

Major Collector Streets:

Major collector streets serve as smaller-scale parallel routes to arterial streets and provide access to neighborhoods. Examples include Center Street, Powers Avenue, and Daniels Street west of Airport Way. Major collector streets will typically provide two travel lanes, a Class II bike lane and a sidewalk on both sides. Median islands and turn lanes may be appropriate in certain conditions. For newly constructed major collector streets, on-street parking should be prohibited to reduce pavement width, pedestrian crossing distances, and maintenance costs. On-street parking for existing major collector streets should be restricted or limited by eliminating the parking lane or through the use of bulb-outs to minimize the cross section and discourage speeding.

Minor Collector Streets:

Minor collector streets serve as the backbone circulation routes within larger neighborhoods and commercial/industrial areas. These streets provide primary access to light industrial and office properties and provide a link between low volume residential streets and larger collector and arterial streets. Examples include Pestana Avenue, North Street, DuPont Court, and Vanderbilt Circle. The minor collector street should be small scale, two lane streets. The streets should be wide enough to safely accommodate traffic flows, but not so wide as to encourage high-speed travel. On-street parking should be restricted or limited by eliminating the parking lane or through the use of bulb-outs to minimize the cross section and discourage speeding. Depending on the surrounding land uses (e.g., office, commercial, or residential areas), the minor collector may accommodate Class II bike lanes. Sidewalks should be provided on each side of the street.

Residential Streets:

While they carry relatively light traffic loads, residential streets constitute the majority of Manteca's street system. These streets are intended to serve residential driveways, providing access between homes and larger streets. In general, these streets should include narrow travel and parking lanes to slow travel and discourage through trips. Features like corner bulb-outs and traffic circles (which are a smaller version of a roundabout) should be incorporated to improve the aesthetic quality of the street, while calming traffic. Class II bike lanes should not be included on residential streets as volumes and speeds are slow enough to safely accommodate bikes and cars. However, Class III bike routes and special pavement markings for bicycles may be appropriate to provide continuity for the bicycle system. Sidewalks should be provided on both sides of the street. Where a residential street ends in a cul-de-sac, a shared bicycle/pedestrian path should be constructed (as appropriate and where right-of-way is available) to connect the cul-de-sac to other residential, collector, or arterial streets. These bicycle and pedestrian connections shorten travel distances and encourage the use of these modes.

Intersections of City Streets:

Intersections are critical components of the street network since they tend to define how well the system operates. Drivers and transit users typically experience most of their traveling delay at intersections. In addition, intersections are important for pedestrians and bicycles since they provide controlled points where these modes can cross major roadways. The City's Standard Plans should be updated to include a set of typical intersection treatments. In general, intersections should have minimum lane widths to serve the type of vehicles expected on the roadway (e.g., lanes should be sufficiently wide to accommodate trucks in industrial areas). Narrower lanes pose less of a barrier for pedestrians to cross and reduce maintenance costs. In addition, u-turn movements should be accommodated in the intersection design to the extent feasible to extend the length of landscaped medians. Also, bus bays should be included in intersection designs for expressways, arterials, and major collectors to maintain traffic flow while busses are loading and unloading.

Pedestrian Design and Needs

Planning for pedestrians requires understanding of walkability and demand. Pedestrian walkability refers to the ease, comfort and safety of walking and is influenced by connectivity, accessibility, the sense of safety (real and perceived), and the quality of the pedestrian environment. Pedestrian demand is the extent to which people want to walk to a particular place and is influenced by land use and development types including mixes and intensities of activities, the presence of public spaces and parks, and the availability of transit facilities.

Pedestrian needs cover more than walking from one place to another. For example, a person walks after getting off of the bus, or after parking their car. In these scenarios we become pedestrians and should be able to walk comfortably, safely, and quickly to our final destinations. Regardless of the nature of the trip, pedestrian needs include safety, connectivity, and accessibility to destinations. The design of sidewalks and paths should consider those with special needs, including children, seniors, and those with mobility impairments. Designing for pedestrians should include the following key elements:

Direct connections: Pedestrians must sometimes walk long distances to access adjacent destinations when the street network is developed in a non-grid street pattern with cul-de-sacs and limited collector streets that connect to the arterial network. Pedestrian cut-throughs between cul-de-sacs and neighborhood trails that create direct connections reduce walking distances and improve pedestrian mobility.

Clearly Indicated Crossings: Crossing facilities, including crosswalks and signage, should be easily identified by both motorists and pedestrians to encourage their use by pedestrians and effectively warn motorists of their existence.

Continuous facilities: Sidewalks that do not create a continuous path to a destination, and poorly marked crosswalks do not promote safe pedestrian travel. Continuous facilities encourage walking as a viable mode of transportation.

Well-designed walkways: Narrow sidewalks, sidewalks that are adjacent to high traffic roadways without a landscaped parkway or parking buffer, and sidewalks obstructed by utility boxes, signs, light and power poles all make walking less appealing and can make it difficult or even impossible for the mobility-impaired to use the sidewalk.

Slow traffic speeds: The likelihood of pedestrian injury or death increases dramatically with higher motor vehicle speeds. Reducing traffic speeds significantly increases pedestrian safety.

Mixed land uses: Separating housing from more active land uses tends to increase the distances to employment, shopping, schools, recreational opportunities making it more difficult and less desirable to walk to these destinations. Mixed land use patterns combine housing, employment, shopping, schools, and recreational opportunities to enhance access and walkability.

BTA Compliance

This document is also intended to satisfy the requirements of the California Bicycle Transportation Account (BTA). The BTA is an annual program providing state funds for city and county projects that improve safety and convenience for bicycle commuters in accordance with the Streets and Highways Code (SHC) Section 890-894.2. California Bicycle Transportation Act, projects must be designed and developed to achieve the functional commuting needs and physical safety of all bicyclists. The City of Manteca will maintain its eligibility for grant funding from the BTA by preparing and adopting this Bicycle and Pedestrian Master Plan in

compliance with SHC Section 891.2, as detailed in Table 1 below. While not required for other grant sources, an adopted bicycle and pedestrian plan substantially improves the chances of securing funding.

TABLE 1 Relationship of California Bicycle Transportation Act to the City of Manteca Bicycle & Pedestrian Master Plan	
Required Plan Element	Location of Element
(a) The estimated number of existing bicycle commuters in the plan area and the estimated increase in the number of bicycle commuters resulting from implementation of the plan.	Chapter VI
(b) A map and description of existing and proposed land use and settlement patterns which shall include, but not be limited to, locations of residential neighborhoods, schools, shopping centers, public buildings, and major employment centers.	Chapter VI Figures 3 & 7
(c) A map and description of existing and proposed bikeways.	Chapters V & VII Figures 3 & 7
(d) A map and description of existing and proposed end-of-trip bicycle parking facilities. These shall include, but not be limited to, parking at schools, shopping centers, public buildings, and major employment centers.	Chapters V & VII Figures 3 & 7
(e) A map and description of existing and proposed bicycle transport and parking facilities for connections with and use of other transportation modes. These shall include, but not be limited to, parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots, and provisions for transporting bicyclists and bicycles on transit or rail vehicles or ferry vessels.	Chapters V & VII Figures 3 & 7
(f) A map and description of existing and proposed facilities for changing and storing clothes and equipment. These shall include, but not be limited to, locker, restroom, and shower facilities near bicycle parking facilities.	Chapters V & VII Figures 3 & 7
(g) A description of bicycle safety and education programs conducted in the area included within the plan, efforts by the law enforcement agency having primary traffic law enforcement responsibility in the area to enforce provisions of the Vehicle Code pertaining to bicycle operation, and the resulting effect on accidents involving bicyclists.	Chapters V & VII
(h) A description of the extent of citizen and community involvement in development of the plan, including, but not limited to, letters of support.	Chapter III & Appendix B
(i) A description of how the bicycle transportation plan has been coordinated and is consistent with other local or regional transportation, air quality, or energy conservation plans, including, but not limited to, programs that provide incentives for bicycle commuting.	Chapter II & Appendix C
(j) A description of the projects proposed in the plan and a listing of their priorities for implementation.	Chapter VII, IX & Appendix A
(k) A description of past expenditures for bicycle facilities and future financial needs for projects that improve safety and convenience for bicycle commuters in the plan area.	Chapter VIII & Appendix A

ELIGIBLE PROJECTS AND ACTIVITIES

The State's Bicycle Transportation Account provides potential funding for projects that improve the safety and convenience of bicycle commuters, including, but not limited to, any of the following:

- New bikeways serving major transportation corridors
- New bikeways removing travel barriers to potential bicycle commuters
- Secure bicycle parking at employment centers, park-and-ride lots, rail and transit terminals, and ferry docks and landings
- Bicycle-carrying facilities on public transit vehicles

- Installation of traffic control devices to improve the safety and efficiency of bicycle travel
- Elimination of hazardous conditions on existing bikeways
- Planning
- Improvement and maintenance of bikeways
- Project planning
- Preliminary engineering
- Final design
- Right of way acquisition
- Construction engineering
- Construction and/or rehabilitation

PLAN ORGANIZATION

This report is divided into the following chapters:

- Chapter I - Introduction
- Chapter II – Consistency With Other Plans
- Chapter III – Community Participation/Needs Survey
- Chapter IV – Goals, Objectives and Policies
- Chapter V – Existing Conditions
- Chapter VI – Analysis of Demand
- Chapter VII – Proposed System
- Chapter VIII – Cost and Funding Analysis
- Chapter IX - Implementation

As shown in Table 1, the information provided in this document is intended to satisfy all the requirements of the BTA. The information presented for each component is the result of data collection efforts by the City of Manteca in collaboration with community members who participated in the online survey (see Chapter III).

FIGURE 1 – Base Map

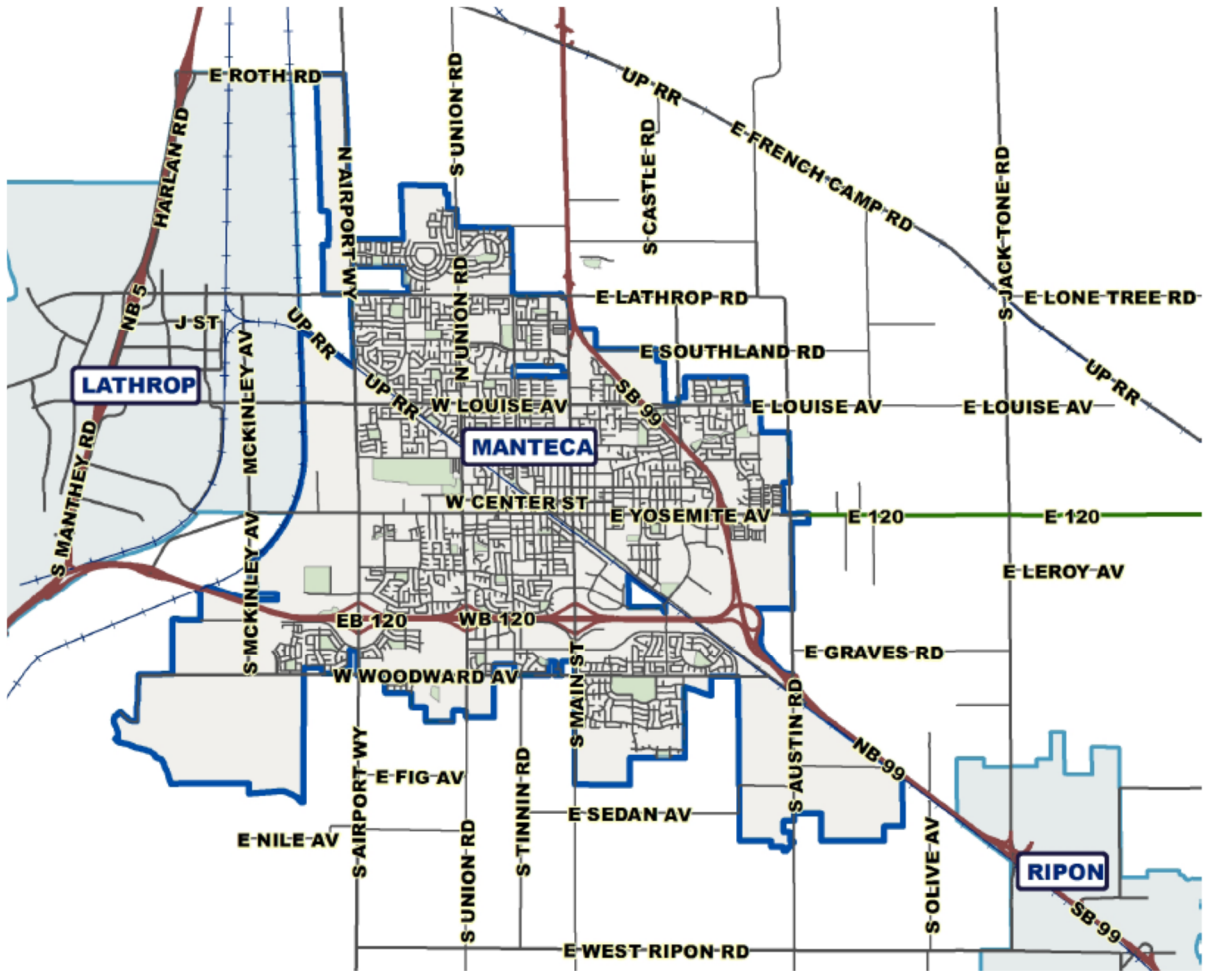
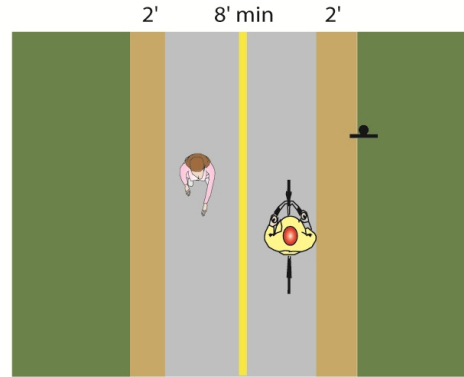


FIGURE 2 – General Bikeway Classifications

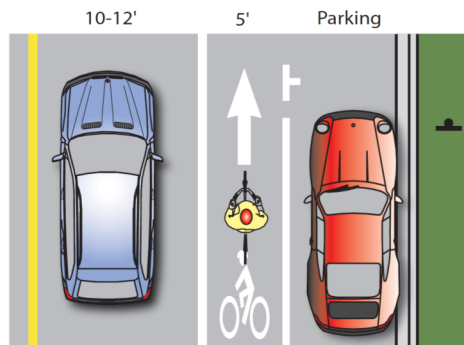
This Plan recommends three bikeway types as classified by Caltrans, as described below and presented to the right.

Class 1 multi-use paths provide for bicycle and pedestrian travel on a paved right-of-way completely separated from roadways. These facilities are typically used by recreational and casual bicyclists. Commuting bicyclists will also use Class I facilities that provide access to work or school.



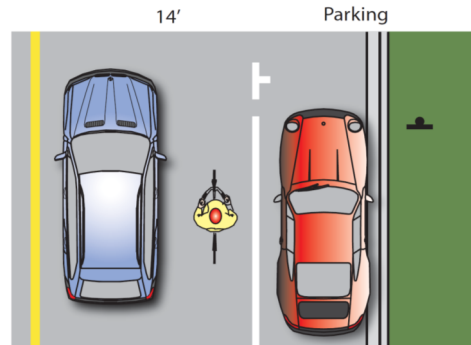
Class I bikeways are separated from the roadway.

Class 2 bicycle lanes provide a signed, striped and stenciled lane for one-way travel on both sides of a roadway. These facilities are typically used by commuting bicyclists and bicycle enthusiasts. Casual bicyclists will also use Class II facilities if traffic speeds and volumes are relatively low. Class II bicycle lanes are often recommended on roadways with moderate traffic volumes and speeds where separation from motorists can increase the comfort of bicyclists.



Class II bike lanes provide a striped travel lane on roadways for bicyclists.

Class 3 bicycle routes provide for shared roadway use and are generally identified only by signs. These facilities may have a wide travel lane or shoulder that allow for parallel travel with motorists.



Class III bicycle routes are signed roadways indicating a preferred bicycle route.

II. CONSISTENCY WITH OTHER PLANS

The Bicycle & Pedestrian Master Plan was prepared to ensure consistency with other local and regional transportation and air quality plans. As such, preparation of this Plan included a review of several other relevant plans and programs. A summary of key elements of each plan and program reviewed is presented below.

City of Manteca General Plan

The City of Manteca General Plan sets forth goals, policies and specific implementation items relevant to this Bicycle & Pedestrian Master Plan. The City's General Plan was adopted on October 6, 2003 and the City's original Bicycle Master Plan was adopted in September of 2003. The original Bicycle Master Plan missed out on including the many goals and policies that were integrated into the General Plan. Furthermore, the City's development activity has increased and new State legislation has been adopted that the City has responded to with amendments to the General Plan.

The City's two most recent General Plan amendments were the updates to the Circulation Element (2011) to bring the City into compliance with the State's AB1358 "Complete Streets Act of 2008" and the Air Quality Element to bring the City into compliance with the States mandates under AB32 "The Global Warming Solutions Act of 2006" and SB375 "The Sustainable Communities and Climate Protection Act of 2008". These updates to the Circulation and Air Quality Elements emphasize the benefits of Bicycling and Walking as alternative forms of transportation that have no greenhouse gas emissions, and have the added benefit of the support of the State to push for "complete streets" that consider all forms of transportation rather than focusing primarily on automobiles and other motorized vehicles. The City used these opportunities to add and amend the goals, policies, and implementation programs to further enhance and support the use of alternative modes of transportation with an increased focus on bikes and pedestrians.

Complete streets describes a comprehensive approach to the practice of mobility planning. The complete street concept recognizes that transportation corridors have multiple users with different abilities and mode preferences (e.g., driving, biking, walking, and taking transit). A well-integrated street system considers the complementary relationship between land use, local and regional travel needs, and the context that it serves. Complete streets apply equally to facilities like Yosemite Avenue through downtown and commercial corridors like Main Street near the State Route 120 interchange. Complete streets consider the full range of users including vehicles, trucks, pedestrians, bicycles, children, the disabled, and seniors.

These two most recent General Plan amendments are the impetus for the update to the existing Bicycle Master Plan and the change in the title of the document to include "Pedestrian". The list of goals, policies, and implementation measures from the General Plan that support bicycle and pedestrian modes of travel are listed within Appendix C.

City of Manteca, Climate Action Plan

The City of Manteca, Climate Action Plan (CAP) was adopted in October 2013. The purpose of the CAP is to outline a course of action for the City government and the community of Manteca to reduce per capita greenhouse gas emissions by amounts required to show consistency with AB 32 goals for the year 2020 and adapt to effects of climate change, and to provide clear guidance to City staff regarding when and how to implement key provisions of the CAP, as well as to provide a streamlined mechanism for projects that are consistent with the CAP to demonstrate that they would not contribute significant greenhouse gas impacts. One of the easiest means to reduce the number of trips made in vehicles is to enhance the City's bicycle and pedestrian facilities to make bicycling and walking safer and more convenient. The following CAP strategies are specifically targeted to enhance bicycle and pedestrian infrastructure (i.e. paths, lanes, sidewalks).

The CAP includes strategies specifically to increase bicycle and pedestrian travel. Section 4.3.2 – Pedestrian Infrastructure, Section 4.3.3 – Bicycle Infrastructure, and Section 4.3.4 – Traffic Calming Features each build upon the existing goals and policies of the City of Manteca General Plan as listed above.

The Pedestrian Infrastructure section states that adequate pedestrian infrastructure connecting frequently accessed destinations is critical to an increase in walking trips. Pedestrian infrastructure should be incorporated into project designs for new development, but also can be retrofitted in existing neighborhoods with barriers to walking such as lack of sidewalks or dangerous crossings. Pedestrian Infrastructure strategy PI-1 states: “The City shall ensure that all projects comply with the General Plan policies regarding pedestrian infrastructure during the development review process.” It is found that areas with good pedestrian connection and access can reduce emissions by up to 2% by increasing walking.

The Bicycle Infrastructure section states that bicycle infrastructure including separate bicycle paths and bicycle lanes on roadways can increase the safety of cyclists and encourage the use of this travel mode. Bicycle paths designed to provide more direct connections shorten travel distances and maximize safety. Bicycle lanes are less costly and can more easily connect multiple destinations for cyclists. Bicycle Infrastructure strategies B-1, 2, & 3 state: “BI-1 The City shall review all projects to ensure they comply with relevant General Plan policies and the Bicycle Master Plan. BI-2 Require developers to contribute fair share funding to the construction of planned bike lanes on roads with frontage on the project site. BI-3 The City shall identify opportunities for constructing bike lanes on roads connecting other neighboring cities for inclusion in the Bicycle Master Plan (examples include Austin Road and Jack Tone Road).” A doubling of bicycle commuting to 1.4 percent would result in a reduction in vehicles miles traveled and reductions in greenhouse gases of about 0.25 %, accounting for shorter average trips (2 miles) likely to be replaced by cycling.

The Traffic Calming Features section includes design features and strategies to reduce vehicle speeds and reduce conflicts with pedestrians to encourage more walking. Slower speeds encouraged by traffic calming can also improve safety and increase bicycling. Providing on-street parking, or street trees and landscaping to separate vehicles from pedestrians improve walkability. Traffic Calming strategies TC-1 & 2 state: “TC-1, The City shall review all projects requiring street improvements to collectors and arterials to identify opportunities to install traffic calming improvements at intersections impacted by the project and requiring upgrades. TC-2, The City shall review all projects to ensure compliance with the “Complete Streets” requirements regarding traffic calming and pedestrian improvements. Traffic calming can reduce emissions by 0.25 to 1 % by increasing walking and bicycling.

San Joaquin County Bicycle Master Plan Update

The San Joaquin County Bicycle Master Plan was adopted in November 2010. The purpose of this plan was to provide a vision, strategies, and actions for the improvement of bicycling in San Joaquin County and to build upon and enhance the plan adopted in 2002. The purpose of this Plan is also to expand the existing networks, close gaps, address constrained areas, provide greater connectivity, educate, encourage, and secure project funding. The City of Manteca Bicycle & Pedestrian Master Plan incorporates this purpose into its goals. The City’s plan also considers and provides linkages consistent with the regional bicycle facilities included in the County’s plan.

San Joaquin Valley Unified Air Pollution Control District Air Quality Attainment Plan

Air quality in the San Joaquin Valley violates federal and state health standards. Under State and Federal requirements, the San Joaquin Valley is mandated to implement transportation control measures (TCMs) and other mobile source control measures to significantly decrease emissions. The bike plan represents one of many “Transportation Control Measures” (TCM) for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congested conditions. As a federal term, TCMs are non-capacity adding strategies that help in improving air quality and are included in the State Improvement Program (SIP) for nonattainment areas such as the San Joaquin Valley.

As a result, the City of Manteca Bicycle & Pedestrian Master Plan will support regional air quality attainment goals.

San Joaquin County Council of Governments Regional Congestion Management Program 2012 (SJCOG RCMP)

This 2012 plan is a revision of the region's 2007 plan. The 2012 revision acknowledges that alternative modes of transport, including walking and bicycling help mitigate congestion. The purpose of the RCMP is to monitor congestion, identify congestion problems, and establish a programming mechanism aimed at reducing congestion. This Bicycle & Pedestrian Master Plan is consistent with the RCMP, as bicycles and walking are alternative modes of transportation that can reduce the number of vehicle trips and overall congestion.

SJCOG Regional Transportation Plan 2011 (RTP)

The San Joaquin Council of Governments (SJCOG) adopted their latest Regional Transportation Plan (RTP) in 2011, which provides a transportation vision through the year 2035. The RTP now includes a separate Bicycle and Pedestrian Action Element that defines the existing regional system, continuing needs and issues, and short and long range plans for the region. The plan also identifies planned projects throughout the County including specific improvements to the regions bicycling facilities. Implementation of the identified projects is funded in part by Measure K funds. This Bicycle & Pedestrian Master Plan is consistent with the RTP, short and long range plan goals, which establishing this plan itself is one.

Measure K Expenditure Plan 2012

The Measure K Expenditure Plan identifies the countywide transportation facility and service improvements to be delivered by the extension of the existing half-cent sales tax in San Joaquin County from 2011 to 2041. These improvements include highway, public transit, railroad grade crossing, passenger rail, smart growth, and bicycle projects. Estimated revenues from this 30-year renewal are estimated at 2.5 billion dollars of which 7% or 53 million dollars is allocated to Bicycles, Pedestrians, and Safe Routes to Schools. This Bicycle & Pedestrian Master Plan is in part necessary to be eligible for additional bicycle and pedestrian project funding.

SJCOG Regional Bicycle, Pedestrian and Safe Routes to School Master Plan 2012 (SJCOG BP-SRTS)

With the passage of Measure K Renewal, the existing Bicycle Funding program expanded to include Pedestrian and Safe Routes to School projects. Sixty percent (60%) of the funds will be allocated according to a competitive grant process. Forty percent (40%) of the funds will be allocated to the local jurisdictions according to their proportionate share of the total incorporated and unincorporated population. Funds are intended to be used to match federal, state, local, and private funding to maximize the number of improvements to be implemented. The allocated funds are to expand and enhance pedestrian and bicycle safety and facilities within San Joaquin County. Eligible projects include, but are not limited to: Bicycle commute facilities on separate rights-of-way, recreational pedestrian and bicycle facilities, traffic calming devices, cross walks, pedestrian/bicycle.

The Manteca Bicycle and Pedestrian Master Plan incorporates the Priority and Vision Projects identified within the BP-SRTS Master Plan to establish consistency and maximize the potential for Measure K funding.

III. COMMUNITY PARTICIPATION/NEEDS SURVEY

Community participation is an important component in the development of a Bicycle & Pedestrian Master Plan. For this reason the City of Manteca, Planning Division created the Bicycle and Pedestrian Master Plan survey in order to obtain public input on the status of bicyclists and pedestrians in the City of Manteca. The survey contained 16 questions aimed at obtaining information on the type and general location of the users of Manteca's bicycling and pedestrian facilities. We also wanted to know what they use the facilities for, how they feel about them, what might get them to use them more, and how the City could improve its existing network of paths, bikeways and sidewalks. A link to the online survey was posted in the City's weekly newsletter and on the City's Community Development, Parks & Recreation, Public Works, and Transit Department websites between September 24, 2013 to October 30, 2013, during which time the City received 131 responses. A phone number and email address were included; however, no responses or inquiries were received through either.

The survey concluded with an opportunity to provide an email address to be made aware of future developments on the Bicycle & Pedestrian Master Plan. Fifty-four of the 131 participants provided their email addresses, which were used to forward copies of the draft plan and maps to provide an opportunity to obtain additional feedback on the draft document and route maps prior to finalization.

The information gathered from the survey was used to match the layout of the proposed bikeway system to current needs and behaviors of pedestrians and bicyclists. The survey results illustrate that the vast majority of those responding to the survey are recreational bicycle riders and that they choose to bike, walk, or run for exercise.

The average recreational trip is over 10 miles. The majority of respondents included the Tidewater Bike Path as a favorite place to ride and Woodward, Northgate and other parks and the Downtown and shopping centers as major destinations. The lack of safe crossings on SR 99 and SR 120 was frequently noted as a concern for those crossing the highways and living within east and south Manteca. The majority of respondents noted that personal safety is a reason that they do not walk more often, and that they would ride their bicycle more if there were more bicycle lanes. More bike lanes, paths, and sidewalks with better maintenance and connectivity were all cited as important improvements that would enhance walking and bicycling in and around Manteca

OUTREACH PROCESS FINDINGS/CONCLUSIONS

Based upon the survey responses and comments submitted the following findings and conclusions have been established:

- There is a demand for more recreational opportunities for bicycling and pedestrian activity within the City.
- An expanded trails system including the lengthening of the Tidewater Bikeway is desired.
- Personal safety is a concern of bicyclists and pedestrians when using any of the existing overpasses of SR 99 and SR 120 due to the lack of bicycle lanes and/or sidewalks.
- Rider and Motorist education is concern.
- Lack of Bicycle Racks is a problem for bicyclists.
- There is a desire for more bike lanes, paths, and sidewalks with better maintenance, more separation from automobile traffic, and continuous/unbroken/fragmented routes to popular destinations.

Please refer to Appendix B, Survey Results for a detailed list of the questions that were asked and the answers provided.

IV. GOALS, OBJECTIVES, AND POLICIES

The development of goals, objectives, and policies for this Bicycle & Pedestrian Master Plan is intended to provide specific direction on the necessary actions involved in planning, designing, funding, and constructing bikeway facilities. The following information relies on an understanding of the relationship between the proposed bikeway system, key issues facing implementation of specific routes, and the requirements of local, state, and federal funding programs.

These goals, objectives, and policies are grouped as follows:

- Overall System
- New Development Areas
- Commuting
- Recreation
- Safety & Education
- Funding

The purpose for topic organization is to provide City staff, decision makers, and citizens with a clear and concise direction on how to implement the bikeway facilities proposed in the Bicycle & Pedestrian Master Plan. Each topic area includes an overall goal, measurable objective, and policies. Each policy consists of action statements related to the development of specific facilities or programs within the City of Manteca. The goals and policies described below are consistent with the City of Manteca General Plan and the other plans as discussed in Chapter II "Consistency with Other Plans" and as described in Appendix C, "General Plan Goals, Policies, and Implementation Programs for Bicycles and Pedestrians".

Overall System

Goal 1: To expand transportation alternatives within the City of Manteca, establish a comprehensive, convenient, and safe bike and pedestrian system for travel within the City and connection to the regional facilities.

Objective: Implement a network of bikeways and sidewalks within the City connecting residential areas with, schools, recreation, shopping, transit connections, and employment areas.

Objective: Emphasize bicycle and pedestrian travel within low vehicular traffic corridors as an alternative to high volume roadways.

Objective: Construct bikeways identified in the proposed system and provide for the maintenance of both existing and new facilities.

Objective: Construct sidewalks within all new developments and close gaps between developments and nearby destinations.

Objective: Minimize barriers and hazards for bicycles and pedestrians resulting in reduced collision rates throughout the City.

Objective: Coordinate with San Joaquin County cities and government entities to create continuity and consistency with existing and planned bikeway systems.

Policies:

- 1.1 Maintain a bikeway and pedestrian plan that identifies existing and future needs, and provides specific recommendations for facilities and programs.
- 1.2 Construct the recommended bikeway system in a way that respects property rights and minimizes the potential for conflicts with other vehicles, pedestrians, and users.
- 1.3 Emphasize travel along corridors that run parallel to roadways with high traffic volumes and/or high bicycle and/or pedestrian collision rates.

- 1.4 Require all bikeways to conform to design standards contained in the latest version of the Highway Design Manual, Chapter 1000: "Bikeway Planning and Design", Caltrans, unless otherwise established by the City.
- 1.5 Minimize vehicular crossing points (i.e., driveways and cross-streets) on Class I pathways to the greatest degree possible.
- 1.6 Meet the requirements of the Americans with Disabilities Act when constructing facilities contained in the proposed system, where applicable.
- 1.7 Coordinate with San Joaquin County and other communities regarding the timing of implementation of the proposed system.
- 1.8 Provide connections that allow for regional travel between the City of Manteca and other San Joaquin Valley communities and destinations.
- 1.9 Integrate bicycle and pedestrian design elements into community, land use and transportation planning.
- 1.10 As funding allows, implement the proposed bikeway and pedestrian systems.
- 1.11 Eliminate physical barriers in new and developing neighborhoods to provide for the most direct route and reduce distances when possible to promote walking as a viable form of transportation.

New Development Areas

As new residential and non-residential development areas are planned and constructed, these individual projects should be reviewed to ensure consistency with the proposed bike and pedestrian systems. In addition, development projects should adhere to the policy statements below regarding access, mobility, and support facilities.

Goal 2: Include bikeways and sidewalks in all new development projects within the City of Manteca to facilitate on-site circulation and access within non-residential developments, and close gaps and remove barriers in the system to increase connectivity and the overall convenience of bicycling and walking.

Objective: Maximize the number of daily trips made by bicycle and/or pedestrian to and from new development projects within the City.

Policies:

- 2.1 Ensure consistency with the City of Manteca General Plan and consider landowner concerns when planning and acquiring bikeway easements.
- 2.2 Require new development to construct bikeways and sidewalks included in the proposed system along all roadways within the development and adjacent to that development where feasible and necessary to close gaps in the system.
- 2.3 Require new development to provide support facilities such as bicycle racks, personal lockers, and showers at appropriate locations such as parks, major recreational destinations, park-and-ride facilities, employment centers, schools, and commercial centers.
- 2.4 Require all residential projects to provide sidewalks on both sides of every street, and incorporate traffic calming measures along residential collectors to increase pedestrian safety and encourage walking.
- 2.5 Require all residential projects to consider the safest and most direct routes to parks and schools when designing circulation plans for subdivisions.
- 2.6 Require all new non-residential projects to provide safe and direct access for bicyclists and pedestrians to the main entrance of all on site uses from the public way and any transit stops.

Commuting

Bicycles can represent a larger percentage of total commute trips if a comprehensive network of interconnected bikeway facilities is developed. This Plan proposes to implement such a system as defined by the following goal and policy statements.

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

Objective: Increase bicycle and pedestrian trips to reduce vehicle congestion, improve air quality, and conserve energy.

Policies:

- 3.1 Maintain access for cyclists from proposed bikeway system to residential/commercial centers.
- 3.2 Provide and maintain support facilities such as bicycle racks, personal lockers, and showers at appropriate locations to promote bicycle use.
- 3.3 Encourage employers to promote bicycling and walking as an alternative mode for commuting to and from employment centers.
- 3.4 Promote and encourage the use of the bike racks available on all Manteca Transit busses and continue to coordinate with regional transit providers to promote bicycles on buses.
- 3.5 Provide connections to the proposed bikeway system from all existing and future transit facilities, stations, and terminals to the greatest degree feasible.
- 3.6 Encourage enhancement of bicycle support facilities at the City's Multi Modal station to encourage bicycling to the downtown area.

Recreation

Recreational bicycle and pedestrian travel for personal health, well-being, and enjoyment can be enhanced by providing a safe and well maintained system of bikeways and sidewalks. This plan proposes to enhance recreational opportunities by implementing the following goal and policy statements.

Goal 4: Develop a continuous and interconnected bikeway and pedestrian system that is safe and well maintained to provide greater opportunity to improve the physical fitness, the health, and the well-being of all residents and visitors of the City of Manteca.

Objective: Provide a bikeway and pedestrian system that residents and visitors utilize and enjoy.

Policies:

- 4.1 Maintain the bicycle system map to encourage use by residents and visitors.
- 4.2 Continue efforts to create a "city loop" of off-street (Class 1) paths that link the Tidewater Bikeway to paths south of SR 120, west of Airport Way, and north of Lathrop Road.
- 4.3 Implement informational and directional guide signing on bikeway facilities.
- 4.4 Provide shade and protection from wind and other weather conditions wherever possible.
- 4.5 Maximize connections to off-street paths from existing and developing neighborhoods.
- 4.6 Promote connectivity of sidewalks by closing gaps between sections of sidewalks when possible and feasible.
- 4.7 Establish staging areas that provide vehicle parking, and restrooms at access locations to off-street pathways.

Safety and Education

Safety and education are important aspects of increasing bicycle use and walking. If bicyclists and pedestrians perceive that the bikeways, paths, and sidewalks system are unsafe, they will be discouraged from using it. The following goals and policies are intended to improve the public's safety while using the bike and pedestrian systems.

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

Objective: Educate and inform all residents and users of the bike and pedestrian system about how to use the system safely.

Policies:

- 5.1 Utilize standard signing and traffic controls to command the attention of motorists and ensure a high level of safety for bicyclists and pedestrians.
- 5.2 Use available collision data to monitor bicycle-and pedestrian related collision levels annually and to achieve a 25 percent reduction over the next 10 years.
- 5.3 Maintain educational brochures and develop a bicycle education program that is available to all residents and visitors of the City.
- 5.4 Develop and implement a School Bicycle Safety Program targeting all children within the City.
- 5.5 Coordinate with the City of Manteca Police Department to enforce laws related to bicycle travel, including the bicycle helmet law; identify actions recommended by the Police Department to improve safety.
- 5.6 Integrate bicycle safety information into published bikeway system route maps.
- 5.7 Limit on-street bikeways to locations where the available roadway width and traffic volumes permit safe coexistence of bicycle and motor vehicle traffic.
- 5.8 Install prominent signs at major City entries alerting motorists to the presence of bicyclists and to share the roadway.
- 5.9 Repair and sweep bikeways on a regular basis.
- 5.10 Provide safe drainage grates and roadways surfaces on all new and improved streets.

Funding

To obtain the funding required to implement the proposed system, the City of Manteca must take advantage of funding sources at the County, State, and Federal levels. It will also require a commitment of local funding.

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

Objective: Maximize the amount of local, State, and Federal funding sources for bikeway facilities that can be used by the City of Manteca for the implementation of the proposed bikeway system.

Policies:

- 7.1 Maintain and periodically update current information regarding regional, State, and Federal funding programs for bikeway facilities along with specific funding requirements and deadlines.
- 7.2 Pursue Regional, State, and Federal funding and submit completed funding applications.
- 7.3 Consider joint grant applications with other agencies such as San Joaquin County, the City of Lathrop, and the City of Ripon.

- 7.4 Pursue funding for education and enforcements efforts through programs such as the Congestion Mitigation and Air Quality Improvement Program (CMAQ); National Recreational Trails Fund; National Highway Safety Act Section 402 funds; Highway Safety, Research, and Development Fund; and the SJCOG Safe Routes to School program.

V. EXISTING CONDITIONS

The summary of existing conditions describes the current bicycle route structure and facilities that support the system throughout the City. This discussion will focus on the location and type of bikeway, regional and multi-modal connections, and support facilities and programs.

Existing Bikeway Facilities

Figure 3 displays the existing bicycle route system and support facilities currently in Manteca. This information was taken from the current Bicycle Master Plan and was verified with City staff and through field visits. The current system is dispersed throughout the central core of the City with the Tidewater Bike Path continuing to be the “backbone” of the system. Since this plan was originally approved back in September of 2003, the City has implemented the following planned segments and additional segments:

- Class I Trails:
 - Connected the Tidewater Bike Path on Moffat Drive and the Spreckels Avenue path to the Atherton Road Bike Path south of SR120 with the construction of the roadway projects that connected Industrial Park Drive from Main Street to Moffat and the connection of Industrial Park Drive to Van Ryn Avenue via the SR120 underpass. This section provided for the first connection north and south of SR120 without having to use an overpass.
 - The connection of the Atherton Road Bike Path to Woodward Park via the pathway on Wellington Avenue between Atherton Drive and Woodward Avenue.
 - The extension of the Atherton Road Bike Path east and south to connect with Woodward Avenue, and extension west to the western boundary of the Paseo West Apartment Complex.
 - The extension of the Tidewater Bike Path north of Lathrop Road within the Union Ranch East subdivision. The extension of the path westward through the Union Ranch East subdivision and Park to Union Road continuing west to Airport Way along the southern boundary of the Woodbridge community.
 - Also the 4th mile long isolated section that connects Springport Park and Button Estates Park within Sierra Creek Park.
- Class II Bike Lanes:
 - Completed planned bike lanes on Geneva Way from Airport Way to Villa Ticino Park and Zurich Drive, and on Zurich Drive to Matterhorn Street to Silverado Drive connecting Crom St to Louise Avenue.
 - Added bike lanes on Hutchings Street from Powers Avenue to Curran Grove Park and along Norman Drive to connect with the Spreckels Avenue Path.
 - Converted a planned bike route to bike lanes on Lancaster Drive from Main Street to Springtime Park and along Springtime Avenue to connect with Louise Avenue.
 - Added bike lanes on Pagola Avenue and Tinnin Road connecting Atherton Drive and Woodward Avenue, and along Collins Street connecting Pagola Avenue and Tinnin Road.
 - Added bike lanes to Yosemite Avenue between Winters Drive and Walnut Avenue.
 - Converted a planned bike route on Marguerite Avenue and Nicol Way to bike lanes creating bike lane connections between Lathrop Road and Louise Avenue and access to Primavera, Doxey, and Primavera Parks.
 - Continued bike lanes on Heartland Drive from Buena Vista at Woodward Park east to Pillsbury Road. This section completes the bike lane connection on Buena Vista to Woodward Avenue and Pear Tree Street to Main Street.
- Class III Bike Routes:

- o Converted planned bike lanes on Brookdale Way to a bike route connecting Cottage Avenue and Pestana Avenue.
- o Converted planned bike lanes on Vasconcellos Avenue to a bike route between Nehemiah Drive and Yosemite Avenue.

Table 2 summary of existing conditions describes the current bicycle route structure and facilities that support the system throughout the City. This discussion will focus on the location and type of bikeway, regional and multi-modal connections, and support facilities and programs.

TABLE 2 Miles of Existing Bicycle Paths, Lanes, and Routes			
Street Name and Segment	Class I Bike Path (Miles)	Class II Bike Lanes (Miles)	Class III Bike Route (Miles)
TIDEWATER	3.5		
UNION RANCH EAST	0.8		
UNION RANCH	1.6		
SPRECKELS AVE.	0.9		
INDUSTRIAL PARK DR.	0.1		
VAN RYN AVE.	0.2		
ATHERTON DR. (TOSORO)	0.9		
ATHERTON DR. (PASEO)	0.3		
QUEENLAND AVE.	0.4		
ATHERTON DR. (ORCHARD VALLEY)	0.5		
ATHERTON DR. (DUTRA FARMS)	0.6		
ATHERTON DR. (DUTRA ESTATES)	0.2		
BOLTON LN.		0.3	
PRIMAVERA AVE.		0.4	
LONDON AVE.		0.8	
NORTHGATE DR. (AIRPORT-UNION)		1.0	
NICOL WAY (MARGUERITE-SYRACUSE)		0.1	
MARGUERITE AVE		0.1	
CRESTWOOD AVE. (NORTHGATE-LATHROP)		0.5	
LANCASTER DR.		0.3	
SPRINGTIME AVE.		0.3	
CROM ST.		1.0	
SILVERADO DR.		0.4	
ZURICH DR.		0.2	
GENEVA WAY		0.2	
ALAMEDA ST (UNION-WALNUT)		0.4	
ELM AVE (ALAMEDA-LOUISE)		0.5	
ALAMEDA ST. (ELM-SYCAMORE)		0.2	
ALPINE AVE.		0.7	
PESTANA AVE.		1.3	
NEHEMIAH DR.		0.5	
CENTER ST. (UNION-ELM)		0.7	
YOSEMITE AVE. (ST. DOMINIC'S-WALNUT)		0.9	
POWERS AVE. (MOFFAT-NORTH)		0.6	
HUTCHINGS ST.		0.1	
NORMAN DR.		0.4	
DANIELS ST. (AIRPORT-UNION)		1.0	
WINTERS AVE.		0.7	
WAWONA ST. (SUNRISE-UNION)		0.3	
FISHBACK RD (DANIELS-WAWONA)		0.3	
MISSION RIDGE DR.		1.3	
INDUSTRIAL PARK DR.		0.8	

PAGOLA AVE		0.2	
COLLINS ST. PAGOLA-TINNIN)		0.3	
TININ RD. (MONTE ORO-MONTE CASA)		0.2	
PEAR TREE ST.		0.3	
TANNEHILL DR.		1.0	
BUENA VISTA DR.		0.6	
HEARTHLAND DR. (BUENA VISTA-PILLSBURY)		0.5	
SHERWOOD PL.-KING RICHARD WAY-HOYT LN.			0.6
NORTHGATE DR. (UNION-MAIN)			1.0
TRAILWOOD AVE			0.6
YVONNE AVE.			0.2
PHILLIPS DR.-STOKER WAY-KELLEY DR.			0.7
AGATE AVE.			0.4
ALAMEDA ST. (WALNUT-ELM)			0.3
ALAMEDA ST. (SYCAMORE-POWERS)			0.7
LODE ST. (ELM-POPLAR)			0.2
JASON ST.			0.3
GRANT AVE.-FRANCES ST.-RALPH AVE.			0.3
MT. VERNON PL.-MARIGNY WAY-MONTICELLO LN.			0.2
PLACER AVE.			0.5
SOUZA BLVD.			0.1
LINCOLN AVE.-FRANCES ST.-RALPH AVE.			0.9
CENTER ST. (ELM-FREMONT)			0.7
EDISON ST. (POWERS-PLACER)			1.0
POWERS AVE. (NORTH-EDISON)			0.4
ALAMEDA ST. (POWERS-COTTAGE)			0.4
NORTH ST. (FREMONT-COTTAGE)			0.6
NORTH ST.-NORTHWOODS AVE.			0.5
COTTAGE AVE. (YOSEMITE-LOUISE)			1.0
FREMONT AVE. (MIKESELL-NORTH)			0.4
GARFIELD AVE.-MIKESELL ST.			0.3
WETMORE ST. (MAIN-MELLON)			0.4
MELLON AVE.			0.3
PARK AVE.-OAK ST.-WILLOW AVE.			0.6
WAWONA ST. (UNION-MAIN)			1.0
EL PORTAL AVE.-EL CAPITAN AVE. NEVADA ST.			0.5
CHERRY LN.			0.5
UNION RD. (CENTER-CHERRY/CROM)			0.4
WAWONA ST. (AIRPORT-SUNFISH)			0.7
MAGRATH AVE.-PARK VIEW ST.-MERCEDES AVE.-GRAND PRIX AVE.			0.6
UNION RD. (MISSION RIDGE-DANIELS)			0.1
STONUM LN.-ELLIS LN.			0.2
VASCONCELLOS AVE (YOSEMITE-NEHEMIAH)			0.5
TAHOE ST.			0.4
LOCUST AVE. (MISSION RIDGE-WAWONA)			0.4
TOTAL MILES	10.0	19.4	18.9

Regional and Multi-Modal Connections

The development of a bicycle system that connects to regional bikeways and other travel modes (bus, rail, carpool, etc) continues to be a priority of the Bicycle & Pedestrian Master Plan. These regional connections encourage bicycle use and allow riders to expand their riding area, taking them to destinations outside the City. The extent of the existing regional and multi-modal connections is discussed below.

Regional Connections

The City of Manteca is bordered by the City of Lathrop on most of its western boundary and unincorporated areas of San Joaquin County everywhere else. To date there are no regional connections to the City of Manteca; however the combined efforts of San Joaquin County and City of Manteca plan to coordinate these connections on County roadways. The San Joaquin Bicycle Master Plan update adopted November of 2010 plans to provide regional connections countywide, for example, bike routes on Airport Way, Austin Road, West Ripon Road, and SR120.

Multi-Modal Connections

Multi-modal facilities are areas where bicyclists can connect with another mode of travel to reach their intended destination. These facilities are essential to bicycling as they enable riders to access public transit and other transportation modes in situations where roadway obstacles (i.e., rail lines or freeways) might prevent continuous bicycle travel.

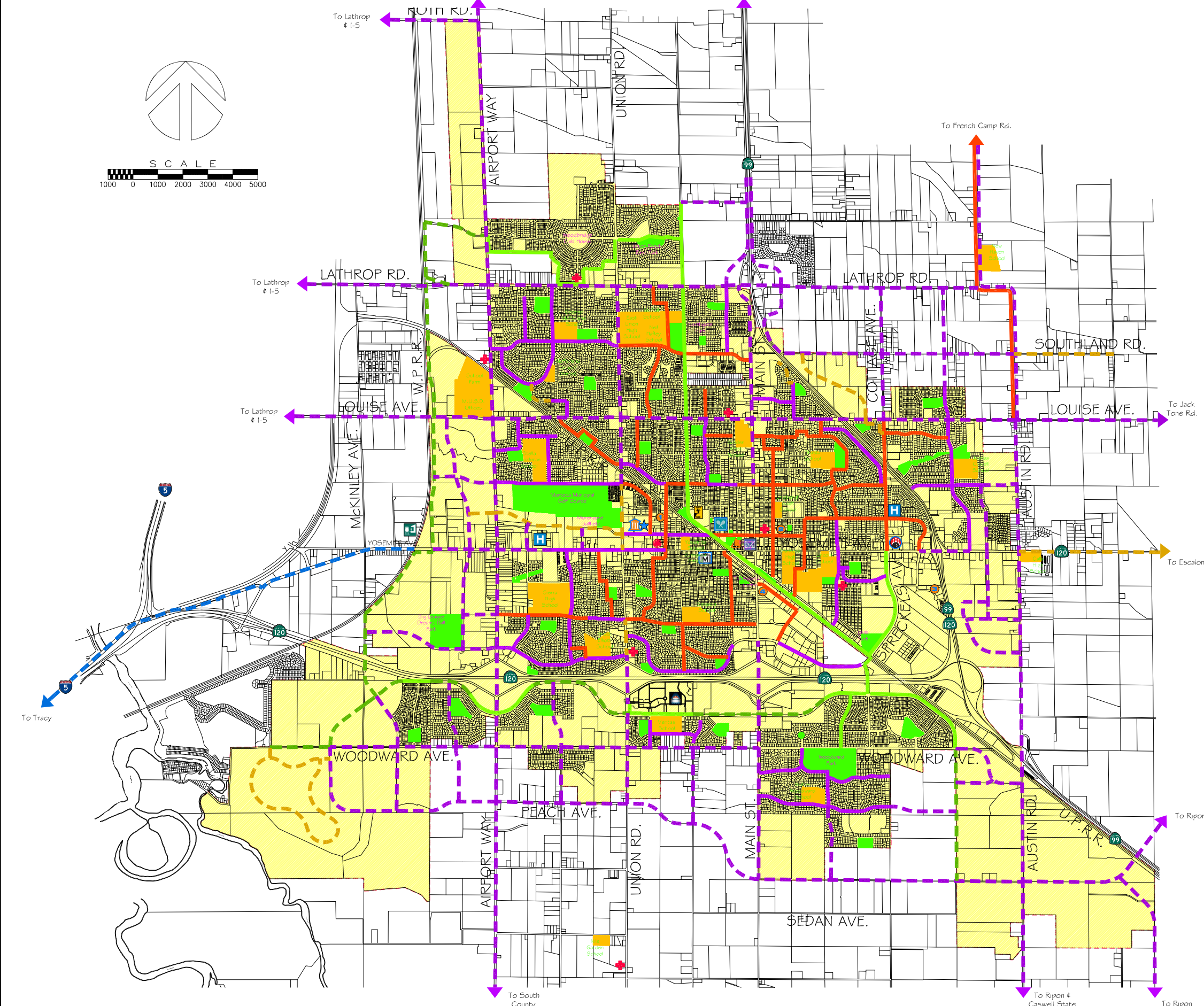
Manteca Transit provides bike racks on every City bus free of charge. Each bus is equipped with a rack that can carry up to two bikes. Racks are located on the front of the bus and can accommodate two-wheel bicycles with wheel spans of 16 inches in diameter or larger.

The San Joaquin County Regional Transit District (SJRTD) has mounted exterior bicycle racks on all fixed route inter-regional bus routes. The SJRTD Metro Hopper Route 91 serves the City of Manteca providing connection to Ripon and Stockton and other San Joaquin County cities by transferring to other available routes.

The Altamont Commuter Express (ACE) train connects San Joaquin County to the Bay Area. Bicycles are allowed on designated passenger cars. Each bike car has 14 bike stalls with 2 additional stalls on the lower level. The nearest ACE station is located in the City of Lathrop on the west side of the Union Pacific Railroad tracks north of Yosemite Avenue.

By allowing bikes on buses and trains, an intermodal link has been created at both ends of a transit trip, which thereby increases the range of service to passengers with destination that are outside walking distance of transit stops. Most major multi-modal connection locations provide bus lockers to allow safe storage of a bicycle when riding to and from the connection is all that is needed.

FIGURE - 3 Existing Bicycle Route System



**CITY OF MANTECA
BICYCLE MASTER PLAN
EXISTING AND PROPOSED ROUTE SYSTEM
2013**



Legend

- Class I Bike Path Existing
- Class II Bike Lane Existing
- Class III Bike Route Existing
- - - Proposed Class I Bike Path
- - - Proposed Class II Bike Lane
- - - Proposed Class III Bike Route
- - - Suggested Regional Route

Community Services

- + Fire/Emergency Services
- ★ Police Station
- ✉ Post Office
- 📖 Library
- H Hospital
- 🏛️ Municipal Offices
- 📍 State, County & Federal Offices
 - 1 DMV
 - 2 S.J. Courts
 - 3 Social Security
 - 4 Animal Shelter
- 🚆 ACE Train Station
- 🌳 Parks
- 🏖️ Picnic Area
- 🎓 Schools
- 🎬 Cinema
- 🎾 Tennis Courts
- 🎳 Bowling Alley
- 🚲 Bike Shop
- 🛹 Skate Park

Support Facilities

Support facilities include physical infrastructure designed to accommodate and encourage the use of bicycles. These facilities include bicycle racks, lockers, restrooms, showers, and clothes lockers. The City is committed to providing bicycle support facilities where possible.

In general, all of the schools, community parks, and public buildings are equipped with bicycle racks and restrooms. Restrooms are also provided at Woodward, Northgate, and Lincoln Parks, as well as the Library, the Golf Course, and Morezone Field.

In 1997 the City of Manteca established a bicycle parking requirement to provide sufficient bicycle parking for multi-family (apartments) and non-residential (commercial and industrial) developments. The City's Zoning Ordinance includes a requirement that all apartments, public and civic facilities, commercial, and industrial developments provide and maintain bicycle parking at a minimum ratio based on the number of required automobile parking spaces.

Total Parking Spaces	Minimum # of Bicycle Spaces Required
1 - 29	2
30 - 59	4
60 - 74	5
75 - 99	6
100 - 199	7
200 - 299	8
300 - 399	9
400 and greater	10

In no case shall there be fewer than two employee bicycle spaces and two patron spaces, unless specifically exempt.

The Required Bicycle Parking ordinance also requires that bicycle parking must be located on a paved surface, in proximity to a building entrance, and in a visibly secure location adjacent to the building. That bicycle parking shall consist of a stationary bicycle rack, and not located within a required setback yard areas.

Existing Pedestrian Network

The pedestrian network in Manteca mainly consists of sidewalks on most streets that for the most part provide connections to the downtown, parks, and schools. Manteca maintains a standard that all new developments provide sidewalks on both sides of the street, and the closure of gaps in the sidewalk system when feasible. There are areas of Manteca that were not required at the time they were developed to provide sidewalks, such as areas that were developed in the County prior to becoming part of the City, and Manteca's industrially zoned areas.

The City of Manteca has developed and maintained an inventory of sidewalks and where they are needed. Table 4 lists and Figure 4 displays the existing areas currently in need of sidewalk, curb and gutter. It shows the areas which lack alley pavement, curb, gutter and sidewalk, just sidewalk, and just curb and sidewalk.

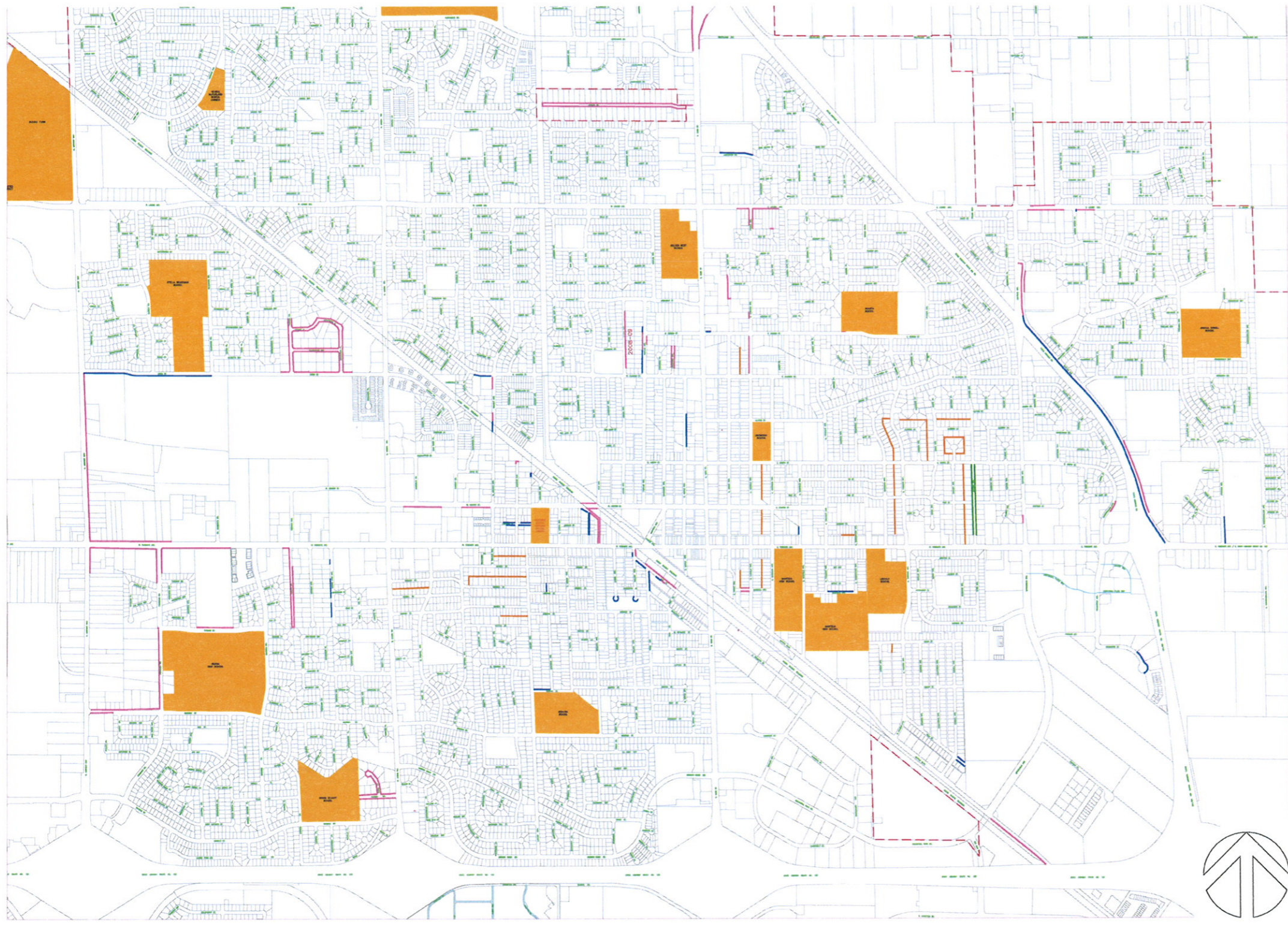
Understanding the quality of pedestrian facilities in the City of Manteca is essential for determining future opportunities for improvement. Sidewalk type and width, curb and gutter were evaluated in the facilities assessment:

Inventory of Existing Issues

TABLE 4 Inventory of Missing Sidewalk, Curb and Gutter	
Missing Items	Streets
Curb, Gutter and Sidewalk	N. Airport Way
	S. Airport Way
	W Yosemite Ave.
	Fishback Rd.
	Thomas St.
	Wawona St.
	Crowin Dr.
	Sesst Ct.
	Pacific Rd.
	W. Center St.
	Almond Ave.
	N. Walnut Ave.
	Foxfire Dr.
	Crom St.
	Clubhouse Way
	Greenview Pl.
	Titleist Pl.
	N. Main St.
	Joseph Rd.
	E. Louise Ave.
	Frank Ave.
	N. Grant Ave.
	N. Lincoln Ave.
	Acacia Ave.
	Poplar Ave.
	Lombardo Ave.
	Mikesell Ave.
	Oak St.
Willow Ave.	
Moffat Blvd.	
Cottage Ave.	
Button Ave.	
Northwoods Ave.	
Sidewalk	Crom St.
	Grand Prix Ave.
	Joaquin St.
	N. Walnut Ave
	W. Alameda St.
	Lancaster Dr.
	E. Edison St.
	Poplar Ave.
	N. Maple Ave.
	Park Ave.
	Oak St.
	Yolo St.
	Mikesell Ave.
	Button Ave.
Pestana Ave.	

	Commerce Ct.
Curb and Gutter	Mylnar Ave.
Alley Pavement	Vernal St.
	Virginia St.
	Edythe St.
	N. Grant Ave.
	Nevada St.
	N. Lincoln Ave.
	S. Grant Ave.
	Lassen Ave.
	E. Yosemite Aev.
	Sherwin Ave.
	Raylow Ave.
	Hansen Ave.
	Aldwena Ln.

Figure 4 - Sidewalk Curb and Gutter Map



CITY OF MANTECA SIDEWALK, CURB & GUTTER MAP



Legend

-  Missing Curb, Gutter & Sidewalk
-  Missing Sidewalk
-  Missing Curb & Gutter
-  Missing Alley Pavement

Community Services

-  Parks & Schools

Bicycle and Pedestrian Safety

To evaluate bicycle safety, available existing collision data was reviewed to identify collision trends and locations within the City limits.

Collision Data

Collision data was provided by the California Highway Patrol Statewide Integrated Traffic Record System (SWITRS) statistics. This data represents all reported¹ bicycle and pedestrian related collisions occurring in the City of Manteca between 2004 and 2012. Tables 5 and 6 characterize the collision data by year, party at fault, and primary factor leading to the collision. Table 7 summarizes the severity of the collision. Figures 5 and 6 illustrate the location of the reported pedestrian and bicycle collisions from Tables 5 and 6.

TABLE 5 City of Manteca Bicycle Collision Characteristics										
Year	Total No.	FAULT			FACTOR					
		Bicycle	Driver	Unknown	Wrong Side	Stop Sign	Driver Error	R-O-W Auto	Unsafe Speed	Driver Alc/Drg
2004	28	21	5	2	13	5	2	2	1	2
2005	26	22	2	2	11	2	3	10	0	1
2006	29	25	2	2	13	4	5	13	1	1
2007	22	15	4	3	10	1	2	6	1	1
2008	19	15	3	1	9	4	1	5	1	0
2009	11	9	2	0	8	2	0	6	1	0
2010	19	13	1	5	4	0	0	8	2	1
2011	13	8	2	3	4	2	1	8	2	1
2012	17	11	4	2	4	3	0	7	0	1
TOTAL	184	139	25	20	76	23	14	65	9	8

Source: California Highway Patrol Statewide Integrated Traffic Record System (SWITRS) Statistics.

TABLE 6 City of Manteca Pedestrian Collision Characteristics										
Year	Total No.	FAULT			FACTOR					
		Ped	Driver	Unknown	In Road	Not in X-walk	Driver Error	R-O-W Ped	Unsafe Speed	Driver Alc/Drg
2004	16	6	85	2	2	7	0	4	1	1
2005	13	4	6	3	0	2	0	5	0	0
2006	19	4	12	3	2	1	0	11	1	0
2007	11	5	4	2	4	7	0	0	0	0
2008	15	9	3	3	2	7	0	2	1	0
2009	15	6	6	3	1	5	0	5	1	0
2010	10	4	4	2	0	4	0	3	1	0
2011	24	7	12	5	2	6	2	6	1	1
2012	6	1	1	4	0	2	0	1	0	0
TOTAL	129	46	56	27	13	41	2	37	6	2

Source: California Highway Patrol Statewide Integrated Traffic Record System (SWITRS) Statistics.

¹ The actual number of collisions is probably higher than reported. This data reflects reported collisions only, and does not include unreported collisions and under-counted non-automobile-related collisions. For example, bicycle-bicycle or bicycle-pedestrian collisions tend to be less severe and consequently under-reported.

TABLE 7
City of Manteca Collision Severity¹

Year	Total No. Bike	Extent of Injury			Total No. Ped	Extent of Injury		
		Fatality	Injured	Unknown		Fatality	Injured	Unknown
2004	28	0	28	0	16	2	14	0
2005	26	0	26	0	13	0	13	0
2006	29	0	24	5	19	0	19	0
2007	22	1	19	2	11	0	11	0
2008	19	0	17	2	15	0	14	1
2009	11	0	10	1	15	0	11	4
2010	19	1	15	3	10	0	9	1
2011	13	0	13	0	24	0	24	0
2012	17	0	17	0	6	0	6	0
TOTAL	184	2	169	13	129	2	121	6

Source: California Highway Patrol Statewide Integrated Traffic Record System (SWITRS) Statistics.

Trends and Comparisons

As shown in Table 5, a total of 184 bicycle collisions were reported during the 9-year period from 2004 to 2012. Primary causes of these collisions were bicyclists riding on the wrong side of the road, and running stop signs/lights. Two fatalities occurred and 169 of the collisions resulted in injuries. Bicyclists were at fault in approximately 76 percent of the collisions. This information illustrates that there is a downward trend in the number of accidents over the past 9-years, and that the number of accidents from riders being on the wrong side of the street and running stop signs has also decreased. This would support that continued education and enforcement is an important tool in decreasing collisions involving cyclists.

As shown in Table 6, a total of 129 pedestrian involved collisions were reported during the 9-year period from 2004 to 2012. Primary causes of these collisions were pedestrians walking in the road and not crossing at crosswalks. Two fatalities occurred and 121 of the collisions resulted in injuries. Pedestrians were at fault in approximately 36 percent of the collisions, drivers 43 percent of the time, and 21 percent with unknown causes. This information illustrates the need to continue requiring sidewalks in all new developments and to maintain an inventory of roadway segments in need of sidewalks.

Of the 129 pedestrian involved collisions the data illustrates, as one might guess, that the majority of collisions occurred on major collectors and arterials, primarily at intersections, and close to parks, high schools, and the downtown. The majority of collisions on Main Street, Yosemite Avenue, Center Street, Alameda Avenue, Louise Avenue, and Northgate Boulevard.

Figures 5 and 6 illustrate the location of the reported pedestrian and bicycle collisions from Tables 5 and 6. In very general terms the majority of the accidents occurred along heavily travelled roadways such as Main Street, Union Road, Louise Avenue, and Yosemite Avenue and at the intersections along these roadways. The data would indicate that bicycles use these roadways and that more could be done to reduce the number of collisions on them.

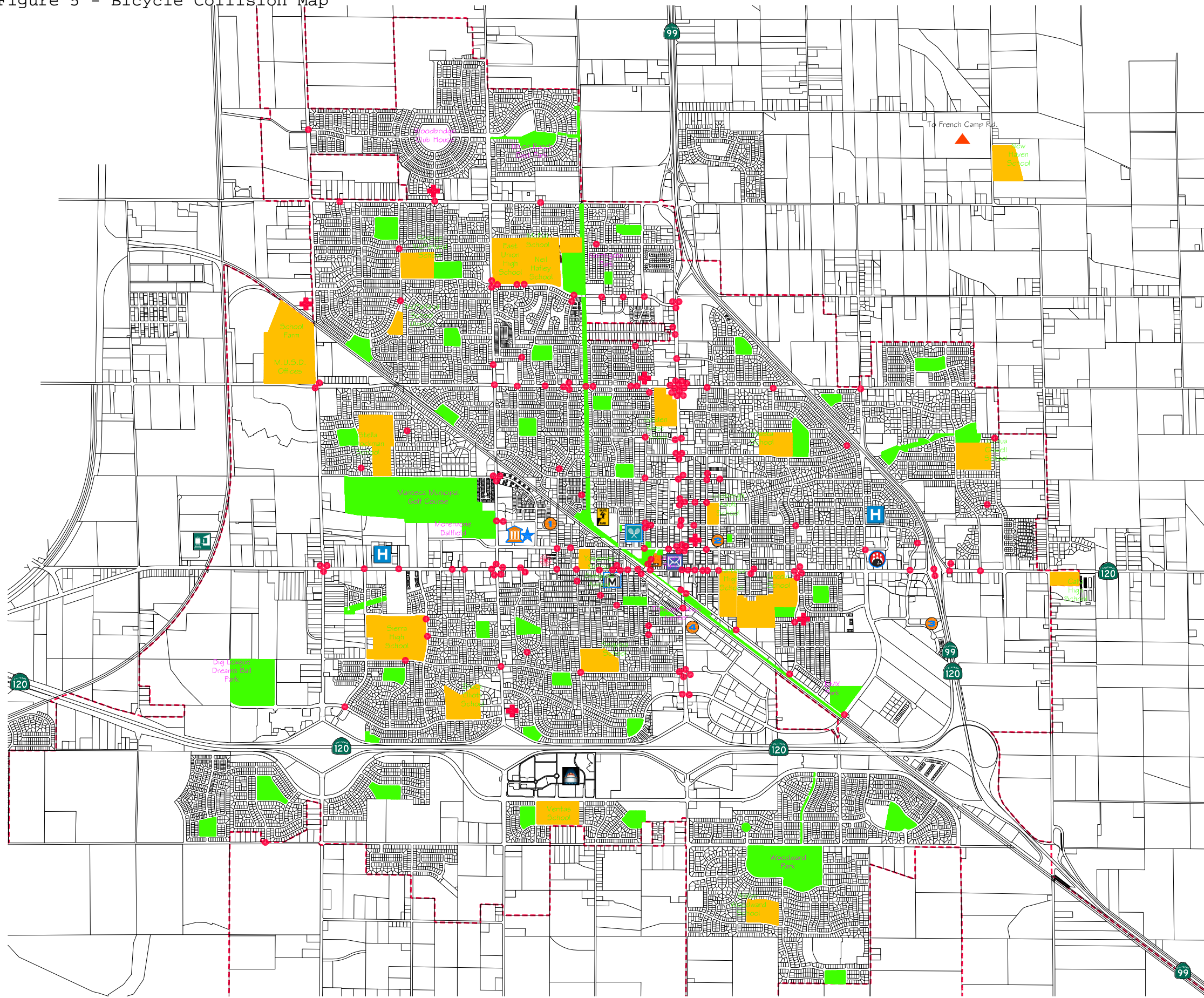
Safety Programs

Safety is a major concern of both existing and potential users of the bikeway system. User perceptions regarding safety are one of the main reasons individuals do not bicycle more often. This concern is understandable given the potential for serious injuries to bicyclists that are involved in collisions with vehicles.

Many bicyclists, of all ages, lack the proper instruction for riding on roadways. This is very evident from analyzing bicycle collision data within the City of Manteca. During the 9-year analysis period, approximately 77 percent of the reported collisions were the fault of the bicyclist. Riding on the wrong side of the road accounted for nearly half of these collisions. Although not specifically stated in the accident reports, the scenario is typically that motorists turning right at intersections are naturally looking to the left for oncoming traffic and are not expecting a bicyclist coming from the right. This information suggests that increased safety education and enforcement would be an important tool in decreasing bicycle-related collisions.

Existing bicycle and pedestrian safety programs in the region were reviewed as part of this planning effort. There is no mandatory bike safety program administered by the Manteca Unified School District; however, some schools organize their own bicycle-safety presentations in cooperation with the police department. The police department typically uses handouts, demonstrations, and interactive media to teach bicycle safety.

Figure 5 - Bicycle Collision Map



**CITY OF MANTECA
BICYCLE COLLISION
MAP
2004-2012**



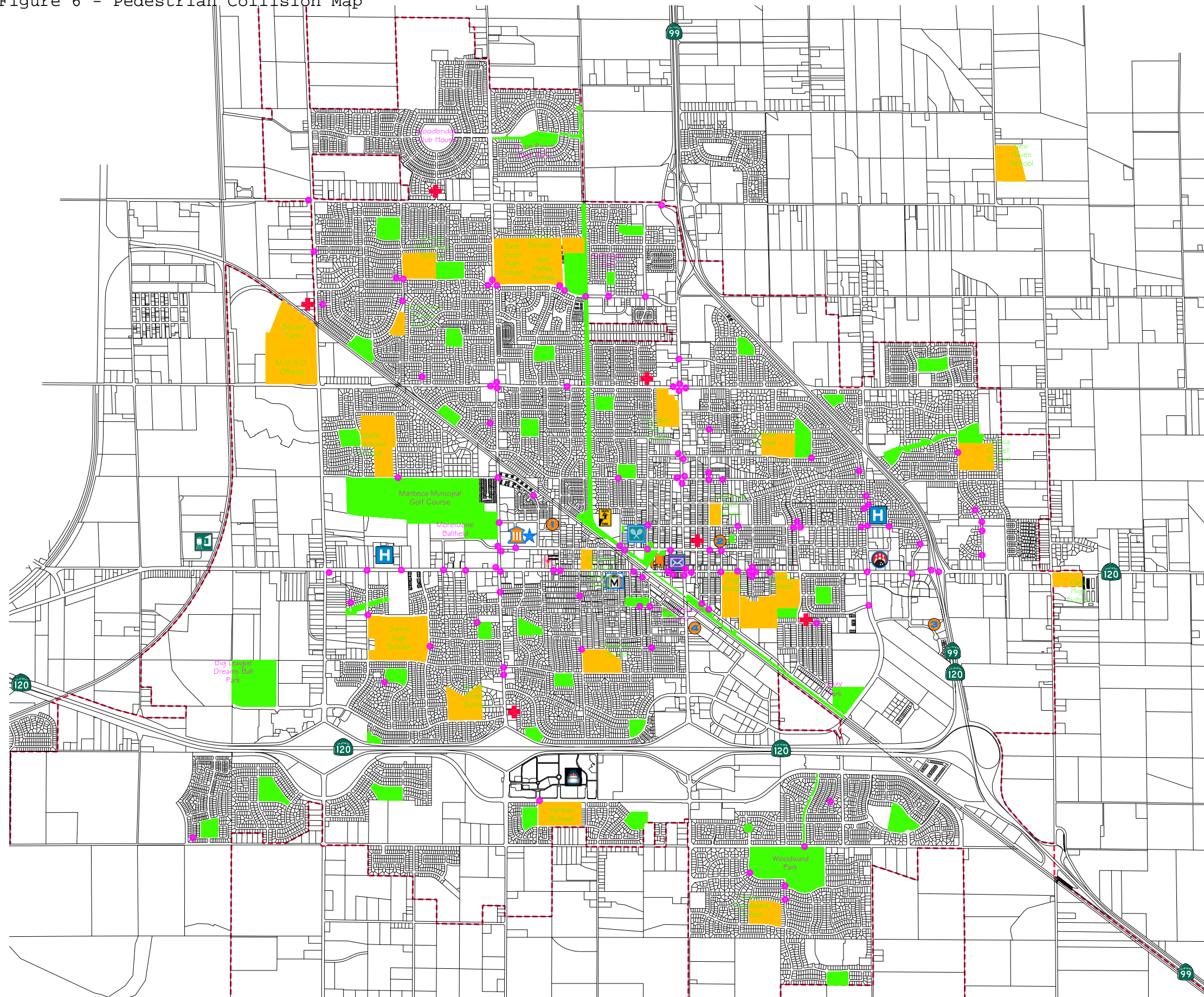
Legend

● Points where collision occurred

Community Services

- ✚ Fire/Emergency Services
- ★ Police Station
- ✉ Post Office
- 📖 Library
- H Hospital
- 🏛 Municipal Offices
- 📍 State, County & Federal Offices
 - ① DMV
 - ② S.J. Courts
 - ③ Social Security
 - ④ Animal Shelter
- 🚆 ACE Train Station
- 🌳 Parks
- 🏖 Picnic Area
- 🎓 Schools
- 🎬 Cinema
- 🎾 Tennis Courts
- 🎳 Bowling Alley
- 🚲 Bike Shop
- 🛹 Skate Park

Figure 6 - Pedestrian Collision Map



**CITY OF MANTECA
PEDESTRIAN COLLISION
MAP
2004-2012**



Legend

● Points where collision occurred

Community Services

- ✚ Fire/Emergency Services
- ★ Police Station
- ✉ Post Office
- 📖 Library
- H Hospital
- 🏛 Municipal Offices
- 📍 State, County & Federal Offices
 - ① DMV
 - ② S.J. Courts
 - ③ Social Security
 - ④ Animal Shelter
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- 🚲 Bike Shop
- 🛹 Skate Park

VI. ANALYSIS OF DEMAND

The objective of analyzing bicycle travel demand is to identify the following travel characteristics:

- Level of existing bicycle trips
- Patterns of travel for bicycle trips
- Level of future bicycle trips
- Possible methods of stimulating additional bicycle trips

This section identifies the location of existing major activity centers likely to attract bicycle trips and provides information on population and employment trends and their influence on bicycle travel demand.

Existing Major Activity Centers

One purpose of the Bicycle & Pedestrian Master Plan is to provide improved linkages from residential areas to employment, commercial, educational, and recreational centers. These linkages support bicycle travel demand for both commute and recreation trips. Each of the maps throughout this document includes a legend that identifies major activity centers that currently are, or could potentially be, bicycle destinations, including those identified by City staff and as part of the online survey. These activity centers include the downtown business district, large employment and shopping centers, schools, and parks.

Growth Trends

Table 8 provides estimates of existing and forecasted future population and employment levels, and also presents the effects of such growth on the road network. This data can be used to identify trends and to assess demand for bike and pedestrian facilities.

According to the "San Joaquin Council of Governments, Population, Employment and Housing Unit Projections for 2009," the City of Manteca had an estimated population of 67,477 with growth over 25 years to increase Manteca's population to 117,010 or 73%. Employment levels are expected to grow from 14,823 to 21,756 or 47%. The combined effect is forecasted to be a 73 percent increase in daily vehicle trips.

Future growth and development can assist bikeway facilities planning in two ways: (1) new developments often require upgrades to existing roadways that may create opportunities to construct new bikeway facilities; and (2) changes in land use patterns can allow for better access and connectivity.

TABLE 8 Population and Employment Growth in the City of Manteca			
	2010	2035 ¹	Percent Growth
Population	67,477	117,010	73%
Employment	14,823	21,756	47%
Total Daily Person Trips ²	796,229	1,380,718	73%
Note:			
1. San Joaquin Council of Governments, Population, Employment and Housing Unit Projections (2009).			
2. Average Daily Person Trips = 3.8 per person * 3.1 Persons Per Household = 11.8. (Sources: 2009 National Household Travel Survey (FHA) & California Department of Finance E-5 Population and Housing and Household Estimates)			

Bicycle & Pedestrian Travel Demand

Statistical information regarding bicycle ridership and walkability for Manteca is limited to 2012 Census data from the American Community Survey. The following discussion describes both existing and future ridership and walkability levels and their relationship to Manteca’s bikeway and pedestrian system.

Existing Bicycle Demand

A common term used in describing demand for bicycle facilities is “mode split.” Mode split refers to the form of transportation a person chooses to take, such as walking, bicycling, public transit, or driving. Mode split is often used in evaluating commuter alternatives such as bicycling, where the objective is to increase the percentage of people selecting an alternative means of transportation to driving alone.

Table 9 presents Census data for the means of transportation used by those travelling from home to work for the City of Manteca.

TABLE 9 Means of Transportation to Work	
Mode (Home-based work trips)	Percentage
Drive Alone	78.5%
Carpool	17.8%
Transit	1.7%
Bicycling	0.4%
Walking	1.1%
Other	0.4%
Source: American Community Survey 5-year estimates (2005-2009)	

As shown in Table 9, bicycle trips are 0.4 percent of home-based work trips in Manteca. This should not be misinterpreted as the bicycle mode share of all trips for several reasons:

- Means of transportation to work data only represents commute trips which tend to be longer trips than shopping, school, recreation, and other trips and are therefore less compatible with bicycling.
- Census data fails to capture people who commute by bicycle one or two days per week.
- No separate accounting of shopping, school, or recreational trips is made in the Census; these trips make up more than half of the person trips on a typical weekday and a significantly greater proportion on weekend. These trips also tend to be short- to medium-length, which are very well suited for bicycle trips.
- Journey-to-work reports information for adult work trips, but does not include data on school trips, which are much more likely to be bicycling trips as school-aged individuals cannot drive until the latter half of their high school years.

To adjust for under-counting, bicycle mode share has been increased by 50 percent to 0.6 percent. Total daily bicycle trips can be estimated using the mode split and an estimate of total daily person trips. According to Table 8, a total of 796,229 person trips occur each day in Manteca. Assuming a 0.6 percent bicycle mode split, this corresponds to a total daily bicycle trip estimate of 4,777 trips.

Existing Pedestrian Demand

A place can be categorized based on its levels of pedestrian walkability and demand. A place may have desirable destinations, such as locations with multiple shops, office parks, schools, and the like, but which are difficult or unsafe to walk to. This may be due to inadequate sidewalks, infrequent street crossing opportunities or lack of a direct route. Such a place would have low walkability and high demand. Alternatively, a place may be walkable because of improved facilities, but it may lack a destination to which people want to travel. Such a place would have high walkability and low demand.

The optimum pedestrian environment would have both high walkability and high demand. Consequently, all plans and guidelines must work toward achieving high levels of both demand and walkability if their aim is to increase pedestrian travel. As stated in Section 1 Introduction, Planning for pedestrians requires understanding of walkability and demand. Pedestrian walkability refers to the ease, comfort and safety of walking and is influenced by connectivity, accessibility, the sense of safety (real and perceived), and the quality of the pedestrian environment. Pedestrian demand is the extent to which people want to walk to a particular place and is influenced by land use and development types including mixes and intensities of activities, the presence of public spaces and parks, and the availability of transit facilities.

As shown in Table 9, pedestrian trips are 1.1 percent of home-based work trips in Manteca which is statistically 0.7 percent greater than the number of bicycling trips. In similar fashion to bicycle trips, the number of walking trips should not be misinterpreted as the walking mode share of all trips.

- Means of transportation to work data only represents commute trips which tend to be longer trips than shopping, school, recreation, and other trips and are therefore less compatible with walking.
- Census data fails to capture people who commute by walking one or two days per week.
- No separate accounting of shopping, school, or recreational trips is made in the Census; these trips make up more than half of the person trips on a typical weekday and a significantly greater proportion on weekend. These trips also tend to be short- to medium-length, which are well suited for walking trips.
- Means of transportation to work reports information for adult work trips, but does not include data on school trips, which are much more likely to be bicycling trips as school-aged individuals cannot drive until the latter half of their high school years.

To adjust for under-counting, walking mode share has been increased by 50 percent to 1.65 percent. Total daily walking trips can be estimated using the mode split and an estimate of total daily person trips. According to Table 8, a total of 796,229 person trips occur each day in Manteca. Assuming a 1.65 percent walking mode split, this corresponds to a total daily bicycle trip estimate of 13,138 trips.

Future Bicycle & Pedestrian Demand

Future bicycle and pedestrian trips will depend on a number of factors such as demographics, the availability of well-connected facilities, and location, density, and type of future land development. As shown in Table 8, the population and number of jobs in Manteca is expected to increase by nearly 73 and 47 percent, respectively, between 2010 and 2035. The number of daily person trips is forecasted to increase to over 1.38 million, an increase of over 73 percent. This amount of growth will put a heavy burden on regional and local transportation facilities and its many users. This growth emphasizes the need to promote alternative modes of travel, including bicycling and walking, as a viable and attractive option driving a car.

With appropriate bicycle and pedestrian facilities in place and continued implementation of employer trip reduction programs that include incentives for using alternative modes of travel, the bicycle and walking mode

splits could increase above their current rates. However, assuming the split remains unchanged, an estimated 8,284 or more daily bicycle trips and 22,782 more daily walking trips could be expected in 2035.

Continued implementation of Manteca's bicycle and pedestrian network will help achieve the objectives identified in this Master Plan, but equally important is the development of land use patterns that are favorable to bicycling and walking. These include compact, mixed-use development focusing on in-fill prior to continued development on the periphery.

VII. PROPOSED SYSTEM

Proposed Bicycle System

The proposed bikeway system for the City of Manteca was developed based on the City's current Bicycle Route Master Plan, and direct input from the public. Criteria used in developing and refining the proposed system is listed below.

- Advocacy Planning – Rely on members of interested agencies, organizations, City Staff, and community in the plan development process.
- Public Input – Solicit and consider public information in the bikeway planning process.
- Coverage – Provide balanced access from all portions of the City's population and employment centers for both commuting and recreation routes.
- Safety – Provide the highest level of safety possible while eliminating major safety concerns.
- Connectivity – Provide connections to activity centers, public transit, and access to and from neighboring communities. Activity centers include residential neighborhoods, schools, parks, shopping, employment centers, government centers, transit centers, and other recreational destinations.
- Gaps & Barriers – Eliminate or improve connections through major gaps and barriers. Major gaps and barriers include narrow freeway crossings, railroad crossings, high traffic roadways, and major intersections.
- On-Street Bikeways – Provide Class II bike lanes as the preferred on-street bikeway facility. Class III bike routes should be used when Class II bike lanes are not feasible due to existing narrow roadway segments or environmental constraints. The designation of on-street bikeways should indicate to bicycles that there are particular advantages to using these facilities as compared with alternative routes. This means that responsible agencies have taken actions to ensure that these facilities are suitable to be shared with vehicular traffic and will be maintained in a manner consistent with the needs of bicyclists.
- Off-Street Bikeways – Class I bike paths should be implemented at strategic locations to maximize the recreational benefit of the proposed system. These bikeways provide a higher degree of recreational benefit than bikeways located on streets. They can also become linear parks, adding to the range of amenities for the community.

Figure 7 illustrates the proposed bikeway system that resulted from the community input, development, and refinement process. The proposed system includes a total of approximately 66 miles of new bikeway facilities in addition to the 48.3 miles currently in place. Table 10 shows the number of existing and proposed miles for each bikeway classification.

TABLE 10 Length (Miles) of System by Bikeway Classification			
Bikeway Classification	Existing	Proposed	Total
Class I	10.0	9	19
Class II	19.4	50.1	69.5
Class III	18.9	6.9	25.8
TOTAL	48.3	66	114.3

Each route is classified according to the standards as was shown on Figure 2. However, the Class III bike route standards do not specify a minimum shoulder width or roadway lane width. For the purpose of this Bicycle & Pedestrian Master Plan, a minimum shoulder width of 3 feet is desirable; however, physical conditions may dictate a narrower lane width for individual projects depending on the findings from the City. Further, the minimum width for a Class I bike path shall be 10 feet; however, 12 feet is desirable due to the potential for multiple types of users (i.e., in-line skaters, pedestrian, etc.) on these paths. In addition, buffer/shoulder areas of 3 feet shall be provided on each side of the Class I bike paths.

Linkages Across SR 120 and SR 99

Eliminating or improving conditions at barriers to bicycle travel within the City of Manteca was a major goal in developing the proposed bikeway system. Due to the constrained conditions on local roadways and interchanges, the most challenging bicycle barriers within the City are SR 120 and SR 99. Improving connectivity between the central Manteca area with the developing areas to the east and south of these highways is critical to improving overall connectivity of the proposed system.

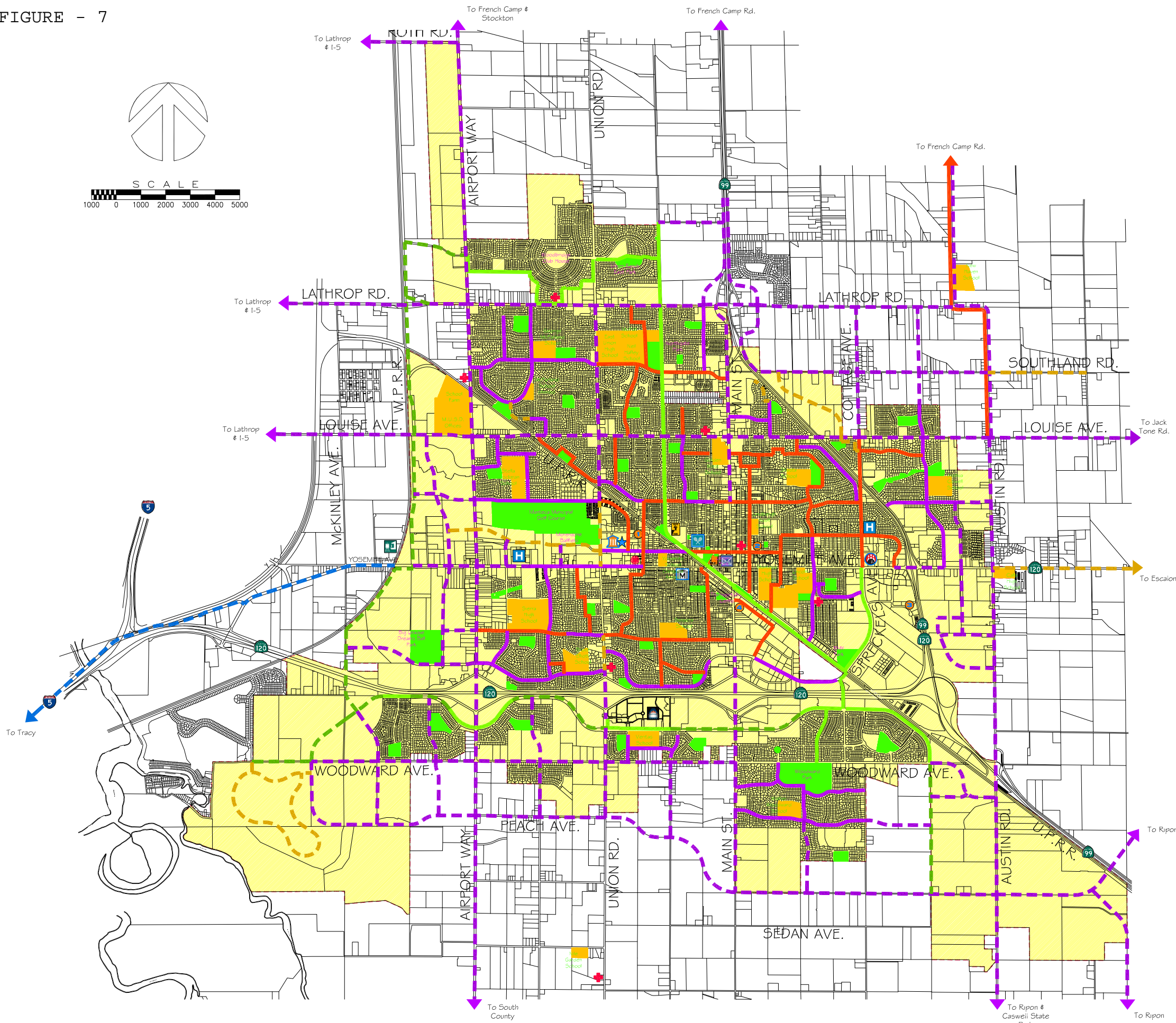
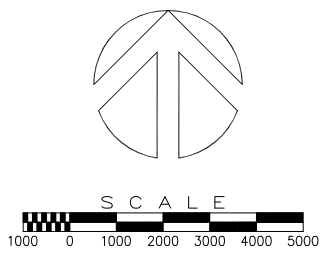
The proposed system includes connections across SR 120 and SR 99 at several locations, as shown on Figure 7. The crossings are at Lathrop Rd./SR99, Louise Ave./SR99, Cottage Ave./SR99, Austin Rd./SR99, Union Rd./SR120, Main St./SR120, Airport Wy./SR210, and the future interchange of Antone Raymus Expressway and SR99. The other ways across SR120 and SR99 are at the Yosemite Av./SR99 interchange underpass, the McKinley Av./SR120 interchange underpass, and the Van Ryn/ SR120 underpass.

The major elements of highway crossings are:

- Class II Bikeway (Bike Lane) and Sidewalks– see Figure 2.
- Continuing Connecting & Parallel Facilities – An emphasis of the proposed bikeway system is to provide bikeways on low volume neighborhood streets in lieu of higher volume arterials. However, most of the crossings of SR 120 and SR 99 are located on arterials. Therefore, the end point connections should provide access to parallel facilities where bike lanes do not continue on the arterial, such as the north ends of SR120 at Main St. and Union Road. In these cases, connecting facilities would be Daniels St., Mission Ridge Dr., and Industrial Park Dr., which are existing Class II facilities.
- Directional Signing – As envisioned, the crossings of SR 120 and SR 99 will provide improved connectivity across these two freeways; however, bicyclists will need effective directional signing to guide them to/from parallel facilities. Without directional signing, bicyclists may not be aware of the facilities provided leading to confusion or lack of use.

Each of these elements should be considered in the design of each crossing and modified as necessary to fully address the unique characteristics of each.

FIGURE - 7



**CITY OF MANTECA
BICYCLE MASTER PLAN
EXISTING AND PROPOSED ROUTE SYSTEM
2013**



Legend

- Class I Bike Path Existing
- Class II Bike Lane Existing
- Class III Bike Route Existing
- - - Proposed Class I Bike Path
- - - Proposed Class II Bike Lane
- - - Proposed Class III Bike Route
- - - Suggested Regional Route

Community Services

- + Fire/Emergency Services
- ★ Police Station
- ✉ Post Office
- 📖 Library
- H Hospital
- 🏛️ Municipal Offices
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- 🚲 Bike Shop
- 🛹 Skate Park

Regional and Multi-Modal Connections

The development of a bicycle system that connects to regional bikeways and other travel modes (bus, rail, carpool, etc) continues to be a priority of the Bicycle & Pedestrian Master Plan. These regional connections encourage bicycle use and allow riders to expand their riding area, taking them to destinations outside the City. The extent of the existing regional and multi-modal connections is discussed below.

Regional Connections

The City of Manteca is bordered by the City of Lathrop on most of its western boundary and unincorporated areas of San Joaquin County everywhere else. To date there are no regional connections to the City of Manteca; however the combined efforts of San Joaquin County and City of Manteca plan to coordinate these connections on County roadways. The San Joaquin Bicycle Master Plan update adopted November of 2010 plans to provide regional connections countywide, for example, bike routes on Airport Way, Austin Road, West Ripon Road, and SR120.

Multi-Modal Connections

The proposed bike and pedestrian system includes routes that overlap the existing Manteca Transit stops and the downtown Transit Station at the intersection of S. Main St. and Moffat Blvd and the Tidewater Pathway. Multi-modal facilities are areas where bicyclists can connect with another mode of travel to reach their intended destination. These facilities are essential to bicycling as they enable riders to access public transit and other transportation modes in situations where roadway obstacles (i.e., rail lines or freeways) might prevent continuous bicycle travel.

Manteca Transit provides bike racks on every City bus free of charge. Each bus is equipped with a rack that can carry up to two bikes. Racks are located on the front of the bus and can accommodate two-wheel bicycles with wheel spans of 16 inches in diameter or larger.

The San Joaquin County Regional Transit District (SJRTD) has mounted exterior bicycle racks on all fixed route inter-regional bus routes. The SJRTD Metro Hopper Route 91 serves the City of Manteca providing connection to Ripon and Stockton and other San Joaquin County cities by transferring to other available routes.

The Altamont Commuter Express (ACE) train connects San Joaquin County to the Bay Area. Bicycles are allowed on designated passenger cars. Each bike car has 14 bike stalls with 2 additional stalls on the lower level. The nearest ACE station is located in the City of Lathrop on the west side of the Union Pacific Railroad tracks north of Yosemite Avenue.

By allowing bikes on buses and trains, an intermodal link has been created at both ends of a transit trip, which thereby increases the range of service to passengers with destination that are outside walking distance of transit stops. Most major multi-modal connection locations provide bus lockers to allow safe storage of a bicycle when riding to and from the connection is all that is needed.

Support Facilities

Support facilities are an important element of the proposed bikeway system. Key facilities include bicycle lockers, bicycle racks, showers, and locker facilities. These support amenities can encourage bicycling and walking by reducing the threat of theft of a bicycle and providing cyclists and walkers with the ability to take a shower and to store personal hygiene products and clothing. Properly designed bike racks are required for all new developments and major modifications to existing developments. In addition, bicycle parking facilities

should be added at all existing activity centers. The type of parking facility (short-term easy-to-access and long-term secure) should be selected based on cost, ease of use, and ability to prevent theft.

Access to shower and locker facilities may help encourage people to commute by bicycle. Many jobs require employees to wear specific uniforms or formal attire. By having shower and locker facilities available, employees have the option to shower and dress at work. This is an important consideration for bicycle commuters as they cannot control their travel environment and are much more dependent on support facilities at their workplace.

The following actions are recommended for increasing the number of locations with bicycle parking, shower, and locker facilities.

- Require end of trip support facilities (i.e., bicycle racks, personal lockers, and showers) at appropriate locations such as parks, major recreational destinations, park-and-ride facilities, employment centers, schools, and commercial centers. The City should consider amending the Zoning Ordinance to require end of trip support facilities in all major employment centers of a size and criteria to be determined.
- Provide and maintain end of trip support facilities (i.e., bicycle racks, personal lockers, and showers) at appropriate existing activity centers to promote and encourage bicycle use. The City should consider end of trip support facilities during the creation of the Parks and Recreation Master Plan.

Crossing Protection

Bikeway facility intersections connecting with area roadways require special measures to provide and enhance safety. Nationally, about 75% of bicycle collisions take place at intersections. The following steps are recommended to enhance safety at these locations:

- Utilize signing, striping, flashing beacons, and bicycle-actuated signals at street crossings with high levels of bicycle demand when warranted by engineering standards.
- Install detectors at signalized intersections along the bikeway system as signal systems are upgraded. Detectors should be located within the striped bike lane either along the curb or between the right-turn lane and through lane.
- Provide adequate sight distance and crossing times at all bikeway intersections.
- Incorporate traffic calming measures, where appropriate, to slow vehicular traffic.

Proposed Pedestrian System

Pedestrian enhancement projects should be expected to provide all improvements along the street, including sidewalks, lighting and landscaping. Most areas of Manteca should have “basic” accommodations, but others, such as the downtown Core, should have “premium” facilities. Using the “basic” or “premium” levels of improvements, an appropriate pedestrian treatment can be selected for each area of the City.

- At a minimum, “basic” pedestrian improvements, consisting of five-foot sidewalks separated from the street by a minimum five-foot landscape strip, should be required on all roads.
- Where pedestrian demand is at its highest, “premium” improvements should be used. These improvements include all of the basic improvements plus additional elements that make the pedestrian setting an active urban place. Items like wider sidewalks, pedestrian level lighting, pedestrian level directional signage, and seating areas at regular intervals.

City-Wide Improvements

The following are improvements that should be considered and implemented throughout the City or within future city-wide planning projects such as a Parks and Recreation Master Plan, Capital Improvement Projects of the Public Works Department, and projects as part of applications under the San Joaquin County Council of Governments Safe Routes to Schools Program.

Implement Streetscape Enhancements

Streetscape enhancements are pedestrian improvements beyond the minimum standard that help to create an enhanced pedestrian experience and contribute to the overall livability of the City. Streetscape enhancements include pedestrian scaled lighting, street trees and landscaping, street furniture, colored or decorative paving, and decorative crosswalks. In addition, traffic calming measures are often employed to reduce crossing distances and traffic speeds and increase visibility of pedestrians crossing the street.

ADA Transition Plan

The Americans with Disabilities Act (ADA), which provides civil rights protections to persons with disabilities, was enacted on July 26, 1990. Title II of the ADA mandates that a public entity and the services, programs or activities that they provide are readily accessible to and usable by individuals with disabilities. The act requires any public entity that employs 50 or more people to prepare a self-evaluation to assess whether any of their programs and services are discriminatory, and to evaluate physical barriers to accessibility. As an outcome, public entities were required to develop a Transition Plan (by January 1992). The goals of the plan are to identify physical obstacles in the public entity's facilities that limit the accessibility of its programs or activities to individuals with disabilities; describe in detail the methods that will be used to make the facilities accessible; specify the schedule for taking the steps necessary to achieve compliance; and indicate the official responsible for implementation of the plan.

The City of Manteca is currently working on an ADA Transition Plan. As part of the plan, the City needs to perform a city-wide survey of its existing facilities to identify barriers for accessibility. Additionally the Transition Plan should:

- Identify existing facilities that limit access for persons with disabilities.
- Describe in detail the methods to be used to make facilities accessible.
- Specify a schedule for improving facilities by prioritizing the needs of persons with disabilities in existing facilities.
- Indicate the official responsible for implementation of the plan.
- Develop a procedure for installation of accessible facilities.
- Monitor the Transition Plan via milestones.
- Provide an avenue for citizens to request curb ramps, Accessible Pedestrian Signals, and sidewalk repair.

Assess and Repair Sidewalk Surface

Safe and accessible sidewalk connections are the backbone of creating a pedestrian-friendly city. The City of Manteca has a very extensive sidewalk network. However, in order to build off of this existing network and promote connectivity and accessibility, the City needs to ensure that all sidewalk surfaces meet ADA standards. Meeting or exceeding ADA standards will contribute to a better pedestrian environment for all users.

ADA standards require a minimum of 4 feet of unobstructed sidewalk. Some exceptions may be made to a minimum of 3 feet because of right-of-way restrictions, natural barriers, or other existing conditions. If a sidewalk is less than 5 feet wide, a passing space, which measures 5 feet wide by 5 feet long, is required every 200 feet. Sidewalks should have a continuous surface that is not interrupted by steps or abrupt changes in level and have a slip resistant surface.

There are instances within the City of Manteca where the sidewalks are not up to standard for a number of reasons. In many cases, sidewalks are old and their age has caused the surface to crack and cause abrupt level changes. Additionally, sidewalks are frequently obstructed by signs, poles, benches, or other streetscape amenities, which encroach on the minimum 4 foot sidewalk. There are also areas within the City where there may be a gap in the existing sidewalk network.

Survey Existing Sidewalk Conditions

The City should conduct an audit of the sidewalks and identify locations that need to be updated to meet the minimum ADA requirements. These areas should be prioritized by the City based upon their proximity to major destinations.

Ensure that All Curb Ramps Meet ADA Standards

Curb ramps allow people with mobility impairments to gain access to the sidewalks and to pass through median islands in streets. Without curb ramps, these individuals would be forced to travel in streets and roadways, where they are in potential conflict with vehicles and/or are prevented from reaching their destination.

Curb ramps are required at every intersection where a pedestrian way crosses a curb. The preferred orientation is for two curb ramps per corner that align with the direction of the crosswalks. Sometimes the limited width of a sidewalk makes it necessary to locate one curb ramp in the center of the curb return. However, in locations where space is limited curb extensions should be considered as a method to widen the sidewalk and provide adequate room for curb ramps.

As part of the ADA Transition Plan, a survey of the intersections throughout the City should be performed to evaluate the status of curb ramps based upon the ADA Accessibility Guidelines. Currently, the City requires all new development to meet ADA standards.

Update Traffic Signals to meet Accessible Pedestrian Signal Guidelines

Accessible Pedestrian Signals are pedestrian activated signals that communicate information about pedestrian timing in a non-visual format and are spatially designed to be utilized by pedestrians with mobility and visual limitations. Accessible pedestrian signals help pedestrians with vision impairments to navigate an intersection by audibly indicating the WALK interval of the signal phase, and by guiding a pedestrian across the street with a constant audible destination message.

Currently, the majority of the signals within the City do not fully meet these accessibility guidelines. Standard City policy is that all new signals designed and built within the City will meet these guidelines. Retrofitting existing signals to meet accessible pedestrian signal guidelines will require significant construction and engineering in many locations. The location of new accessible pedestrian upgrades to existing signals is currently based upon citizen request with the services of an Orientation and Mobility Specialist to evaluate subject intersections and recommend improvements. To make the most use of available resources and to target the locations in most need of retrofit, the City should continue to address citizen needs but should also work to create a prioritized list of signals for upgrades based upon the following criteria:

- Major intersections with medium to high volumes of traffic.
- Intersections with turning lanes particularly if the signal pole and push button are located on a central median island.
- Intersections that are not at 90 degrees.
- Intersections that are located near schools, parks, youth and senior centers, shopping districts, and transit facilities.

Update the Push Buttons on Pedestrian Activated Signals

The type and location of the pedestrian signal push button are important aspects of a pedestrian signal that greatly influences their use and accessibility. Throughout the City of Manteca there are a number of

pedestrian signal push buttons that are not universally accessible. These push buttons are outdated and often contain small push buttons that demand a lot of force to activate. The City has begun to replace these outdated push buttons with modern push buttons that can be easily operated by persons with limited hand strength or dexterity, that require a limited amount of force to activate, and that respond to activation with a noise or vibration to alert the pedestrian that the button has been activated.

Updating the signal push buttons is one opportunity to improve the accessibility of pedestrian signals that can be accomplished with minor engineering and cost. The City should prioritize the updating of the push buttons in the short-term to identify priority locations that need push button updates, and to ensure that all new signals include pedestrian activated push buttons that meet these criteria.

Pedestrian Improvement Areas

Along with areas around all parks and schools, the following is a list specific areas that should be evaluated in the Pedestrian Improvement Areas. Based on the Pedestrian Collision Map (Figure 6) these streets and intersections seem to be the most in need of improved pedestrian areas due to being the areas pedestrians utilize the most.

- Along E. Atherton Dr. between S. Main St. and S. Union Rd.
- Along Northgate Dr. between N. Airport Way and N. Main St.
- Along Union Rd. between Daniels St. and W. Lathrop Rd.
- Along Main St. between Tidewater Pk. and Louise Ave.
- Along Yosemite Ave. between N. Airport Way and Button Ave.
- Intersection of W. Lathrop Rd. and Madison Grove Dr.
- Intersection of Cottage Ave. and E. North St.
- Intersection of Cottage Ave. and E. Alameda St.
- Intersection of N. Powers Ave. and E North St.
- Intersection of S. Powers Ave. and Marin St.
- Intersection of N. Union Rd. and W. Center St.
- Intersection of E. Center St. and N. Lincoln Ave.
- Intersection of E. Center St. and N. Sherman Ave.
- Intersection of W. Center St. and Tidewater Pk.
- Intersection of E. Center St. and N. Grant Ave.
- Intersection of E. Alameda St. and N. Lincoln Ave.

Educational and Safety Programs

Programs to teach bicyclists and pedestrians the fundamentals of bicycle riding and walkability are important in order to establish good traveling habits. In addition, they encourage bicycle use and walkability by making new riders and pedestrians more comfortable and safe. Elementary school children in Manteca receive some informal bicycle-riding safety education by law enforcement officials upon request by area schools.

The following steps are recommended to build on this effort:

- Continue and expand the current bicycle and pedestrian education program for school children (i.e., some existing programs are currently offered upon request). A coordinated proactive effort between the City's police department, school district, and recreation department would improve the overall effectiveness of safety education.
- Establish an adult bicycle education program through the parks and recreation department that teaches adults how to ride defensively and encourages individuals to bike to work.

- Provide training to the City's police officers regarding bicycle and pedestrian safety and bicycle and pedestrian collision assessment/reporting.
- Include bicycle and pedestrian safety information as part of visitor packages offered through visitor centers, bicycle shops, local chamber of commerce, etc.

VIII. COSTS AND FUNDING ANALYSIS

Implementation of the proposed bikeway and pedestrian system will require funding from local, State, and Federal sources. Successful acquisition of capital from these funding sources requires coordination with other agencies such as SJCOG, Caltrans, and San Joaquin County. To facilitate funding efforts, this section presents conceptual construction cost estimates for the proposed system along with a brief description of past expenditures for bikeway and pedestrian facilities.

Cost Estimates for Bicycle System

Table 11 provides a unit cost summary for the construction of bikeway facilities in the region. These estimates are based on actual costs experienced in communities throughout the State. More detailed estimates should be developed following the preliminary engineering stage as individual projects advance towards implementation.

For purposes of this Bicycle & Pedestrian Master Plan, conceptual construction costs for the proposed system were based on the following assumptions:

- New Class I facilities would be constructed on generally flat right-of-way with minimal grading needed given the existing topography within the City.
- New Class II facilities would require moderate roadway improvements due to the relatively narrow roadways and prevailing pavement conditions within the City.
- New Class III facilities would require signing only.

TABLE 11 Conceptual Unit Cost Estimates for Bikeway Construction	
Facility Type	Estimated Cost per Mile
Class I Bike Path – Construct path with minimal grading needed	\$642,700
Class II Bike Lane – Signing, Existing Striping Removal, New Striping and Stenciling.	\$42,600
Class III Bike Route – Signing only	\$8,000

A summary of system costs for each bikeway classification is presented in Table 12. Conceptual cost estimates for individual routes are provided in Appendix A.

TABLE 12 Conceptual Cost Estimate Summary	
Bikeway Classification	Cost
Class I Bike Path	\$5,800,000
Class II Bike Lane	\$2,136,000
Class III Bike Route	\$55,800
TOTAL	\$7,991,800

Cost Estimates for Pedestrian System

****Sidewalk Improvement Estimates****

Potential Funding Sources

As shown in Table 12, the total cost for construction of the proposed bikeway system would be approximately \$7,991,800. The cost of the proposed system would be prohibitive to fund solely from local sources; however, many funding opportunities are available at the Federal, State, and local levels for constructing bikeway facilities. A general description of these sources is provided below.

Most funding programs are transportation versus recreation oriented, with an emphasis on reducing auto trips and providing inter-modal connections. These funding sources typically require completion and adoption of a bikeway master plan, quantification of the costs and benefits of the system, proof of public involvement and support, environmental compliance, and commitment of local resources.

Federal Funding Sources

Bicycle and pedestrian projects are broadly eligible for funding from almost all the major Federal-aid highway, transit, safety, and other programs. Bicycle projects must be "principally for transportation, rather than recreation, purposes" and must be designed and located pursuant to the transportation plans required of States and Metropolitan Planning Organizations.

The following federal sources provide funding that could be utilized by the City of Manteca for implementation of bicycle projects.

Transportation Equity Act for the 21st Century (TEA- 21) - TEA-21 provides funding for roads, transit, safety, and environmental enhancements. These are generally state and local improvements for highways and bridges that accommodate additional modes of transit. Improvements include capital costs, publicly owned intercity facilities, and bicycle and pedestrian facilities. Cities, counties, and transit operators can apply for TEA-21 funds. A 20 percent local match is required for these funds.

Surface Transportation Program Fund, Section 1108 (STP) – STP are block grant funds that are used for roads, bridges, transit capital, pedestrian, and bicycle projects. Eligible bicycle projects include bicycle transportation facilities, bike-parking facilities, equipment for transporting bicycles on mass transit facilities, bike activated traffic control devices, preservation of abandoned railway corridors for bicycle and pedestrian trails, and improvements for highways and bridges. TEA-21 allows the transfer of funds from other TEA-21 programs to the STP Fund. Cities, counties, metropolitan planning organizations (MPO), and transit operators can apply for TEA-21 funds. A 20 percent local match is required for these funds when used for bicycle projects.

National Highway System Fund (NHS) – NHS funds provide for an interconnected system of principal arterial routes. The goal of the program is to afford access to major population centers, international border crossings, transportation systems, meet national defense requirements, and serve interstate and inter-regional travel. This travel includes access for bicyclists and pedestrians. Facilities must be located and designed pursuant to an overall plan developed by each metropolitan planning organization (MPO) and state, and incorporated into the RTP. Both state and local governments can apply for NHS funds. A 20 percent local or state match is required for these funds.

Congestion Mitigation and Air Quality Improvement Program, Section 1110 (CMAQ) – CMAQ funds are available for projects that will help attain National Ambient Air Quality Standards (NAAQS) identified in the 1990 Federal Clean Air Act Amendments. Projects must be located within jurisdictions in non-attainment areas. Eligible projects include bicycle and pedestrian transportation facilities intended for transportation purposes, bicycle route maps, bike-activated traffic control devices, bicycle safety and education programs, and bicycle promotional programs. Cities, counties, MPO, state, and transit operators can apply for TEA-21 funds. A 20 percent local or state match is required for these funds.

Transportation Enhancements Program, Section 1201(TE) – The TE Program is a 10 percent fund set aside from the STP. Projects must have a direct relationship to the intermodal transportation system through function, proximity, or impact. This program has 12 activities that are eligible for funding. Two enhancement activities are specifically bicycle related: 1) provision of facilities for bicyclists and pedestrians, and 2) preservation of abandoned railway corridors (including the conversion and use thereof for bicycle or pedestrian trails). Local, regional, and state public agencies, special districts, non-profit and private organizations can apply for TE funds. Cities, counties, or transit operators must sponsor and administer the proposed projects. A 12 percent local match is required for these funds.

Scenic Byways Program Fund – This program provides funding for the planning, design, and development of a State Scenic Byways Program. Priority is given to designated scenic byways, proposals with specific intent, and projects established under partnerships. Funds may be used for the construction of facilities along the highway for the use of pedestrians and bicyclists, including pedestrian/bicycle access, safety improvements, and rest areas. The local jurisdiction and the MPO must formally support the byway. Cities can apply for these funds. A 20 percent local match is required for these funds.

Bridge Repair and Replacement Program (BRRP) – BRRP funds are available for bridge rehabilitation and replacement. When a highway bridge deck is being replaced or rehabilitated with federal funds, the bridge-deck must provide bicycle accommodations, if access is not fully controlled. Bridge projects must be incorporated into the Regional Transportation Improvement Program (RTIP). Cities may apply for these funds. No local match is required specifically for bicycle accommodations.

National Recreational Trails Fund, Section 1112 – Funds are available for recreational trails for use by bicyclists, pedestrians, and other non-motorized and motorized users. Projects must be consistent with a Statewide Comprehensive Outdoor Recreation Plan (SCORP). Projects include development of urban trail links, maintenance of existing trails, restoration of trails damaged by use, trail facility development, provision of access for people with disabilities, administrative costs, environmental and safety education programs, acquisition of easements, fee simple title for property, and construction of new trails. Private individuals/organizations, cities, counties, and other governmental agencies can apply for these funds. There are no specific local match requirements for these funds.

National Highway Safety Act, Section 402 – The Highway Safety Program is a non-capital safety project grant program under which states may apply for funds for certain approved safety programs and activities. There is a priority list of projects for which an expedited funding mechanism has been developed; bicycle and pedestrian safety programs have been included on this list. Eligible states must adopt a Highway Safety Plan (HSP) reflecting state highway problems. Eligible projects include pedestrian and bicycle safety programs, program implementation, and identification of highway hazards. State departments, cities, counties, and school districts may apply for these funds. No local match is required.

Transit Enhancement Activity, Section 3003 – The Transit Enhancement Activity fund can be used for bicycle access to mass transportation, including bicycle storage facilities and installation of equipment for transporting bicycles on mass transportation vehicles. Regional transportation planning agencies, state, and local agencies may apply for these funds. A 5 percent local match is required for these funds.

Highway Safety, Research, and Development Fund, Section 2003 – This fund can be used to improve bicycle safety through education, police enforcement, and traffic engineering. Projects must be incorporated into the RTIP. Cities, counties, and state agencies can apply for these funds. A 25 percent local match is required for these funds.

Section 3 Mass Transit Capital Grants – This fund can be used for mass transit station access including bicycle access, bicycle parking facilities, bicycle racks, and other equipment for transporting bicycles on transit vehicles. States, regional, local governments, and transit operators can apply for these funds. A 10 percent local match is required for bicycle related projects using these funds.

State Funding Sources

The following State of California sources provide funding that could be applicable for the City of Manteca.

Bicycle Transportation Account (BTA) – The state BTA is an annual program available for funding bicycle projects. These funds can be used for a wide range of bicycle projects; however, emphasis is on projects that benefit bicycling for commuting purposes. Cities and counties with approved bikeway plans can apply for these funds. A 10 percent local match is required for these funds.

Environmental Enhancement and Mitigation (EEM) Program – This program benefits bicycle projects that offset environmental impacts of new or modified transportation facilities. Local and non-profit agencies can apply for these funds. There is no local match required.

Flexible Congestion Relief (FCR) Program – This program is designed to reduce congestion on major transportation corridors by adding capacity to roadways. These funds can be used for bikeway projects if they are consistent with the RTP and included in the RTIP. There is no local match required for these funds.

Safe Routes to School – This fund was established by Assembly Bill 1475. These funds can be used for bikeways near California schools.

State Highway Operations and Protection Program (SHOPP) – This program is state-funded and used by Caltrans to maintain and operate state highways. Local jurisdictions are encouraged to work with Caltrans to help define projects, including bikeway projects on state highways.

Local Funding Sources

A variety of local sources may be available for funding bikeway improvements; however, their use is often dependent on political support.

Local Transportation Fund (LTF), TDA Article 3 – This fund was established by the California legislature under the state Transportation Development Act of 1972. LTF revenues are derived from return of ¼-percent of the 7¼ state sales tax to the county of origin. Local jurisdictions can apply for these funds which can be used for transit and bicycle projects. Up to 2 percent of funding can be set aside for bicycle facilities and 5 percent can be used for supplementing other funds to implement bicycle safety education programs. These funds are collected at the state level but are administered by SJCOG.

Measure K – In November 2006, the voters of San Joaquin County approved the use of Measure K funds to expand and enhance pedestrian and bicycle safety and facilities within San Joaquin County. This measure continued a ½-cent county-wide sales tax for transportation projects throughout the County. A portion of these funds are available for alternative transportation projects, including bicycling and pedestrian facilities.

New Construction – Future road widening and construction projects are one means of providing on-street bikeways. To ensure that roadway construction projects provide bikeway facilities where needed, roadway design standards are required to include adequate minimum cross-sections. Further, the review process for new development should include input pertaining to consistency with the proposed bikeway system.

Assessment Districts - Different types of assessment districts can be used to fund the construction and maintenance of bikeway facilities. Examples include Community Facility Districts, Infrastructure Financing Districts (SB 308), Open Space Districts, or Lighting and Landscape Districts. These types of districts have specific requirements relating to the establishment and use of funds.

Other Funding Sources

Local sales taxes, developer or public agency land dedications, private donations, and fund-raising events are other local options to generate funding for bikeway and pedestrian projects. Creation of these potential sources usually requires substantial local support.

Funding Strategy

Understanding the City's investment in the existing bikeway system and what is required to complete the system is important in developing a funding strategy. The City of Manteca currently expends approximately \$5,000 annually for maintenance of bikeways within the City. Since 1996, approximately \$4 million has been expended for new or improved bikeway facilities in the City of which approximately \$3.4 million were local funds.

With an approximate length of over 44 miles, the existing system represents a substantial investment. Implementation of the proposed system, consisting of an additional 54 miles would require an additional investment of approximately \$21.3 million, which equates to an annual cost of approximately \$1.1 million per year over 20 years, in constant 2003 dollars. Although a portion of the proposed system would be constructed as new development or re-development occurs, a substantial amount of the total cost will rely on public funding.

With this understanding, the following options should be considered by the City for fulfilling the funding commitment necessary to complete the proposed system:

- Prepare joint applications with other local and regional agencies for competitive funding programs at the State and Federal levels. Joint applications often increase the competitiveness of projects for funding; however, coordination amongst the participating jurisdictions is often challenging. The City should consider acting as the lead agency, with a strong emphasis on coordination between participating jurisdictions, on important projects to ensure they are implemented as quickly as possible.
- Use existing funding sources as matching funds for State and Federal funding.
- Include bikeway projects in local traffic impact fee programs and assessment districts.
- Include proposed bikeways as part of roadways projects involving widening, overlays, or other improvements.

The City should also take advantage of private contributions, if appropriate, in developing the proposed system. This could include a variety of resources such as volunteer labor during construction or monetary donations towards specific improvements.

****Add funding strategy for Pedestrian System****

IX. IMPLEMENTATION

Implementation of the proposed bikeway and pedestrian system will require effective planning and execution. To facilitate these efforts, the phasing and priorities for implementing specific routes are discussed below. In addition, typical design standards for each bikeway classification are also presented.

Bikeway and Pedestrian System Planning

The specific implementation of any given bikeway facility and pedestrian network, with all factors considered equal, should be based on established criteria:

In many situations, the most needed bikeway improvement may not be the first implemented. Often, external factors, such as the construction of new roads, create opportunities to provide new bikeway facilities without the consideration for need. The Identified Bicycle and Pedestrian system improvements that occur with development of a specific project do not need to be ranked; however, there is still a need to establish criteria to rank projects that would be important to Manteca in areas where development projects may not be ready. The following implementation sections will provided the City with the ability to rank projects and prioritize based on specific criteria.

Bicycle Project Formation Guidelines

Establishing priority bikeway projects identified in this plan should be bikeways that meet the criteria defined in Table 13. These criteria were developed and adopted by the San Joaquin County Council of Governments for scoring individual community projects within the Bicycle and Pedestrian Safe Routes to School Master Plan. Priority project should be established by evaluating each of them against these ten criteria and scored. The maximum potential score for each project is the sum of the maximum potential score of all project criteria, which is 110.

TABLE 13 Bikeway Project Formation Criteria		
Criteria	Definition and Scoring	Max Points
Gap Closure	Project connects or extends existing bikeways and provides for a consistent, continuous through route for bicyclists. Project meeting this criterion = 10 points.	10
Collision & Safety	Project rectifies safety concerns based on available data within the last 5-years identifying corridors with high incidents of bicycle related collisions within a 1/8 mile buffer of the proposed improvement. 0-2 Incidents = 05 points 3-4 Incidents = 10 points 5-6 Incidents = 15 points 7 + Incidents = 20 points Project can receive up to 10 points based on alternative information.	20
Project Readiness	Sponsoring agency has completed one or more of the following preconstruction phases (3 points for each phase completed): 1. Feasibility Study / Project Study Report 2. Environmental Clearance 3. Right-of-Way Acquisition 4. Plan, Specification, & Estimates 5. Other pre-construction requirements	15
Activity Center Connectivity	Project provides/improves connectivity across a combination of the following key CACs*: Employment centers Transit Hubs / Stations	15

	Schools Compact commercial areas Residential concentrations or downtown / community cores Project falls within an area meeting 3 of 5 CACs = 05 points. Project falls within an area meeting 4 of 5 CACs = 10 points. Project falls within an area meeting 5 of 5 CACs or is within the ½ area around the downtown/ community core consistent with the MK Smart Smart Growth Infill Opportunity Sites = 15 points	
Safe Routes to School Project Proximity	Project clearly provides/improves a direct route and is located, at minimum, within ¼ mile of a public school. Project receives 5 points for meeting this criterion.	5
Safe Routes to School Project Support	Project has document support for project based on a specific school site SRTS needs assessment. Project is based on school site assessment = 10 points Alternative support information retained from community based resources (e.g., School administrators, local police) has been obtained. Project can receive up to 5 points based on alternative information.	10
Community Support	Based on outcomes of community outreach efforts, consensus has been reached which endorses/supports the project by the community. Level of support is based on documented outreach efforts = 10 points. Alternative support information has been retained from community based resources (e.g., School administrators, local police) reinforcing support for project. Level of support is based on alternative information obtained = 5 points.	10
Relationship with CMP Transportation Network	Project parallels (within ¼ mile) and/or intersects with one or more roadways on the Congestion Management Program's transportation network. Project meets this criterion = 5 points	5
Matching Funds Potential	Level to which matching funds has been secured (e.g., other local such as BP-SRTS non-competitive, MK Local Street Repair, State TDA, Federal Transportation Enhancement) Matching funds up to 10% of the project cost are identified = 10 points. Matching funds up to 5% of the project cost are identified = 5 points Matching fund sources are identified = 3 points.	10
	SUB TOTAL MAXIMUM POINTS	100
BONUS POINTS		
Innovation & Design	Project involves innovation & design measures (e.g. dedicated bicycle signal heads, creative ways to separate bike from automobile traffic, queue jumpers, bike box, colored lanes, Bike Boulevard, bike station). Projects possessing innovation & design measures = 10 points.	10
	TOTAL MAXIMUM POINTS	110

Pedestrian Project Formation Guidelines

The priority pedestrian projects included in this Plan should also be evaluated the criteria defined in Table 14. These criteria were developed and adopted by the San Joaquin County Council of Governments for scoring individual community projects within the Bicycle and Pedestrian Safe Routes to School Master Plan. Priority project should be established by evaluating each of them against these ten criteria and scored. The maximum potential score for each project is the sum of the maximum potential score of all project criteria, and is 110.

TABLE 14
Pedestrian Project Formation Criteria

Criteria	Definition and Scoring	Max Points
Bridges Critical Pedestrian Gap	Project connects or extends existing network and provides for a consistent, continuous through route for pedestrians. Project meeting this criterion = 10 points.	10
Pedestrian Incidents & Safety	Project rectifies safety concerns based on available data within the last 5-years identifying number of pedestrian related incidents within a 1/8 mile buffer of the proposed improvement. 0-2 Incidents = 05 points 3-4 Incidents = 10 points 5-6 Incidents = 15 points 7 + Incidents = 20 points Project can receive up to 10 points based on alternative information.	20
Project Readiness	Sponsoring agency has completed one or more of the following preconstruction phases (3 points for each phase completed): 1. Feasibility Study / Project Study Report 2. Environmental Clearance 3. Right-of-Way Acquisition 4. Plan, Specification, & Estimates 5. Other preconstruction requirements	15
Activity Center Connectivity	Project provides/improves connectivity across a combination of the following key CACs: Employment centers Transit Hubs / Stations Schools Compact commercial areas Residential concentrations or Downtown / community cores Project falls within an area meeting 3 of 5 CACs = 05 points. Project falls within an area meeting 4 of 5 CACs = 10 points. Project falls within an area meeting 5 of 5 CACs or is within the ½ area around the downtown/ community core consistent with the MK Smart Smart Growth Infill Opportunity Sites = 15 points	15
Safe Routes to School Project Proximity	Project clearly provides/improves a direct route and is located, at minimum, within ½ mile of a public school. Project receives 5 points for meeting this criterion.	5
Safe Routes to School Project Support	Project has documented level of community support for project based on a specific school site SRTS needs assessment. Project is based on school site assessment = 10 points Alternative support information retained from community based resources (e.g., School administrators, local police) has been obtained. Project can receive up to 5 points based on alternative information.	10
Community Support	Based on outcomes of community outreach efforts, consensus has been reached which endorses/supports the project by the community. Level of support is based on documented outreach efforts = 5 points. Alternative support information has been retained from community based resources (e.g., School administrators, local police) reinforcing support for project. Level of support is based on alternative information obtained = 3 points.	5
Accommodates Vulnerable Pedestrians	Project location and/or features accommodate "vulnerable" pedestrians (e.g., physically impaired persons, seniors, and youth) who require accessible facilities for walking and using mobility assistive devices. Projects meeting this criterion receive 5 points.	5
Relationship with CMP	Project parallels (within ¼ mile) and/or intersects with one or more roadways on the Congestion Management Program's transportation network.	5

Transportation Network	Project meeting this criterion = 5 points Congestion Management Program's transportation network	
Matching Funds Potential	Level to which matching funds has been secured (e.g., other local such as BP-SRTS non-competitive, MK Local Street Repair, State TDA, Federal Transportation Enhancement) Matching funds up to 10% of the project cost are identified = 10 points. Matching funds up to 5% of the project cost are identified = 5 points Matching fund sources are identified = 3 points.	10
	SUB TOTAL MAXIMUM POINTS	100
Bonus Points		
Innovation & Design	Project involves innovation & design measures (e.g. use of Intelligent Transportation System strategies, enhanced pedestrian crossings, rapid rectangular flashing beacons, traffic calming strategies). Projects possessing innovation & design measures = 10 points.	10
	TOTAL MAXIMUM POINTS	110

Priority Projects

Priority bikeways will be listed in Table 13. The priorities currently in the list are straight from the SJCOG BPMPsRTS document, scored the listed projects based on documentation prior to this updated bicycle master plan.

In general, these bikeway facilities should be considered first when applying for funding or advancing a project from the planning to the design stage. City staff should also periodically review this list of priority projects to determine if any bikeway facilities should be removed due to various constraints or routes added as necessary to facilitate construction.

TABLE 15 City of Manteca Priority Bikeway Projects					
Location	Class	Start	End	Miles	Estimated Project Cost
Atherton Drive	1	Union Road	Sparrowhawk Street	0.80	\$536,070
Atherton Road West Extension	1	End of Existing Class 1	Woodward Ave	2.05	\$1,316,300
Manteca-Ripon Connector (Manteca)	1	Woodward Road	Planned River Road Bikeway	2.99	\$1,919,200
Tidewater Bikeway (Lathrop Road)	1	Lathrop Rd	Union Ranch Subdivision	0.24	\$152,300
			Totals	6.17	\$3,968,200

Bikeway Design Standards

The Caltrans Highway Design Manual and AASHTO Guide for the Development of Bicycle Facilities provide extensive detail on bikeway design for bikeways. These design standards provide a solid framework for future implementation, but may not always be feasible considering the constraints within a given corridor.

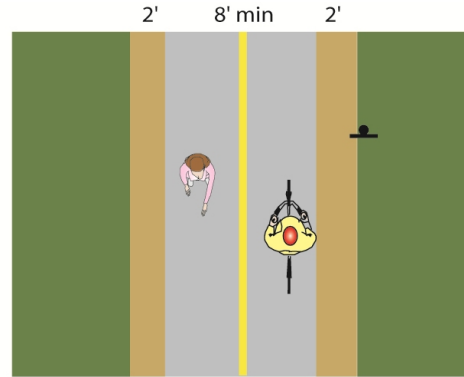
Bikeway design and planning standards are continually changing and expanding. For example, there is pressure from the bicycling public to allow bike lanes that are narrower than current standards to be installed on existing streets. However, local jurisdictions must be protected from liability concerns; therefore, most agencies adopt the Caltrans or AASHTO standards as a minimum.

Examples of typical design treatments for Class I, Class II, and Class III bikeways are shown on Figure 8. This information is provided to assist the City of Manteca in the design and construction of future bikeway facilities. With these standards and other information provided in this Bicycle & Pedestrian Master Plan, the City can proceed with the next step in advancing bikeway projects from the planning stage to the design and construction phase.

FIGURE 8 – Class I, Class II, and Class III bikeways

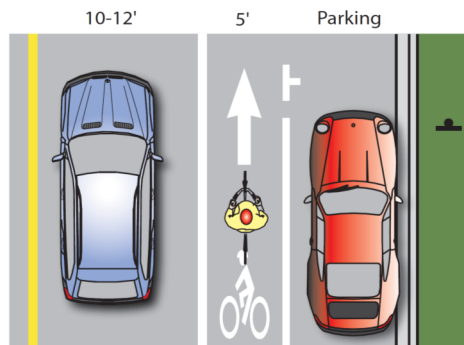
This Plan recommends three bikeway types as classified by Caltrans, as described below and presented to the right.

Class 1 multi-use paths provide for bicycle and pedestrian travel on a paved right-of-way completely separated from roadways. These facilities are typically used by recreational and casual bicyclists. Commuting bicyclists will also use Class I facilities that provide access to work or school.



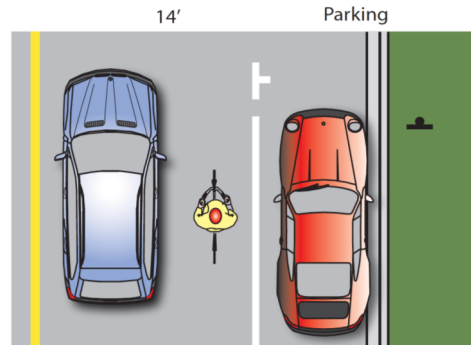
Class I bikeways are separated from the roadway.

Class 2 bicycle lanes provide a signed, striped and stenciled lane for one-way travel on both sides of a roadway. These facilities are typically used by commuting bicyclists and bicycle enthusiasts. Casual bicyclists will also use Class II facilities if traffic speeds and volumes are relatively low. Class II bicycle lanes are often recommended on roadways with moderate traffic volumes and speeds where separation from motorists can increase the comfort of bicyclists.



Class II bike lanes provide a striped travel lane on roadways for bicyclists.

Class 3 bicycle routes provide for shared roadway use and are generally identified only by signs. These facilities may have a wide travel lane or shoulder that allow for parallel travel with motorists.



Class III bicycle routes are signed roadways indicating a preferred bicycle route.

APPENDIX A

CONCEPTUAL COST ESTIMATES FOR INDIVIDUAL ROUTES

CITY OF MANTECA
BICYCLE MASTER PLAN UPDATE
PROPOSED BICYCLE PATHS, LANES AND ROUTES
03-17-2014

CONCEPTUAL COST ESTIMATES FOR INDIVIDUAL ROUTES				
STREET NAME & (SEGMENT)	BIKE PATH (MILES)	BIKEWAY CLASS	COST PER MILE	TOTAL COST
ATHERTON (DUTRA ESTATES-MOBILE HOME)	0.3	1	\$ 642,700	\$ 213,138
ATHERTON (UNION-SPARROWHAWK)	0.8	1	\$ 642,700	\$ 536,070
ATHERTON (LAKESIDE-PASEO)	1.0	1	\$ 642,700	\$ 660,350
ATHERTON (WOODWARD-DUTRA ESTATES)	0.8	1	\$ 642,700	\$ 503,083
ATHERTON (WOODWARD-SEDAN)	1.0	1	\$ 642,700	\$ 639,413
DAISYWOOD (FCOC-AIRPORT)	0.5	1	\$ 642,700	\$ 321,959
FCOC (MC KINLEY-DAISYWOOD)	3.3	1	\$ 642,700	\$ 2,094,374
LATHROP (FCOC-LATHROP)	0.2	1	\$ 642,700	\$ 120,506
MCKINLEY (FCOC-ATHERTON)	0.7	1	\$ 642,700	\$ 421,407
WOODWARD (ATHERTON-OAKWOOD SHORES)	0.5	1	\$ 642,700	\$ 293,840
SUBTOTAL	9.0			\$ 5,804,141
99 EAST FRONTAGE RD (LATHROP-BRUNSWICK)	0.8	2	\$ 42,600	\$ 33,362
AIRPORT (ROTH-YOSEMITE)	4.0	2	\$ 42,600	\$ 171,376
AIRPORT (YOSEMITE-PEACH)	1.9	2	\$ 42,600	\$ 81,682
AUSTIN (CITY LIMITS-YOSEMITE)	4.0	2	\$ 42,600	\$ 170,957
AUSTIN (YOSEMITE-LOUISE)	1.0	2	\$ 42,600	\$ 42,584
BELL TERRA (WOODWARD-ATHERTON)	0.5	2	\$ 42,600	\$ 20,977
BELLA TERRA (WOODWARD-PEACH)	0.4	2	\$ 42,600	\$ 17,903
BLUE BIRD (ATHERTON-PEACH)	0.9	2	\$ 42,600	\$ 39,978
BRUNSWICK (TIDEWATER-CRESTWOOD)	0.5	2	\$ 42,600	\$ 20,534
BUENA VISTA (TANNIHILL-PEACH)	0.6	2	\$ 42,600	\$ 24,043
COPPER COVE LOOP (VASCONCELLOS-AUSTIN)	0.9	2	\$ 42,600	\$ 37,428
COPPER COVE NEW DRIVE 9 (COPPER COVE LOOP TO AUSTIN)	0.4	2	\$ 42,600	\$ 17,750
COTTAGE (LOUISE-LATHROP)	1.0	2	\$ 42,600	\$ 42,713
CRESTWOOD (LATHROP-BRUNSWICK)	0.7	2	\$ 42,600	\$ 29,304
CROM (FCOC-AIRPORT)	0.5	2	\$ 42,600	\$ 20,235
DANIELS (MC KINLEY-AIRPORT)	1.0	2	\$ 42,600	\$ 44,133
FISHBACK (YOSEMITE-CENTER)	0.2	2	\$ 42,600	\$ 8,835
HEARTLAND (ATHERTON-WOODWARD REROUTE)	0.3	2	\$ 42,600	\$ 12,425
LATHROP (AIRPORT-CRESTWOOD)	1.8	2	\$ 42,600	\$ 77,043
LATHROP (AUSTIN-CRESTWOOD)	1.9	2	\$ 42,600	\$ 81,537
LATHROP (WPRR-AIRPORT)	0.5	2	\$ 42,600	\$ 21,139
LOUISE (AUSTIN-PRESCOTT)	0.8	2	\$ 42,600	\$ 32,249
LOUISE (WPRR-AUSTIN)	1.0	2	\$ 42,600	\$ 42,600
MAIN (ALAMEDA-LATHROP)	1.5	2	\$ 42,600	\$ 65,780
MAIN (MISSION RIDGE-PEACH)	1.8	2	\$ 42,600	\$ 77,180
MC KINLEY (ATHERTON-PEACH)	0.9	2	\$ 42,600	\$ 39,050
MILO CANDINI (YOSEMITE-DANIELS)	0.8	2	\$ 42,600	\$ 32,450
NEHEMAH (VASCONCELLOS-AUSTIN)	0.3	2	\$ 42,600	\$ 10,715
OLIVE EAST (SEDAN-CITY LIMIT)	0.6	2	\$ 42,600	\$ 27,464
PEACH (AIRPORT-UNION)	1.0	2	\$ 42,600	\$ 42,390
PEACH (MAIN-AUSTIN)	2.0	2	\$ 42,600	\$ 85,450
PEACH (UNION-MAIN)	1.3	2	\$ 42,600	\$ 53,549
PEACH (WOODWARD-AIRPORT)	1.7	2	\$ 42,600	\$ 71,976
PESTANA (PIN OAK-LATHROP)	0.7	2	\$ 42,600	\$ 31,789
ROTH (WPRR-AIRPORT)	0.5	2	\$ 42,600	\$ 20,945
SEDAN (AUSTIN-SPRR)	0.9	2	\$ 42,600	\$ 39,833
SOUTHLAND (AUSTIN-LATHROP)	2.4	2	\$ 42,600	\$ 101,570
TANNIHILL (PILLSBURY-ATHERTON)	0.5	2	\$ 42,600	\$ 21,655
TINNIN (WOODWARD-PEACH)	0.6	2	\$ 42,600	\$ 24,551
TREVINO (YOSEMITE-CENTER)	0.2	2	\$ 42,600	\$ 6,971
UNION (ATHERTON-PEACH)	0.7	2	\$ 42,600	\$ 29,296
UNION (CROM-LATHROP)	1.5	2	\$ 42,600	\$ 63,956
UNION (DANIELS-LIFE STYLE)	0.4	2	\$ 42,600	\$ 15,830
VASCONCELLOS (YOSEMITE-NEHEMAH)	0.5	2	\$ 42,600	\$ 21,816
VASCONCELLOS (YOSEMITE-NEW DRIVE)	0.5	2	\$ 42,600	\$ 21,833
VILLA TICINO (CROM-YOSEMITE)	1.0	2	\$ 42,600	\$ 43,899
WAWONA (MILO CANDINI-AIRPORT)	0.3	2	\$ 42,600	\$ 10,989
WOODWARD EAST REROUTE (ATHERTON-AUSTIN)	0.7	2	\$ 42,600	\$ 27,916
YOSEMITE (COMMERCE-PESTANA)	0.4	2	\$ 42,600	\$ 16,322
YOSEMITE (FCOC-ST DOMINIC'S)	0.9	2	\$ 42,600	\$ 38,380
SUBTOTAL	50.1			\$ 2,134,341
AKSLAND	0.2	3	\$ 8,000	\$ 1,836
CENTER (VILLA TICINO-UNION)	1.2	3	\$ 8,000	\$ 9,659
FELICE-BROOKDALE	0.2	3	\$ 8,000	\$ 1,909
NICOL (SYRACUSE-LONDON)	0.2	3	\$ 8,000	\$ 1,986
SHADOWBROOK (LOUISE-SOUTHLAND)	0.8	3	\$ 8,000	\$ 6,192
SOUTHLAND (AUSTIN-PRESCOTT)	0.8	3	\$ 8,000	\$ 6,055
THE TRAILS LOOP	2.4	3	\$ 8,000	\$ 19,361
UNION (WAWONA-DANIELS)	0.3	3	\$ 8,000	\$ 2,168
UNION (YOSEMITE-CROM)	0.5	3	\$ 8,000	\$ 4,015
YOSEMITE (AUSTIN-COMCONEX)	0.3	3	\$ 8,000	\$ 2,018
SUBTOTAL	6.9			\$ 55,200
TOTAL BIKEWAY MILES	66.0		TOTAL SYSTEM COST	\$ 7,993,682

APPENDIX B
SURVEY RESULTS

SURVEY RESULTS

The following text and tables are a summary of the survey results that were compiled by City staff and incorporated into this Bicycle & Pedestrian Master Plan, as appropriate.

NOTE: The tables below list the responses to the survey questions as percentages of the total number of responses to the choice. For example, the choice casual recreation received 110 responses (90.16%) from the total of 122 respondents to the question.

1. What type of bicyclist are you?

ANSWER CHOICES	RESPONSES
CASUAL RECREATION	90.16% - 110
REGULAR COMMUTER	7.38% - 9
MOUNTAIN BIKING	9.84% - 12
CLUB BICYCLIST	5.74% - 7
OCCASIONAL COMMUTER	15.57% - 19
RACING	3.28% - 4
TOURING	7.38% - 9
TOTAL RESPONDENTS: 122	

2. What are the main reasons that you walk, jog, run?

ANSWER CHOICES	RESPONSES
RECREATION	72.31% - 94
EXERCISE/JOG OR RUN	83.85% - 109
WALK TO WORK	12.31% - 16
WALK TO SCHOOL	6.15% - 8
WALK TO THE BUS	0.77% - 1
SHOPPING/DINING	18.46% - 24
TOTAL RESPONDENTS: 130	

3. Please indicate the frequency of bicycling or walking trips for the following purposes:

	WORK	SCHOOL	RECREATION	ERRANDS	TOTAL RESPONDENTS
2 OR MORE DAYS PER WEEK	15.56% - 14	6.67% - 6	93.33% - 84	16.67% - 15	90
ONCE A WEEK	15.38% - 6	2.56% - 1	58.97% - 23	35.90% - 14	39
1 -3 DAYS PER MONTH	12.90% - 4	3.23% - 1	54.84% - 17	38.71% - 12	31
LESS THAN ONCE A MONTH	44% - 11	4% - 1	36% - 9	36% - 9	25
NEVER	78.05% - 32	90.24% - 37	2.44% - 1	48.78% - 20	41
					TOTAL RESPONDENTS: 131

4. For the trips listed in question 2, please estimate the total number of miles for each riding or walking trip type.

ANSWER CHOICES	AVERAGE MILES	RESPONSES
WORK	6.6	38.89% - 49
SCHOOL	0.7	23.02% - 29
RECREATION	10	96.83% - 122
ERRANDS	4.3	41.27% - 52
		TOTAL RESPONDENTS: 126

5. Please tell us some of your favorite destinations to ride or walk to within and around Manteca. In terms of riding or walking what makes these destinations special? What would improve your route to the destination? (There were a total of 94 respondents to this multi-part question).

- Designated bike paths are best. Bike lanes painted
- Woodward Park for soccer. Post office. I would like to ride my bike to some of the places to eat in Manteca, especially downtown, but there are no bike racks in Manteca to lock bikes up, except at the Post Office, which has a very small rack. In the future, I would like to be able to bike to the train station, and leave my bike in a locked bike container (not rack). These containers could be ones that are leased, monthly, plus others that can be 'rented' for the day, by recreational bikers. The area should also be practically under video surveillance, as a deterrent. The bike path in Manteca is nice for riding across town. The public bathroom at the park next to the library is nice, but is an issue, with all of the homeless people that are there. The bike ride out to the movie theater/Bass Pro Shop area is nice, but you then still have the problem of no bike racks to secure your bike. The same applies to Big League Dreams.
- Library Park - Beauty, Comfort, Bathrooms. Transit Station - Beauty Bench between Northgate And Lathrop Rd - Comfort, Beauty
- Walking from Del Webb to Raley's on Lathrop. Biking from Del Webb via the bike path to Hwy 120. Making it safer to cross Lathrop road where the bike paths meet.
- Tidewater trail, Levee from Lathrop Dog Park to Turtle Bay, Union Rd from Del Webb to French Camp.
- The park
- Often ride a 12 mile loop around Manteca, utilizing the Tide Water Bike Path.
- The bike trail allows me and other riders to not stress the riding on our local streets.
- I ride frequently to the ACE Train Station. The shoulder of Yosemite west of Airport Road is in terrible condition and is dangerous to ride on.
- Residential area around Sierra High School. There are sidewalks and generally light traffic.
- bike trail or along the river...like the landscape... I have to deal with traffic to get on the tidewater. Most other bike paths are out of town & chosen for the surface & scenery. Also the ease of access.
- I go to Sierra High School, but I live on the south side of 120, so in order to get to school I need to cross over the overpass each day. It's not safe as there is very little space there and too many people try to veer around the line of cars in order to pass through. When they veer around them, a lot of times they don't see me. It is dangerous. I don't understand why there is not a bike lane there as there are a lot of people that live on the south side of 120, and even more coming as that is where all the houses are being built, and you have the school as well as the Costco shopping center/Big League Dreams/and other stores on the other side. The city needs to plan these things better and make it safe for all Mantecans.
- What would improve my route would be to extend the bike paths. The bike paths are great but if they were longer it would be easier to get a safe work out. I think extending the path from Manteca to Ripon along the rail road tracks would be great. This would be a huge improvement and make it safer for cyclists, joggers, and walkers to get a great workout. Often times to get a suitable workout the path must be included as well as a ride through the country which is unsafe. The issues I have ran into in Manteca riding my bike or jogging is that there simply isn't enough distance on the path to get a quality workout. Often times I get on the bike path near the Food For Less, then ride the path all the way to Lathrop road and back, then out into the country. It may seem like a long ride but it's simply not enough distance. I am a health educator and I am excited about new, safer improvements to the path. I think it will have a immense impact on the health of the community.
- We like to ride the trail. It being longer would be nice.
- Northgate Park
- ANY TRAIL I CAN FIND
- I live over in Meadowlands and I would love a path that would somehow connect to the tidewater bike path. Right I would have to ride over two over passes which are highly dangerous for myself and

especially for children. I really love the bike path off of snowcap and wish it would connect to an additional riding path.

- Use the Tidewater trail regularly and use the bike trails all around town-- longer trails and more water fountains along the target portion of the bike trail would be nice too along with more trees
- There is nothing in Manteca.
- Downtown, bike path - there should be something in the end of the path to mark the end of the road, more benches, a gazebo...
- No destination in particular. Just enjoying biking or walking my dogs. I would like to see less garbage, not just on the bike trail, but in all public spaces of Manteca. Also, the sprinkler systems on the bike trail and in parks need to be monitored better. Some sprinklers just hit the sidewalk and road, not the grass or plants at all. Waste of water and money.
- I bike to the summer Farmers Market
- BICYCLE/JOGGING PATH. IT'S AWAY FROM CARS.
- All city sidewalks and the current designated bike path.
- I live in Woodward Park and love the walking sidewalk around the park perimeter.
- From Woodward Park to Downtown.
- Streets and levees in the area...Safety!
- I like to walk on the tidewater path- it's pretty, feels safe, and is close.
- I like to ride from the northern part of Manteca on Lathrop Rd at the bike path to the Most Southern part at Industrial Rd cross over to Woodward to Austin and back into town up Louise Ave to Union. I would love to be able to ride to Tracy or even Modesto on a bike path someday!
- I have only lived here two weeks and I am very disappointed in the total lack of access to bike trails of any length. I am forced out onto narrow country roads; where I'd really rather not ride.
- Around Woodward Park and the surrounding neighborhoods. I would like to take additional routes in the Woodward area, but the sidewalk eventually ends and does not allow that.
- We ride and walk from Northgate, London, Lathrop Road, Union Road, back to Northgate. Good lighting and sidewalks.
- Chadwick Park The bike path
- I would ride my bike more often to work if there was a bike lane. The route is on Louise Ave. past Union Rd.
- Woodward Park Tidewater bikeway, Park West
- Library Park. I enjoy using the bike trail to the library. A bike lane on Louise would be VERY helpful.
- The bike path, of course. Yosemite Avenue where there is a bike lane. More bike lanes would help! Especially on Union.
- Around parks
- I utilize the bike path through the city for recreation. A dedicated bike path to the path would improve the route I take.
- Starbucks, Grocery store, Kaiser, post office, & Wal-Mart for errands, Tidewater Bike Path for running.
- I only ride in my community in southwest Manteca because I have been told the bike path is unsafe due to sketchy people. I would love to be able to bike over to the stadium center to shop or to the movie theater but there is no bike lane and there are no crosswalks for safety!
- Walking path
- Bike path; farmers market; shopping centers
- Parks, library, and around the neighborhood
- Woodward park to run and ride bikes. Walking path really helps though it gets busy during soccer season. Use the bike path for long runs, though the areas near Moffat, Yosemite, and Center streets are sketchy with the people that hang out there (homeless). Does not make it safe to go alone, which is disappointing. Really appreciate the wide path and landscaping though.
- Bike lanes along North Union Rd Near East Union high school
- The tidewater bike trail is a nice destination.
- Bike trail

- Tidewater pathway
- Around the housing developments is where I go. My route is fine as it is.
- Bike lanes, less homeless people at parks.
- Safety is my main concern. I walk mostly after dinner so a well lite path is essential. I walk my neighborhood by walking around Sierra High.
- Bike trail. No traffic. Too many streets don't have bike lanes.
- I like the bike trail between Lathrop Rd & Northgate. To me it has shade, and scenery is nice.
- Around the outside streets of the city
- We like using the bike path and would love to see it extended!
- SaveMart 24 Fitness Walgreens Rite Aid Street Fairs Farmers Market Post Office DMV
- Around our neighborhood (Brock Elliott/Sierra High School area)
- Ride to Ripon/Salida/Modesto
- Bike path
- We walk/ride bikes around our neighborhood in the Woodward community. As the kids get older I look forward to taking them onto the bike trail through Manteca.
- I use the bike path to the farmers market it feels safe and away from traffic I just walk the local parks in the evenings for exercise
- Tide Water Bike Trail more trees, longer trail
- I really enjoy the Tidewater bike path. I wish it was longer.
- Bike path-safety
- Downtown or the moose
- Woodward Park
- Enjoy the bike path, generally start from Northgate to BMX track. Like the landscaping, could be better maintained, but seeing improvements and it's nice.
- The bike path. Bike lanes on Lathrop Rd, Louise Ave, and Northgate Drive in both directions would be helpful
- Wherever there is the fewest cars and the longest uninterrupted bike path
- Enjoy walking on parts of the bike trail to shopping center for errands (depends on weather) walking my dog
- I ride the entire Tidewater Bike Path several times each week for exercise because it is the longest local traffic free path. I wish it was expanded north to Stockton and south to Modesto. I also ride around Woodward road and anywhere else I can find bike paths around Manteca.
- Bike path because it is safe and there is room off the road.
- The bike trail is what I enjoy. Security behind trail on Elm and Victory Ave.
- Sidewalk on Airport Blvd. Sidewalk on Lathrop Blvd between London Ave. and Raley's shopping center.
- I enjoy riding my bike to work. I live by cottage and work on airport and Louise. There are very few bike lanes and the sidewalks are cracked and dangerous. I would like to see more bike lanes and improved sidewalks
- I would walk to work but there aren't any sidewalks and it's unsafe.
- I enjoy walking the bike path. Improvement to the downtown area would make walking around there nicer.
- Safety, surface, environment
- Raley's shopping center, because it is near work and I can shop, pick up my dry cleaning as well as get a coffee or something to eat.
- Bicycling to Ripon via back roads.
- The bike trail is my favorite!! I wish it went further. I walk 8 miles on the bike trail a few times a week. and 4 miles each evening around Sierra High
- Bike trail
- The bike path, good because of no cars and it goes all the way across town
- Woodward Park has a wonderful walking/riding path.

- I use the bike path and also walk down Airport to Lathrop road but at the corner of airport and Lathrop there is no sidewalk which is very unsafe.
- I like to ride the tidewater trail.
- Bike trail is the best start to finish
- Take the bike path frequently on weekends to take kids to donut shop, Starbucks, or out to breakfast. During the week, we ride with no intended purpose, stop at parks, or just ride around and then go back home. Routes are fine, possibly more water fountains along the way would be nice.
- Bike path
- Parks
- Walking the bike path for exercise. Can be improved by having more lighting.
- At this time I live in the Oakwood Shores community, unfortunately we do not have safe routes established.
- Nothing in Manteca. The motivation to go to the destination would improve my route because I would be motivated to use the route.

6. How would you rate the following as reasons why you do not WALK more frequently?

ANSWER CHOICES	MAJOR	MINOR	NOT A REASON	TOTAL RESPONSES
NO SIDEWALKS	41.28% - 45	20.18% - 22	38.53% - 42	109
SIDEWALKS TO NOWHERE	21.78% - 22	21.78% - 22	56.44% - 57	101
SIDEWALKS IN POOR CONDITION	17.48% - 18	42.72% - 44	39.81% - 41	103
UNSAFE INTERSECTIONS	46.30% - 50	29.63% - 32	24.07% - 26	108
BAD DRIVER BEHAVIOR	45.28% - 48	28.30% - 30	26.42% - 28	106
AUTOMOBILE TRAFFIC	45.87% - 50	34.86% - 38	19.27% - 21	109
PERSONAL SAFETY	54.21% - 58	28.97% - 31	16.82% - 18	107
VISUALLY UNAPPEALING SURROUNDINGS	32.35% - 33	27.45% - 28	40.20% - 41	102
NOT ENOUGH TIME	28.97% - 31	36.45% - 39	34.58% - 37	107
DESTINATIONS ARE TOO FAR	27.18% - 28	25.24% - 26	47.57% - 49	103
WEATHER CONDITIONS	22.94% - 25	44.95% - 49	32.11% - 35	109
LACK OF SHOWERS, LOCKERS, ETC. AT WORK	16.35% - 17	17.31% - 18	66.35% - 69	104
TRAVEL WITH SMALL CHILDREN	19.61% - 20	13.73% - 14	66.67% - 68	102
TOO MANY STOPS TO MAKE	15.69% - 16	26.47% - 27	57.84% - 59	102
TOO MUCH TO CARRY	20.59% - 21	33.33% - 34	46.08% - 47	102
UNSURE OF ROUTE	5% - 5	21% - 21	74% - 74	100
I DO NOT LIKE TO WALK	5.83% - 6	6.80% - 7	87.38% - 90	103

7. How would you rate the following as reasons that you do not BICYCLE more frequently?

ANSWER CHOICES	MAJOR REASON	MINOR REASON	NOT A REASON	TOTAL RESPONSES
NO BICYCLE PARKING	30.84% - 33	32.71% - 35	36.45% - 39	107
NO BIKE LANES	65.49% - 74	16.81% - 19	17.70% - 20	113
BIKE LANES IN POOR CONDITION	37.50% - 39	34.62% - 36	27.88% - 29	104
UNSAFE INTERSECTIONS	53.70% - 58	27.78% - 30	18.52% - 20	108
BAD DRIVER BEHAVIOR	60% - 63	23.81% - 25	16.19% - 17	105
AUTOMOBILE TRAFFIC	55.14% - 59	28.04% - 30	16.82% - 18	107
PERSONAL SAFETY CONCERNS	59.81% - 64	21.50% - 23	18.69% - 20	107
VISUALLY UNAPPEALING SURROUNDINGS	18.81% - 19	32.67% - 33	48.51% - 49	101
DO NOT HAVE THE TIME	15.84% - 16	32.67% - 33	51.49% - 52	101
DESTINATIONS ARE TOO FAR AWAY	16% - 16	28.00% - 28	56.00% - 56	100
WEATHER CONDITIONS	18.45% - 19	46.60% - 48	34.95% - 36	103
LACK OF SHOWERS, LOCKERS, ETC. AT WORK	19.80% - 20	14.85% - 15	65.35% - 66	101
TRAVEL WITH SMALL CHILDREN	18% - 18	17% - 17	65% - 65	100
TOO MANY STOPS TO MAKE	13.86% - 14	26.73% - 27	59.41% - 60	101
TOO MUCH TO CARRY	17.82% - 18	35.64% - 36	46.53% - 47	101
UNSURE OF ROUTE	6.06% - 6	16.16% - 16	77.78% - 77	99
DO NOT HAVE A BIKE	6.93% - 7	4.95% - 5	88.12% - 89	101

8. How important do you think the following improvements would be in supporting walking and bicycling in and around Manteca?

ANSWER CHOICES	VERY IMPORTANT	SOMEWHAT IMPORTANT	NOT IMPORTANT	NOT SURE	TOTAL RESPONSES
MORE SIDEWALKS, PATHWAYS, BIKE LANES, AND BIKE ROUTES	83.33% - 105	11.11% - 14	4.76% - 6	0.79% - 1	126
MAINTENANCE OF EXISTING SIDEWALKS, PATHWAYS, BIKE LANES, AND BIKE ROUTES	76.23% - 93	20.49% - 25	3.28% - 4	0% - 0	122
IMPROVED CONNECTIONS BETWEEN SIDEWALKS, BIKE WAYS, AND TRANSIT	71.07% - 86	20.66% - 25	5.79% - 7	2.48% - 3	121
BETTER INTERSECTIONS (PEDESTRIAN SIGNALS/CROSSWALKS)	60% - 72	30.83% - 37	8.33% - 10	0.83% - 1	120
BETTER STREET LIGHTING	53.85% - 63	25.64% - 30	17.95% - 21	2.56% - 3	117
MORE SEPARATION FROM VEHICLE TRAFFIC	61.16% - 74	28.93% - 35	8.26% - 10	1.65% - 2	121
EDUCATION AND ENFORCEMENT FOR MOTORISTS, PEDESTRIANS, AND BICYCLISTS	49.57% - 58	35.90% - 42	11.11% - 13	3.42% - 4	117
WORKSITE AMENITIES (LOCKERS, SHOWERS, DRESSING ROOMS)	15.60% - 17	22.94% - 25	41.28% - 45	20.18% - 22	109
SECURE BICYCLE PARKING	46.09% - 53	32.17% - 37	15.65% - 18	6.09% - 7	115
BICYCLE ROUTE MAP	31.62% - 37	42.74% - 50	19.66% - 23	5.98% - 7	117

9. If it were safe and convenient, how likely would you be willing to walk or bike for the following?

ANSWER CHOICES	VERY LIKELY	SOMEWHAT LIKELY	NOT LIKELY	NOT SURE	TOTAL
GO TO WORK	42.50% - 51	18.33% - 22	38.33% - 46	0.83% - 1	120
GO TO SCHOOL	24.53% - 26	14.15% - 15	50.94% - 54	10.38% - 11	106
GET TO AND FROM THE BUS	8.41% - 9	15.89% - 17	66.36% - 71	9.35% - 10	107
RUN ERRANDS	40% - 48	35.83% - 43	23.33% - 28	0.83% - 1	120
GO SHOPPING OR DINING	35.04% - 41	29.06% - 34	35.04% - 41	0.85% - 1	117
EXERCISE	88.28% - 113	10.16% - 13	1.56% - 2	0% - 0	128
GO TO THE PARK	76.07% - 89	18.80% - 22	4.27% - 5	0.85% - 1	117

10. What is your general location?

ANSWER CHOICES	RESPONSES
NORTH OF THE RAILROAD TRACKS AND WEST OF MAIN STREET	34.45% - 41
NORTH OF THE RAILROAD TRACKS AND EAST OF MAIN STREET	14.29% - 17
SOUTH OF THE RAILROAD TRACKS AND WEST OF MAIN STREET	13.45% - 16
SOUTH OF THE RAILROAD TRACKS, AND NORTH OF HWY.120	6.72% - 8
SOUTH OF HWY. 120 AND WEST OF MAIN STREET.	9.24% - 11
SOUTH OF HWY. 120 AND EAST OF MAIN STREET.	13.45% - 16
EAST OF HWY. 99	8.40% - 10
TOTAL	119

11. Do your bicycling or walking trips require you to cross Highway 120 or 99, or cross a railroad track? If so, where?

- Going under McKinley now. No lane down McKinley or Northbound Yosemite until north of Airport.
- Louise Ave.--railroad track Main St., Union Road, Airport Way, to cross over freeway. Riding out to take pictures of almond orchards, or just cruising, and going to Woodward Park, for soccer games (saves trying to find a parking space!).
- Will occasionally cross tracks at Hwy 120 from the Bike Trail to head over to Woodward Park. This can be somewhat dangerous due to traffic.
- It could if it were safe
- Austin Road and 99, Lathrop Road and 99
- I cross Highway 120 on Van Ryn or on McKinley to get to the ACE Train Station. I vary my route.
- I would cross 120 at Union or Airport if it was safe.
- I have to cross 120 over the Airport bypass - VERY UNSAFE!
- Sometimes at the Moffat Spreckels area under the overpass.
- I live in Meadowlands and would have to cross over 99 to get to tidewater which I will not do. I would like the tidewater to connect somehow to southland or down cottage and make sidewalks so it is accessible
- Cross rail road tracks going to Target past new bus station at light
- Yes
- Yes (Airport Way or other)
- Industrial Drive, Main Street.
- yes at airport
- 120 at Airport.
- Cross tracks at Union Rd, Cross at Main St Cross at Airport Rd, Cross at Louise Ave, Cross at Industrial Ave, Cross at Northgate Ave, I ride over 120 on main St an airport Rd and union Rd. I ride over 99 at Austin Rd, an Louise Rd and Under at Yosemite Ave,

- RR tracks at Moffat Blvd and at S Austin road
- Louise Airport
- Railroad tracks on Louise Ave., right before crossing over Airport.
- Union Rd, S Main,
- Yes, Moffatt and Industrial
- Railroad crossing at Yosemite, Center, and Main
- Atherton and at Moffett
- Hwy 120-to get to Woodward Park (at Union) RR-to get to Tidewater-at Main before Moffat
- Yes airport
- Yes
- Lathrop Rd.
- Have to cross tracks at Industrial to get to bike path.
- Both 120 and the railroad track.
- Moffat and Woodward
- On main street by the mural o. The corner of main and Yosemite
- Main St.
- Cross tracks on Louise, Main St., and Union
- No, but it would be nice of Sidewalks/Bike Routes connected Manteca to Lathrop on Lathrop Rd. Then I would be able to ride my bike to work safely.
- Yes, to go to the park and shopping center.
- I take back roads when I ride I rarely cross over railroad tracks.
- Moffat Blvd
- yes
- No because I choose not to go in that direction for that reason.
- yes Center street
- Yes 99 overpass at Lathrop Rd (too dangerous)
- Sometimes will cross tracks on Main St., sometimes will go over 99 at Cottage and again at Louise, rarely go under 120 at Industrial Park (?)
- Yes, over highway 99 on lathrop road
- Cross Hwy 120 @ Union Rd to go to the theater
- With better bike trails
- Yes many places most often van Ryan, Moffat and Spreckels
- I do not cross 120 or 99, but only because there are not any good paths to ride. I cross the tracks on the Tidewater Path and on Main and on Center.
- Yes, Airport Blvd. Also, would like to have sidewalks on Lathrop Blvd between London Avenue and Raley's parking lot. Children walk there frequently after school.
- On Louise Ave. heading west toward Airport Rd.
- yes, I cross the railroad tracks on Louise near airport
- Industrial park way and Moffat; Main and Moffat;
- Railroad tracks on Louise Ave heading west on Louise towards Airport.
- At Union and Airport
- Airport and Louise
- Railroad traffic
- Main Street and 120 crossing
- When my son has a walking field trip from Brock Elliott they walk across 120 without any sidewalks.
- Often cross the railroad tracks at either Union near Cherry, Center near the bike path or Yosemite near the bike path. Sometimes cross 120 on union heading north back into town.
- Airport, Louise and Union
- Railroads
- Van Ryn Railroad
- Cross 99 at Cottage and at Louise.

- 120 on Airport Way
- Cross railroad tracks on airport way
- Crossing a railroad track
- Lathrop Road Overcrossing Cottage Avenue Overcrossing Union Road Railroad Walnut Avenue Railroad Center Street Road
- Yes

12. What is your age range?

ANSWER CHOICES	RESPONSES
15 OR UNDER	0% - 0
16 TO 24	2.34% - 3
25 TO 34	13.28% - 17
35 TO 44	27.34% - 35
45 TO 54	28.91% - 37
55 TO 64	21.09% - 27
65 OR OVER	7.03% - 9
TOTAL RESPONDENTS 128	

13. Which of the following best describes you?

ANSWER CHOICES	RESPONSES
EMPLOYED FULL-TIME	83.33% - 105
EMPLOYED PART-TIME	7.14% - 9
FULL-TIME STUDENT	0.79% - 1
PART-TIME STUDENT	0.79% - 1
RETIRED	7.94% - 10
TOTAL RESPONDENTS 126	

14. Including yourself, do any members of your household attend school?

ANSWER CHOICES	RESPONSES
ELEMENTARY SCHOOL	28.35% - 36
MIDDLE SCHOOL	7.09% - 9
HIGH SCHOOL	25.20% - 32
COLLEGE	29.92% - 38
NO STUDENTS	39.37% - 50
TOTAL RESPONDENTS: 127	

15. In order to know how representative the survey is of the general public, please tell us if you or any member of your household work for or participate in any of the following?

ANSWER CHOICES	RESPONSES
BICYCLE OR RUNNING CLUB	12.90% - 16
WALKING OR BIKING ADVOCACY GROUP	3.23% - 4
PUBLIC PLANNING OR ENGINEERING AGENCY/DEPARTMENT, OR COMMISSION	5.65% - 7
PUBLIC TRANSIT AGENCY	1.61% - 2
PRIVATE PLANNING/ENGINEERING FIRM	1.61% - 2
NONE OF THE ABOVE	79.03% - 98
TOTAL RESPONDENTS: 124	

16. Care to share your thoughts? What are your personal reasons for walking or bicycling?

- Eyes on the ground are good for health & welfare of our community. Walking & Bicycling are truly a reflection/example of what a "Family City" is about.
- To enjoy the ride to get to an event to save gasoline by riding bike to a location, such as the post office. I have biked to the Stockton Airport, to purchase tickets to fly. That road is absolutely NOT bike friendly, going down Airport Way.
- The paths need to be cleaned with a street sweeper once a month or so to cut down on massive amounts of thorns, many people have constant flats. The path and landscaping needs more maintenance, Volunteers and businesses could be valuable resource in this regard.
- It would be Wonderful if the businesses in front of the bike path would help to keep it clean and plant some more vegetation behind them. Also that the plants that are there already be trimmed and taken care of. Thanks, Gloria Stanley
- Would really like to see a safe way to cross Lathrop Rd from the Union Ranch development to the Tidewater Bike Trail. I like the exercise and the scenery.
- Exercise and Recreation. I could use a stationary bike for exercise but I like the fresh air and scenery.
- Primarily I ride for exercise to maintain my health.
- Bicycling has helped me lose well over 80lbs and I strive to stay healthy the older I get.
- Exercise and walking my dogs.
- An inexpensive activity - makes for a nice day trip. Bike on car & pack a lunch, invite friends - makes for a great time.
- To improve my health.
- I just like to walk.
- Love taking my 9 month old in his bike trailer and have three young children as well that I would love to take for longer bike rides.
- Healthy lifestyle changes
- Competitive cyclist and triathlete.
- I love walking and I try to walk everywhere possible, I also just got a bike and I will welcome more bike racks in town for easier parking.
- ECONOMICALLY & FITNESS REASONS
- I appreciate your efforts.
- fitness and fun with my kids
- I love to use the bike path to jog along with my kids in a stroller or riding their bikes. We love that it is not on the main streets and that it is quiet and far from cars for most of the way.
- I would like to be able to safely walk and bike to shopping and dining with my children without having sidewalks on the 120 overpass we are not able to do that right now. In addition, with small children we aren't able to ride to Woodward Park because they do not have sidewalks or a bike trail that extend from airport and Woodard to Woodward Park.
- I walk occasionally with extended family members for fun - because of weather extremes/I'm a wimp I generally exercise indoors on my elliptical. My bike is in such disrepair I didn't even claim to own one...I confess biking and traffic makes me nervous, I don't like driving next to bicyclists or biking next to cars- never have, I'm not just old!
- I do a lot of my riding in the evening time sometimes in the dark that requires me take to the sidewalk's because traffic cannot see the bike lanes with that in mind there are many of sidewalks that need quite a lot of repairs from just a section to improve to a major renovation some are not safe for the handicapped with wheel chairs and many trip hazard's..
- I didn't respond to the negative questions (why I don't walk or ride more etc.) because they didn't apply. Where there is a will there is a way. I just moved here from Columbia MO where I rode the statewide Katy Trail (<http://wilderness-voyageurs.com/katy-trail-bike-tour.html?gclid=COfx-pvc2rkCFeU9QgodnIQAvQ>). Here it is less safe and less enjoyable to have to ride back roads. I walk and ride strictly for pleasure and exercise
- Stay in shape! :)

- Mostly exercise; however we do walk or bike to the store and a couple close-by restaurants.
- Exercise
- My father-in law is close to 60 years old and he rides his bike everywhere; to work, fun errands, dining and work. He is on his bike 90% of the time. My husband would like to ride his bike more often. He is able to do so after sundown and is concerned with the lighting.
- For exercise and to get places without having to use the car and gas-environmental. I actually live in Turlock and commute to Manteca. I bring my bike to Manteca and ride. Also some of my answers have to do with my routines in Turlock. If I lived here, I would use the bike paths more if they were safer and away from cars. Right now many bike accidents are caused by preoccupied drivers. I have read about 10 major or fatal accidents in the past year with seasoned riders.
- Bicycling is better for me (exercise), better for the environment (zero emissions), and cheaper (no buying gas)! I'm particularly hoping for a bike path out Daniels to Big League Dreams (something like the one along Atherton?). There is no shoulder to bike to the shops in Stadium Center.
- Training for marathons. My training team loves meeting in Manteca to run the bike path.
- Unless I am with my husband I feel unsafe to use the bike path for walks with my children
- Exercise
- mostly fun and exercise
- We walk/bike/run as a family because it's good for us and something we like to do together. We go to Woodward park and really appreciate the walking path and the paths that lead up to it (down Wellington Ave). You can see the community using them as well. The paths to Woodward (down Wellington) are definitely more enjoyable and a great example of a bike/walk path. We even use the paths near Atherton/Van Ryn as an out and back route. As a parent, if I can keep my kids away from high-speed car traffic and suspect houses/driveways/parked cars, those are the paths/routes we take. The more buffer you can put between cars and roads and houses, the better experience it is for us and the safer I feel. When we have to choose where to go, we always choose bike paths and walking paths over sidewalks and roads. Also, cars parked in bike lanes defeats the purpose and causes us to ride in the street.
- Health and exercise
- I would like to see the bike paths connect to the back paths in Ripon. I would be more likely commute if these paths connected.
- I think street lights in all areas should be working and if not there should be a number to call the city to report and it should be fixed.
- My wife and I enjoy riding together. We also like the exercise
- I love to exercise and being outdoors. I hope the city expand their sidewalks/bike trails past Lathrop Rd & maybe expand into Lathrop City.
- Enjoyment and exercise
- I think the public needs to be more aware of bicycles rights as well as bicycles. The public tends to drive faster when a bicycle is on the side of the road, making it very difficult to stay focused and keeping control of your bike. Very unsafe.
- When the weather isn't too hot or cold, the Manteca Bike path is a great tool to encourage exercise.
- Please educate the public about NOT riding on sidewalks unless you have training wheels!
- Mainly exercise, but errands are easily accessed from points on the bike path. Good way to spend the day exploring town with kids, Skate Park, Library Park, BMX track, etc.
- Widening Louise Ave at the train crossing would be extremely helpful for biking and walking. this can be a very dangerous location.
- Look at Davis and Sacramento (American River ike Path, etc.). Paths on the levees, etc.
- walking my dog, exercise, on vacation or Saturdays depending on the weather making short trips to target, pier one (within walking distance of my home
- People need to be educated. I meet folks riding bikes on the wrong side of the road all the time. It's dangerous. I ride mainly to save gas and money commuting and for recreation. I have a road bike and a mountain bike. I ride whenever I can for exercise. I enjoy long rides with my friends on the weekends. I would love to see the Tidewater path expanded and similar paths established. I would

also like to see Tidewater Path better maintained, with clear boundaries for walkers and bikers. Sometimes groups of walkers will block the entire path.

- Exercise, health
- Good idea but maybe a security bicyclist up and down the trail during day and maybe night a go-kart security
- I would love to walk to work, but am afraid to due to no sidewalks on Airport Blvd. and sidewalks on Lathrop Blvd between London and Raley's parking lot.
- Health reasons, weight control, stress relief, enjoyment!
- I love bicycling to work for exercise. Poor bicycle lanes, sidewalks, and dangerous drivers deter me for bicycling on a regular basis
- I want to walk to work or ride my bike to the Manteca Unified District Office, but crossing the railroad tracks on Louise and with no sidewalks on Airport and on Louise, west of Airport, it makes it too dangerous. We have students walking from Manteca to attend school here at the District Office and it's unsafe for them to walk also without sidewalks.
- Would love to be able to walk to shops, dining, movies, grocery store, etc.
- Recreation and exercise. I like to walk during my lunch hour and after work.
- My personal reason is for exercise, but as a parent of a child with developmental disabilities it is important for her to have safe, lighted walk ways and bus stops. There is a need in Manteca for more bus stops as well. Where we live there are no bus stops within a mile radius.
- If it was to be made a safer thing to do I would walk or bike to work more often.
- I would like to bicycle home from work more but due to unsafe road conditions on Austin Road and surrounding roads like Jack Tone Road or frontage roads I am afraid.
- I walk or ride my bike for as many things as possible!! We have a very good town for walking/biking. We also have great weather. The city of Manteca should ban all drive thru's!
- Really weather is my biggest reason for not riding more, but there are streets that when I do ride feel unsafe. Specifically, Louise and Airport. I don't mind riding them by myself, but when my kids are with me we go out of the way (sometimes a LONG way out of the way) in order to avoid those streets due to lack of bike lanes.
- Get out doors and exercise
- I bicycle ride because it is close to my job but there is no bike lanes on the main roads and no crosswalk over the freeway which makes it very unsafe with traffic.
- I would love to have more access to public bike paths for our town and commuter bike stations.
- I believe that the bike paths should be constructed of concrete. Asphalt paths maybe easier and less expensive to construct, but more expensive to maintain in the long run. The Tidewater Bike Path and Spreckels Avenue path are constructed of asphalt and have been repaired several times already do to water, gopher and grass encroachment damage. Gets rough!
- Love to ride.

17. This question just gave an option to provide an email address. 54 of the 131 participants provided their email address.

APPENDIX C

GENERAL PLAN GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS FOR BICYCLES AND PEDESTRIANS

GENERAL PLAN GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS FOR BICYCLES AND PEDESTRIANS

The City of Manteca General Plan was adopted in 2003, with an amendment that replaced the Circulation Element in 2011. The following is a comprehensive list of all of the General Plan Goals, Policies, and Implementation Measures that support Bicycling and Pedestrian activities. The list is provided to emphasize the purpose of this Bicycle & Pedestrian Master Plan as well as quick reference emphasizing consistency between this document and the City's adopted General Plan.

Context and Vision:

Access to Open Space: (page 1-11) In the absence of natural features that could define an open space network, the General Plan encourages the creation of a network of open spaces in the storm drainage channels and naturalized landscaping along major thoroughfares and bike paths. The open drainage systems would provide a pedestrian connection between parks and access to open space from residential neighborhoods. The neighborhoods would be designed with homes oriented to, rather than backing on the open space corridor.

Land Use Element:

High Density Residential (HDR):

The multi-family dwelling sites are typically located with direct access to arterial streets. The sites have access to the pedestrian and bikeway network along the street corridor and are located along the conceptual route of a public transportation shuttle route. Most sites are near a neighborhood park and a neighborhood commercial center or larger commercial facility.

Commercial Mixed Use (CMU):

The mixed use concept would integrate a mix of compatible uses on a single site that include sales, services and activities which residents may need on a daily basis. With pedestrian access, these sites will enable residents to walk or bike for many local trips, instead of driving for convenience trips.

There will be a strong relationship between the different land uses so that pedestrian access is convenient and there is a clear common design theme.

Business Industrial Park (BIP)

The Business Industrial Park uses shall incorporate the following characteristics.....Pedestrian paths shall be provided on site and connecting between sites within the business park.

- Goal LU-6. Provide open space as a framework for the city, and meet the active and passive recreational needs of the community.
- Policy LU-P-44: The City shall develop an Open Space Master Plan that is consistent with the General Plan, the Bicycle Master Plan and Recreation Master Plan. The Open Space Master Plan should address the potential linkages between public plazas, promenades, parks, utility easements suitable for public access, landscape areas, nature preserves, open drainages, parks and similar public lands and right of-ways that provide open space. The Open Space Master Plan may also identify future extensions of pedestrian and bikeway corridors, natural features, and nature preserve areas that may be suitable for acquisition by the City as public land or other agency to be held as public land in or in a public trust.
- Goal LU-7. Reinforce land use and development patterns that encourage walking and the use of public transit within the community.
- Policy LU-P-47: The City shall develop and apply standards for pedestrian circulation that enable residents to select a reasonably direct and safe pedestrian route to schools, parks, transit stops and commercial services.

- Policy LU-P-48: Storm drainage systems within new development areas should include open drainage corridors, where feasible, that would provide bike and pedestrian paths, and visual open space within neighborhoods. The pedestrian connection should link parks and open space to residential neighborhoods.

Community Design Element:

- Goal CD-1. Retain the compact and cohesive community form of the City.
- Policy CD-P-7: The City shall implement neighborhood design standards in the Residential districts that contribute to the overall character of the neighborhood by emphasizing traditional residential features that enhance the sense of community, ensure a safe pedestrian orientation, and minimize the visual prominence of garages.
- Goal CD-8. Upgrade and enhance the visual quality of Manteca’s arterial and collector streets.
- CD-P-15: Major arterial streets shall include a common landscape theme that includes primary street trees, groundcover, sidewalks, bus shelters where required, and lighting applied throughout the City.
- Policy CD-P-19: The City will identify a program of local improvements such as street tree planting, annual clean-up days, sidewalk installation and repair, and similar local activities to enhance the visual quality of the city.
- Policy CD-P-23: Provide pedestrian systems that connect the center of adjacent neighborhoods.
- Policy CD-P-26: Residential neighborhoods shall be designed to provide access from the neighborhood streets to these open space corridors.
- Policy CD-P-30: Neighborhoods in new growth areas shall incorporate the following characteristics: Each neighborhood shall include an extensive pedestrian and bikeway system comprised of sidewalks and bike lanes along streets and dedicated trails.
- Policy CD-P-31: The pedestrian and bikeway system shall be linked to other pedestrian and bikeways in adjacent neighborhoods and, ultimately, to the Citywide Pedestrian and Bikeway Trail System to provide a continuous interconnected system.
- Goal CD-10. Establish a pedestrian and bicycle friendly environment in neighborhoods and commercial and office land use areas.
- Policy CD-P-37: Commercial centers should provide for convenient, attractive pedestrian access from street fronts and from adjacent commercial, office, and residential land uses.
- Policy CD-P-38: Commercial centers should provide for convenient, attractive pedestrian access within the center with dedicated pedestrian ways between all buildings and pedestrian spaces such as plazas, courtyards, and terraces at natural gathering areas within the site.
- Policy CD-P-39: Integrating the pedestrian elements (walkways, plazas, and terraces) with the buildings will enhance the pedestrian experience. The pedestrian relationship to buildings should be comfortable, convenient, and protected from extremes of sun and wind.
- Policy CD-P-40: Outdoor plazas or other common areas that provide space for special landscaping, public art, food service, outdoor retail sales, or seating areas for patrons are encouraged in retail settings appropriate to such pedestrian activity. The plaza or other common area shall be appropriately scaled to the retail use and shall be directly connected to the primary walkway.
- Policy CD-P-41: Buildings adjoining public spaces, including pedestrian ways shall be designed to allow the sun to reach sidewalks and plazas in the winter.
- Policy CD-P-42: Building configurations that provide “outdoor rooms,” courtyards, paseos, and promenades are encouraged.

- Policy CD-P-43: Where practical, and in compliance with ADA standards, common areas that provide seating should be separated from the primary walkway by informal barriers, such as planters, bollards, fountains, low fences and/or changes in elevation.

Circulation Element:

- Goal C-2. Provide complete streets designed to serve a broad spectrum of travel modes, including automobiles, public transit, walking, and bicycling.
- 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-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.
- Policy C-P-1: The City shall strive to balance levels of service (LOS) for all modes (vehicle, transit, bicycle, and pedestrian) to maintain a high level of access and mobility, while developing a complete and efficient circulation system. The impact of new development and land use proposals on LOS and accessibility for all modes should be considered in the review process.
- Policy C-P-3: At the discretion of City staff, certain locations may be allowed to fall below the City's LOS standard under the following circumstances:

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. However, it is the City's goal to maintain high quality access and mobility in the area with a priority toward non-auto modes. Therefore, the City shall require that new discretionary land use action within the Downtown area, which generate net new PM peak hour auto trips, to participate in enhancing access and mobility for transit, bicycle, and pedestrian modes. These enhancements may include, but are not limited to:

- Enhancing sidewalks to create a high quality pedestrian environment, including wider sidewalks and improved crosswalks, landscaping, buffers between sidewalks and vehicle travel lanes, enhanced pedestrian lighting, increased availability of benches, provisions for café-style seating, and usage of monument elements and other public art.
- Improving bicycle facilities to include attractive and secure bicycle parking, installation of bike lockers in appropriate locations, and provision of bicycle lanes along appropriate roadways.
- Implementation C-I-1. The City shall maintain a master list of multimodal volume data for key intersections and roadway segments. This master list shall be updated regularly with traffic counts (for autos, transit, bicycles, and pedestrians) taken in conjunction with project traffic studies and by special counts conducted by the City as necessary.
- Implementation C-I-2. Perform periodic evaluation of the mobility and access on major streets, which could include evaluation of vehicular LOS conditions, as well as access and mobility issues faced by transit riders, bicyclists, and pedestrians. The use of multimodal LOS analysis techniques could also be included.
- Implementation C-I-4. The City shall develop a pedestrian, bicycle, and transit improvement plan for the Downtown area to facilitate implementation of level of service policy C-P-3 d. This plan will develop a list of multi-modal improvements in the Downtown area to increase the viability and encourage the use of non-auto modes.
- Policy C-P-9: Residential and collector street intersections with collector and arterial streets shall be aligned with other residential and collector streets, where feasible, to maintain a high degree of connectivity between neighborhoods, minimize circuitous travel, and to allow bicyclists and

pedestrians to travel conveniently and safely from one neighborhood to another without using major streets.

- Policy C-P-10: Access for bicycles and pedestrians shall be provided at the ends of cul-de-sacs, where right-of-way is available, to provide convenient access within and between neighborhoods and to encourage walking and bicycling to neighborhood destinations.
- Policy C-P-11: Signals, roundabouts, traffic circles and other traffic management techniques shall be applied at residential and collector street intersections with collector and arterial streets in order to allow bicyclists and pedestrians to travel conveniently and safely from one neighborhood to another.
- Policy C-P-12: Where traffic congestion, pedestrian travel, collision history, or other factors warrant the installation of a traffic signal, the feasibility of a roundabout shall also be evaluated. In general, a roundabout should be installed at these locations unless right of way, cost, design limitations, or other issues preclude the installation of a roundabout.
- Policy C-P-17: Residential subdivisions along arterials and freeways shall be buffered by a noise attenuation measure (sound wall, berm, greenbelt, etc.) as determined by a noise study. Any noise attenuation measure should be designed in a way that it does not discourage pedestrian or bicycle travel by creating barriers between neighborhoods.
- Policy C-P-19: The City shall coordinate with neighboring jurisdictions, including Caltrans, San Joaquin Council of Governments (SJCOG), San Joaquin County, the City of Lathrop, and the City of Ripon to pursue funding for the following regional facilities:
 - A new interchange at McKinley Avenue and SR 120;
 - A new interchange at Austin Road/McKinley Avenue and SR 99;
 - A new interchange on SR 99 between Lathrop Road and French Camp Road;
 - An easterly extension of the SR 120 freeway towards Oakdale; and
 - Regional bicycle lanes and bicycle paths.
- Implementation C-I-6. When planning roadway facilities, incorporate the concept of complete streets. Complete streets include design elements for all modes that use streets, including autos, transit, pedestrians, and bicycles. Complete streets shall be developed in a context-sensitive manner. For example, it may be more appropriate to provide a Class I bike path, as opposed to bike lanes along a major arterial. Pedestrian districts like Downtown Manteca or areas near school entrances should have an enhanced streetscape (e.g., narrower travel lanes, landscape buffers with street trees, etc.) to better accommodate and encourage pedestrian travel.
- Implementation C-I-9. Appropriate sound attenuation measures shall be determined by a noise study. Walls and berms shall be attractive and developed to minimize maintenance. Bicycle and pedestrian access shall be provided through walls and berms to minimize travel distances and increase the viability walking and bicycling.
- Policy C-P-20: The creation or continuance of traffic, bicycle, and pedestrian hazards shall be discouraged in new development, infill development, and redevelopment areas.
- Policy C-P-22: The City shall encourage the development of landscape separated sidewalks along roadways (particularly arterials and non-residential streets) when feasible to discourage pedestrian/vehicle conflicts and be consistent with complete streets concepts.
- Implementation C-I-12. Maintain a program of identification and surveillance of high traffic, bicycle, and pedestrian collision locations, with emphasis on early detection and correction of conditions which could potentially constitute safety hazards.
- Implementation C-I-14. The City shall maintain a program of identification and surveillance of high vehicle, bicycle, and pedestrian collision locations, with emphasis on early detection and correction of conditions that could potentially constitute safety hazards.

4.12 Bikeway and Pedestrian Systems

The bikeway and pedestrian systems in Manteca are critical elements in the transportation network. After driving, walking and biking are the second most common means of travel in Manteca, particularly for recreational purposes. Encouraging these modes of transportation is important for the convenience and enjoyment of Manteca residents and enhancing public health and the quality of life. The existing bikeway and pedestrian network should be enhanced to further encourage bicycling and walking in the City. This is accomplished in part by encouraging the continuity of the existing compact land use pattern in the Land Use Element, and by the creation of new bike routes and sidewalks wherever new streets are installed or existing streets are upgraded.

- Policy C-P-29: Through regular updates to the City's Bicycle Master Plan, the City shall establish a safe and convenient network of identified bicycle routes connecting residential areas with recreation, shopping, and employment areas within the city. The City shall also strive to develop connections with existing and planned regional routes shown in the San Joaquin County Bicycle Master Plan.
- Policy C-P-30: Provide adequate bicycle parking facilities at commercial, business/professional and light industrial uses.
- Policy C-P-31: The City shall strive to expand the existing network of off-street bicycle facilities as shown in the City's Bicycle Master Plan to accommodate cyclists who prefer to travel on dedicated trails. Further, the City shall strive to develop a "city-loop" Class I bike path that links Austin Road, Atherton Drive, Airport Way and a route along or near Lathrop Road to the Tidewater bike path and its extensions. The City shall also strive to develop an off-street bicycle trail extension between the Tidewater Bike Trail near the intersection of Moffat Boulevard and Industrial Park Drive to the proposed regional route between Manteca and Ripon.
- Policy C-P-32: The City shall strive to provide on-street Class II bike lanes along major collector and arterial streets whenever feasible.
- Policy C-P-33: Bicycle travel through residential streets shall be facilitated as much as possible without the use of Class II bike lanes. In general, residential streets have sufficiently low volumes as to not require bike lanes and the narrower street cross section will assist in calming traffic.
- Policy C-P-34: The City shall extend the existing Class I bicycle route north of Lathrop Road along the former Tidewater Southern Railway right-of-way, and any branch or connecting link where right-of-way is available.
- Policy C-P-35: Improve safety conditions, efficiency, and comfort for bicyclists and pedestrians by providing shade trees and controlling traffic speeds by implementing narrow lanes on appropriate streets.
- Policy C-P-36: City shall strive to provide a sidewalk system that serves all members of the community and meets the latest guidelines related to the Americans with Disabilities Act (ADA).
- Policy C-P-37: All new sidewalks, walkways, and intersection crosswalks shall be consistent with the requirements of the ADA.
- Policy C-P-38: Provide walkways connecting to the residential neighborhoods and primary public destinations.
- Policy C-P-39: Route sidewalks so that they connect to major public parking areas, transit stops, and intersections with the bikeway system.
- Policy C-P-40: Provide sidewalks along all new streets in the City.
- Implementation C-I-22. The City shall update its Bicycle Master Plan to include all areas envisioned for development by this General Plan. The Bicycle Master Plan will establish future bicycle routes and provide standards for bicycle facilities, including bicycle paths and bicycle lanes.

- Implementation C-I-23. Utilize the standards set forth in the MUTCD and AASHTO Green Book for improvement and re-striping of appropriate major collector and arterial streets to accommodate Class II bike lanes in both directions, where sufficient roadway width is available. This may include narrowing of travel lanes.
- Implementation C-I-24. Increase bicycle safety by:
 - Providing bicycle paths and lanes that promote bicycle travel.
 - Sweeping and repairing bicycle lanes and paths on a continuing, regular basis.
 - Ensuring that bikeways are delineated and signed in accordance with AASHTO standards and lighting is provided, where feasible.
 - Ensuring that all new and improved streets have bicycle-safe drainage grates and are free of hazards such as uneven pavement or gravel.
- Implementation C-I-25. Add bike lanes whenever possible in conjunction with road rehabilitation, reconstruction, or re-striping projects.
- Implementation C-I-26. Update the City Standard Plans to include bike lanes on collector and arterial streets, as defined by the Bicycle Master Plan.
- Implementation C-I-27. Encourage resident and visitor use of the bike trail system by preparing a map of the pedestrian and bike paths.
- Implementation C-I-28. Update the standard plans to specify a set of roadways with narrower lanes (less than 12 feet) to calm traffic and increase pedestrian and bicycle comfort. These narrow lane standards shall be applied to appropriate streets (e.g., they shall not be applied to outside lanes on major truck routes).
- Implementation C-I-29. The City shall develop a Pedestrian Master Plan, which encompasses all areas envisioned for development by this General Plan. The Pedestrian Master Plan will identify existing deficiencies and establish standards for future pedestrian facilities, including sidewalks, crosswalks, and pedestrian pathways.
- Implementation C-I-30. The City shall develop an ADA Transition Plan. This plan shall identify deficiencies related to ADA access and identify an implementation strategy to bring the deficient facilities up to the applicable standards
- Implementation C-I-31. Update the standard plans to include landscape separated sidewalks where appropriate and feasible.
- Implementation C-I-32. Provide for pedestrian access in the Downtown area, along Yosemite Avenue, Main Street, and in other high-use areas by:
 - Constructing wide sidewalks where feasible to accommodate increased pedestrian use.
 - Providing improved crosswalks, landscaping, buffers between sidewalks and vehicle travel lanes, enhanced pedestrian lighting.
 - Improving the walking environment by providing benches, allowing for café seating, and constructing monument elements and other public art.
 - Providing improvements that enhance pedestrian safety and convenience, such as bulb-outs extending into intersections and at crosswalks to reduce walking distances and provide a safe peninsula for pedestrians.
- Implementation C-I-33. Provide for enhanced pedestrian environments in new subdivisions by:

- Providing bulb-outs at intersections (to be identified by the City) to reduce crossing distances and calm traffic.
- Providing marked (and signalized, if appropriate) mid-block crossings near schools, parks, or other neighborhood attractions. A landscaped median refuge island, raised/textured sidewalk, or other design features may also be provided.
- Providing landscape buffer separated sidewalks
- Policy C-P-44: Establish a plan of primary locations where the transit systems will connect to the major bikeways and pedestrian ways and primary public parking areas.
- Implementation C-I-35. The City shall explore the opportunities for, and encourage the development of, a multi-modal bus/train/bike/auto facility in the downtown area.

Public Facilities and Services Element:

- Goal PF-18: Provide a network of pedestrian and bicycle routes connecting Manteca's major open space areas and destination points.
- Policy PF-P-46. The City shall expand the community and neighborhood park system with the goal of providing neighborhood park facilities within reasonable walking distance of all city residential areas.
- Policy PF-P-50. Neighborhood parks shall conform to the following general guidelines (specific details and standards to be determined within the Parks and Recreation Master Plan):
 - The typical minimum size shall be set to support active and passive recreation activities.
 - The typical service area for a neighborhood park is approximately ¼ mile walking distance.
 - Neighborhood parks shall include a turf area above the basin flood line of sufficient area to be used for playgrounds, sports, picnic areas, and other recreational facilities.
- Policy PF-P-56. The City shall develop a convenient system of pedestrian sidewalks and pathways linking City parks, major open space areas, and the downtown core.
- Policy PF-P-57. The City shall adopt a Bicycle Route Master Plan and develop a bicycle route system linking areas, schools, public facilities, the downtown core, and neighborhoods.
- Policy PF-I-28. The City shall review the Bicycle Route Master Plan that identifies locations of and standards for appropriate bicycle routes throughout the City.

Resource Conservation Element:

- Implementation RC-I-14. Develop alternative transportation systems, such as public transportation and bikeways, which reduce the need for automobile use and petroleum products.
- Implementation RC-I-25. Provide an interconnecting system of open space corridors that incorporate bicycle and pedestrian paths within the urbanized area that connect to regional open space corridors, such as the San Joaquin River.
- Implementation RC-I-26. Use a system of open space corridors to provide pedestrian and bicycle connections between schools, parks and other recreation areas, commercial uses, and employment centers. This system of open space corridors should be connected to the Tidewater Bikeway where feasible, and to a citywide bike and pedestrian trail system as defined in the Circulation Element.

Air Quality Element:

- Goal AQ-3. Increase opportunities for alternatives to internal combustion automobiles including, but not limited to, public transportation, bicycles, walking and alternative fuel vehicles including hybrid gas electric, electric and compressed natural gas.
- Policy AQ-P-2: Develop a land use plan that will help to reduce the need for trips and will facilitate the common use of public transportation, walking, bicycles, and alternative fuel vehicles.

- Policy AQ-P-5: Develop and maintain circulation systems that provide alternatives to the automobile for transportation, including bicycles routes, pedestrian paths, bus transit, and carpooling.
- Implementation AQ-I-10. In new subdivisions, require the internal street system to include the installation of dedicated pedestrian/bicycle pathways connecting to adjacent residential and commercial areas as well as schools, parks and recreational areas.
- Implementation AQ-I-11. Provide adequate pedestrian and bikeway facilities for present and future transportation needs throughout the City.