4 CIRCULATION ELEMENT (Adopted April 5, 2011)

4.1 Introduction

California Government Code Section 65302(b) that states that the General Plan is required to include:

> *"A Circulation Element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the Land Use Element of the plan."*

The statute specifically identifies public utilities and facilities as components of the Circulation Element, but permits jurisdictions to organize elements in a manner appropriate to the community. The Manteca General Plan addresses the public infrastructure, including sewer, water, energy and utilities, in the Public Facilities and Infrastructure Element.

The Circulation Element addresses all aspects of transportation including commuter and truck traffic, intra-city vehicle traffic, rail, buses, bicycles, and pedestrians. Circulation master planning has traditionally focused on automobiles and truck traffic by ensuring that the road system will be adequate to accommodate future traffic demands. While automobile and truck traffic will continue to be important modes of transportation in the time horizon for this General Plan, the future is not necessarily a simple continuation of past trends. Several factors suggest that the conventional use of automobiles will change in significant ways within the time frame of this plan. While these factors cannot be predicted with assurance, the General Plan seeks to provide a balanced transportation system that accommodates all modes of travel and supports the City's goals of remaining a vibrant community where people want to live, work, shop, and recreate.

4.2 Key Assumptions

The following assumptions guide the goals and policies of this Circulation Element.

- People will continue to demand high levels of access and mobility. Therefore, the transportation network and land uses within the City must be

developed in a coordinated manner to provide high degrees of mobility and access via a variety of travel modes.

- A significant percentage of the aging population will grow less capable of driving automobiles, but will demand the same level of independence in their daily lives. This will require a more comprehensive system of complete streets to facilitate mobility via other modes of travel, such as walking, bicycling, and transit.
- The actual cost of operating automobiles will continue to rise and consume a significantly higher percentage of household income. Increasing the viability of other travel modes through transportation investments and land use decisions will become more important in the future.
- An efficient circulation system will also help to reduce construction costs through designs and standard plans that reduce the length and width of roads.
- Vehicles are the single largest source of air pollution and greenhouse gas emissions in the Central Valley. Transportation and land use goals and policies to minimize vehicle travel and promote alternative fuels (e.g., hydrogen, electric vehicles) will reduce the emission of air pollution and greenhouse gasses into the community.
- Recognition about the health benefits of physical activity will increase the amount of recreational bicycle and pedestrian travel.
- As the population of Manteca and the surrounding area grows, there will be an increasing number of bicycles and pedestrians sharing the transportation network.
- Maintaining a high automobile level of service (LOS) is not feasible over the long run from a financial or environmental perspective.
- Manteca is developing into a significant regional retail and freight distribution center within the Northern San Joaquin Valley. The transportation system must be designed in such a way to support these important industries.
- Manteca will continue to see new industrial, office, and retail development. This development, combined with increasing traffic congestion on area

freeways will reduce the number of Manteca residents who will work and shop outside of the City.

- Personal safety, on the road and in public places, will become increasingly important to the general public. This will result in higher demands for complete street designs, which accommodate not only vehicles and trucks, but also buses, pedestrians, and cyclists.
- The railroad is an inherent safety concern because of the existing at-grade street crossings and the potential for vehicle, bicycle, or pedestrian versus train collisions.

The circulation plan must be flexible enough to accommodate today's travel needs while looking to address future travel trends that may emerge within the timeframe of this General Plan. In general, the City seeks to develop a circulation system which reflects the resident's values and also fits within fiscal and environmental realities. The City does not wish to invest in outdated ideas or in improvements that do not increase the mobility of its citizens.

4.3 Relationship to Other General Plan Elements

Circulation and land use are closely linked elements that provide the framework for much of the General Plan. The policies and strategies should demonstrate a balance between land uses and the transportation facilities that serve them. The location and intensity of land uses determines the need for circulation system components and, in turn, the capacity of the circulation system often determines the location and feasibility of land use. Within the context of the General Plan, the circulation policies are also interwoven with economic, housing, open space, air quality, noise, and safety policies.

Coordination between the Land Use Element and the Circulation Element:

- encourages walking and bicycle trips by promoting a compact urban form with neighborhood destinations close to residents;
- makes public transit feasible through coordination of the intensity and location of land uses; and

- reduces the length and number of vehicle trips outside of the community by promoting mixed-use development and by providing employment centers, shopping, and services within the city.

4.4 Relationship to the Regional Transportation System

This Circulation Element is intended to be compatible with the 2007 San Joaquin County Regional Transportation Plan and to support local transportation linkages to the regional transportation network. These linkages include the Altamont Commuter Express (ACE) train and the regional bus systems as well as future opportunities for rail and bus transportation.

4.5 Time Horizon for the Circulation Element

Perhaps more than other elements in the General Plan, the Circulation Element must take a very long-term view. Physical infrastructure, such as the road system, establishes a framework that is very difficult to alter. Land uses may change and buildings may be reconstructed, but the route of the public streets and utility corridors are typically fixed in place over time. Therefore, the circulation system components must be carefully considered for their long-term impacts on land use and community form. Major new roads are relatively expensive and must be planned long in advance in order to obtain sufficient funding and sufficient right-of-way. For these reasons, the Circulation Element must look beyond the twenty-year horizon typical of other elements in the General Plan.

4.6 Circulation Goals

The goals for the circulation system reflect the broader goals of this General Plan. These include improvement of the existing community, economic development, expanded tourism, improved aesthetic quality in the built environment, better public and personal health, improved safety, improved quality of life, and environmental protection.

The circulation system goals are, in part a reflection of the City's historic development pattern, which has built a system that is heavily focused on moving cars quickly through and around the City. While this type of circulation system provides a high degree of mobility and access to those who have cars, it does not adequately serve residents who

cannot or choose not to drive. Moreover, this type of circulation system is expensive to build and maintain since roadways and intersections are designed to accommodate the traffic volumes that occur during the peak one or two hours of the day. The majority of the time the roads are relatively empty, which promotes high vehicle speeds and decreases the viability of alternative modes.

More recently, additional emphasis has been given to other modes. Examples include the construction of the Tidewater Bikeway, the adoption and implementation of a Bicycle Master Plan, streetscape improvements in Downtown, new street standards with improved pedestrian facilities, and the initiation of the City's own transit service. While the City has made great strides toward developing a circulation system that better serves all modes of travel, this Circulation Element stresses the need for a balanced circulation system based on the concept of "complete streets."

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.

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

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

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

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

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

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

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

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

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

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

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

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

The following sections of this Circulation Element will describe the components of the circulation system and will define policies and implementation actions to meet the goals defined above.

4.7 Street Network and Classification

Manteca is built on a grid of major streets spaced at intervals of about one mile. This grid forms the backbone of the local street system and defines the boundaries of many residential neighborhoods. Between the major streets are a series of minor streets that provide access to neighborhoods, offices, and industrial areas. Along with the City's trail system, the sidewalks and bike lanes on these streets also serve pedestrian and bicycle modes. Transit and goods movement needs are also served on the City's street network. The street system in Manteca consists of four general classes of streets:

- expressways;
- arterial streets;
- major collector streets;
- minor collector streets; and
- local, small scale streets that serve residential neighborhoods.

Each street classification is designed to standards appropriate to the conditions and intended use. In general, the standards use the minimum level of street cross-section needed for traffic safety and emergency access and evacuation.

The Circulation Element does not establish street standards that specify the widths of overall pavement, travel lanes, medians, corridors, bike lanes, or sidewalk dimensions. Such standards may be adjusted over time to accommodate different needs and new conditions, and are therefore adopted as separate improvement standards. The Circulation Element establishes the general parameters and intent for each street classification.

Beyond fundamental traffic safety concerns, street design should emphasize ease and expense of maintenance, simplicity of construction, visual character, and multi-modal access. Street widths should be designed at the minimum necessary curb-to-curb width that can safely accommodate the number of vehicle lanes, bicycle lanes, and parking needed for the street. All streets should also feature sidewalks and/or multi-use paths on both sides where right-of-way is available.

Expressways

Manteca currently does not have any expressways; however, the proposed McKinley Avenue extension between SR 120 and SR 99 is planned as an expressway between SR 120 and SR 99, consistent with the *San Joaquin Regional Expressway Study* (SJCOG May 2009). 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 a landscaped median islands, 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.

4.8 Traffic Calming

Traffic speed is a concern where local and collector streets are relatively straight and there are few intersections. Within the developed portions of the city, in residential and school areas, and where there are substantial numbers of pedestrians, it is desirable to maintain traffic flow at safe speeds. This may be accomplished through "traffic calming" measures. These may include modified signing and striping, roundabouts and traffic circles, bulb-outs, and other physical improvements that cause drivers to slow and be more aware of other vehicles and pedestrian or bicycle traffic. To assist in determining where and what type of traffic calming measures are appropriate, the City of Manteca has a Neighborhood Traffic Calming Program that is based on public participation. This "bottom up" approach is common throughout California and relies on neighborhood participation to identify issues and solutions.

4.9 Level of Service Standards

Level of Service (LOS) is a qualitative measure used to describe operations on transportation facilities for different user types, including vehicles, transit riders, bicyclists, and pedestrians. The Highway Capacity Manual provides guidance on state-

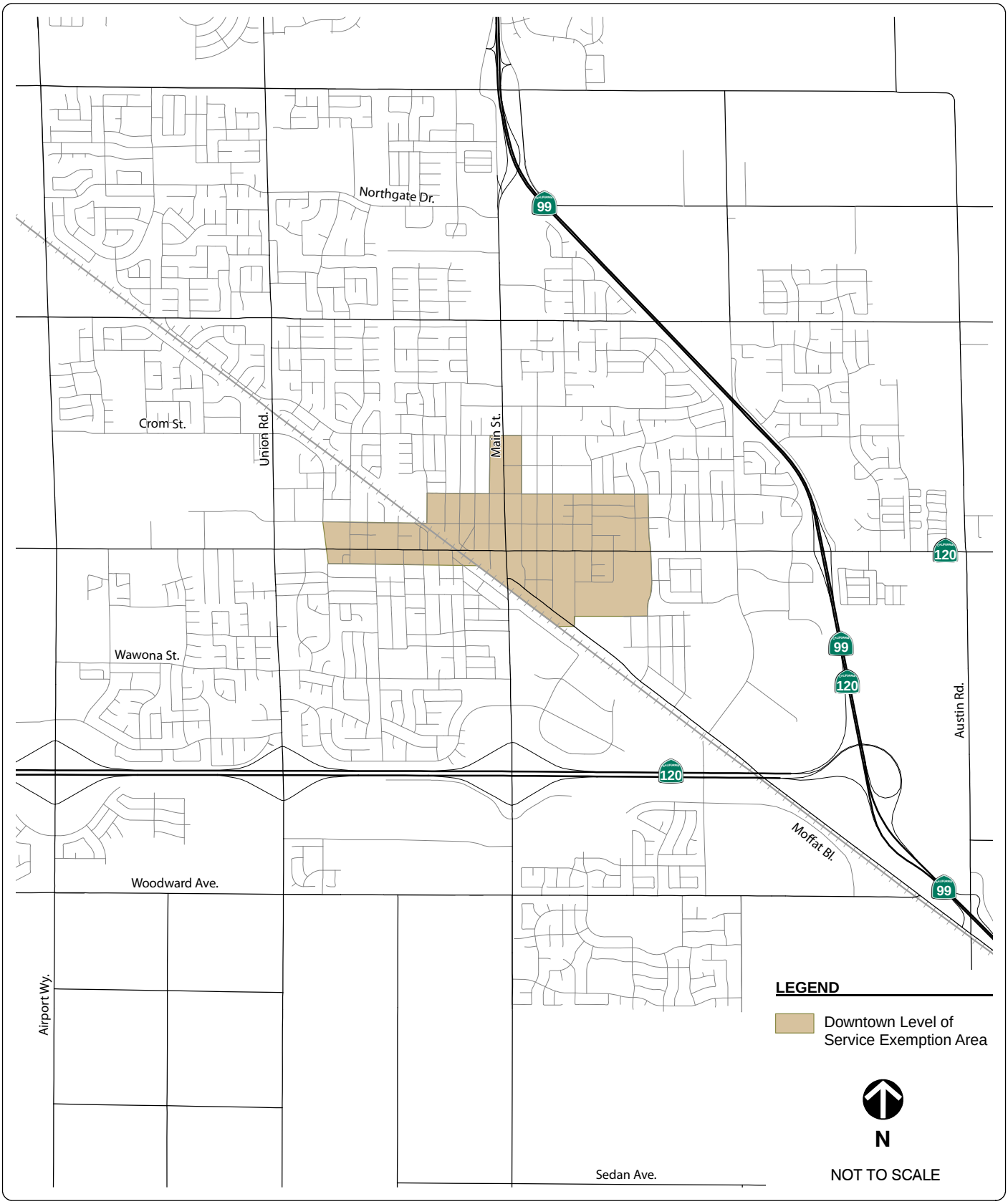
of-the-practice methods to measure LOS. Traditionally, the City has evaluated vehicular LOS on roadway facilities. This analysis compares existing or projected traffic volumes with the theoretical capacity of the street or intersection. Factors taken into consideration include volume of traffic, street and intersection design, signal timing, and other variables.

Each LOS is assigned a letter, ranging from "A" (free flow conditions) to "F" (severe congestion). Vehicular LOS letter "grades" should not necessarily be viewed like school grades where A is best and F is worst. Striving to provide free flow traffic conditions (LOS A) at all hours of the day requires wide streets, large intersections, substantial right-of-way, and considerable funds to construct and maintain these streets. "Good" vehicular LOS also tends to lead to poor LOS for bicycle and pedestrian modes since the larger streets and intersections, higher speeds, and longer waiting times to cross streets makes bicycling and walking more uncomfortable and less safe. Thus vehicular LOS must be balanced against mobility needs for other modes, environmental impact, and construction and maintenance costs. This General Plan establishes an LOS Standard that will guide street improvements in the City while meeting the City's goals of developing an efficient circulation system that promotes travel via other modes.

Policies: Level of Service

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.

C-P-2: To the extent feasible, the City shall strive for a vehicular LOS of D or better at all streets and intersections, except in the Downtown area where right-of-way is limited, pedestrian, bicycle, and transit mobility are most important and vehicular LOS is not a consideration. See Figure 4.1 for a map defining the Downtown area. While vehicular LOS is not a consideration in the Downtown area, traffic studies shall disclose whether any proposed transportation or land use action will substantially increase traffic at intersections and roadways within this area of the City.



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DOWNTOWN LEVEL OF SERVICE EXEMPTION AREA

FIGURE 4.1

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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:

a. Where constructing facilities with enough capacity to provide LOS D is found to be unreasonably expensive. This applies to facilities, for example, on which it would cost significantly more per dwelling unit equivalent (DUE) to provide LOS D than is deemed reasonable by City staff.

b. Where it is difficult or impossible to maintain LOS D because surrounding facilities in other jurisdictions operate at LOS E or worse.

c. Where maintaining LOS D will be a disincentive to use of existing alternative modes or to the implementation of new transportation modes that would reduce vehicle travel. Examples include roadway or intersection widening in areas with substantial pedestrian activity or near major transit centers.

d. In the Downtown area the City cannot maintain the vehicular LOS D standard because of the historic nature of development and limited street right-of-way. 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.

- Enhancing transit stops through high quality, well maintained shelters, and provision of wayfinding signage and transit timetables.

- Providing off-street parking with high quality access to Downtown businesses, and which is well-maintained and provides amenities like shade streets, canopies, adequate lighting, and wayfinding signage.

- Supporting the development of a Downtown Business Improvement District or similar mechanism to help fund ongoing maintenance of the streetscape enhancements.

The Public Works Department shall maintain a list of all City intersections and roadway facilities that are exempt from the LOS D standard. This list shall note any alternate LOS standard that is applicable at the exempted locations.

Implementation: Level of Service

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.

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.

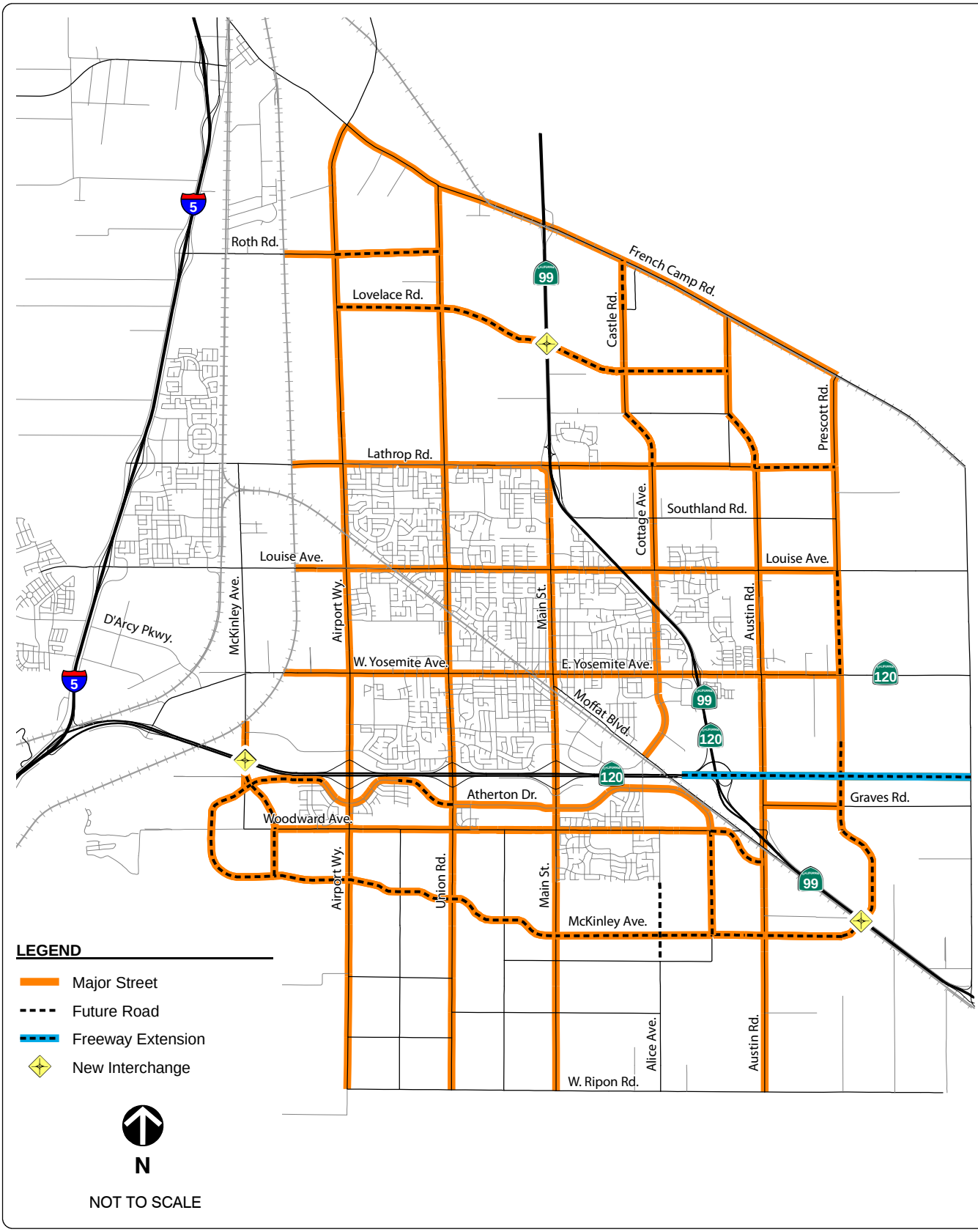
C-I-3. The City shall develop Transportation Impact Analysis (TIA) Guidelines to provide guidance on identifying deficiencies and impacts on all modes of transportation caused by new development. The TIS guidelines will also provide guidance on the types of mitigation measures that would be appropriate to mitigate project-related impacts to transportation facilities in the City. The TIS guidelines will address impact thresholds for vehicular, transit, bicycle, and pedestrian facilities.

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.

4.10 Major Streets Master Plan

The Major Streets Master Plan defines the framework of major streets. It is intended that the City will retain the existing compact form, with development occurring in a concentric pattern. Infill development is also encouraged in the Land Use Element as a means of accommodating new growth. Consequently, selected existing streets will continue to function as the major streets. Nonetheless, there are potential growth areas within and adjacent to the existing City boundary that will require new major roads, roadway capacity expansion, transit, bicycle, and pedestrian improvements where development is permitted.

Figure 4.2 is a schematic diagram of the anticipated alignment of the major streets necessary to accommodate growth over the long-term, including growth that is beyond what is currently envisioned in the Land Use Element. Figure 4.3 provides a more detailed diagram of the major streets, including the anticipated number of lanes required for the more near-term buildout of the Land Use Element. Clearly, the major street system shown in Figure 4.3 is a subset of the system shown in 4.2.



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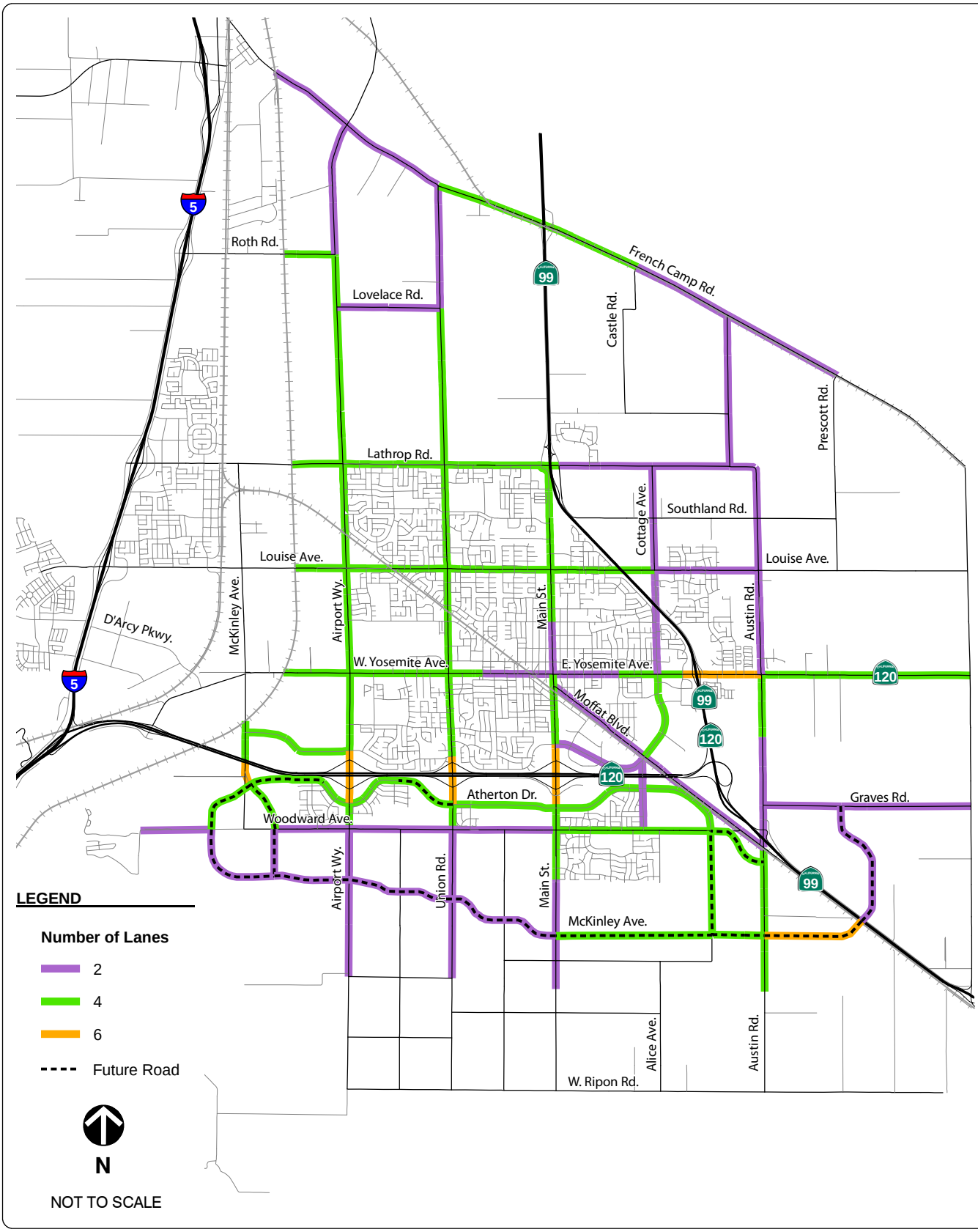
MANTECA MAJOR STREET MASTER PLAN

FIGURE 4.2



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MAJOR STREET MASTER PLAN
2023 GENERAL PLAN LAND USE ELEMENT BUILDOUT - NUMBER OF LANES

FIGURE 4.3

Based on the planned and reasonably foreseeable development known at the time this Circulation Element was prepared, the major street system shown in Figure 4.3 meets LOS standard established in this General Plan; however, as the plan develops some modifications may be necessary to accommodate specific development projects. The Public Facilities Fee (PFF) Program will be the main implementing tool for collecting and allocating funds to implement roadway improvements consistent with the Major Streets Master Plan.

Policies: Street System

C-P-4: Streets shall be dedicated, widened, extended, and constructed according to street cross-section diagrams established in the City Standard Plans.

C-P-5: Major circulation improvements shall be completed as abutting lands develop or redevelop, with dedication of right-of-way and construction of improvements, or participation in construction of such improvements, required as a condition of approval.

C-P-6: New development shall pay a fair share of the costs of street and other transportation improvements based on impacts to LOS and other modes in conformance with the goals and policies established in this Circulation Element and the PFF program.

C-P-7: The street system shall be expanded in a contiguous and concentric manner to serve new development areas and to provide improved circulation for existing residents.

C-P-8: Street improvements will be designed to provide multiple, direct and convenient routes for all modes.

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.

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.

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.

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.

C-P-13: The City shall promote development of a future roadway system as shown in the Major Streets Master Plan.

C-P-14: The City may allow development of private streets in new residential projects that demonstrate the ability to facilitate police patrol, emergency access, and solid waste collection as well as fund on-going maintenance.

C-P-15: The City shall promote infill development that completes gaps in the circulation system.

C-P-16: Residential subdivisions with lots fronting on an existing arterial street should provide for separate roadway access. Ideally, access to residential lots should be from residential or collector streets. For those properties that currently front arterial streets, consideration should be given to providing separate roadway access as a condition of approval for any redevelopment or subdivision of the property.

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 be creating barriers between neighborhoods.

C-P-18: The City shall aggressively pursue state and federal funding to augment the PFF and implement the City's Circulation Element.

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: Street System

C-I-5. The City shall maintain a Major Street Master Plan showing the existing and proposed ultimate right-of-way and street width for each road segment within the City's Sphere of Influence and Area of Interest. The Major Street Master Plan shall also indicate the necessary right-of-way to be acquired or dedicated and the expected method of financing roadway improvements (i.e., City-funded or property owner/developer-funded). The Major Street Master Plan shall be regularly updated.

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.

C-I-7. The City shall require new development to participate in the implementation of transportation improvements identified in the Major Street Master Plan. Participation could include the construction of roadways, improvements to roadways, payment into the PFF program, payment into other fee programs, or fair-share payments. In general, the infrastructure needs and methods of participation will be determined through an environmental impact report or transportation impact analysis.

C-I-8. The City will coordinate with Caltrans and SJCOG to make sure that projects in the City's Circulation Element and Major Street Master Plan are included in long range planning documents, including the Caltrans Long Range Plan, the SJCOG Regional Transportation Plan, and the San Joaquin County Congestion Management Program.

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.

C-I-10. To support the City's goals of minimizing maintenance costs and encouraging active transportation, any new or substantially modified roadway shall be as narrow as feasible while being consistent with LOS and goods movement policies. In general, this implementation measure can be achieved by constructing narrower traffic lanes, although wider lanes may be necessary on certain truck routes.

C-I-11. The City shall regularly update the PFF program to ensure that the fees are consistent with construction costs and the project list reflects changes in the transportation system that may occur as land use

development projects progress and more detail about their transportation needs are known.

Policies: Transportation Safety

C-P-20: The creation or continuance of traffic, bicycle, and pedestrian hazards shall be discouraged in new development, infill development, and redevelopment areas.

C-P-21: In the development of new projects, the City shall give special attention to maintaining/ensuring adequate corner-sight distances appropriate for the speed and type of facility, including intersections of city streets and private access drives and roadways.

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: Transportation Safety

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.

C-I-13. The City shall identify and remove, as feasible, obstacles limiting corner-sight distances at existing street corners.

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.

C-I-15. All new signs, roadway striping, and traffic signals shall be consistent with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).

4.11 Parking

Parking demand is generated by existing businesses, new business, and residents, and is varies by the time of day, time of year, and presence of special events. Guiding new business and residential development is a fundamental purpose in this General Plan. The success of the Economic Development Element will rely, in part, on the ability to accommodate the traffic and parking associated with new businesses and special events.

Policies: Parking

C-P-23: Future growth in traffic volumes may necessitate removal of on-street parking spaces to provide additional traffic lanes.

C-P-24: New development shall provide an adequate number of off-street parking spaces to accommodate the typical parking demands of the type of development on the site. The City may dictate both minimum and maximum amounts of parking; the use of shared parking is encouraged to reduce overall land consumed by parking areas. In the Downtown area, parking supply and demand will be managed through a coordinated approach led by the City.

C-P-25: The City may allow for changes to the parking requirements under certain circumstances. In such cases, the City may require provision of off-site parking, participation in a parking district or payment of an in-lieu fee to cover the costs of land acquisition and construction of parking spaces.

C-P-26: In the Downtown area, the Redevelopment Agency should assist in the provision of off-street parking. Parking facilities in the Downtown area should be within easy walking distance of the businesses

C-P-27: Ensure that there is adequate parking for normal commercial activities.

C-P-28: Ensure that there is adequate parking for special events where deemed appropriate.

Implementation: Parking

C-I-16. The City shall review and revise, as necessary, off-street parking standards of the Zoning Ordinance. Such revision shall be based on a survey of the parking requirements of other Northern California communities, the requirements of the Housing Element to achieve specified residential density levels, and an assessment of the adequacy of the City's current standards.

C-I-17. Work with local merchants to improve on-street and off-street parking conditions.

C-I-18. The City will consider preparing a Parking Management Plan for the Downtown area to ensure that parking facilities are provided in a coordinated manner, which maximizes access to local businesses and connectivity with non-auto modes, including transit, bicycles, and pedestrian facilities.

C-I-19. The City shall require a shared parking analysis for all proposed mixed-use developments and new projects in the Downtown area to ensure that parking is not oversupplied.

C-I-20. To maintain adequate parking supply for businesses, the City may restrict parking on public streets through permit programs, time limits, or parking meters, where appropriate.

C-I-21. If roadway widening requires the removal of on-street parking, a parking supply study should be conducted to determine if the loss of on-street parking spaces will create a parking shortage. If so, the parking supply study should also discuss the feasibility of replacing the lost parking spaces.

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.

Policies: Bikeways and Pedestrian Facilities

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.

C-P-30: Provide adequate bicycle parking facilities at commercial, business/professional and light industrial uses.

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.

C-P-32: The City shall strive to provide on-street Class II bike lanes along major collector and arterial streets whenever feasible.

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.

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.

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.

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).

C-P-37: All new sidewalks, walkways, and intersection crosswalks shall be consistent with the requirements of the ADA

C-P-38: Provide walkways connecting to the residential neighborhoods and primary public destinations.

C-P-39: Route sidewalks so that they connect to major public parking areas, transit stops, and intersections with the bikeway system.

C-P-40: Provide sidewalks along all new streets in the City.

Implementation: Bikeways and Pedestrian Facilities

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.

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.

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.

C-I-25. Add bike lanes whenever possible in conjunction with road rehabilitation, reconstruction, or re-striping projects.

C-I-26. Update the City Standard Plans to include bike lanes on collector and arterial streets, as defined by the Bicycle Master Plan.

C-I-27. Encourage resident and visitor use of the bike trail system by preparing a map of the pedestrian and bike paths.

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).

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.

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

C-I-31. Update the standard plans to include landscape separated sidewalks where appropriate and feasible.

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.

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.

4.13 Public Transit

Manteca is located at a major ground transportation hub in the state and has the opportunity to expand both rail service and bus service. The opportunities will grow with increasing population, and higher costs of travel by automobile. The City can enhance these opportunities by encouraging the use of public transit by Manteca residents and by implementing additional transit routes and services. But the most significant means of enhancing public transit opportunities is in planning land use and circulation networks.

By locating higher density housing, commercial, employment, recreational, education and institutional facilities along major thoroughfares and by providing safe, convenient pedestrian routes to these facilities the City can make public transit more effective and viable. Sound land planning can produce benefits equal to a substantial investment in the labor and capital expenditures of a bus system.

In addition to locating major development along the existing major thoroughfares, the land plan anticipates the development of small concentrations of commercial, high-density housing and public uses in the new growth areas. These concentrations are located at logical intervals along potential public transit routes. At full development of the land uses in the new growth areas new transit routes would be within a one-quarter mile walk of a substantial percentage of the new households.

The City can further enhance the use of existing and future transit facilities by providing a local shuttle or small bus network linking residents to activity centers at or near the transit facility. Such transit facilities can provide connections to more than one form of transportation (a multi-modal center) or to a single transportation node.

Policies: Public Transportation

C-P-41: The City shall encourage the expansion of interstate bus service in the Manteca area.

C-P-42: The City shall encourage commuter and regional passenger rail service that will benefit the businesses and residents of Manteca. Examples

include Amtrak, the Altamont Commuter Express (ACE), and high-speed rail.

C-P-43: The City shall identify and implement means of enhancing the opportunities for residents to commute from residential neighborhoods to the ACE station or other transit facilities that may develop in the City.

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.

C-P-45: Encourage programs that provide ridesharing and vanpool opportunities and other alternative modes of transportation for Manteca residents.

C-P-46: The City shall promote the development of park-and-ride facilities near I-5, SR 120, and SR 99.

C-P-47: The City shall establish and maintain a working relationship between the City administration and the local management of the Union Pacific Railroad regarding expansion of freight and passenger rail service and economic development of the region.

C-P-48: The City shall design future roadways to accommodate transit facilities, as appropriate. These design elements would include installation of transit stops adjacent to intersections and provision of bus bays and sheltered stops.

Implementation: Public Transportation

C-I-34. The City shall periodically review transit needs in the city and adjust bus routes to accommodate changing land use and transit demand patterns. The City shall also periodically coordinate with the San Joaquin Regional Transit District to assess the demand for regional transit services.

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.

C-I-36. The City shall explore a transit connections study that would identify improvements to connections and access to the existing ACE station and the planned multi-modal downtown transit facility.

C-I-37. The City's standard plans shall be updated to include the option for bus bays at intersections of major streets.

C-I-38. The City shall consider alternatives to conventional bus systems, such as smaller shuttle buses that connect neighborhood centers to local activity centers.

C-I-39. The City should explore with the Manteca School District opportunities for joint-use public transit that would provide both student transportation and local transit service.

4.14 Goods Movement

Manteca's central location and accessibility from major highways and rail lines has made the city a major center for goods movement. The transportation system needs to facilitate the goods movement industries in the City to ensure safety for all modes of travel and to support this important sector of the City's economy.

Policies: Goods Movement

C-P-49: The city shall require that new industrial development pay a fair share toward improvements required to accommodate heavy vehicles, including increased pavement wear.

C-P-50: All roads identified as truck routes shall be designed to accommodate STAA trucks.

C-P-51: The City shall encourage the provision of freight rail service into industrial developments through the use and development of rail spurs.

C-P-52: The City should consider vehicle weight limit restrictions on roadways near sensitive uses like schools and residential neighborhoods to discourage cut-through truck traffic.

Implementation: Goods Movement

C-I-40. The City shall develop a truck route map identifying key goods movement corridors in Manteca.

C-I-41. The truck route map shall be periodically reviewed and updated by the City engineer to ensure that goods movement needs are adequately served.

4.15 Transportation Demand Management

The increase in traffic congestion within Manteca and throughout the region has intensified the need to promote alternative transportation modes. Transportation Demand Management (TDM) refers to measures designed to reduce the number and length of automobile trips, particularly during peak commute hours. TDM measures typically include ridesharing, vanpools, and a variety of management techniques applied by larger employers in metropolitan areas. Typical TDM measures are most effective where they can be implemented by large employers.

In communities where there is a significant number of workers commuting out to a larger metropolitan area the TDM measures focus on ridesharing and vanpooling to reduce the number of single occupant vehicle trips. Reduced vehicle travel can help reduce peak hour traffic congestion, reduce future air pollution concentrations, and reduce consumption of energy for transportation uses. Moreover, it can help reduce individual transportation costs for Manteca residents, yielding potentially significant savings as the cost of fuel rises.

Policies: Transportation Demand Management

C-P-53: The City shall establish a requirement for a TDM program in any business park, industrial or commercial land use that employs more than 50 full time equivalent employees.

C-P-54: The City shall provide information about transit services, ridesharing, van-pools, and other transportation alternatives to single occupant vehicles at City Hall, the library, and on the City website.

C-P-55: The City shall encourage employers to provide alternative mode subsidies, bicycle facilities, alternative work schedules, ridesharing, telecommuting, and work-at-home programs employee education and preferential parking for carpools/vanpools.

C-P-56: Partner with SJCOG on the Commute Connection program, which is the regional rideshare program operated by SJCOG. The City shall work with SJCOG to ensure that appropriate businesses and land use development projects participate in the program.

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