

CLOVIS

Bicycle Transportation Master Plan



Prepared for:



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EXECUTIVE SUMMARY

PURPOSE

The first City of Clovis Bicycle Transportation Master Plan (BTMP) was adopted in 2003. According to the California Streets and Highways Code, Sections 890 through 894.2, local agencies must complete a bicycle transportation plan to qualify for grant funds issued by the California Department of Transportation through the Bicycle Transportation Account (BTA). Conforming plans must be no more than five years old. To maintain eligibility for BTA funding, the City is updating the BTMP for the first time since its adoption.

The BTMP establishes goals, policies, implementation actions, and priorities for the development of bicycle facilities in the City of Clovis as envisioned by the General Plan. The ultimate goal of the BTMP is to increase the number of persons in Clovis that bike for both utilitarian and recreational purposes by developing and maintaining an interconnected system of Class I, II, and III bicycle facilities.

The BTMP will improve the accessibility of funding for bicycle-related improvements in Clovis. In addition to BTA requirements for eligibility, Measure “C” requires that jurisdictions have an adopted bicycle transportation plan in place by 2012 to receive funding for bicycle infrastructure.

DEVELOPMENT

The BTMP was developed through the Planning and Development Services Department. Coordination with other City departments occurred throughout the development of the plan. Public participation was encouraged through a public workshop, held on September 27, 2010, and through online comment cards; the public was invited to comment on the draft BTMP during its public review and comment period.

CONTENTS

The Bicycle Transportation Master Plan includes eight chapters:

1. Introduction – discusses the project and setting and provides key definitions
2. Goals, Policies, and Implementation Actions – sets forth the vision and objectives for the plan
3. Relationship to Other Plans – summarizes the policy context for bicycle planning throughout Clovis
4. Existing Conditions – examines existing levels of bicycle activity and existing bicycling infrastructure
5. Recommended Network – shows the proposed network of bicycle facilities and provides guidance for support facilities
6. Education, Encouragement, and Enforcement – describes programs to improve bicycle facility usage and safety
7. Financing – discusses candidate funding sources
8. Implementation – summarizes standards for new construction and for the retrofitting of existing roadways

CHAPTER 1. INTRODUCTION

Throughout the United States, California, and the Central Valley, bicycling is becoming a more popular transportation mode for both utilitarian and recreational purposes. Bicycling is a healthy, environmentally friendly, and socially equitable form of transportation.

To encourage the role of the bicycle as a viable mode of transportation, the City of Clovis is dedicated to providing well-maintained facilities that promote public use. With this in mind, the City has updated its Bicycle Transportation Master Plan (BTMP), which promotes bicycle travel as a practical transportation mode by connecting places of employment, residential areas, shopping centers, schools, and recreational areas in our community. To ensure the BTMP's success, the community will also need to develop awareness that both bicycles and motor vehicles are legitimate users of the transportation system.

PURPOSE

The previous City of Clovis BTMP was adopted in 2003. According to the California Streets and Highways Code, Sections 890 through 894.2, local agencies must complete a bicycle transportation plan to qualify for grant funds issued by the California Department of Transportation through the Bicycle Transportation Account (BTA). Conforming plans must contain the minimum 11 key elements as shown in Table 1 and must be no more than five years old.

TABLE 1: CALIFORNIA BICYCLE TRANSPORTATION ACT (BTA) REQUIRED ELEMENTS	
Required Bicycle Transportation Plan Elements per the California Bicycle Transportation Act (1994)	Location Addressed within the Bicycle Master Plan
A. Estimated number of existing and future bicycle commuters	Chapter 4
B. Map and description of land use and settlement patterns	Chapter 4
C. Map and description of existing and proposed bikeways	Chapters 4 and 5
D. Map and description of bicycle parking facilities	Chapter 4
E. Map and description of multimodal connections	Chapter 4
F. Map and description of facilities for changing and storing clothes and equipment	Chapter 4
G. Description of bicycle safety and education programs	Chapter 6
H. Description of citizen and community participation	Chapter 1
I. Description of consistency with transportation, air quality, and energy conservation plans	Chapter 3
J. Description of proposed bicycle projects and implementation priority	Chapter 5 and Appendix A
K. Description of past expenditures and future financial needs for bicycle facilities	Chapters 4 and 7
Source: Fehr & Peers, 2011	

The California Bicycle Transportation Act is provided in Appendix B.

In addition, the Measure “C” half cent sales tax extension approved by Fresno County voters in 2006 estimates an allocation of \$12 million dollars specifically for bicycle infrastructure throughout the City of Clovis and nearly \$55 million Countywide between 2007 and 2027. Measure “C” requires that jurisdictions have an adopted master plan for pedestrian/trail facilities (including Class I bike paths) in place by 2012 to receive funding for bicycle infrastructure.

The BTMP establishes goals, policies, implementation actions, and priorities for the development of bicycle facilities in the City of Clovis as envisioned by the General Plan. Key elements of the BTMP include maps of existing and proposed bicycle facilities and their proximity to major activity centers. The implementation plan identifies project priorities, locations, improvement descriptions, facility types, and cost estimates. The implementation plan will guide development of the proposed bicycle improvements.

The Clovis Planning and Development Services Department will review the BTMP as necessary for needed updates and revisions. The review will reflect continuing changes in bicycling needs, safety, growth, regulatory requirements, and the overall level of service provided.

SETTING

Clovis is one of 15 cities located in the County of Fresno, which is situated in the midst of California’s agriculturally rich San Joaquin Valley. Since its incorporation in 1912, Clovis has been a “Gateway to the Sierra.”

Dedicated to promoting planned growth while retaining its unique western heritage, the City’s population has nearly doubled since 1985, reaching its current populace of approximately 97,000 (California Department of Finance, 2010). By 2030, the City of Clovis’ population and workforce are anticipated to grow to approximately 149,000 and 77,000, respectively. Currently, Clovis encompasses over 23 square miles of area within its incorporated city limits.

Clovis was historically a lumber milling and agricultural community. Its current major industrial areas are found on Clovis Avenue south of Gettysburg Avenue, Tollhouse Road east of Sunnyside Avenue, and Barstow Avenue east of Clovis Avenue. Clovis’ regional commercial development is focused along Shaw Avenue, Clovis Avenue, and Herndon Avenue.

Clovis’ General Plan Circulation Element relies on a variety of transportation modes to move people and goods around the City. Primary transportation modes include passenger vehicles, trucks, pedestrians, bicycles, and transit. The street system in Clovis is composed of local streets, collector streets, arterial streets, expressways, and freeways. Local streets provide access to individual parcels. Collector streets “collect” or bring together traffic from local streets to arterial streets that are designed to carry traffic from one area of the community to another. Expressways and freeways carry regional traffic. State Route 168, the only freeway in Clovis, connects Clovis to the other major freeways in Fresno County.

PROJECT AREA

The goals, policies, implementation actions, and priorities for the development of bicycle facilities as identified in the BTMP apply to Clovis’ incorporated area. However, the BTMP also outlines planned bicycle facilities in the City’s sphere of influence boundary. The City’s currently incorporated city limits and sphere of influence are shown in Figure 1.

Figure 1: Clovis City Limits and Sphere of Influence

BENEFITS

Bicycling is a commute option and recreational activity that can be enjoyed year-round in the City of Clovis as well as the region. Noteworthy benefits include:

- Bicycling instead of driving reduces air pollution.
- Bicycling is one of the best forms of cardiovascular exercise for people of all ages.
- Bicycling is an activity that everyone in the family can enjoy – from beginners to intermediate and advanced.
- Bicycles are inexpensive to maintain and operate.
- Many insurance companies reduce rates for commuters who bicycle to work rather than drive.
- Bicycling is a viable alternative for many short trips, including trips to work or the store.

PUBLIC PARTICIPATION

Public participation was an important component of the BTMP update. The City solicited public input regarding existing bicycle conditions, potential bikeways, desired intersection treatments, and the types of support facilities or programs needed to improve bicycling in Clovis. Public input was used to develop and prioritize the recommended network of bikeways and to develop complementary educational, encouragement, and enforcement programs. The planning process included the following public outreach activities:

- **Public Workshop:** a public workshop was held on Monday, September 27, 2010, at Clovis City Hall. The purpose of this workshop was to gather feedback from Clovis area residents, public entities, school districts, and local bicycle clubs on existing barriers to bicycle travel, desired bikeways, and preferred support facilities. Attendees reviewed and marked up maps of the existing and proposed network of bicycle facilities. They also identified preferred support facilities on multiple-choice boards and addressed concerns directly with the City and consultant team.
- **Online Survey:** an online comment card was distributed for community members who were unable to attend the public workshop. Participants answered the following questions:
 - What do you like about bicycling in Clovis?
 - What keeps you from bicycling in Clovis?
 - What could the City do to improve conditions for bicyclists?
 - What other comments do you have for the plan?
- **Stakeholder Discussions:** City staff met with staff from the Clovis Unified School District to coordinate on bikeway projects significant to the school district. Clovis Unified School District is supportive of an improved bicycle network that can be used by students as an alternative means of getting to school and to ease school-related traffic congestion. The City also met with the Fresno Irrigation District to discuss strategies for implementing Class I bike paths along irrigation canals. The City and the Irrigation District agreed that there are many challenges to implementing Class I bike paths along irrigation canal and to discuss individual project segments as they arise.
- Consistent with the requirements of Government Code Sections 15072 and 15105, the City of Clovis invited comments on the draft BTMP from interested stakeholders, ranging from public agencies, affected school districts, local bicycling clubs and coalitions, Clovis Chamber of

Commerce, Building Industry Association, General Plan Advisory Committee (GPAC), and interested citizens. The draft BTMP was made available to the public throughout a duly noticed public comment period. To conform to the California Environmental Quality Act (CEQA), a negative declaration was prepared and made available to the public at the same time as the draft BTMP. During this time, copies of the draft BTMP and CEQA document were placed at City Hall and the Clovis Branch of the Fresno County Library. Public comments were incorporated, as appropriate, in the final plan.

BICYCLE FACILITIES

Bicycle facilities can be classified into two types:

- Bikeways – facilities provided for bicycle travel
- Support facilities – facilities for use by bicyclists while en route or once they have reached their destination

Bikeways

Chapter 1000 of the Caltrans *Highway Design Manual* identifies three types of bikeways:

Bike Path (Class I Bikeway)

Off-street bike paths are facilities for use exclusively by bicycles and pedestrians, with minimal cross-flow by motor vehicles. They are often located in a separate right of way.



CLASS I - Multi-Use Path

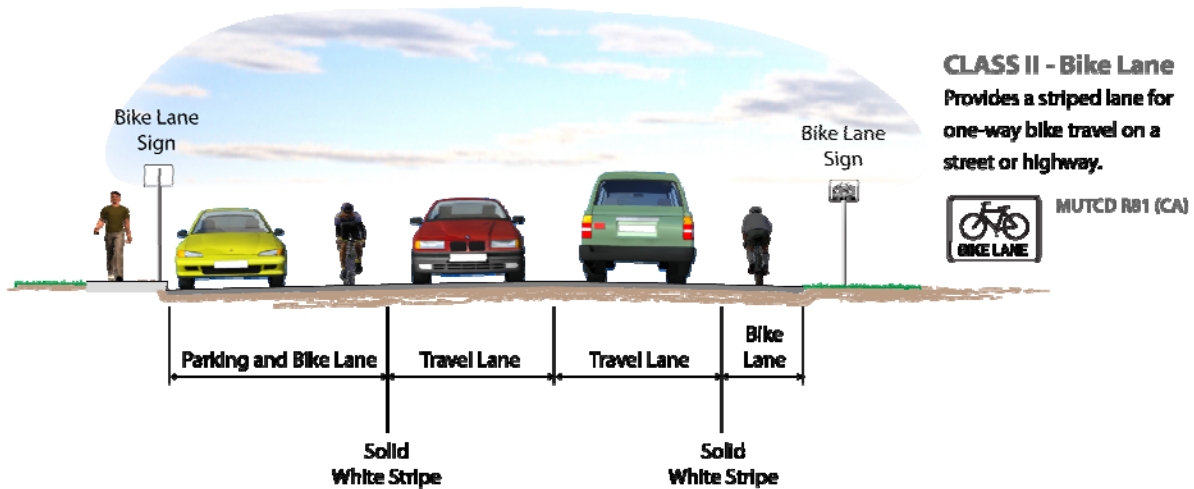
Provides a completely separated right-of-way for exclusive use of bicycles and pedestrians with crossflow minimized.



MUTCD R44A (CA)

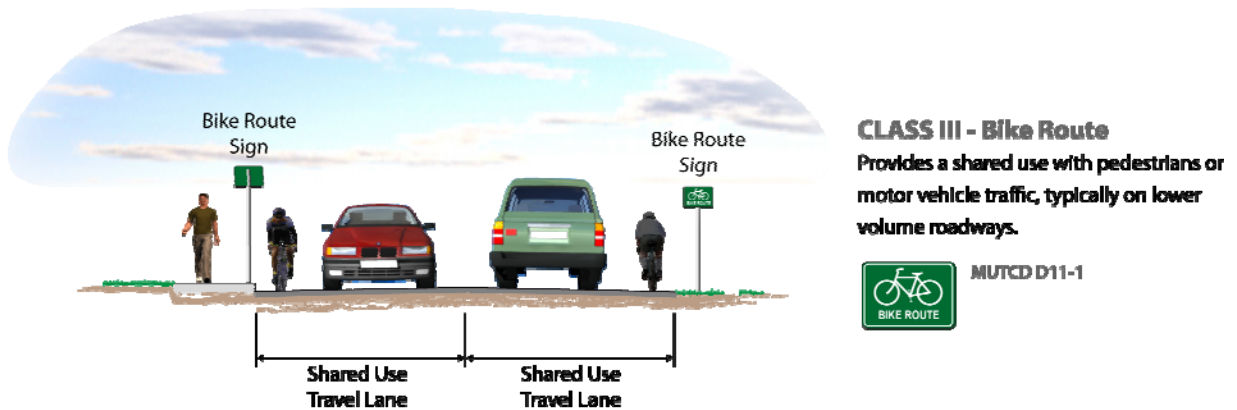
Bike Lane (Class II Bikeway)

Bike lanes are areas within paved streets that are identified with striping, stencils, and signs for preferential (semi-exclusive) bicycle use.



Bike Route (Class III Bikeway)

Class III bikeways are on-street routes intended to provide continuity to the bikeway system. Bike routes are designated by signs or permanent markings and are shared by motorists.



Chapter 4, Existing Conditions, discusses the locations of these types of bikeways in Clovis.

Support Facilities

Support facilities include Class I bike path amenities, directional signage, bicycle parking, shower and changing space, and secure storage for bicycle gear.

Class I Bike Path Amenities

Amenities on Class I bike paths include lighting; location and directional signage; and resting locations that can include benches, water fountains, restrooms.

Directional Signage

Directional signage can be used on all types of bikeways to direct bicyclists to other bikeways and major destinations, such as Old Town Clovis.

Short-Term Bicycle Parking

Short-term bicycle parking is typically provided via bike racks and is usually used when cyclists park their bikes for a couple of hours or less.

Long-Term Bicycle Parking

Long-term bicycle parking is typically provided at major employment sites, schools, and transportation terminals in the form of bike lockers, bike cages, or bike rooms. Because access is only allowed to users, these facilities provide higher security so bicyclists feel comfortable leaving their bicycles for long periods. Long-term bicycle parking facilities can be managed by a building owner, who issues keys to bike cages or bike rooms. Alternatively, electronic bicycle lockers offer a keyless alternative where a user pays for secure parking time.

Shower and Locker Facilities

People are more likely to commute to work on bicycles if they have convenient access to showers and lockers; they are an important factor in encouraging regular commuting via bicycle. These types of bicycle support facilities are usually implemented as a component of new commercial building construction and are managed by the building owner; they are rarely publicly owned and operated.

OPERATION OF BICYCLES / RULES OF THE ROAD

The California Vehicle Code (CVC) Division 11 contains the rules and regulations for operating a bicycle, commencing with Section 21200 through 21210. The CVC does not define bicycles as vehicles, but states that persons riding bicycles have all the rights and responsibilities of the drivers of vehicles. This means that bicycle riders must follow the basic traffic laws that all drivers follow, including but not limited to the following:

- *Ride on the right side of the roadway*
- *Obey traffic control devices (signs, signals)*
- *Yield to cross traffic*
- *Yield when changing lanes*
- *Yield to pedestrians in crosswalks*
- *Maintain speed positioning – the general principle is that the slowest traffic stays right. Bicycles are typically slower than auto traffic and are therefore usually found on the right side of the road (or within a bike lane, if provided). According to the CVC, bicycles may leave the right side of the road or a bike lane:*
 - *When overtaking and passing another bicycle or vehicle proceeding in the same direction.*
 - *When preparing for a left turn at an intersection or into a private road or driveway.*

- *When reasonably necessary to avoid conditions (including, but not limited to, fixed or moving objects, vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes) that make it unsafe to continue along the right-hand curb or edge.*
- *When approaching a place where a right turn is authorized.*

If in any circumstance a bicyclist feels that it is unsafe to be passed in the curb lane, they are allowed to “take the lane”; common causes include debris near the curb, trash cans, parked cars, or narrow lane widths.

- *Maintain intersection positioning – at intersections, bicyclists should travel in the right-most lane that leads to their destination. This means that if a bicycle is preparing to make a left turn, they may leave the right side of the road, even if a bike lane is provided, to enter the left turn pocket or the innermost through lane if the road has no left turn pocket.*

CHAPTER 2. GOALS, POLICIES, AND ACTIONS

The 1993 Clovis General Plan introduces the importance of bicycling:

The community will see expanded bicycle and pedestrian facilities in the future. Bicycle activity is expected to increase over the life of this element. With the completion of the planned bikeway system as shown in the Bikeway Plan, and the addition of newer routes in the developing areas of the community, bicycle usage is expected to increase. As a result of congestion management requirements, commuter bike activity will be promoted. Bicycle facilities are primarily provided along roadway right-of-way, as well as within transit corridor facilities, along canals and drainage facilities, and along the Beltway Trail System. The Trail System which is to be differentiated from the Bikeway Plan is further described in the Open Space/Conservation element.

GOALS, POLICIES, AND ACTIONS

The 1993 Clovis General Plan includes goals, policies, and actions relevant to bicycling:

Goal 2: Provide adequate, safe, well maintained, and efficient access to employment, educational, commercial, and recreational uses throughout the community, including the downtown core area.

Policy 2.1: Maximize traffic safety for automobile, transit, bicycles and pedestrians.

Action: Separate vehicular, bicycle, and pedestrian traffic on the beltway system and other high speed heavy traffic facilities.

Goal 3: Promote all modes of transportation, including transit, bicycle, and walking, for the development of alternatives to the private automobile.

Policy 3.1: Achieve a balanced multi-modal transportation system, including multi-modal corridors and transit centers

Actions:

- As it becomes available, acquire railroad rights of way for use as pedestrian, bicycle, transit, and/or parkway corridors and as multi-modal terminal locations, including bus or rail transit stations.
- Design the inner and outer beltway systems to accommodate a bicycle and pedestrian trail system and alternative transit mode circulation system.
- Utilize canal easements to provide bicycle and pedestrian trails.

Policy 3.3: Promote the long term shifting of peak hour commute trips from the single occupant automobile to ridesharing, buses, pedestrian, bicycles and other strategies that may emerge.

Actions:

- In order to provide safe and efficient roadway systems and multi-use corridors which encourage bicycle use, a Community Bikeway Plan shall be implemented.
- Require bike parking and amenities at commercial developments.

GENERAL PLAN UPDATE

The City is currently updating the 1993 General Plan. The updated General Plan will include revised goals, policies, and actions for bicycle transportation. Revisions to this plan's goals, policies, and actions will be reflected when the General Plan update is complete. These revisions should be consistent with the bikeway prioritization criteria established in this plan (see Chapter 5. Recommended Network).

CHAPTER 3. RELATIONSHIP TO OTHER PLANS

CITYWIDE PLANS

1993 City of Clovis General Plan

The BTMP is the implementation document for Clovis General Plan Circulation Element bicycle transportation goals and policies. The Circulation Element (Chapter 3) of the General Plan discusses bicycling in several locations:

- Page 3-6 discusses establishing a pedestrian and trails system along the Southern Pacific Railroad line right-of-way.
- The Bikeway Plan shows existing and future bike routes.
- Page 3-7 describes how the implementation of bicycle facilities according to the Bikeway Plan will lead to increased ridership.
- Several Goals, Policies, and Actions are relevant to bicycling. They are summarized in Chapter 2: Goals, Policies, and Actions.

City of Clovis 2003 Bicycle Transportation Master Plan

The 2011 Bicycle Transportation Master Plan will supersede the 2003 Bicycle Transportation Master Plan. Notable improvements include an updated inventory of existing bikeways, a revised map of proposed bikeways, and enhanced recommendations for support facilities and programs.

City of Clovis Standard Drawings

The City of Clovis Standard Drawings define standards applicable to the construction of Class I bike paths and Class II bike lanes.

- Standard Drawings for streets specify where additional right-of-way is required for bike lanes.
- Standard Drawing ST-20 "Intersection Striping at Non-Signalized Intersections" specifies how bike lanes will be striped through unsignalized intersections.
- Standard Drawing ST-21 "Geometrics, Collector with Two-Way Left Turn Lane" specifies that bike lanes will be six feet wide on a collector with two-way left turn lane.
- Standard Drawing ST-22 "Geometrics, Four Lane Collector" specifies that bike lanes will be seven feet wide on a four lane collector.
- Standard Drawing ST 26 "Intersection Bike Lane Striping" specifies how bike lanes will be striped through intersections with various approach types.

Clovis Municipal Code

The Clovis Municipal Code includes regulations applying to bicyclists. It also includes building standards for new development.

- Chapter 4.1, Sections 1-12, contain regulations pertaining to licensing bicycles in the City of Clovis. The code specifies that bicyclists must obtain a license for their bicycle from the Police Department to operate the bicycle in the City of Clovis. Dealers of both new and secondhand

bicycles must notify the Police Department of a transfer of ownership within ten days. The license fee for a bicycle is one dollar per year; violations of chapter are punished with fines of up to five dollars and/or the impounding of bicycles.

- Chapter 4.5 specifies the traffic regulations applying to bicyclists.
 - Chapter 4.5, Section 330 specifies that bicyclists have all the rights of, and are subject to all duties applicable to, the driver of a vehicle.
 - Chapter 4.5, Section 880 restricts bicyclists from operating bicycles on freeways.
 - Chapter 4.5, Section 1409 restricts bicycles from being locked to parking meters.
- Chapter 5.8, Section 12 restricts bicyclists from riding on sidewalks or in public parks or squares.
- Chapter 10.3, Section 4 specifies that roadways and bicycle lanes on public streets do not qualify as a City park.
- Chapter 10.5, Section 3 prohibits bicycles from being used at City skate parks.

Traffic Impact Study Report Guidelines

The City of Clovis uses the Traffic Impact Study (TIS) Report Guidelines from the City of Fresno, which detail the steps necessary for a traffic impact analysis in the City. Per the TIS Report Guidelines,

In relation to bicycles, TIS's should identify any existing and planned facilities. The guidelines require that TIS's identify a project's consistency with general plan policies relating to alternative transportation in addition to those relating to vehicular level of service. Generally, these policies strive to decrease auto-dependence in Fresno through transit-oriented development concepts and to provide safe conditions for bicyclists.

Loma Vista Specific Plan

The Loma Vista Specific Plan was adopted in April 2003 and is a planning document that guides development in Clovis' southeast area (3,307 acres bounded by Locan Avenue to the west, McCall Avenue to the east, portions of Bullard Avenue and Shaw Avenue to the north, and the Gould Canal to the south). The area's proposed land use includes a range of low-density to high-density residential with various commercial uses.

The plan's Local Transportation guiding principle is relevant to bicycling:

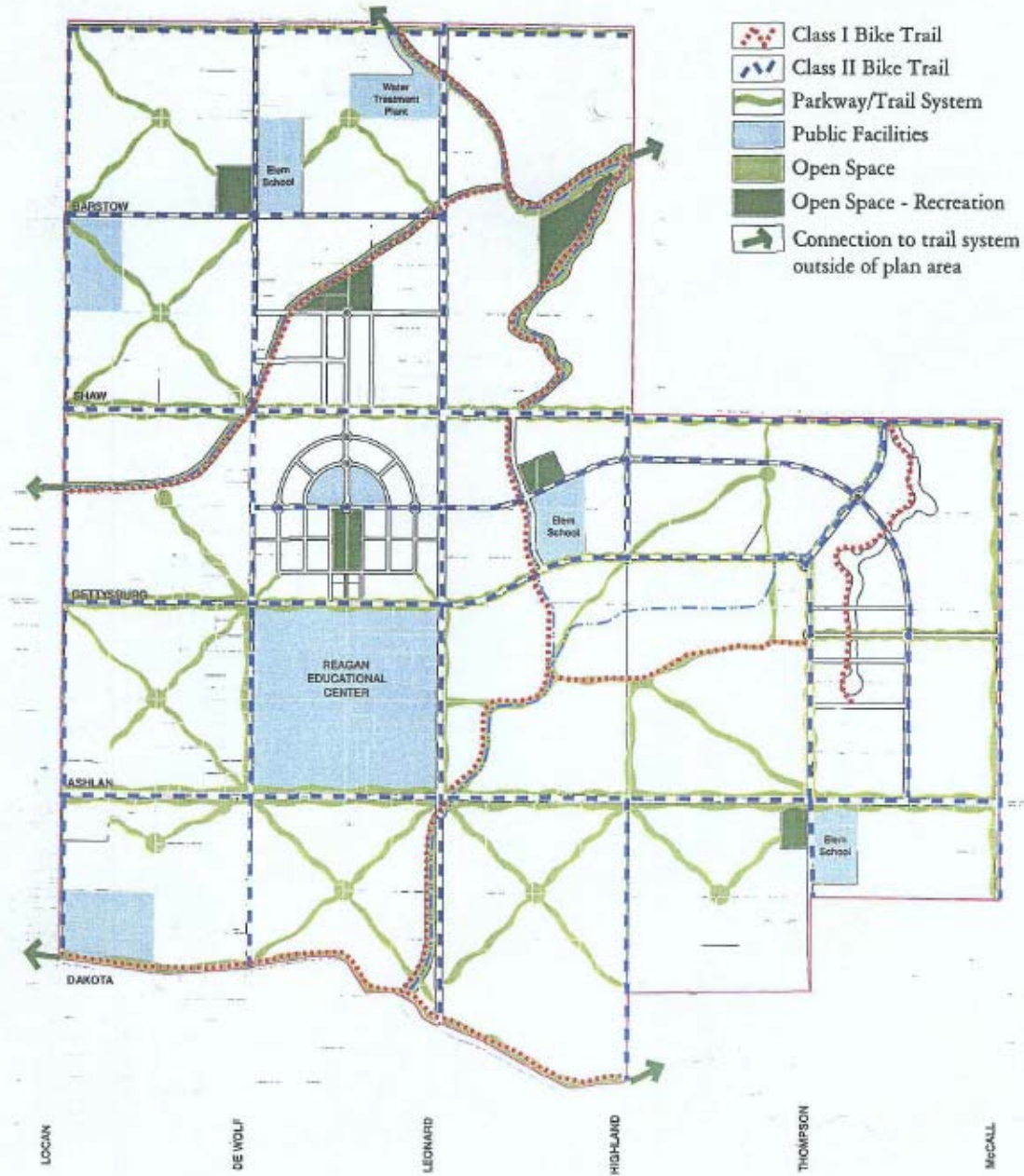
Organize land uses in a manner that promotes pedestrian-oriented circulation patterns and reduces the number and length of vehicular trips. Ensure that growth-inducing transportation impacts on existing communities are minimized.

The plan's Circulation component includes conceptual street cross-sections. Several of the cross-sections, including those for the Arterial/Expressway, Collector, Minor Collector, and Community Center Street, show options for Class II bike lanes and Class III bike routes.

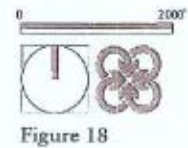
The plan includes a Parkway/Trail System that provides pedestrian and bicycle linkages throughout the plan area.

Figure 18 of the Loma Vista Specific Plan shows the planned locations of on-street and off-street bikeways:

Bicycle Trails Plan



City of Clovis
Southeast Urban Center
Specific Plan



REGIONAL PLANS

The BTMP is consistent with valley-wide programs that seek to reduce single-occupant motor vehicle travel.

Other Bicycle Plans

The BTMP was developed in coordination with and is consistent with the City of Fresno Bicycle, Pedestrian, & Trails Master Plan and the Fresno County Regional Bicycle Master Plan.

Regional Transportation Plan

The Regional Transportation Plan (RTP), prepared by the Council of Fresno County Governments in 2010, provides a long-range transportation vision for the Fresno County Region for the years 2010 to 2035. Several goals and policies of the RTP relate to bicycling; this BTMP is consistent with those goals and policies.

Measure "C"

Its extension approved by voters on November 7, 2006, Measure "C" is a half cent retail sales tax. Revenues from Measure "C" will go toward transportation improvements in Fresno County until 2027, when it will require a vote of approval for its continuation. Measure "C" estimates an allocation of \$12 million dollars specifically for bicycle infrastructure throughout the City of Clovis and nearly \$55 million Countywide. Measure "C" requires that jurisdictions have an adopted bicycle transportation plan in place by 2012 to receive funding for bicycle infrastructure. The BTMP was developed to fulfill all the requirements of Measure "C".

STATEWIDE INITIATIVES AND LEGISLATION

The BTMP is consistent with statewide programs that will affect the implementation of future bicycle transportation facilities.

Assembly Bill 32 and Senate Bill 375

Senate Bill (SB) 375 is the implementation legislation for Assembly Bill (AB) 32. AB 32 requires the reduction of greenhouse gases (GHG) by 28 percent by the year 2020 and by 50 percent by the year 2050. Reducing automobile trips is one method of reducing GHG emissions. This can be achieved using modes other than the automobile, such as walking, bicycling, or riding transit.

Assembly Bill 1358

Assembly Bill 1358 is the Complete Streets Act. It calls for the inclusion of all modes (pedestrian, bicycles, transit, and automobile) into the design of roadways.

Assembly Bill 1581

Assembly Bill 1581 provides direction that new actuated traffic signal construction and modifications to existing traffic signals include the ability to detect bicycles and motorcycles. It also calls for the timing of actuated traffic signals to account for bicycles.

Caltrans Deputy Directive 64 (Revision 1) DD-64-R1

Deputy Directive 64-R1 (DD-64-R1) was issued to ensure that travelers of all ages and modes can move "safely and efficiently along and across a network of 'complete streets.'" The directive establishes responsibilities for Caltrans staff to safely accommodate bicyclists, pedestrians, and transit users.

Caltrans Traffic Operations Policy Directive 09-06

Traffic Operations Policy Directive 09-06 requires that bicycle and motorcycle detection be provided on all approaches to traffic-actuated signals in the State of California. Additionally, the directive requires that signal timings be modified to provide adequate clearance time for bicyclists. Assembly Bill 1581 is the enabling law for Policy Directive 09-06.

CHAPTER 4. EXISTING CONDITIONS

EXISTING BIKEWAYS

Existing Class II bike lanes and Class III bike routes were inventoried in April 2010 using a GPS-video camera to record bikeway features such as signage, striping, and stenciling. These features were reviewed to ensure that bikeways complied with applicable design criteria. The City maintains a GIS database of Class I bike paths. According to the recent inventory and City GIS data, Clovis has 56.4 miles of existing bikeways, as shown in Table 2. Table 2 shows the mileage distribution of these bikeways by bikeway classification.

Bikeway Classification	Mileage
Class I Bike Paths	13.6
Class II Bike Lanes	41.6
Class III Bike Routes	1.2
Total	56.4

Source: Fehr & Peers, 2011

Figure 2 shows the existing bikeways within the City of Clovis. Major existing Class I bike paths include the Clovis Old Town Trail, the Dry Creek Trail, and the Enterprise Trail. Class II bike lanes exist on many, but not all, of the City's collector and arterials streets.

REGIONAL CONNECTIONS

Existing bikeways in Clovis connect to the regional bikeway network through the City and County of Fresno. Key connections to the City of Fresno include Class II bike lanes on Shepherd Avenue, Teague Avenue, Alluvial Avenue, Sierra Avenue, Barstow Avenue, Ashlan Avenue, and Fowler Avenue. The Clovis Old Town Trail connects to the City of Fresno to the south near Fresno Yosemite International Airport and to the north on Willow Avenue between Nees Avenue and Teague Avenue.

PAST EXPENDITURES ON BICYCLE FACILITIES

Based on the existing network of bikeways, an estimate of past expenditures is possible. Table 3 provides a summary of the past citywide expenditures on bicycle facilities, in 2011 dollars. Chapter 7 presents an explanation of 2011 per mile costs for the three bikeway classes.

Bikeway Classification	Mileage	2011 Per Mile Cost	Expenditure
Class I Bike Paths	13.6	\$2.02 million	\$27.5 million
Class II Bike Lanes	41.6	\$19,000	\$790,400
Class III Bike Routes	1.2	\$11,200	\$13,440
Total	56.4	N/A	\$35.4 million

Source: Fehr & Peers, 2011

As shown in Table 3, the past Citywide expenditures on bicycle facilities totals over \$35.4 million. Several of the City's bike lanes were constructed by development fees, so, the City's actual share of the total expenditure on bicycle facilities is less than \$35.4 million.

SUPPORT FACILITIES

Support facilities include bicycle parking, shower and changing space, and secure storage for bicycle gear.

In general, short-term bicycle parking is provided at major shopping centers, fast food locations, educational facilities, financial institutions, post offices, Clovis library, and commercial businesses. Figure 4 shows the locations of these land uses throughout the City. Few long-term bicycle parking and shower/locker facilities exist in the City. Clovis Municipal Code, Title 9 Planning and Zoning requires bicycle storage spaces at a rate of two percent of the number of required off-street vehicle parking spaces; within the R-T zoning district, the requirement is five percent of the number of required off-street vehicle parking spaces. The Development Code does not distinguish between short-term and long-term bicycle parking.

Figure 2: Existing Bicycle Facilities

MULTIMODAL CONNECTIONS

The primary transit providers serving the City of Clovis are Clovis Stageline and Fresno Area Express (FAX).

All Clovis Stageline buses are equipped with front-mounted bike racks that accommodate two bicycles, available on a first-come, first-served basis. Bikes are not allowed inside the buses.

All FAX buses are equipped with front-mounted bike racks that can accommodate at least two bicycles; some buses have racks that can accommodate three bicycles. The bike racks are available on a first-come, first-served basis. Bikes are not allowed inside FAX buses unless it is the last bus on the route that day and the bike rack is full, or by bus driver discretion.

Figure 3 shows existing Clovis Stageline and FAX routes and station locations. These routes are subject to change on an annual basis.



A Clovis Stageline bus with front-mounted bike rack

Figure 3: Transit Route and Station Locations

EXISTING AND FUTURE LAND USE PATTERNS

The Land Use Element of the General Plan establishes land use designations in conjunction with its goals and policies that reflect Clovis' intentions for the following:

- Managed growth
- Expansion of employment, recreation, and residential opportunities
- Protection of the small town atmosphere
- Establishment of a pivotal position in a regional context
- Conservation of resources

The vision for Clovis is: "A City that is committed to the Clovis Community Family, their needs, their values, and a quality of life for all; reflecting that commitment in how it develops and in the activities it undertakes."

In general Clovis landscape is flat, largely developed with a grid street pattern, and accommodates a mix of land uses. Local-serving commercial uses are scattered throughout the City. Regional commercial development is focused along Shaw Avenue, Clovis Avenue, Old Town Clovis, and Herndon Avenue. Major industrial areas are found on Clovis Avenue south of Gettysburg, Tollhouse Road east of Sunnyside, Barstow Avenue east of Clovis, Minnewawa Avenue north of Herndon Avenue, and the area between Ashlan and Dakota Avenues and Peach and Minnewawa Avenues.

Currently, Clovis has four public high schools, three intermediate schools, and 19 elementary schools. Other land uses within the community that generate bicycle trips include employment centers, public facilities (parks, open space areas), governmental facilities, as well as intermittent special events, especially in the Old Town commercial district. The City owns and operates 56 parks totaling approximately 146 acres (City of Clovis Parks Master Plan, 2010). Figure 4 shows these land use designations according to the General Plan.

California State University, Fresno (Fresno State) is located directly adjacent to Clovis' west city limits. Their Campus Master Plan identifies the University's plans for circulation and trails.

Future land use patterns in the City of Clovis are expected to change. With the adoption of the Loma Vista Specific Plan in April 2003, the City will be developing patterns of land use that support multimodal transportation and smart growth, featuring the best and latest in planning and design. The community design for Loma Vista includes a series of diverse residential neighborhoods planned around compact pedestrian-oriented mixed-use cores, accompanied by a full mix of employment opportunities, recreational activities, shops, and services. The BTMP also includes integration of existing watercourses, irrigation canals, and drainage systems/plans into the community fabric of the Loma Vista Specific Plan area. The City intends to better accommodate bicycle travel in this area.

An extensive parkway/trail system (paseo) is identified in the Loma Vista Specific Plan. This system generally follows the roadway alignment and provides a pedestrian and bicyclist linkage from the interior of the residential quarter sections. The paseo trail system will provide a connection from the central neighborhood park to nearby schools, activity areas, and signalized intersections. Paseos are intended to be 30- to 40-foot wide landscaped areas equipped with 12-foot wide all-weather surfaces suitable for walking and bicycling. Paseos may be linked with sidewalks on local streets to complete the required connectivity.

Figure 4: Clovis General Plan Land Use

BICYCLE ACTIVITY CENTERS

Certain activity centers such as elementary, intermediate, and high schools, colleges, recreational areas, parks, and community centers (commercial, financial and general employment) require special emphasis because of their potential to attract bicycle travel. The Clovis BTMP attempts to provide at least one connection to each of these major bicycle activity centers. See Figure 4 for the location of major activity centers in relation to the existing and proposed bicycle facilities network.

The City of Clovis recognizes the importance of safe pedestrian and bicycle routes to school sites. The City will continue to work cooperatively with Clovis Unified School District in developing and improving safe pedestrian and bicycle travel routes to schools.

EXISTING AND FORECAST BICYCLE USE

The California Department of Finance reports that as of 2010, the population of the City of Clovis was approximately 97,000. The incorporated area is approximately five miles wide and covers approximately 22 square miles. Therefore, most trips are generally short and could be easily accomplished by bicycle. This is particularly true for trips to school and to centrally located commercial and employment centers.

Table 4 provides journey-to-work data from the 2000 U.S. Census, showing that the mode split for bicycling in the City of Clovis is 2.5 percent of primary trips to work. This statistic includes only a portion of cyclist commuters because it fails to measure people who ride only one or two days per week. It also fails to measure non-commute riding activities such as trips to stores or schools. As a percentage, bicycle non-commute trips are generally greater than commute trips because commute trips tend to be longer and less bikeable. This means that of the City of Clovis' 2008 workforce population of 45,500, more than 1,100 used the bicycle as their primary means of transportation to work. Table 4 compares this figure to other local jurisdictions as well as the statewide average. Clovis' bicycle-to-work mode split exceeds that of comparable jurisdictions in the Central Valley; the City's goal is a bicycle mode share of at least five percent by the year 2020.

Location	Drive Alone	Carpool	Public Transportation	Bicycle	Walk	Other*
Clovis	70.6%	12.0%	0.6%	2.5%	4.3%	10.0%
Bakersfield	77.4%	13.4%	1.9%	0.7%	1.6%	5.0%
Fresno	74.4%	14.4%	2.8%	0.9%	2.6%	4.9%
Merced	74.2%	15.9%	0.9%	2.0%	2.2%	4.8%
Modesto	76.9%	11.7%	1.6%	1.1%	2.8%	5.9%
Sacramento	65.9%	16.4%	5.9%	1.8%	4.1%	5.9%
Visalia	78.1%	10.9%	0.9%	1.2%	2.0%	6.9%
State of California	71.8%	14.5%	5.0%	0.8%	2.9%	5.0%

* Worked at home, motorcycle, etc.
Source: Census 2000 Journey to Work

Implementation of the BTMP could potentially increase the mode split in the City to exceed the state goal mode split of 2.8 percent. By 2030, the City of Clovis' population and workforce are anticipated to grow to approximately 149,000 and 77,000, respectively. Table 5 compares the annual trips, vehicle miles traveled (VMT), and pounds of carbon dioxide saved in 2030 for different percentages of bicycle mode share.

2030 Bicycle Mode Split	Bicycle Commuters	Annual Vehicle Trips Saved	VMT Saved	Lbs CO₂ Saved
2.5% (Existing Mode Split)	1,930	617,600	4,940,800	4,545,540
2.8% (State Goal Mode Split)	2,160	691,840	5,534,720	5,091,940
5.0% (City of Clovis Goal Mode Split)	3,860	1,235,200	9,881,600	9,091,070

Source: Fehr & Peers, 2011

Table 5 shows the benefits that improving the bicycle mode split could have on decreasing vehicle congestion and improving local air quality. The City expects to increase the bicycle mode split to five percent by further developing the planned bikeway system and by implementing new facilities in developing areas of the community.

BICYCLE SAFETY

Bicycle safety was evaluated as part of the BTMP development process. In particular, existing bicycle collision data was reviewed to identify the nature and type of collisions that have occurred.

Collision data from the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS) was provided by the City of Clovis. This data represents all reported bicycle/vehicle-related collisions occurring in the City of Clovis during the five year period from January 2005 through December 2009. Collisions that occur on off-street paths are not included in the SWITRS data. Table 6 summarizes the collision data by year and severity of collision. Two fatalities were recorded during the five year period. Most of the collisions reported (72 percent) resulted in some form of injury.

Year	Total Collisions	Injury Collisions	Fatality Collisions
2005	34	26	0
2006	32	17	2
2007	32	27	0
2008	33	23	0
2009	32	24	0
Total	163	117	2

Source: SWITRS Collision Data

Collisions that involve bicycles, whether they involve cars, other bicycles, or pedestrians, are generally underreported. Some bicycle collisions likely occurred that were not included as part of the SWITRS data.

Table 7 summarizes the collision causes. A total of 163 were reported between January 2005 and December 2009. The most common primary collision factors were the bicyclist riding on the wrong side of the road and right-of-way violation by automobiles.

TABLE 7: CITY OF CLOVIS BICYCLE COLLISION SUMMARY PRIMARY COLLISION FACTORS (JANUARY 2005 – DECEMBER 2009)	
Primary Collision Factor	Number of Collisions
Wrong Side of Road (Bike)	66
Right of Way Violation (Auto)	29
Ran Signal or Stop Sign	18
Improper Turn	15
Other	35
Source: SWITRS Collision Data	

CHAPTER 5. RECOMMENDED NETWORK

PROPOSED BIKEWAYS

The proposed bikeway network is continuous, well-connected to City destinations, and meant to accommodate all levels of bicyclists. Table 8 includes the existing, proposed, and total lengths of the City of Clovis bikeways. Figure 5 shows the proposed system throughout the entire City.

Bikeway Classification	Existing Mileage	Proposed Mileage	Total Mileage
Class I Bike Paths	13.6	34.1	47.7
Class II Bike Lanes	41.6	84.6	126.2
Class III Bike Routes	1.2	12.5	13.7
Total	56.4	131.2	187.6

Source: Fehr & Peers, 2011

Major Class I bike path projects include connecting the Clovis Old Town Trail through Old Town Clovis, connecting the Dry Creek Trail south of Alluvial Avenue, and completing the Dry Creek Trail between Sierra Avenue and Shaw Avenue. Class II bike lane projects are proposed on many collector and arterial streets and would fill in existing gaps in the bike lane network. Class III bike routes are proposed on roadways where not enough right-of-way is available for a bicycle lane but the roadway serves as an important link in the bicycle network.

PRIORITIZATION

The prioritization of proposed bikeways was based on expected use, type of route, connectivity, and potential improvements to safety. Specifically, the following factors were used to determine suitability scores for proposed bikeways:

- Proximity to:
 - Parks
 - Schools
 - Commercial corridors
- Suitability, based on:
 - Roadway number of lanes
 - Roadway posted speed limit
 - Roadway Average Daily Traffic (ADT) volume
 - Roadway width of pavement
 - Parking

- Collision density
- Driveway density

Appendix D includes a complete description of how suitability scores were developed. The BTMP prioritizes bikeway improvements based on suitability and separates the improvements into short-term, mid-term, and long-term projects. Complete lists of short-, mid-, and long-term projects are provided in Appendix A. Chapter 7 discusses the phasing and costs of the proposed projects.

SUPPORT FACILITIES

The City should improve the bicycle parking requirements within the Development Code to require long-term bicycle parking and shower/locker facilities with new development.

Bicycle Parking

A revised standard for bicycle parking should, at minimum, include:

- Minimum required short-term and long-term bicycle parking spaces, per the California 2010 Green Building Standards Code:
 - **Short-term bicycle parking.** *If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.*

Although 200 feet is the maximum allowable distance, the City of Clovis encourages projects to place bicycle racks as close to the visitors' entrance as is feasible.

- **Long-term bicycle parking.** *For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of motorized vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include:*
 1. *Covered, lockable enclosures with permanently anchored racks for bicycles;*
 2. *Lockable bicycle rooms with permanently anchored racks; and*
 3. *Lockable, permanently anchored bicycle lockers.*
- Specifications for short-term bicycle parking:
 - Bicycle parking space size (eight feet long, three feet wide)
 - Bike rack type (should be U-lock compatible)
 - Bike racks should be securely anchored to the surface or structure with fixtures that cannot be removed using common tools
- Bicycle parking placement guidelines (safe, visible, and convenient location)



Example of a U-lock

Several bike racks meet these specifications, including those shown here:



U-Rack (or Hoop Rack)



Bike Hitch



Swerve Rack



Round Rack

The following racks do not meet these specifications because they are either incompatible with U-locks or do not provide two points of contact:



Wave Rack



Toaster Rack – or any other designed to hold the bike by only one wheel

Figure 5: Proposed Bicycle Facilities

Shower/Locker Facilities

Showers and clothes lockers are important for bicycle commuters with a rigorous commute or whose job requires formal office attire. Academic studies show shower and locker facilities at places of employment can be a factor in encouraging commuting to work by bicycle. Employees who exercise on their lunch breaks can also benefit from these facilities. While simpler end-of-trip facilities may be more feasible, consideration should be given to requiring shower and locker facilities in all developments with 100 or more employees.

The design of shower and locker facilities should accommodate both male and female employees and tenants. Small employment centers can provide a unisex restroom/shower room with a locking door. Larger employment centers that require more than one shower can add a separate shower and locker room to both the men's and women's restrooms. Maintenance of shower and locker facilities should be provided by the building management. Whenever possible, shower facilities should be located near bicycle parking facilities.

Showers and locker facilities should be included as a requirement for new large employers as part of the City development code, similar to the zoning ordinance of Palo Alto, California. Palo Alto's zoning code, as shown in Table 9, represents national best practices for the provision of showers at commercial buildings.

TABLE 9: PALO ALTO, CA EMPLOYEE SHOWERS REQUIRED		
Uses	Gross Floor Area of New Construction (ft²)	Showers Required
Medical, Professional, and General Business Offices, Financial Services, Colleges and Universities, Business and Trade Schools, Research and Development, General Business Services, and Manufacturing	0-9,999	No requirement
	10,000-19,999	1
	20,000-49,999	2
	50,000 and up	4
Source: <i>Zoning Ordinance (Title 18)</i> , Palo Alto, California		

Palo Alto's standards are easily applied to new developments since these requirements are derived from building square footage.

MULTI-MODAL CONNECTIONS

Clovis Stageline should consider equipping new buses with front-mounted bike racks that can accommodate three bicycles. Additionally, if the bike rack is full on the last daily bus on the route, they should consider allowing bikes inside the bus or by bus driver discretion.

CHAPTER 6. EDUCATION, ENCOUAGEMENT, AND ENFORCEMENT

In 2010, the Clovis Police Department was awarded a grant from the California Office of Traffic Safety, through the National Highway Traffic Safety Administration, that included funding for bicycle safety education. The grant funded bicycle safety presentations in elementary schools, helmet fittings, and bike rodeos by members of the Clovis Police Department in October 2010. Public information programs are available from the Clovis Police Department upon request. The Clovis Police Department will continue to offer public outreach programs regarding bicycle education and safety as funds are available.

The Clovis Fire Department makes annual presentations to each Clovis elementary school as part of its “Time to Survive” program, educating students on pedestrian and bicycle safety. As part of this outreach program, coloring sheets identifying safety issues are distributed to the students. Similar to the Police Department, the Fire Department also conducts public information programs when requested. In the past, the Fire Department has participated in bike rodeos where they can inspect bicycle equipment and safety gear.

A number of advisory bodies, agencies, and advocacy groups exist in the Fresno-Clovis Metropolitan Area serving as representatives to the City’s bicycling community. These groups include but are not limited to: Clovis Police Community Service Officers, Clovis Unified School District, Fresno Cycling Club, and the Fresno County Bicycle Coalition. As additional opportunities permit, the City will educate both motorists and cyclists as to their proper roles within the traffic environment. The City will work with local advocacy groups to administer education and encouragement programs for residents of all ages.

BICYCLE EDUCATION PROGRAMS

Sample education and encouragement programs include the following.

Public Service Announcements

Public service announcements (PSAs) are an important part of creating bicycling awareness, as they can effectively reach the public via TV, radio, Internet, or print media and reinforce other education and outreach messages. A well-produced public service message can be memorable and effective. The City could develop a PSA campaign with messages that encourage residents to bike or that educate residents on bicycle safety.

Online Bicycle Maps

The City will provide existing bicycle network maps on their Web page for residents to use as a trip-planning resource.

Share the Road Campaign

Share the Road campaigns serve as a reminder to all transportation system users – bicyclists, pedestrians, and motorists included – that everyone is a legitimate user of the roadway and that the roadway right-of-way system must be shared between user types. The City could initiate a Share the Road campaign that features education opportunities focused on adult bicyclists and motorists.

BICYCLE ENFORCEMENT PROGRAMS

The City should also work with the Police Department to conduct enforcement campaigns intended to improve bicycle safety. Sample enforcement programs include the following.

Targeted Moving Violations

Decreasing moving violations, committed by motorists and bicyclists alike, is critical to improving bicycle safety and encouraging all roadway users to share the road. The City should work with the Police Department to develop targeted enforcement efforts. Advertising campaigns help the targeted violation efforts reach a wider audience.

Moving violations by motorists that affect bicyclists include:

- Speeding
- Passing without sufficient clearance
- Driving in the bike lane
- Right-turning in front of bicyclists
- Failing to signal
- Double parking

Moving violations by bicyclists include:

- Running stop signs or red lights
- Failing to signal
- Wrong-way riding
- Riding without lights at night
- Failing to wear a helmet (if under 18 years of age)

Radar Speed Signs

Radar speed signs feature a changeable message sign linked to a radar unit; the signs display the vehicle's actual speed as the vehicle approaches the sign. Radar speed signs can be mounted permanently to a pole (where they are powered by hard wire or a solar unit) or alternatively they can be mounted to a trailer (also known as a "speed trailer") and deployed on a temporary basis. Studies in the United States have shown that radar speed signs are an effective way to slow traffic. The City should consider installing additional radar speed signs within school zones in partnership with the school districts. Speed trailers should be deployed to different parts of the City regularly to remind drivers City-wide to obey the speed limit.

Sting Operations

Bicycle sting operations target motorists who dangerously violate the right-of-way of bicyclists, and especially motorists who drive within the bike lane, pass without sufficient clearance, or right-turn in front of bicyclists. Such operations can also target bicyclists who commit moving violations. Sting operations are most effective on roadways and intersections with high bicycle volumes. The City should consider conducting recurring bicycle sting operations since changes in motorist behavior can be short-term. In addition to, or in lieu of, fines, officers can issue educational materials that inform drivers and bicyclists of the rules of the road. By working with local news media, the sting operations can reach a broader segment of the public in addition to residents who are pulled over.

ADOPT-A-TRAIL PROGRAM

An Adopt-A-Trail program could be developed for basic trail maintenance on Clovis' Class I bike paths.

Through a similar program on the American River Parkway around Lake Folsom and Lake Natoma near Sacramento, CA, each mile of the parkway has a Volunteer Steward who picks up litter and trims vegetation for 20 hours per quarter. Volunteer Stewards can be individuals, businesses, or organizations. Financial sponsors can also adopt a mile of the parkway; sponsorships provide funding for signage, maintenance equipment, and other supplies for volunteer efforts. An Adopt-A-Trail program would require staff time to organize; however, may yield significant savings to the City and positively engage the community in trail maintenance.

CHAPTER 7. FINANCING

Bicycle facilities have both capital and maintenance costs. Bicycle facilities have been funded through dozens of different federal, state, regional, and local programs.

COSTS

Table 10 shows capital unit costs for bikeways.

TABLE 10: CAPITAL COSTS FOR BIKEWAYS	
Bikeway Classification	Cost per Mile
Class I Bike Paths	\$2.02 million
Class II Bike Lanes	\$19,000
Class III Bike Routes	\$11,200
Source: Fehr & Peers, 2011	

As shown in Table 10, the City spends an average of \$19,000 per mile on bicycle lane striping modifications (including striping for continuous left-turn lanes), signage, stenciling, and detection loops at signalized intersections. Development of bicycle trails/paths costs on average \$2.02 million per mile to design, acquire, and construct paving, landscaping, and irrigation improvements.

Table 11 provides cost estimates for short-, mid, and long-term projects by bikeway type.

TABLE 11: PROJECT COST ESTIMATES				
Bikeway Classification	Short-Term	Mid-Term	Long-Term	Total
Class I Bike Paths	\$25,089,300	\$15,045,900	\$28,940,900	\$69,076,100
Class II Bike Lanes	\$731,000	\$860,600	\$1,372,900	\$2,964,500
Class III Bike Routes	\$147,200	\$140,700	\$145,300	\$433,200
Total	\$25,967,500	\$16,047,200	\$30,459,100	\$72,473,800
Source: Fehr & Peers, 2011				

As shown in Table 11, the total capital cost for the proposed system of bicycle facilities is approximately \$72.4 million. Class I bike paths are the most expensive facility type. The cost of implementing the short-term projects, which represent the top 30 percent of each type of facility according to suitability score, is approximately \$25.9 million. It is likely that the implementation of the short-term projects will take many years to complete.

Table 12 shows typical maintenance costs and frequency for bikeways, including replacement of signage, restriping, restenciling, and resurfacing.

TABLE 12: MAINTENANCE COSTS FOR BIKEWAYS			
Bikeway Maintenance Type		Cost	Maintenance Frequency
Class I Bike Paths	Landscaping ¹	\$11,000 per mile	Annually ²
	Slurry seal ³	\$17,600 per mile ⁴	10 years
	Rehabilitation ³	\$49,300 - \$70,400 per mile ⁵	15 years
Class II Bike Lanes	Restriping	\$315 per mile ⁶	Annually
	Signage	\$200 per sign ⁷	10 years
Class III Bike Routes - signage		\$200 per sign ⁷	10 years
Notes: 1. Cost includes direct costs, contract overhead, and water costs 2. \$11,000 per mile per year; specific service frequencies include: <ul style="list-style-type: none"> • Trash (once per month) • Weeds (twice per year) • Tree pruning (once per year) • Asphalt cleaning (twice per year) 3. If slurry seal is applied every 10 years, trail rehabilitation (pavement overlay and reconstruction) may not be necessary 4. Based on \$2.50 per square yard and 12 foot wide trail; includes restriping 5. Based on \$7.00 – \$10.00 per square yard and 12 foot wide trail; includes restriping 6. Includes cost to restripe bike lanes and refresh stencils; based on 2009 restriping costs (including administrative fees) 7. Includes cost to remove exiting sign and replace with new sign Source: Fehr & Peers, 2011			

As shown in Table 12, there is a significant costs associated with the proper maintenance of Clovis' bikeways. The implementation of additional bicycle facilities in the City will require increased financial commitment to the maintenance of these facilities.

FEDERAL AND STATE PROGRAMS

The majority of public funds for bicycle projects are derived through a core group of federal and state programs. Federal funds from the Surface Transportation Program (STP), Transportation Enhancements (TE), and Congestion Mitigation Air Quality (CMAQ) programs are allocated to Fresno COG and distributed regionally; distribution is allocated either competitively or proportionally according to jurisdiction population.

Limited amounts from the Local Transportation Fund (LTF), which is derived from a ¼ cent of the general sales tax collected statewide, can be used for bicycle facilities.

State and federal Safe Routes to School programs are potential funding sources for both bicycle and pedestrian planning and infrastructure projects that improve access to schools. Caltrans administers two Safe Routes to School programs: the state-legislated program (SR2S) and the federal program (SRTS). Each program has unique differences that affect project selection.

Bicycle facilities can be funded through the California Bicycle Transportation Account (BTA). Annually, \$7.2 million is available for projects through the BTA.

The California State Parks Recreational Trails Program provides funds annually for recreational trails and trails-related projects. Cities are eligible applicants for the approximately \$2.3 million available annually. The program requires an applicant match of 12 percent of the total project cost.

In 2010, the California Strategic Growth Council (SGC) awarded \$20 million through the Proposition 84 Sustainable Communities Planning Grant and Incentives Program. The SGC will award \$20 million more in grants in both 2011 and 2012 (totaling \$40 million). Eligible projects include plans that support greenhouse gas emission reduction and sustainable communities. Twenty percent of the grant funds are set aside for Economically Disadvantaged Communities (EDC).

Caltrans Transportation Planning Grants are available to jurisdictions and can be used for planning or feasibility studies. The maximum funding available per project is \$300,000.

The Highway Safety Improvement Program (HSIP) is a core federal-aid program that aims to reduce traffic fatalities and serious injuries on public roads. Caltrans administers the program in California and expects to receive \$70 million for the 2010/11 Federal Fiscal Year. HSIP funds can be used for projects such as bike lane projects on local roadways, improvements to Class I multi-use paths, or for traffic calming measures. Applications that identify a history of incidents and demonstrate their project's improvement to safety are most competitive for funding.

The Land and Water Conservation Program offer funds to states and through states to local governments for trails acquisition and development.

REGIONAL AND LOCAL FUNDING

Historically, the City has received annual Transportation Development Act Allocation funds (approximately \$25,000) for bicycle and pedestrian facility development and maintenance. Typically, these funds are set aside for capital projects and/or bicycle facility maintenance. For many years this has been the most consistent funding available for bikeway development in Clovis.

According to the 2006 Measure "C" Extension Expenditure Plan, the Measure "C" half cent sales tax extension approved by Fresno County voters in November 2006 estimates an allocation of \$12 million (approximately \$600,000 per year) specifically for bicycle infrastructure throughout the City of Clovis and nearly \$55 million Countywide by 2027. Because of the Great Recession's impact on the local economy, it is likely that actual funding available through Measure "C" through 2027 will be less than projected.

Private/local funding for pedestrian projects comes primarily from development projects, either in the form of improvements constructed directly by developers or through development fee programs.

New policies at the federal level have resulted in a series of programs that promise to provide increased funding in the coming years for bicycle projects. The HUD-DOT-EPA Interagency Partnership for Sustainable Communities has generated a series of new grant programs to-date, including Urban Circulator grants, TIGER grants, and Sustainable Communities Planning grants. DOT Secretary Ray LaHood recently announced a new DOT policy initiative, indicating "well-connected walking and bicycling networks [are] an important component for livable communities."

CHAPTER 8. IMPLEMENTATION

The City of Clovis Planning and Development Services Department-Planning and Engineering Divisions are responsible for implementing the BTMP. Various components of implementation include planning for the design, acquisition of right-of-way, and construction of proposed bicycle improvements. Divisions within the Public Utilities Department are responsible for long-term maintenance of the completed bicycle facilities network.

The City of Clovis Planning and Development Services Department will continually monitor implementation of the BTMP and its future revisions and updates. To be eligible for Bicycle Transportation Account (BTA) funding, conforming plans must be no more than five years old.

Figures 2 and 5, respectively, identify the location of existing and planned bikeways in the City. Several projects are needed to complete the proposed system. Appendix A identifies proposed capital projects that are planned for implementation. Such projects are identified by priority, location, description of improvement, facility type, and estimated cost. The City may modify projects and priorities as timing and opportunities arise. Figures 2 and 5 and Appendix A will be updated regularly.

The City will make every effort to implement the BTMP in a timely manner. However, the construction of planned bicycle facilities depends largely on the City's ability to secure both construction and maintenance funding, given its limited amount of available discretionary revenue sources.

DEVELOPMENT GUIDELINES

Feasible Class I, II, and III bikeways will continue to be developed throughout the community, as funding becomes available and development occurs. The City will continually assess the need, guidelines for development, and implementation strategy for such facilities. Additional engineering and environmental studies will be necessary to implement proposed BTMP projects.

The Caltrans Highway Design Manual (HDM) Chapter 1000, Bikeway Planning and Design, establishes minimum criteria for planning and designing bikeways in California. The California Manual on Uniform Traffic Control Devices (MUTCD) Part 9, Traffic Controls for Bicycle Facilities provides standards and specifications for traffic control devices on bicycle facilities.

The City uses both of these documents when planning new facilities or improving the performance of existing bicycle facilities in Clovis. By using these documents, the City has flexibility to carefully evaluate conditions, making modifications as appropriate, for each bicycle improvement. Typically, the City has applied more stringent criteria than what is set forth by the HDM and MUTCD. The City's Standard Drawings, provided in Appendix C, were developed in accordance with the HDM and MUTCD. The City also adheres to current Americans with Disabilities Act requirements when designing and constructing its facilities.

To provide a safe, convenient, and effective bicycle path and lane, the City will carefully consider and review the following:

- Acquisition of right-of-way
- Connectivity to existing paths and lanes (local and regional) and activity centers
- Geometry of path and lane
- Mid-block crossings
- Narrowing existing travel lanes and/or sidewalks
- Restriping existing roadways
- Installation of continuous left turn lanes
- Widening the roadway

- Vehicle parking on one or both sides of the street
- Eliminating travel lanes (“Road Diet”)

Class I Bike Paths

Typically, bike paths follow existing streams and greenways, and are a component of a community trails system separate from motor vehicle traffic. Bike paths serve both commuter and recreational cyclists. Motorized vehicles are not permitted on Class I bike paths except for maintenance.

Bicyclists, pedestrians, and joggers often use paths. For this reason, a bicycle path is also referred to as a shared use path/trail.

Key components to a successful bike path include:

- Continuous separation from traffic
- Scenic qualities
- Connection to activity centers
- Well-designed street crossings with measures such as grade separated crossings, bike and pedestrian activated traffic signals, median islands, and warning signs
- Good design, by providing adequate width, sight distance, and drainage, etc.
- Proper maintenance
- Curb ramps and curb cuts that are convenient, as wide and gently graded as possible, and conform to the Americans with Disabilities Act (ADA)
- Where bike paths intersect a roadway, as few bollards as is necessary
- New and retrofitted traffic signals should be built so that bicyclists can easily access a push button to request a green light

The City’s typical development width standard for a Class I facility is 10-12 feet – five-six feet for each direction of travel; Class I bike paths built using Measure “C” funding are required to be 12 feet wide. The minimum allowable width according to the Caltrans Highway Design Manual is eight feet.

The implementation of Class I bike paths along irrigation canals in Clovis will require coordination with the canal owner and/or operator, typically the Fresno Irrigation District; in many cases a joint use agreement will be necessary. Additionally, bike paths adjacent to canals should be designed to overcome the safety concerns of bike paths next to canals. The Fresno Irrigation District (FID) owns and/or operates several of the canals in Clovis.

Curb ramps or curb cuts that are used by bicyclists as a part of a bike path should conform to ADA requirements.

Class II Bike Lanes

Bicycle lanes are established along streets. In all cases, bicycle lanes are one-way facilities, paired on opposite sides of the street to facilitate two-way travel. Bicycle lanes separate cyclists from traffic by a wide stripe, allowing cyclists to travel within their own lane. Where possible, the City will construct bicycle lanes on most arterial and collector streets according to the proposed facilities shown on Figure 5.

Table 13 shows the width of Class II bike lanes according to the City's development standard and the Caltrans Highway Design Manual.

TABLE 13: WIDTH OF CLASS II BIKE LANES		
Bike Lane Type	City of Clovis Development Standards	Caltrans Highway Design Manual
With marked parking stalls	Strive for 6 feet	Minimum 5 feet
Parking permitted without marked parking stalls	Strive for 14 feet	Minimum 12 feet
Parking prohibited; with curb and gutter	Strive for 7 feet	Minimum 5 feet
Parking prohibited; without curb and gutter	Strive for 6 feet	Minimum 4 feet
Source: Fehr & Peers, 2011		

As shown in Table 13, the City's development standards for bike lanes exceed the minimums required by the Caltrans *Highway Design Manual*. A six-inch solid white line is typical when delineating the right-of-way of the lane from the vehicle travel lane. Bicycle lanes are not separated from traffic by raised barriers or raised pavement markers. Typically, bike lane lines do not extend through intersections.

Bicycle lanes in the community center of the Loma Vista Specific Plan are planned along all community center streets. The community center's bikeways will not be striped but may be signed at entrances to the centers from major streets. These streets will have angled on-street parking and will have a posted speed limit of 25-miles per hour. These streets are intended to focus on the pedestrian and the cyclist, and to de-emphasize automobile traffic as the sole function of the street.

Alternative Bicycle Facility Options

When warranted, the City will consider alternative design concepts along with other innovative approaches to traditional bicycle facilities. An alternative design concept will be implemented only if it can be safely and legally incorporated into the planned bicycle network and can be reasonably maintained.

RETROFIT GUIDELINES

Retrofitting existing streets and roadways may be necessary to accommodate bicyclists since residents, densities, and land uses that support bicycling are often found to already exist in built-up areas. The following guidelines will be considered when determining which portions of a roadway may be modified. Not all existing roadways can be retrofitted using these guidelines. However, every effort will be made to ensure bikeway continuity.

Reconsider Need for Parking

As appropriate, the City will evaluate the need for on-street parking. In areas with low parking demand, City parking and bicycle lanes may be combined, yet still accommodate parking needs of nearby residences and businesses. The City will coordinate with the Clovis Unified School District to determine where bike lanes can be implemented while still accommodating the parking needs of the schools.

Traffic Speed and Lane Widths

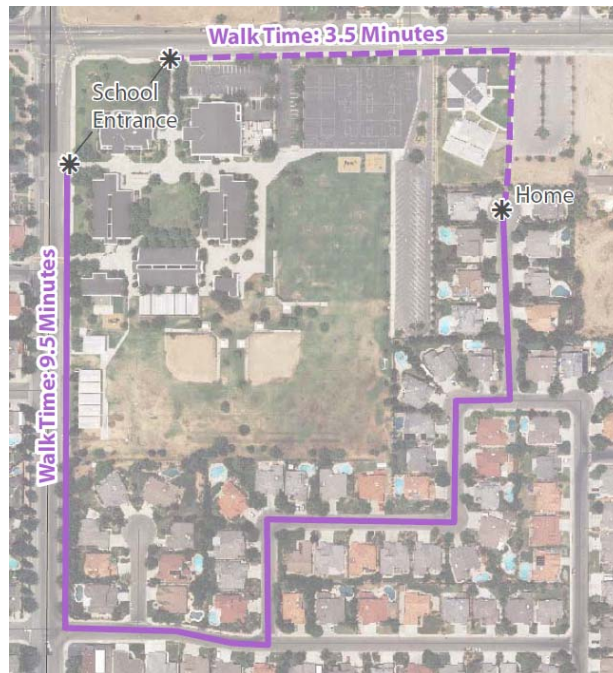
The City recommends a minimum standard 12-foot travel lane and center turn lane. In areas where speed zones are less than 35-miles per hour, narrower travel lanes (two or more lanes in each direction) and/or center turn lanes may be appropriate. These narrower lane widths could provide more space on a street for bicycle lanes without the need for widening.

Number of Lanes and Lane Widths

In areas with four traffic lanes (two in each direction) and a significant number of left-turn movements, re-striping for a continuous left-turn lane, two travel lanes (one in each direction), and two bike lanes may be considered. Re-striping will also depend on traffic volumes.

Connectivity

Connectivity is an important element to consider when designing residential neighborhoods and their supporting land uses (schools, businesses, etc.). Well-connected neighborhoods that feature a residential grid network or open cul-de-sacs promote active transportation modes because they provide calmer streets and more direct routes to destinations, as shown in the following figure.



APPENDIX A: PROPOSED PROJECTS

**APPENDIX B:
CALIFORNIA BICYCLE TRANSPORTATION ACT**

APPENDIX C: STANDARD DRAWINGS

APPENDIX D: SUITABILITY SCORE DEVELOPMENT