PROPOSED BIKE SYSTEM

CHAPTER 5

5.1 Bikeway Planning Considerations

It has been stated that Merced has a relatively extensive bikeway system, however, there are a number of areas within Merced that lack bicycle accessibility. Five target areas for improvements are:

- The Western Industrial Area;
- Merced College Area and UC Merced;
- South Merced, including the Airport Industrial Park;
- Southeast Merced, including Golden Valley High School, and,
- Local Government Centers in Downtown Merced.

Prior to installation of bike-related improvements in some of these areas, additional bikeway studies will be needed, (see Appendix C), and are discussed in sub-section 5.1.2.

5.1.1 Target Areas

WESTERN INDUSTRIAL AREAS

Providing access to the Western Industrial Park from the north is made difficult by the narrowness of State Route 59 and the expense of providing any potential grade separated crossing for bicycles of State Route 59 over Santa Fe Railroad. Bike lanes are needed on Cooper Avenue, providing bike commuters protection from the many delivery trucks that use the same route. The Cooper Avenue bike lane could be connected to Ashby Road, which parallels Highway 99 to Atwater. A bike lane along Ashby Road is proposed for the many commuters from the Atwater area.

Proposed Bikeway Improvements:

- Create safer crossing for bike and pedestrian traffic on the Bear Creek Bike Path where it is crossed by Bear Creek Drive.
- Bike lane on Cooper Avenue.
- Bike lane on Highway 59 from 16th Street to Olive Avenue.

MERCED COLLEGE AND UC MERCED

Merced Community College:. The Merced Community College campus is currently served by Class II bicycle lanes along M Street, along G Street, and along Yosemite Avenue. G Street and McKee Road bike lanes are feeders from several residential neighborhoods to the bike lanes in the college vicinity. Completion of Class I bicycle paths along Fahrens Creek to the north and Cottonwood Creek to the east have provided additional access to the campus.

UC Merced: The UC Merced campus is currently served by the Lake Road Class I bike path, which connects to a Class II bike lane on Yosemite Avenue. There is a current need to complete the Class II bike lane striping along Yosemite Avenue between McKee Road and Parsons Avenue and between Mansionette Drive and G Street.

Proposed Bikeway Improvements:

- Extend bike lane along Yosemite Avenue (on north side) between McKee Road and Parsons Avenue.
- Extend Fahrens Creek path to Old Lake Road.
- Complete Class II bike lane east on Bellevue Road to the Bellevue Bicycle Lane, which extends to the UC Merced Campus.
- Widen and reconstruct bike lanes on McKee Road from Yosemite Avenue to Black Rascal Creek.
- Create safe crossing of G Street on Cottonwood Creek Path.
- Widen and reconstruct bike lanes on Yosemite Avenue east of G Street to the eastern end of city limits.

SOUTH MERCED, INCLUDING AIRPORT INDUSTRIAL PARK

The Airport Industrial Park is currently accessed from Downtown by Class II bicycle lanes along V and R Streets. All other bikeways in the South Merced area (south of 16th Street) are Class III bike routes which should be upgraded to Class II.

Proposed Bikeway Improvements:

- Designate a five-foot bike lane on Grogan Avenue and install signs.
- Designate a five-foot bike lane on Wardrobe Avenue and install signs.
- Extend Childs Avenue bike lane to City limits.
- Installation of bike lanes on 13th and 14th Streets in conjunction with the Highway 99 off-ramp couplet projects.
- Extend M Street bikeway from Childs Avenue to Mission Avenue.
- Extend G Street bikeway from Childs Avenue to Mission Avenue.
- Extend V Street bikeway from Childs Avenue to Gerard Avenue.
- Install bike lane along Tyler Road.
- Install bike lane along Henry Road.

SOUTHEAST MERCED, INCLUDING GOLDEN VALLEY HIGH SCHOOL

There are currently bikeways available in southeastern Merced along Motel Drive, Glen Avenue, Bear Creek, parts of McKee Road, and parts of Parsons Avenue. These do not fully service the local schools, parks, and businesses in the area.

Proposed Bikeway Improvements:

- Extend Childs Avenue bike lanes to east City limit line. This would service the Golden Valley High school students and staff.
- Install bike lanes on Coffee Street. This would connect a local middle school and local elementary school to the Childs Avenue bike lane.
- Install bike lanes on Yosemite Parkway from Main Street to Parsons Avenue.
- Extend the Parson's Avenue bike lane to provide a north-south through bikeway connecting Parsons Avenue in the south to Old Lake Road in the north.
- Install bike lanes on Parsons Avenue from Yosemite Parkway to the southern end of city limits.
- Construct a bike-bridge across Bear Creek at Glen Avenue. This would add connection of northern and southern Merced.
- Install an undercrossing at McKee Road on the Black Rascal Creek Path.

LOCAL GOVERNMENT CENTERS IN DOWNTOWN MERCED

Merced's Downtown, like many American downtown areas, poses certain problems for bikeway planning. Because the downtown was built in an era when bicycle commuting was not taken into consideration, the street layout does not always lend itself to bikeways. Merced's planners and engineers have forged the best possible bikeways the downtown layout would allow. However, there are a few locations where bike facilities might be improved.

Proposed Bikeway Improvements:

- Construct the Canal Street Bike Boulevard from Bear Creek Path to Childs Avenue.
- Construct ramps and curb cuts at various locations.
- Widen bike lanes to five feet on major/divided arterials, where possible.
- Widen bike lanes on G Street south of Bear Creek (long range).

5.1.2 Bikeway Study Areas

Prior to designation of bikeway types on selected roadways, additional assessment and public input will be necessary. These areas are denoted in Appendix C. These areas include:

- Olive Avenue, between Hwy 59 and G Street;
- Alternative Bikeway to R Street between Olive Avenue and 19th Street. Alternatives to assess include: 1) Construct alternative routes that don't require using R Street from Olive Avenue to 19th Street, for example, taking Rambler Road to Ardell Drive and creating a bike/pedestrian bridge across Bear Creek to O Street, designing O Street into a bicycle boulevard; and 2) a modified R Street cross-section pertaining to travel lanes, parkway and sidewalks;
- Alternative Corridors linking North and South Merced in the area between O Street and K Street;
- Bikeways connecting Golden Valley High School with areas north of the Santa Fe Railroad;
- 16th Street, between V Street and Highway 140 (east); and,

In Appendix E, the ranking of several Study Areas are assigned the letter "A" for the study part of the project, and then letter "B" for the improvement component of the project, which may occur as part of the original grant, but more likely as a follow-up item after decisions have been made as to what improvements are selected.

The bike lane projects for both Olive Avenue and 16th Street, while scoring very high in the prioritization process, were also identified as being cost-prohibitive. The need for the study area reflects this high score, and the bike facility and feasibility studies for these roadways should include bike lanes (as an option) on these roadways.

5.1.3 Safe Route to School Projects

The *2013 BTP* encourages improving bicycle travel near schools through a comprehensive approach including construction of bikeways, support facilities and education at targeted school-sites in Merced. Improving bicycle access to local high schools was identified as a significant need in the community, and will be a focus of improvement during the implementation phase of the *2013 BTP*. The City will continue to work with community patterns to identify future safe-route to school needs, and may update the BTP in response to the need.

5.1.4 Regional Bikeways

Regional Bikeways extend through the City of Merced and beyond the City limits and Sphere of Influence to nearby communities. A detailed discussion of regional bikeways is located in Chapter 4 (Existing Bike System). Regional bikeways are included in the *2013 BTP* project list and are denoted by an "R" in Appendix E. Collaborating with Merced County to develop bikeways of mutual interest will be emphasized during the implementation phase of the plan, particularly to improve regional bikeways located between the Merced City Limits and its Sphere of Influence on high-demand bikeways, such as those that exist between the City and UC Merced and other significant bicycle commuter populations.

5.1.5 Education-Based Projects

All projects offer opportunities for an educational component, and should be planned and budgeted for in all grant applications. Additionally, there are some educational projects that "stand-alone" (see Recommended Project #8), and may include the following ideas and described in more detail below.

- Sponsor League Cycling Instructor (LCI) Training
- Safe Routes to School Courses
- Conduct Open Street Events
- Public Education and Enforcement Campaign
- Education at Bike-Related Events

SPONSOR LEAGUE CYCLING INSTRUCTOR (LCI) TRAINING

League Cycling Instructors (LCI's) are trained by the League of American Bicyclists to provide education in bicycle handling and traffic skills, safety, rules of the road, and safe routes to school.

Education Project: Sponsor LCI training seminars through the League of American Bicyclists, to improve the number and safety of bicyclists in Merced by increasing the capacity of the community to offer this education.

OFFER SAFE ROUTES TO SCHOOL COURSES

Assist area school districts to offer Safe Routes to School courses, taught by League Cycling Instructors, as part of physical education or after-school classes. This curriculum engages youth through multimedia and practical walking and bicycling activities, empowering them to travel effectively, independently, and make sensible and informed traffic decisions.

(source: http://www.bikeleague.org/programs/education/courses.php)

CONDUCT OPEN STREETS EVENTS

To encourage citizens to replace daily automobile trips with bicycling, walking, and public transportation at appropriate locations, the community is invited to develop "Open Streets" Events. Open Streets initiatives temporarily close streets to automobile traffic at appropriate locations, so that people may use them for just about any activity except driving. Open Streets events are now increasingly common in towns and cities seeking new and fun ways to achieve environmental, social, economic, and public health goals. Such programs also allow citizens to see and connect with their community in a new and exciting way while promoting the benefits associated with active transportation. *Open Streets* events differ from street fairs in that they explicitly support physical activity and the broadening of transportation choices. (source: "Open Streets Guide", http://openstreetsproject.org).

PUBLIC EDUCATION AND ENFORCEMENT CAMPAIGN

Conduct a three part bicycling education and enforcement campaign through the Police Department in collaboration with community partners and League Cycling Instructors.

- Part One: Educate the community in bicycling rules of the road using various forms of outreach, in collaboration with community partners such as the Merced Bicycle Coalition, Healthy South Merced Project, Building Healthy Communities, School Districts, and the County Health Department.

- Part Two: Police Department will conduct a warning campaign targeting bicyclists violating traffic and helmet laws and motorists violating bicyclists' rights, issuing warnings and educational literature instead of citations.

- Part Three: Police Department will conduct an enforcement campaign as in Part Two, issuing citations. Violators are offered the option of attending bicycling traffic rules class in lieu of paying a fine, to be conducted by League Cycling Instructors.

EDUCATION AT BIKE-RELATED EVENTS

Conduct bicycling education at community-wide bicycling events, in the form of rodeos or other on-bike courses for children and adults taught by League Cycling Instructors. Events such as the annual Merco Cycling Classic Community Fair and possible Amgen Community Fair and Open Streets events are well suited to bicycling education activities.

5.2 Prioritization and Estimated Costs

5.2.1 Project Objectives

In order to prioritize the identified projects, a prioritization methodology was utilized consisting of objective and ranking factors. The first element included identification of broad project objectives, and then for each objective, a set of project ranking factors was used to score each project. On Tuesday, March 26, 2013, the Bicycle Advisory Commission (BAC) met to discuss topics pertaining to the prioritization process for the recommended bike facility projects. The BAC was asked to complete a scoring sheet for the project objectives and asked to score the objectives on a scale of 1-5 (5 representing the highest value) to help guide City Staff to determine project ranking factors for use in scoring all proposed bicycle projects. The resulting BAC scores are listed for each objective below:

Bike Facility Project Objectives	Scores
Enhance Existing System	4.3
Project Readiness	3.7
Connection to Activity Centers	2.6
Transit Access / Support Facilities	2.3
Safety	2.1

5.2.2 Project Ranking Factors

The Project Ranking Worksheet (Appendix F) was utilized to score each project, resulting in a prioritization score, which is presented in Appendix E. Whenever possible, however, developers will be encouraged to provide bicycle facilities, that may or may not follow the order of the priority list.

5.2.3 Bikeway Rights-of-Way

Any bikeway proposed on property where the City does not have right of way, will have to be negotiated with those parties who do have right of way and/or ownership (i.e. canals, railroads, and private property). This bike plan, by its proposed projects, does not imply rights to property included in the plan area. Estimated costs for future rights-of-way are discussed in the next section.

5.2.4 Estimated Costs / Bikeways and Support Facilities

BIKE PATH (CLASS I)

- For asphalt paths, $65,000+/- per mile to grade and pave a 10-foot wide asphalt surface with 3-foot wide graded shoulder on each side.
- For concrete paths, $48,000+/- per mile to grade and construct an 8-foot wide concrete surface with graded shoulder on each side.

BIKE LANE (CLASS II)

Bike lanes have multiple potential cost factors that must be taken into consideration before a decision is made in regard to the type of improvements each street segment will have, and are presented in Table 5.1below.

Table 5.1: Estimated Costs for Bike Lanes

Improvement Scenario	Improvement Component (Both Sides of Road)	Improvement Cost (per mile)
1	Pavement Striping, Markings and Signage within Existing ROW	$50,000
2	5 Feet of Asphalt within Existing Right of Way	$150,000
3	If Needed, Rights-of-way	$250,000/res $500,000/com
4	Curb and Gutter Improvements	$100,000
5	Parkstrip and Sidewalk Improvements	$185,000

BIKE ROUTE (CLASS III)

- $22,000+/- per roadway centerline mile for signs on each side of the road.

BIKE/PEDESTRIAN BRIDGES

- $1,200+per foot per bridge with a width of 8’-0”.
- $1,500+ per foot per bridge with a width of 10’-0”.

STREET UNDERCROSSING

- For arterial streets, $250,000+ per tunnel with a width of 12’-0” and length of 70’.
- For collector streets, $150,000+ per tunnel with a width of 10’-0” and span of 40’.

OTHER

- **Bike Boulevards:** $235,000 per mile (no additional right of-way would be needed)
- **Bike Racks:** $720 per rack (includes install cost and would hold between 3 to 5 bikes)
- **Traffic Signal Sensors:** $1,500 per sensor (includes install cost)
- **Outdoor Bike Locker:** $2,000 per locker (includes install cost)

5.3 Proposed Projects

5.3.1 Context of the 2013 BTP and Project Develpment

The *2013 BTP* builds upon a comprehensive system of bikeways and support facilities that will enhance Merced's existing bikeways while setting the stage for effective connections between regional destinations.

Over the course of the last 25 years, the City of Merced has shown a serious commitment to creating a bicycle friendly community investing over 4 million dollars in developing its bikeway system. The *2013 BTP* continues that tradition by including over 100 potential projects for bikeways, support facilities, and other related activities and tasks. The *2013 BTP* accomplishes one-step of several to fully realize the development of the listed projects. The ability to accomplish projects, however, is dependent upon a dynamic setting of funding and staff resources as they apply to all steps, which include: 1) describing the community vision (the BTP); 2) having available local funding sources; 3) the ability and success to compete for and being awarded state and federal grant funds; 4) completed environmental reviews; 5) completed engineering and design; and, 6) continued community support for projects. Thus, while the *2013 BTP* is a significant initial step toward realization of the City's intent to construct bikeways and support facilities, the scope and function of the *2013 BTP* is to identify the desired possibilities of the community which may be implemented during the 5-year life of the BTP.

5.3.2 Comprehensive Project List

The proposed *2013 BTP* project list (Appendix E) was crafted from the following sources:

- *2008 BTP* Proposed Bikeway Project Map
- Listed Projects from "Target Areas" listed in Section 5.1
- 2008 Merced County Regional Bikeway Plan (projects within the City's Sphere of Influence).
- Projects currently in process of being developed
- Ideas expressed at the *2013 BTP* Community Public Workshops

Appendix E includes a description of the *2013 BTP's* proposed bikeways and bike support facilities in priority order. Table 5.2 below describes in miles, the existing and proposed bikeway network. This data was generated from the ArcMAP-based maps of the City's existing and proposed bikeways presented in Appendix C.

Table 5.2: Miles of Bikeway Types

Bikeway Type	Existing Bikeways	Additional Bikeways Proposed in 2013 BTP
Class I - Bike Path	22.21	16.23
Class II – Bike Lane	29.48	47.00
Class III – Bike Routes	11.02	0
Bike Boulevard	0	1.36 (average)
Sharrows	0	3.25

While the list of recommended projects is large, the BAC spent considerable time identifying the top fifteen projects. Pursuit of funding for these top projects should be top priority. The remaining projects are included to give the City the ability to identify a project in cases where funding sources are selective. Given the extensive public, commission and staff involvement in preparing the plan, future projects should be selected from the *2013 BTP's* recommended project list. In the rare case when funds for a project are sought after, but the project is not on the prioritized list, then Staff will make every effort to discuss the merits and purpose of the project with the BAC before proceeding.

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