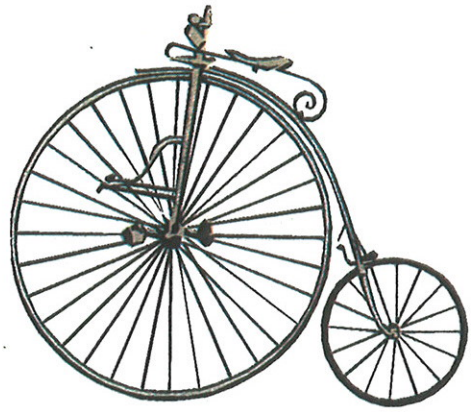

2002

CITY OF WOODLAND

BICYCLE TRANSPORTATION PLAN

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CITY OF WOODLAND

BICYCLE TRANSPORTATION PLAN

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INTRODUCTION

State law requires that cities take an active part in helping to reduce automobile congestion through the promotion of alternative modes of transportation. The City of Woodland is dedicated to creating and enhancing routes and pathways for pedestrians and bicycles, as alternative modes of transportation.

PURPOSE

The purpose of this Bicycle Transportation Plan (BTP) is to improve bicycle transportation and safety in the City of Woodland. This plan identifies, discusses and classifies into various groups all existing and future bikeways throughout the City.

This plan addresses the use of the bicycle as a non-motorized source of transportation (e.g., bicycle and pedestrian travel). The BTP incorporates the City's roadway network and is designed to meet development levels for effective and efficient bikeway movement as shown on the Circulation Diagram of the City's General Plan. It meets the requirements of the Bicycle Transportation Act, contained in sections 890 through 894.2 of the California Streets and Highways code.

LOCATION & PROFILE

The City of Woodland is located within Yolo County, approximately 20 miles northwest of Sacramento, six miles north of Davis and seven miles south of the Sutter County line. Interstate 5 (I-5) and State Route 113 (SR 113) intersect within the city.

Woodland is the second largest incorporated City of Yolo County with a population in 2000 of about 50,000. Woodland is the County seat of Yolo County and is within the four county Sacramento Metropolitan Area which includes El Dorado, Placer, Sacramento and Yolo Counties.

Woodland was settled in 1853 and incorporated in 1871. The settlement grew as it attracted others who found farming a profitable venture. Woodland today is still largely a city of homes as it was known in the early 1900's. With an abundance of tree planting, Woodland became the "City of Trees", with a tree symbol used as the City's logo. Factors contributing to Woodland's prosperity have been rich soil and a good climate, the relocation of the county seat to Woodland, and the establishment of a good transportation network.

The City has maintained records of population growth since 1870. Between 1975 and 1995, the average annual growth rate was 2.79 percent. The City uses the growth projection prepared by the Sacramento Area Council of Governments, which is 2.06 percent per year. This growth rate may be affected by many factors including the growth pressures from the Natomas Area, the growth rate of the City of Davis, family size, and the City's own internal policy decisions. The current General Plan dated 1996 provides for a growth rate 1.7 percent annual growth Rate based on 2015/2020 population growth.

TRANSPORTATION

Bicycle transportation is becoming a more popular means of travel within the City as well as within the region. The installation of a formal bikeway system will encourage this efficient means of travel, while at the same time provide a safer environment for the cyclist.

Under California State Code, bicycles are viewed as vehicular traffic and are considered users of streets and highways. Although cyclists are also allowed to use sidewalks, State and City Code prohibits cyclists from riding on the sidewalk in commercial areas and in front of schools.

When developing a bikeway system, it is easier to include bicycle facilities on new streets than trying to retrofit existing streets with set rights-of-way. Thus a long-range plan is a necessary tool when developing a citywide system.

As stated above, the use of the bicycle is becoming more and more popular as an alternative mode of transportation for commuter and recreational uses within the City of Woodland as well as within the region. Due to the flat area topography, mild regional climate, relatively short distances between other nearby communities, increasing traffic congestion, increasing costs of owning and operating an automobile, increasing public awareness of energy conservation and preserving the environment by reducing pollution, the bicycle is a very attractive alternate mode of transportation for the public within the City of Woodland. Encouraging increased bicycle use has many advantages for both the public and the City. Some of these advantages are improved air quality, reduced traffic congestion, increased physical fitness, and energy conservation. A well thought-out bikeway plan can be a win-win situation for everyone.

INFORMATION

The Bikeway development and construction process seeks to provide a degree of mobility that is in balance with other values. Social, economic, and environmental effects must be considered fully along with technical issues in the development of bikeway projects so that final decisions are made in the overall public interest. The goal is to increase bikeway mobility and safety in a manner that is compatible with, or which enhances community values and plans.

BIKEWAY ELEMENT

The main concerns of the public regarding bikeways are safety, convenience, and routes to and from desired destinations. The City shares these same concerns in addition to assuring that bikeways serve commuter needs, local support for bikeways has been demonstrated, and the funding sources for installing, upgrading and maintaining bikeways are available.

The Bicycle Transportation Plan (BTP) consolidates all aspects of bikeway planning and engineering into a dedicated document to supplement the Transportation and Circulation Element of the City's General Plan, with the flexibility to accommodate the future bicycling needs and desires of the City. The BTP sets forth goals, policies, recommended actions and financial options for a City-wide bikeway facility system to respond to the identified needs, and anticipated future needs of cyclists.

The previous Bikeway Master Plan (BMP) of 1993 consisted of 5 Phases of construction. The first 3 phases of the BMP were constructed by the 1994 Bikeway Upgrades and Installations Project, No.

93-06, which was completed on September 19, 1995. The remaining phases of the project consist of Phase 4 (New Bikeways on Local Streets) and Phase 5 (Bikeways Installed with Future Development). As part of this BTP, Phase 4 and Phase 5 will be incorporated herein. With this BTP, the term Phase will be changed to Group and is not meant to set an order of construction or installation for new bikeways. This BTP will also include the addition of Groups 5, 6, 7, and Future Bikeways.

COORDINATION

The BTP has been developed in cooperation with the following agencies and groups:

- Yolo County Planning and Public Works Department
- City of Woodland Community Development Department
- Yolo County Transportation District (YCTD)
- City of Woodland City Council
- City of Woodland Traffic Safety Commission
- City of Woodland Planning Commission
- Local Bicycle Touring Clubs and interested local citizens
- Sacramento Area Council of Governments (SACOG)
- Caltrans
- Yolo Solano Air Quality Management District
- Planning and Conservation League Foundation

In accordance with the Transportation Element of the General Plan, this BTP includes existing and proposed bikeways within the Beamer Kentucky Assessment District, the Gibson Ranch Community Facilities District (CFD), Unit 1 and the newly adopted Spring Lake Specific Plan.

The Department of Public Works, in cooperation with the Community Development Department, will perform a biennial review of this plan for updates and revisions based on bikeway needs, along with concerns from the public and various coordination groups. The updates will reflect changes in bicycling needs, City growth, and regulatory requirements.

DEFINITION

Designations of various bikeway routes are indicated for cyclists because there are particular advantages to using these routes. The City of Woodland has taken actions to assure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of cyclists, while being shared with motor vehicles.

It is emphasized that the designation of bikeways as Class I, II, and III should not be construed as a hierarchy of bikeways. Each class of bikeway has its appropriate application.

CLASSIFICATION

A bikeway is defined as a transportation facility provided primarily for bicycle travel. Bikeways are classified into 3 categories:

1. CLASS I BIKEWAYS (**BIKE PATHS/Multi-Use Paths**)

Class I bikeways **Bike Paths** are facilities with exclusive right of way, with cross flow by motorists minimized. Section 890.4 of the Streets and Highways Code describes Class I bikeways as serving "the exclusive use of bicycles and pedestrians". Generally, bike paths should be used to serve corridors not served by streets and highways or where wide right-of-way exists, permitting such facilities to be constructed away from the influence of parallel streets. Bike paths should offer

opportunities not provided by the road system such as recreational uses or high-speed commuter routes if motor vehicle cross flow can be minimized. The most common applications for bike paths are along rivers, canals, utility right-of-way, abandoned railroad right-of-way, and within regional parks. Sidewalk facilities are not considered Class I facilities because they are primarily intended to serve pedestrians, generally cannot meet the design standards for Class I bikeways and do not minimize the motorists cross flows.

2. CLASS II BIKEWAYS (**BIKE LANES**)

Class II bikeways **Bike Lanes** for preferential use by bicycles are established within the paved area of roadways. Bike lane stripes are intended to promote an orderly flow of traffic, by establishing specific lines of demarcation between areas reserved for bicycles and lanes to be occupied by motor vehicles. Bike lane signs and pavement markings support this effect. Bike lane stripes can increase cyclists' confidence that motorists will not stray into their path of travel if they remain within the bike lane. A bike lane provides a striped lane for one-way travel on a street. Bike lanes should be used to improve conditions for cyclists in corridors where there is significant bicycle demand and distinct needs, which can be served by them. Bike lanes are intended to promote an orderly flow of traffic by delineating the right-of-way assigned to cyclists and motorists. Also, passing motorists are less apt to swerve toward opposing traffic knowing the cyclists will remain within the striped bicycle lane.

3. CLASS III BIKEWAYS (**BIKE ROUTES**)

Class III Bikeways **Bike Routes** are intended to provide continuity to the bikeway system. Bike routes are established along routes not served by Class I or II bikeways, or to connect discontinuous segments of bikeway (normally bike lanes). Class III facilities are shared facilities, both with motor vehicles on the street, or with pedestrians on sidewalks, and in either case bicycle usage is secondary. Class III facilities are established by placing Bike Route signs along roadways. They indicate to cyclists there are particular advantages to using these routes as compared to non-designated routes.

In selecting the proper type bikeway facility, an overriding concern is to assure that the proposed facility will not encourage, or require, cyclists and motorists to operate in a manner that is inconsistent with the rules of the road.

BIKEWAY FACILITIES GUIDELINES

Bicycle travel can be enhanced by improved maintenance and by upgrading existing roads used regularly by cyclists, regardless of whether or not bikeways are designated. This effort requires increased attention to the portion of roadways where cyclists are expected to ride.

The development of the city's bicycle transportation system over the years, and the lessons learned during that time, have helped to evolve a bicycle facility planning principle of goals and policies that has served as a benefit to the City and the users of the bikeway.

STANDARDS

Bikeway standards are based on State of California Department of Transportation standards (Chapter 1000 of the CALTRANS Highway Design Manual), AASHTO Guide for the Development of Bicycle Facilities, and City of Woodland policies regarding bikeways. The City of Woodland has a policy for the location and marking of bikeways (please see Exhibit A-C in Appendix B). Although this policy establishes the minimum requirements for bikeways, it is preferred to have bikeways be as wide as physically possible. For example, the policy states that Class II bikeways, which are the most common type, shall have a minimum width of 5 feet where parking is prohibited and 13 feet where parking is permitted, however the 13 feet width may be reduced to 12 feet on a case by case basis in areas where parking tees do not exist and on-street parking usage is low. Also, certain bikeway signs should indicate popular convenient destinations such as historic centers, the downtown area, large parks, etc., to guide cyclists to these locations.

The City of Woodland may have guidelines that are more stringent than that of Chapter 1000 of the CALTRANS Highway Design Manual. It must be emphasized that a careful evaluation of conditions for a specific bikeway may justify an easing of some requirements, or necessitate a more stringent requirement, as the case may be. Therefore, these guidelines are not absolute standards but rather a guide to be used as a point of beginning when planning new facilities or improving performance of existing facilities.

ROUTE CRITERIA

Bikeway selection factors commonly used, typically include but are not limited to the following:

> Rider Safety - Routes are chosen considering various safety factors, including lightest traffic, widest shoulders, and fewest parked cars.
>
> Rider Convenience - Convenience factors usually considered include most destination points, fewest stop signs, most side streets with stop signs, and least conflicts on shoulders.

The selection criterion above is intended to promote a bikeway system to adequately provide for the cycling population in Woodland. In order to increase the use of bicycles, it is necessary to provide adequate routes for all segments of the cycling population. These routes must serve all combinations of origins and destinations across the city. This cannot be done by designating and developing a skeleton of high priority bike routes, such as specific routes to school.

The existing and future street and bicycle networks are planned to safely and adequately provide for bicycle circulation. Bike lanes exist or are planned along arterial and collector streets. In addition,

Class I bicycle facilities are provided in neighborhood greenbelts and along high demand bicycle corridors. A less comprehensive circulation system would not meet the goal of providing safe and convenient bicycle access to all areas of the city.

BIKE LANE OBSTRUCTIONS

Width criteria for bike lanes takes into account that occasional obstructions such as leaf piles and yard debris may exist in the bike lanes which would require cyclists to steer around them. While automobiles do sometimes stray into the bike lane and cyclists sometimes stray into the vehicle lane, these incursions seldom result in accidents. Mid-block accidents between bikes and cars are rare. More common are bike-bike accidents and bikes running into fixed objects such as parked cars or debris piles. The majority of bike-car accidents occur at intersections, not mid-block. It is recommended that the City work with the waste disposal program to provide residents with yard waste containers and eliminate the placing of unconfined yard waste in the streets for disposal. Yolo-Solano Air Quality Management District (AQMD) supports *an alternative to the placement of yard waste in the streets since yard waste and other debris in many cases is placed in bike lanes and on street shoulders which can be a hazard to cyclists.*

GOALS AND POLICIES

The City of Woodland is committed to providing an alternative transportation atmosphere with the use of bikeways. The BTP is a comprehensive common sense document that will focus on installation and upgrades that will encourage the use of bikeway facilities

BIKEWAY GOALS

It is the goal of the City to implement a (BTP) which will provide a network of bikeways between residential areas, employment centers, schools, recreational facilities, and commercial businesses; to provide safe convenient travel for cyclists; to reduce air and noise pollution, traffic and parking congestion, and excess energy consumption caused from automobiles; and to promote the physical fitness and recreational benefits of bicycling.

BIKEWAY POLICIES

To accomplish this goal, the following policies have been developed:

1. Eliminate physical bicycling obstacles to provide a safer environment for bicycle transportation.

2. Encourage adequate, convenient and secure bicycle parking at employment centers, schools, recreational facilities, transit terminals, commercial businesses, the downtown core area and other locations where people congregate. Encourage bicycle rest facilities, including but not limited to restrooms, drinking water, public telephones and air for bicycle tires.

3. Integrate public transportation systems with bicycling (i.e.: bike racks on buses).

4. Encourage bicycle safety education to children and adults.

5. Maintain consistency with the routing and geometrics of Yolo County's Bicycle Transportation Plan, and recommendations of July 2001 Davis Woodland Bikeway Feasibility Study Report..

6. Develop bicycle facilities with maximum citizen and community involvement in planning and maximum flexibility and coordination with long-range transportation planning.

7. Designate commuter bicycle routes as higher priorities than recreational routes. Designate Class II bikeways as the preferred facility in areas of developed roadways.

8. Require residential, commercial and industrial developments to include bicycle facilities in accordance with this plan. Consider the needs of cyclists when new roadways are constructed and existing roadways are upgraded. Construct and delineate bikeways in conformance with the current City standards.

9. Promote the development of a comprehensive and safe system of recreational and commuter bicycle routes that provide connections between the city's major employment and housing areas, between its existing and planned bikeways, and between schools and parks and residential neighborhoods.

10. Promote use of bicycles as a viable and attractive alternative to cars.

11. Promote bicycle travel through appropriate facilities, programs, and information.

12. Pursue alternative sources of funding for the development and improvement of bikeways.

13. Require recreational, residential, commercial and industrial developments to include on-site bicycle facilities in accordance with this BTP.

14. Encourage employers to provide benefits/bonuses to commuter cyclists. Support voluntary efforts by employers to promote employee bicycle commuting.

15. Work to expand and increase the efficiency of the bicycle-licensing program.

16. Utilize grant monies, license fees, and fines, along with capital improvement monies to help fund the development and installation of bikeways and bicycle parking facilities.

17. Require new development to provide sufficient right-of-way widths to accommodate bikeways on new collector and arterial streets, as identified in this Bicycle Master Plan, and to install these facilities.

18. Continue to develop off-street bicycle paths for access to schools and recreation facilities in existing and future neighborhoods in the City. Consider safety and security issues in connection with development of these facilities.

19. Recommend establishing a city policy that requires future development provide or improve connections to planned regional and city routes shown in the County Bicycle Transportation Plan and the Woodland BTP, where feasible.

LAND USE

LAND USE ELEMENT

The land use element is a key component of the 1996 Woodland Area General Plan and the 2002 General Plan Update. This element deals with the present and future use of valuable land resources. It is here that other elements of the General Plan are brought together and coordinated to formulate a unified plan for the preservation and enhancement of quality of life for the present and future residents of Woodland.

The plan utilizes the road improvements built with the various project developments. The Transportation and Circulation element of the 1996 City of Woodland General Plan and the 2002 General Plan Update addresses the movement of people and goods within various planning areas. Chapter 1 of the City of Woodland General Plan illustrates the various land uses. The Land Use Planning Areas diagrams (Appendix C) designate land uses for Woodland and the surrounding area. Figure 1-1 shows the boundaries for the Woodland General Plan Area Land Use, including the areas designated for agricultural uses. Figure 1-2 illustrates the Land Use Diagram of adjacent areas west of Woodland. Figure 1-3 is the Planning Area and Urban Limit Line diagram, and Figure 1-4 is the Planning Area Land Use Diagram, which illustrates land use within the City of Woodland. Bikeways will be interconnected with project development and utilized by the proposed bikeway network as noted in the BTP (refer to the Master Plan Maps, Appendix E).

The BTP provides a substantial bikeway network, which will interconnect residential, commercial and industrial uses within the City.

IMPLEMENTATION

BICYCLE HAZARD REDUCTION AND ELIMINATION

Elimination and reduction of bicycle hazards is an integral part of the BTP and receives the highest priority for implementation. Therefore, it is highly recommended to eliminate known hazards to increase the safety for cyclists and reduce the potential liability exposure of the City.

As part of the 1997-2001 Bikeway Upgrades and Installations Projects, there were 77 existing storm drainage grates replaced with bicycle proof grates.

A field review has been performed to identify remaining bicycle hazards in both existing and proposed bikeways. Listed below are the results of the review in which bicycle hazards remain:

Storm Drainage Grates

From field data gathered by the Public Works Department, there are 55 storm drain grates, down from 132 in 1997, within the bikeway system that need to be modified. No grated storm drains remain on existing bikeways and the remaining 55 storm drain grates on proposed bikeways need to be modified to prevent bicycle tires from dropping in between the slots of the grates. The existing grates can either be replaced with bicycle safe grates, have inserts installed on them, or bars welded to them. The disadvantages of having either inserts installed or bars welded to the existing grates is regular on-going maintenance and replacement costs due to being damaged or removed by street cleaning equipment and/or other vehicles. Also, the inserts are susceptible to theft since they do not have theft-proof bolts. Replacing existing grates with bicycle safe grates eliminates these problems. Although the initial cost of installing new bicycle safe grates is higher than installing inserts or welding bars to the existing grates, the overall long term maintenance costs will be less.

Bicycle proof grates create a cleaning and maintenance concern for the Public Works Division. The grates have smaller openings, allowing street debris and leaves to gather on the grates, therefore reducing the flow of storm water through the grates and into the storm system. Without continued periodic monitoring and cleaning of the grates, flooding may occur.

Storm Drainage Culverts

There are 23 covered storm drainage culverts that remain in the flowlines of curbs, 4 covered culverts are on existing bikeways and 19 on proposed bikeways, which could pose a potential hazard to cyclists. Elimination of these culverts would require either of the following:

1. Installation of a curb inlet and an underground stormdrain pipe to a nearby storm drain main.

2. Installation of a manhole and removal of the culvert from the street.

3. Installation of a valley gutter across a street.

4. Reconstruction and lowering of the intersection.

Storm Drainage Culverts at Driveways

There are some instances where a culvert has been installed across a driveway to eliminate the dip between the street and the driveway. At the time of field review, there was one culvert in the flowline of a curb across a driveway on an existing bikeway and one in a proposed bikeway. In these situations the driveway may have to be reconstructed and the street ground down to allow vehicles to exit these driveways without hitting their undercarriages on the pavement. In some cases grinding down the street may not be possible and street reconstruction may be necessary. These culverts will be eliminated as part of on going road reconstruction projects.

ROUTE CLASSIFICATION AND SELECTION

The (BTP) implementation prioritization system was developed with the safety of the overall bikeway network being paramount. The priorities for bikeway installation are based on each street's physical capacity to accommodate a bike lane, functional usage classification and number of existing bicycle hazards on the existing or proposed bikeway. This priority system was chosen because it favors routes used by commuter cyclists and would improve bicycle safety on those routes, which are the unsafe for cyclists. Also, by using this type of system, the City can compete more effectively for the state funding of bicycle programs.

The classifications of arterial, collector and local streets are used extensively throughout the United States to distinguish different traffic uses between arterial, collector, and local streets. Arterial streets have the fundamental objective of moving large volumes of traffic as safely and quickly as possible and place more emphasis on high-level traffic service than on land access. Collector streets have the primary purpose of collecting traffic from residential and/or commercial areas and moving it to or from arterial streets. Local streets are all streets not classified as either arterial or collector and can be in either residential, business or industrial areas. The main function of local streets is to provide direct access between abutting land and the other street systems. Commuters prefer using arterial and collector streets to move from one destination to another because these streets most often connect desired locations in a direct manner. Commuters do not prefer local streets because they often discourage through traffic by not offering direct routes to desired locations. The classification of arterial and collector streets for the Woodland Urban Area is based on a proposed Functional Usage Map currently under review by CALTRANS, and the Sacramento Area Council of Governments and Yolo County.

The main reason for using a priority system based on street classifications is to increase the safety of the overall bikeway system. Most local streets included in the BTP are located within residential areas which tend to have a low amount of traffic and do not typically have the street width to accommodate a Class II bikeway (painted bike lane). Local streets alone cannot serve all of the needs of a cyclist due to the limited types of land uses they serve and the lack of direct routes to desired locations. Due to the low traffic, these streets are most likely the safest for cyclists to use and the addition of bike lanes would not make a significant impact on the overall safety of the network.

About one-half the arterial and collector streets collectively included in the BTP have the street width to accommodate a Class II bikeway (bike lane) and would not require street widening for installation. These streets serve a variety of land uses, provide direct routes to desired locations and have a higher amount of traffic than local streets. The other half of the collector and arterial streets can not accommodate Class II bikeway striping due to the allowance of on street parking. This would not allow the necessary width for both on street parking, bikeway striping and the necessary width for a travel lane. Installing Class II bikeways on arterial and collector streets would designate separate travel lanes for vehicular and bicycle traffic. This separation increases the cyclists confidence about sharing the roadway with motorists, and decreases the motorist's anxiety about sharing a roadway with cyclists. With bike lanes on these streets, a cyclist knows to remain within

the bike lane to avoid vehicles, and the motorist knows to remain out of the bike lane to avoid bicycles. On streets such as arterial and collectors with high traffic volumes, bike lanes greatly increase the cyclist's safety and thus the safety of the overall bikeway system.

Public Works engineering staff established a grouping system for bikeway installations that addresses bikeways on existing streets, proposed bikeways on arterial, collector, and local streets, the installation of bike paths, and bikeways installed with future streets to provide the greatest safety impact for the cyclist as follows (see Appendix B).

Group 1	Programmed Work
Group 2	Signing and Striping Only
Group 3	Major Work
Group 4	Future Bikeways for the exclusive use of Pedestrians and Bicyclists
Group 5	Spring Lake Specific Area
Group 6	Bikeways to Urban Limit Lines
Group 7	North West Area

The prioritization of the groups, with the exception of future bikeways, was based on future roadwork as outlined in the City of Woodland's Multi-Year Pavement Plan and the amount of work necessary to complete each segment.

It is the strong desire of the City to best serve the citizens of Woodland by providing a safe and efficient citywide bikeway system. It is always best to keep up on opportunities of application for federal aid funding for bikeway system upgrades and expansion.

As the City expands in size and the bicycling population increases, a system which monitors this alternative mode of transportation bicycling should be started to track the needs and demands of the cyclist and the pedestrian pathways. A Citywide bikeway system could foster expanded bicycle use, creating an improved air quality in the area. With the planning of any future street projects, bikeway routes will be required to be installed. If a street project is to be installed and a bikeway system is part of the design per the BTP, the bikeway will be installed as part of that street project regardless of the installation priority designation noted in the BTP.

PROHIBIT ON-STREET PARKING

Bike lanes provide a significant benefit to safe and efficient bicycle circulation. Conflicts between bikes and autos are dramatically reduced when on-street bike lanes are installed. Having separate identifiable areas on the street for bikes and autos places the travelers in predictable locations.

When prohibiting on-street parking to accommodate a Class II bikeway, various issues must be considered. As a minimum these include the street width distance from face of curb to face of curb and the current use of the adjacent property.

Bikelane striping is generally installed on collector and arterial roadways that serve residential, commercial, and industrial areas. If on-street parking is prohibited "No Parking any Time" signs will be installed.

To meet City Code, for Class II bikeways only, on street parking could be eliminated when the street cross section is narrower than required by the Highway Design Manual. This has been identified at:

E. Beamer Street - County Road 102 to east City limits.

UPGRADE EXISTING & INSTALLING NEW BICYCLE FACILITIES

The Public Works Department compared the existing and proposed routes with the bikeway standards and established bikeway classifications for each route. The classifications were based on the bikeway category as described in the "Classification" section of this BTP. Based on these comparisons, the following significant changes have been made:

A. Pioneer Avenue, from Gibson Road to East Main Street, has been redesignated as a Class III Route
B. Gibson Road, between California Street to West Street is now a Class III Route.

In many cases, the costs and sacrifices associated with physically widening a street or prohibiting on-street parking in front of existing residences and/or businesses to accommodate a Class II bikeway would be impractical when a Class III bikeway, using the existing street width and parking arrangement, will provide an adequate link within the proposed City-wide bikeway network.

The City is in the preliminary phases of locating the footprint for a bicycle overcrossing over Gibson Road connecting the South East Area with the Spring Lake Area in the vicinity of Woodland Community College and Pioneer High School. The proposed overcrossing will connect the bicycle paths from the regional park south of Woodland to Kleinhard Park and could become a part of the regional bicycling network.

All new proposed bikeways will be installed as per the City of Woodland and CALTRANS standards where possible. Before any actual bikeway construction/installation occurs, preliminary bikeway design plans will be forwarded to CALTRANS for review of bicycle movements across freeway overcrossings and on/off ramps.

Bicycle detectors at signalized intersections should be considered for Class I Bikeways and high bicycle demand corridors. It is recommended that a Type D Quadruple detector loop be used if traffic conditions warrant such an installation. Locations and cost estimates for installing warranted bicycle detection facilities will be identified and determined with each future signal upgrade project.

BIKEWAYS IN URBAN LIMIT AREAS

The City's roadway network is designed to meet year 2020 development levels based on the land uses shown on the Land Use Diagram (figure 1-2). The BTP seeks to maintain satisfactory bikeways while accommodating future growth as outlined in the City's General Plan.

New roadways required to serve new development include a minor arterial north of and parallel to Kentucky Avenue and a new principal arterial south of Gibson Road. In addition, several arterial and collector streets would be extended from and across these roads that are in the Urban areas to the

north and the south to serve new planned residential development areas, to the east to serve the industrial areas and to the south to the proposed Davis-Woodland connection.

When property, which is currently outside the City Limits in the Urban Areas, is annexed, the City shall consider the needs of cyclists when new roadways are constructed and existing roadways are upgraded.

BIKEWAYS OUTSIDE URBAN LIMIT AREAS

In an effort to maintain continuity with the regional bikeway system and provide connections with the Davis-Woodland bike system, the City will attempt to identify a Class I corridor in the undeveloped land to the south of the current City limits so that Right-of-Way can be obtained at the time of development. This would facilitate the connection with the Davis-Woodland route that has been identified in the Davis-Woodland Bikeway Feasibility Study Report (July 2001).

SUMMARY

Within the current City limits, the BTP identifies a completed bikeway system comprised of approximately 7.2 Path Miles of Class I Bike Paths, 34 road miles of Class II Bike Lanes and 19 road miles of Class III Bike Routes.

To complete the system, within the current City limits, it is estimated that future development will install approximately 1/4 mile of Class I Bike Path's and 4.7 road miles of Class II Bike Lanes. The City proposes 6.4 path miles of Class I Bike Paths, 8.5 road miles of Class II Bike Lanes and 12.2 road miles of Class III Bike Routes.

The Project List, Appendix A labels and describes the installation of bikeways. These lists show the various bikeways broken into groups based on a proposed installation plan. Each group lists the type of bikeway facility, the proposed street and the estimated cost to install. Those pages following describe the upgrade of existing and proposed bikeway length in lineal feet and road miles, not curb miles.

The Plan shows bikeways to be installed in the Urban Limit areas. When developed, the bikeway system will be increased for all types of bikeways to include Class I Bikeways by 6.8 road miles, Class II Bikeways of 7.4 road miles, and Class III by 1 road mile.

When all bikeways are complete as identified to include the Urban Area, the City wide Bikeway system will comprise of the following:

A. Class I Bike Paths - 13 road miles
B. Class II Bike Lanes - 42.4road miles
C. Class III Bike Routes - 20 road miles

PARKING FACILITIES AND INTEGRATION WITH PUBLIC TRANSPORTATION

BICYCLE PARKING

Bicycle parking facilities at public buildings, parks, schools, retail and employment centers, commercial and industrial sites need to be safe, secure and available to encourage bicycle use. Bicycle parking facilities installed, as part of the BTP should serve commuting needs first with recreational needs served second.

The City encourages increased bicycle use by requiring all new commercial and industrial development to provide on-site bicycle parking through the development review process, and also recommends bicycle parking be provided in retail and employment centers to encourage bicycle use. Class II bicycle parking racks (racks to which a bicycle can be locked by securing both wheels and the frame with a user-supplied lock, and the rack has a shield to protect the user's lock from tampering) are recommended for short term parking at retail centers. Sheltered parking or secured bicycle lockers are recommended for long term employee parking. The City supports recreational, existing retail, commercial and industrial development in actively encouraging trip reduction to their location by providing bicycle parking facilities installed on-site. This plan has not specifically identified locations of parks, public buildings and transit terminals within the City that may need bicycle parking facilities. It is estimated an average Class II bicycle parking rack costs approximately $750.00 to $1,000.00 per location to install. Locations and cost estimates for installing bicycle-parking facilities will be identified at a later date as part of an update to the BTP.

It is also recommended that the City encourage the installation of bicycle carrying racks onto local public and private transit vehicles, as well as private area resident vehicles, to facilitate Intermodal transportation within Yolo County, and cooperate with the Yolo County Transportation District, private transit and area residents in efforts to install these racks to show their (and the City's) commitment to promoting bicycle use, improving air quality, reducing traffic congestion, increasing physical fitness and conserving energy.

Existing rest facilities can be utilized by cyclists at the various parks and public building locations throughout the City. If the need for additional rest facilities arises, it is recommended to install them at future park and public building locations. Provisions for these bicycle amenities along with shower/locker facilities should be encouraged for new development areas.

COST SUMMARY

The City has currently programmed Group 1 to be completed with those related portions of the City's Multi-Year pavement program. The City will attempt to acquire State and Federal funding for the installation of Groups 2 and 3 of the BTP and will continue examining possibilities for the installation of Group 4. State funding is limited and applications are reviewed and judged based on need, impact, and extent of improvements to be constructed. Therefore, it is recognized that the City's project may not rank high enough to obtain these funds, and possible budget constraints or the lack of funding sources may not allow the City to complete the bikeway network installation on existing streets in the near future. The funding for groups 5 through 7 will be included in future development, though the timing of installation will be dependent on the development of future growth areas.

The Project List in Appendix A indicates bikeway installation limits and various groups, followed with an estimate of installation costs for each group. Previous construction costs were used to help determine the estimates listed below:

1. **Storm Drainage Grates:** There are 45 storm drain grate hazard locations identified throughout the bikeway system. A total of 90 grates are used because most locations have 2 grates instead of 1 large grate, which would need to be modified. Estimated cost to replace existing grates with bicycle safe grates is $300.00/grate, requiring two bicycle safe grates to be installed at one location.

2. **Storm Drainage Culverts:** A total of 23 culvert quadrants will have to be removed. One quadrant represents one corner of an intersection that has a covered culvert. An accurate cost estimate for removing these culvert hazards without a detailed assessment of what work would have to be done at each location would be difficult. For the purpose of this plan, based on previous construction figures, an estimate for one quadrant will consist of sidewalk, curb & gutter, culvert removal and/or abandonment including handicap ramp reconstruction to be $11,000 per quadrant.

3. **Class I Bike Path:** A bike path will vary in width depending on need. The estimated costs used to install a bike path only to include finish surface and base material are as follows: 8-foot path is $18.00 per lineal foot; 10-foot path is $23.00 per lineal foot; 12-foot bike path is $27.00 per lineal foot, these costs do not include: fencing, shoulders, lighting, right-of-way, etc. The estimated cost for this type of bikeway may be higher when installation is planned along an existing road or right-of-way.

4. **Class II Bike Lanes:** Estimated cost used to install a bike lane is $6,700.00 per road mile. This estimated cost includes Bikeway legends, bikeway posts and signs with concrete footings, and 30 mil x 6" thermoplastic striping. Minimum estimated installation cost for bikeways less than 1/2 mile is $500.

5. **Class III Bike Routes:** Estimated costs used to install a bike route are $1,000.00 per road mile. The estimate cost includes installation of posts, signs and concrete footings. Minimum estimated installation cost for bikeways less than 1/2 mile is $400.

The following is a summary of costs mentioned in the text and detailed in Appendix A and associated Groups 1-6:

Group 1	Programmed Work	$153,890
Group 2	Signing and Striping Only	$30,250
Group 3	Major Work	$184,250
Group 4	Future Bikeways for the exclusive use of Pedestrians and Bicyclists	$4,814,700
Group 5	Spring Lake Specific Area	$1,081,058
Group 6	Bikeways to Urban Limit Lines	$14,366
Group 7	North West Area	$33,902
	Sub Total	**$6,312,416**
	Engineering 20%	$1,262,483
	Contingency 10%	631241.6
		$8,206,141

Future Bikeway Maintenance Costs

Bike Path's are in the formative stages within the Gibson Ranch development area. Currently, the existing bike path is approximately 3/4 mile long and is available for use by pedestrians and cyclists. Maintenance costs are minimal and would be limited to sign maintenance.

The current maintenance cost of the existing 24 road miles of Class II Bike Lanes within the City is approximately $8,400.00 per year. The BTP proposes to add approximately 10 road miles of Class II Bike Lanes which would cost approximately $11,900.00 additional per year to maintain.

Due to new regulations effective January 1, 1996, the United States Environmental Protection Agency (EPA) has recommended that no solvent-based paints should be used for road marking materials. Prompted by the EPA regulations, the Highway Administration (FHWA) has provided timetables for complying with a new, lower Volatile Organic Compound (VOC) requirements. Sprayable thermoplastic 30-mil (.030 inch/. 76 mm thick) traffic stripes for bikeway lines is a viable alternative versus paint stripes. Thermoplastic sprayable striping for bikeways will provide a durable stripe that will be maintenance free for 2 - 5 years depending on traffic volume. The life cycle costs for thin-mil thermoplastic jobs are highly comparable, if not equal, to those of paints, as paint striping requires annual re-striping.

Maintenance costs for Class III Bike Routes will be less than Class II Bike Lanes because maintenance is reduced to involve replacement of bike route signs when damaged, stolen or worn. Bike route traffic signs may last approximately 7 years on the average and may cost approximately $500.00 per road mile to maintain. The BTP proposes to add 12 road miles of Class III Bike Routes to the existing 7 road miles of Class III Bike Routes for a total of 19 curb miles of Class III Bike Routes. Therefore, the annual cost of bike route maintenance could be approximately $9,500.00 beginning in 7 years. However, this figure may actually be less because only the signs would typically be replaced every 7 years, while the post or streetlight on which they are originally mounted would not be replaced unless they were damaged.

In summary, the maintenance cost of re-striping all Class II bikeways proposed by the BTP could cost $11,900.00 per year, and the maintenance cost of resigning all Class III bikeways proposed by the BTP would cost $1,500.00 per year beginning approximately 7 years after initial sign installation.

Potential Funding Sources

Potential funding sources for bikeway installations and maintenance are:

1. Yolo-Solano Air Quality District Clean Air Funds program is a potential source of local matching funds for the construction and improvement of bicycle facilities.

2. Local funding to install and maintain bikeways could be available through Operation & Maintenance and Capital Improvement funding.
   Redevelopment funds may be available to assist in projects where revitalization is planned to improve specific locations within the City.

3. State funding to install bikeways could be available through Fuel Tax and Transportation Development Act funds, the Bicycle Transportation Account, Air Quality funds and through Intermodal Facilities (Park & Ride lots, bicycle storage lockers).

4. State administered Federal funding could be available through the Intermodel Surface Transportation Enhancement Activities (ISTEA) such as the Transportation Enhancement Activities (TEA), Congestion Mitigation Air Quality (CMAQ) and Surface Transportation Program (STP).

   Through the State's Bicycle Transportation Account (BTA), there is $7.2 million/year available statewide for cities and counties to compete for funding bikeway capital improvement projects (CIP's). Local agencies are required by CALTRANS to have a current approved bikeway transportation plan that is not greater than 2 years old as a prerequisite for bikeway project funding consideration through the BTA program. A local agency is eligible for a maximum of $1.8 million per year for bicycle projects that meet BTA criteria and must match 10% of the project cost from sources other than BTA. The City will be applying for bikeway project funding through this program.

APPENDICES

APPENDIX A
PROJECT LISTS

In order to provide a safe Citywide bikeway system, the existing bikeways must be upgraded to current bikeway standards. Group 1 listed below has been programmed to be completed with pavement projects outlined in the City's Multi-Year Pavement Program.

GROUP 1
Programmed Work

Planned 2002		
Sixth Street	Main St. to Court St.	$440
Court Street	Sixth St. to East St.	$550
		$990
Planned for 2003		
Palm Avenue	Court St. to Woodland Ave.	$1,760
Sutter Street	Beamer St. to Woodland Ave.	$440
Woodland Avenue	Sutter St. to College St.	$1,430
Woodland Avenue	College St. to County Road 98	$14,740
College Street	at Woodland Ave.	$990
Cross Street	West St. to Second St.	$88,770
		$108,130
Planned for 2004		
Fourth Street	Marshall Ave. to Gum Ave.	$440
		$440
Planned 2005		
Walnut Street	Kentucky Ave. to Beamer St.	$7,700
		$7,700
Planned 2006		
Thomas Street	E. Main St. to E. Gum Ave.	$5,170
Harter Avenue	E. Kentucky Ave. to E. Beamer St.	$4,400
E. Oak Avenue	East St. to Thomas St.	$12,100
E. Oak Avenue	Thomas St. to Matmor Rd.	$2,860
		$24,530

Planned 2007 +

California Street	Greenwood Dr. to Gibson Rd.	$660
Court Street	Ashley Ave. to Sonoma Way	$770
Churchill Downs Avenue	Pioneer Ave. to East St.	$9,350
		$10,780

Lemen Ave Realignment

North Street	Fifth St. to Fifth St.	$440
Lemen Street	East St. to Matmor Rd.	$880
		$1,320

GROUP 2

Dependent on funding availability:

Signing and Striping Only

Ashley Avenue	El Dorado Dr. to south City Limits	$1,540
Bartlett Avenue	McKinley Ave. to Second St.	$660
E. Beamer Street	County Road 102 to east City limits	$2,970
California Street	W. Cross St. to Greenwood Dr.	$5,610
California Street	W. Beamer St. to W. Court St.	$5,280
Cannery Road	Matmor Rd. to Industrial Way	$440
Cottonwood Street	Del Oro St. to south City limits	$550
Fifth Street	Beamer St. to North St.	$990
Fifth Street	North St. to Court St.	$440
Granada Drive	Coloma Way to College St.	$880
Industrial Way	Main St. to Cannery Rd	$440
Matmor Road	Lemen St. to E. Beamer St.	$660
Matmor Road	Tyler Dr. to south City limits	$550
McKinley Avenue	Southwood Dr. to Bartlett Ave	$440
Sixth Street	El Dorado Dr. to south City Limits	$1,540
Sixth Street	Gum Ave. to Gibson Rd.	$440
Southwood Drive	Ashley Ave. to Cottonwood St.	$2,640
W. Lincoln Avenue	County Road 98 to Cottonwood St	$3,740
W. Lincoln Avenue	Cottonwood St. to California St.	$440
		$30,250

GROUP 3

Major work to be completed, with future capital projects.

Major Work

Armfield Avenue	East St. to E. Main St.	$1,980
California Street	W. Court St. to W. Cross	$5,060
Clover Street	California St. to Third St.	$24,420
Coloma Way	El Dorado Dr. to Granada Dr.	$2,310
Fifth Street	Main St. to Gum Ave.	$22,660
Gum Avenue	Fourth St. to East St.	$880
Mariposa Street	W. Beamer St. to W. Kentucky Ave.	$8,030
Marshall Avenue	College St. to Fourth St.	$23,210
Second Street	Granada Dr. to Lincoln Ave.	$24,090
Southwood Drive	Cottonwood St. to McKinley Ave.	$2,640
Walnut Street	Beamer St. to Cross St.	$68,970
		$184,250

Listed below are limits of proposed Bike Paths that provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians with vehicular cross flow minimized.

GROUP 4

Future facilities for the exclusive use of bicycles and pedestrians if or when the property is dedicated by the local railroad companies:

Future Bike Paths for the exclusive use of Pedestrians and Bicyclists

East Street	South City Limits to Dubach Park	$280,500
Main Street	East Street to Pioneer Avenue	$134,200
Gibson Road	Overcrossing between Pioneer & Ogden	$2,200,000
County Road 102	Overcrossing to Regional Park	$2,200,000
		$4,814,700

Future Growth will require development of new roadways, widening and improvements of existing roadways. The City shall plan, design, and regulate the development of the City's streets in accordance with the functional classification system described is this Master Plan and as described in the City's General Plan. Listed below are proposed and future roads with limits of proposed Class I, Class II, and Class III bikeways that will be included in the development of roadway areas that are currently in the Urban Limit areas.

FUTURE BIKEWAYS

Bikeway's in Urban Areas:

GROUP 5

Spring Lake Specific Area

County Road 24C	College Street to County Road 102	$395,010
Matmor Road	South City Limits to the extension east of County Road 24C	$2,948
Pioneer Avenue / County Road 101	Gibson Road to County Road 25A	$255,420
County Road 25A	SR 113 overcrossing to County Road 101	$68,310
East Street	South City Limits to the Urban Limit line	$118,800
County Road 102	South City Limits to the Urban Limit line	$240,570
		$1,081,058

GROUP 6

Bikeways to Urban Limit Lines

E. Kentucky Avenue	East City Limits to County Road 102	$3,685
E. Beamer Street	County Road 102 to east City limits	$6,633
County Road 102	E. Beamer Street to the north Urban Limit line	$1,100
E. Main Street	E. City Limits to the east Urban Limit line	$2,948
		$14,366

GROUP 7

North West Area

Road X	County Road 98 to West Street	$7,370
Road Y	N. Ashley Avenue to the extension of N. College Street	$9,581
N. Cottonwood Street	Kentucky Avenue to Road X	$3,685
Mariposa Street	Kentucky Avenue to Road Y	$2,211
N. College Street	Kentucky Avenue to Road Y	$2,211
N. Ashley Avenue	N. City Limits to the north Urban Limit line	$2,948
N. West Street	Kentucky Avenue to the N. Urban Limit line	$5,896
		$33,902

PROGRAMMED WORK 2002-2007

Currently in the Multi-Year Pavement Program

	Street	From To	Type	miles	feet	Grate Hazards	Culvert Hazards	Street Type	Cost
	Planned 2002								
1	Sixth Street	Main St. to Court St.	III	0.08	430	0	0	L	$440
2	Court Street	Sixth St. to East St.	II	0.07	365	0	0	A	$550
				0.15	**795**	**0**	**0**		**$990**
	Planned for 2003								
1	Palm Avenue	Court St. to Woodland Ave.	III	0.66	3,508	0	0	L	$1,760
2	Sutter Street	Beamer St. to Woodland Ave.	III	0.25	1,307	0	0	L	$440
3	Woodland Avenue	Sutter St. to College St.	III	0.40	2,137	0	0	L	$1,430
4	Woodland Avenue	College St. to County Road 98	II	1.50	7,899	2	0	L	$14,740
5	College Street	at Woodland Ave.	II	0.00	0	3	0	C	$990
6	Cross Street	West St. to Second St.	III	0.65	3,451	0	8	C	$88,770
				3.47	**18,302**	**5**	**8**		**$108,130**
	Planned for 2004								
1	Fourth Street	Marshall Ave. to Gum Ave.	II	0.03	174	0	0	L	$440
				0.03	**174**	**0**	**0**		**$440**
	Planned 2005								
1	Walnut Street	Kentucky Ave. to Beamer St.	II	0.50	2,625	3	0	L	$7,700
				0.50	**2,625**	**3**	**0**		**$7,700**
	Planned 2006								
1	Thomas Street	E. Main St. to E. Gum Ave.	II	0.64	3,403	0	0	L	$5,170
2	Harter Avenue	E. Kentucky Ave. to E. Beamer St.	II	0.50	2,637	0	0	L	$4,400
3	E. Oak Avenue	East St. to Thomas St.	III	0.28	1,469	0	2	L	$12,100
4	E. Oak Avenue	Thomas St. to Matmor Rd.	II	0.22	1,161	4	0	L	$2,860
				1.64	**8,670**	**4**	**2**		**$24,530**

PROGRAMMED WORK 2002-2007 (con't)

	Street	From To	Type	miles	feet	Grate Hazards	Culvert Hazards	Street Type	Cost
	Planned 2007 +								
1	California Street	Greenwood Dr. to Gibson Rd.	III	0.29	1,551	1	0	L	$660
2	Court Street	Ashley Ave. to Sonoma Way	II	0.12	648	1	0	L	$770
3	Churchill Downs Avenue	Pioneer Ave. to East St.	II	0.99	5,231	4	0	L	$9,350
				1.41	**7,430**	**6**	**0**		**$10,780**
	Lemen Ave Realignment								
1	North Street	Fifth St. to Fifth St.	III	0.01	70	1	0	L	$440
2	Lemen Street	East St. to Matmor Rd.	III	0.50	2,615	1	0	L	$880
				0.51	**2,685**	**2**	**0**		**$1,320**

MINIMAL WORK

	Street	From To	Type	miles	feet	Grate Hazards	Culvert Hazards	Street Type	Cost
	Signing and Striping Only								
1	Ashley Avenue	El Dorado Dr. to south City Limits	II	0.22	1,140	0	0	L	$1,540
2	Bartlett Avenue	McKinley Ave. to Second St.	III	0.52	2,750	0	0	L	$660
3	E. Beamer Street	County Road 102 to east City limits	II	0.52	2,763	0	0	C	$2,970
4	California Street	W. Cross St. to Greenwood Dr.	II	0.35	1,827	0	0	L	$5,610
5	California Street	W. Beamer St. to W. Court St.	II	0.41	2,163	0	0	L	$5,280
6	Cannery Road	Matmor Rd. to Industrial Way	III	0.19	982	0	0	L	$440
7	Cottonwood Street	Del Oro St. to south City limits	II	0.03	173	0	0	L	$550
8	Fifth Street	Beamer St. to North St.	II	0.33	1,728	0	0	L	$990
9	Fifth Street	North St. to Court St.	II	0.08	420	0	0	L	$440
10	Granada Drive	Coloma Way to College St.	III	0.21	1,129	0	0	L	$880
11	Industrial Way	Main St. to Cannery Rd	III	0.24	1,256	0	0	L	$440
12	Matmor Road	Lemen St. to E. Beamer St.	III	0.30	1,572	0	0	L	$660
13	Matmor Road	Tyler Dr. to south City limits	II	0.03	141	0	0	L	$550
14	McKinley Avenue	Southwood Dr. to Bartlett Ave	III	0.02	119	0	0	L	$440
15	Sixth Street	El Dorado Dr. to south City Limits	II	0.19	1,001	0	0	L	$1,540
16	Sixth Street	Gum Ave. to Gibson Rd.	II	0.38	2,024	0	0	L	$440
17	Southwood Drive	Ashley Ave. to Cottonwood St.	II	0.26	1,366	0	0	L	$2,640
18	W. Lincoln Avenue	County Road 98 to Cottonwood St	II	0.50	2,638	0	0	L	$3,740
19	W. Lincoln Avenue	Cottonwood St. to California St.	III	0.26	1,395	0	0	L	$440
				5.04	**26,587**	**0**	**0**		**$30,250**

MAJOR WORK

	Street	From To	Type	miles	feet	Grate Hazards	Culvert Hazards	Street Type	Cost
	Major Work								
1	Armfield Avenue	East St. to E. Main St.	III	0.27	1,405	1	0	L	$1,980
2	California Street	W. Court St. to W. Cross	II	0.45	2,370	4	0	C	$5,060
3	Clover Street	California St. to Third St.	III	0.97	5,122	4	2	L	$24,420
4	Coloma Way	El Dorado Dr. to Granada Dr.	II	0.57	3,029	4	0	L	$2,310
5	Fifth Street	Main St. to Gum Ave.	II	0.62	3,266	0	2	L	$22,660
6	Gum Avenue	Fourth St. to East St.	III	0.21	1,087	2	0	L	$880
7	Mariposa Street	W. Beamer St. to W. Kentucky Ave.	III	0.51	2,675	12	0	L	$8,030
8	Marshall Avenue	College St. to Fourth St.	III	0.28	1,475	2	2	L	$23,210
9	Second Street	Granada Dr. to Lincoln Ave.	III	0.68	3,599	2	2	L	$24,090
10	Southwood Drive	Cottonwood St. to McKinley Ave.	III	0.63	3,347	3	0	L	$2,640
11	Walnut Street	Beamer St. to Cross St.	II	0.87	4,602	1	5	L	$68,970
				6.06	**31,977**	**35**	**13**		**$184,250**

FUTURE BIKEWAYS
For Exclusive Use of Bicyclists and Pedestrians

	Street	From To	Type	miles	feet	Grate Hazards	Culvert Hazards	Street Type	Cost
	Future Bikeways for the exclusive use of Pedestrians and Bicyclists								
1	East Street	South City Limits to Dubach Park	I	3.40	17,952	0	0	A	$280,500
2	Main Street	East Street to Pioneer Avenue	I	1.00	5,280	0	0	A	$134,200
3	Gibson Road	Overcrossing between Pioneer & Ogden	I	N/A	N/A	0	0	A	$2,200,000
4	County Road 102	Overcrossing to Regional Park	I	N/A	N/A	0	0	A	$2,200,000
				4.40	**23,232**	**0**	**0**		**$4,814,700**

FUTURE BIKEWAYS
In Urban Areas

	Street	From To	Type	miles	feet	Grate Hazards	Culvert Hazards	Street Type	Cost
	Spring Lake Specific Area								
1	County Road 24C	College Street to County Road 102	I	2.52	13,300				$395,010
2	Matmor Road	South City Limits to the extension east of County Road 24C	II	0.40	2,100				$2,948
3	Pioneer Avenue / County Road 101	Gibson Road to County Road 25A	I	1.63	8,600				$255,420
4	County Road 25A	SR 113 overcrossing to County Road 101	I	0.44	2,300				$68,310
5	East Street	South City Limits to the Urban Limit line	I	0.76	4,000				$118,800
6	County Road 102	South City Limits to the Urban Limit line	I	1.53	8,100				$240,570
				7.27	**38,400**	**0**	**0**		**$1,081,058**
	Bikeways to Urban Limit Lines								
1	E. Kentucky Avenue	East City Limits to County Road 102	II	0.47	2,500				$3,685
2	E. Beamer Street	County Road 102 to east City limits	II	0.95	5,000				$6,633
3	County Road 102	E. Beamer Street to the north Urban Limit line	III	1.00	5,300				$1,100
4	E. Main Street	E. City Limits to the east Urban Limit line	II	0.36	1,900				$2,948
				2.78	**14,700**	**0**	**0**		**$14,366**

FUTURE BIKEWAYS
In Urban Areas (con't)

	Street	From To	Type	miles	feet	Grate Hazards	Culvert Hazards	Street Type	Cost
	North West Area								
1	Road X	County Road 98 to West Street	II	1.00	5,280				$7,370
2	Road Y	N. Ashley Avenue to the extension of N. College Street	II	1.30	6,864				$9,581
3	N. Cottonwood Street	Kentucky Avenue to Road X	II	0.50	2,640				$3,685
4	Mariposa Street	Kentucky Avenue to Road Y	II	0.30	1,584				$2,211
5	N. College Street	Kentucky Avenue to Road Y	II	0.30	1,584				$2,211
6	N. Ashley Avenue	N. City Limits to the north Urban Limit line	II	0.38	2,000				$2,948
7	N. West Street	Kentucky Avenue to the N. Urban Limit line	II	0.81	4,300				$5,896
				4.59	**24,252**				**$33,902**
		TOTALS		**37.85**	**199,829**	**55**	**23**		**6,312,416**

APPENDIX B

BIKEWAY DESIGN DIAGRAMS, SECTIONS & DETAILS

Exhibit A

Two-way Bike Path on Separate Right of Way

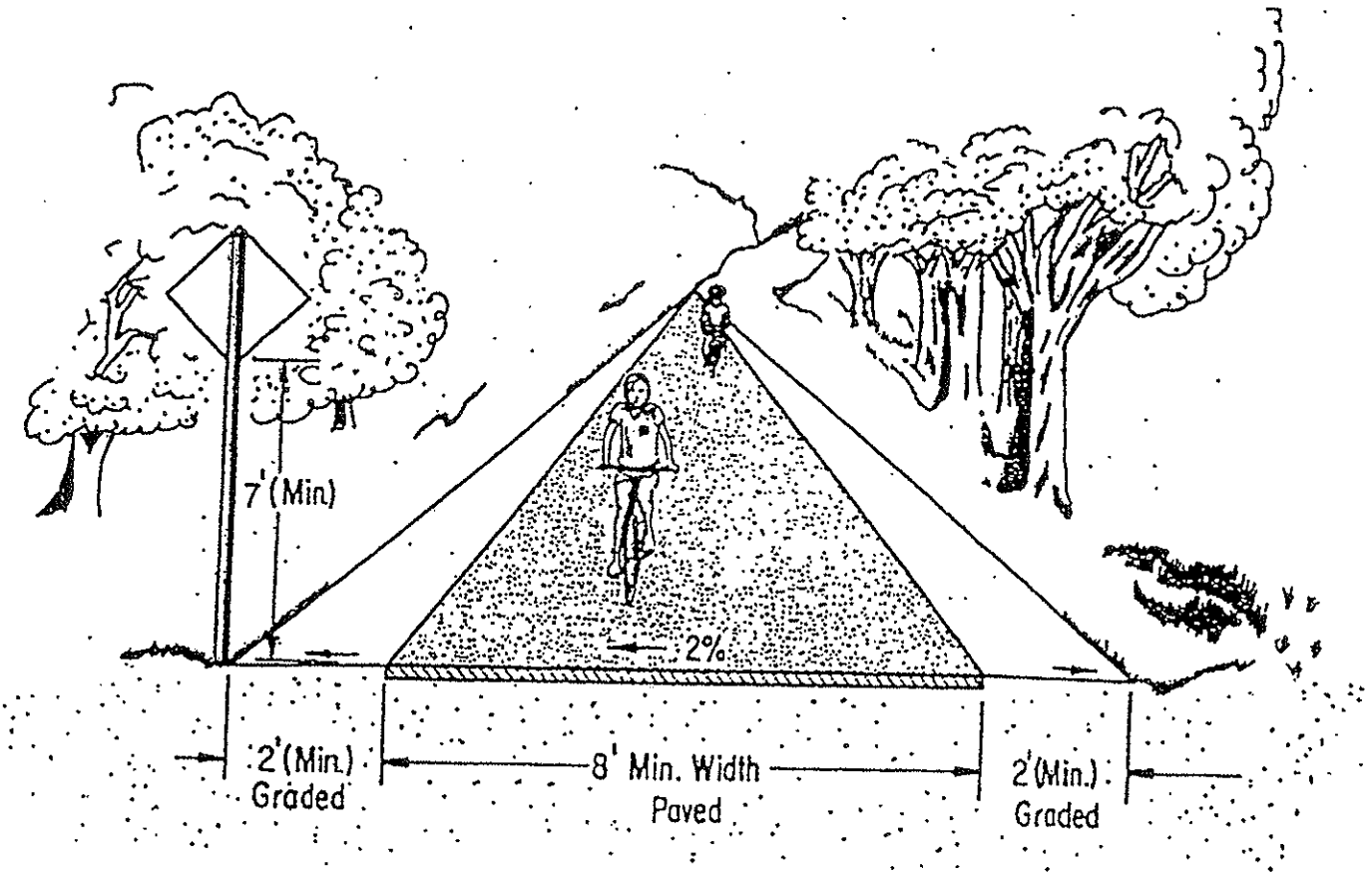
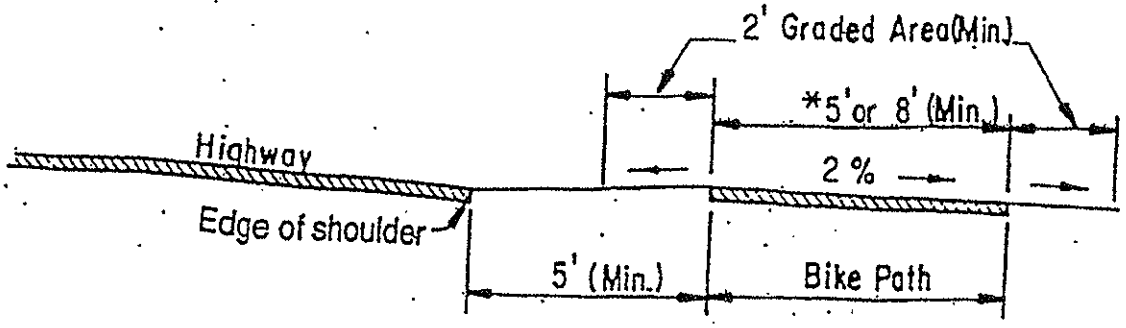


Figure 1003.1B

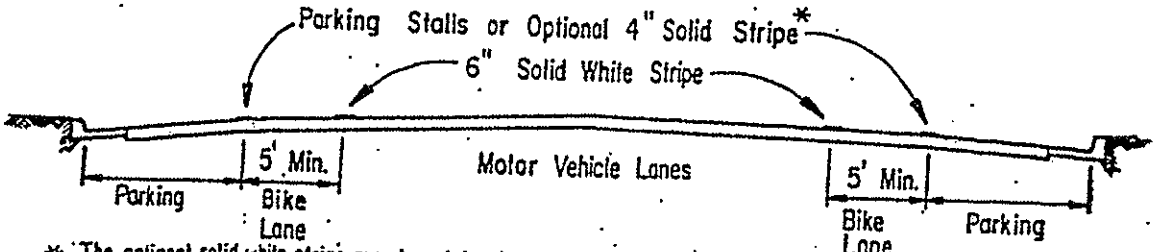
Typical Cross Section of Bike Path Along Highway



*One-Way: 5' Minimum Width
Two-Way: 8' Minimum Width

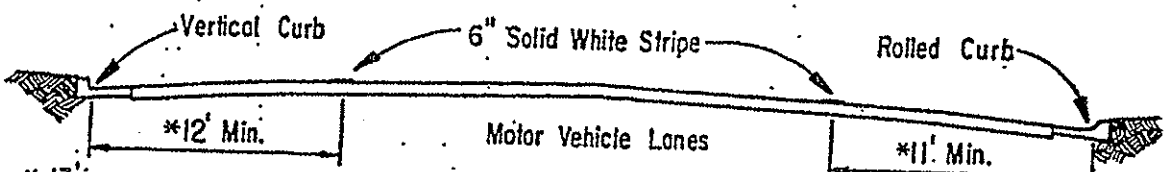
Exhibit B

Typical Bike Lane Cross Sections (On 2-lane or Multilane Highways)



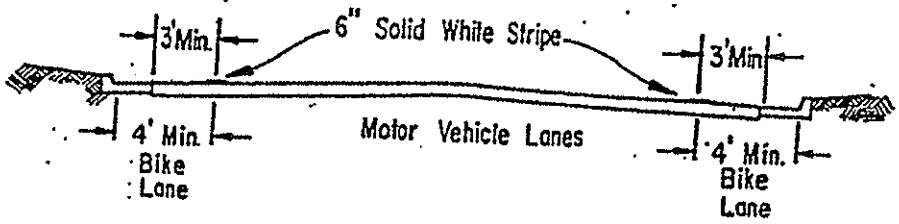
* The optional solid white stripe may be advisable where stalls are unnecessary (because parking is light) but there is concern that motorists may misconstrue the bike lane to be a traffic lane.

(1) STRIPED PARKING

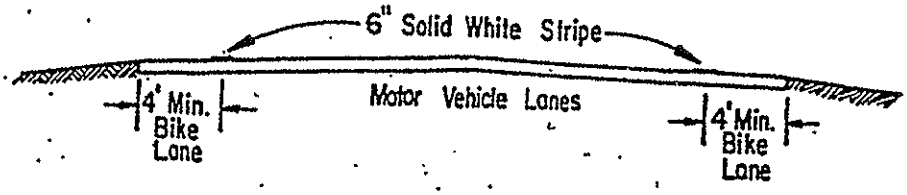


* 13' is recommended where there is substantial parking or turnover of parked cars is high (e.g. commercial areas).

(2) PARKING PERMITTED WITHOUT PARKING STRIPE OR STALL



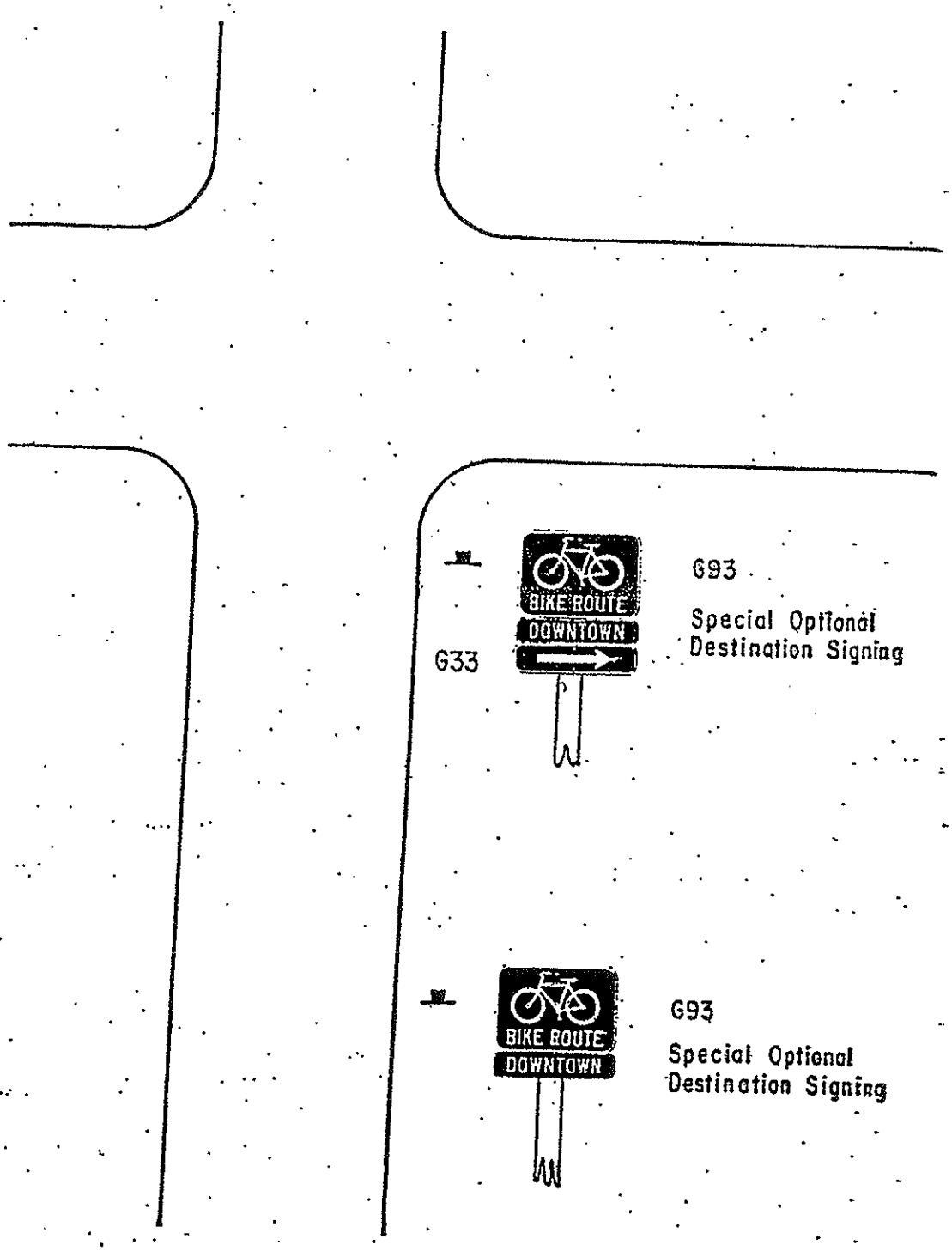
(3) PARKING PROHIBITED



(4) TYPICAL ROADWAY IN OUTLYING AREAS PARKING RESTRICTED

Exhibit C

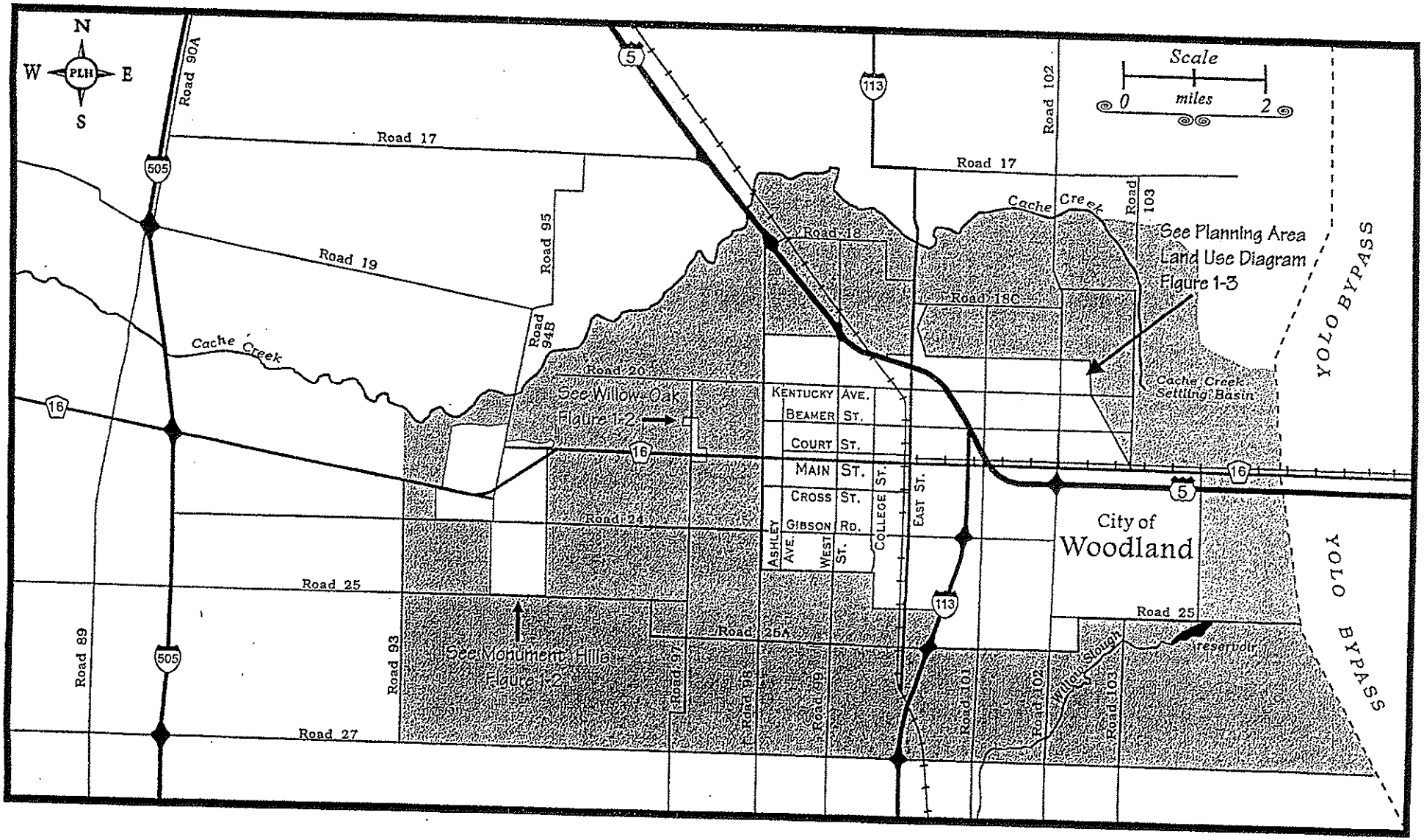
Bike Route Signing



NOTE: The G93 Bike Route signs shall be placed at all points where the route changes direction and periodically as necessary.

APPENDIX C

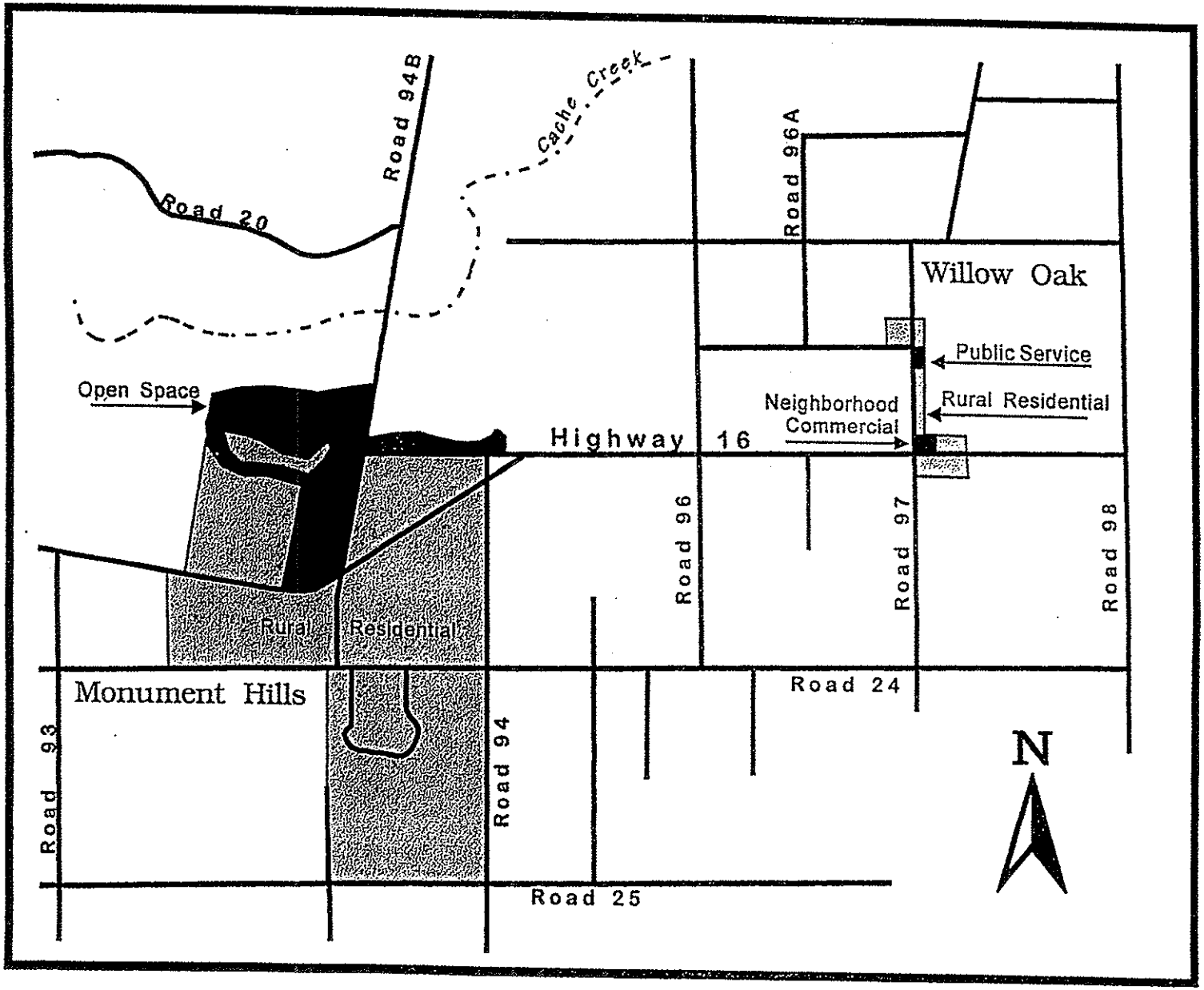
LAND USE PLANNING AREAS



Woodland General Plan Area Land Use Diagram

Figure 1-1

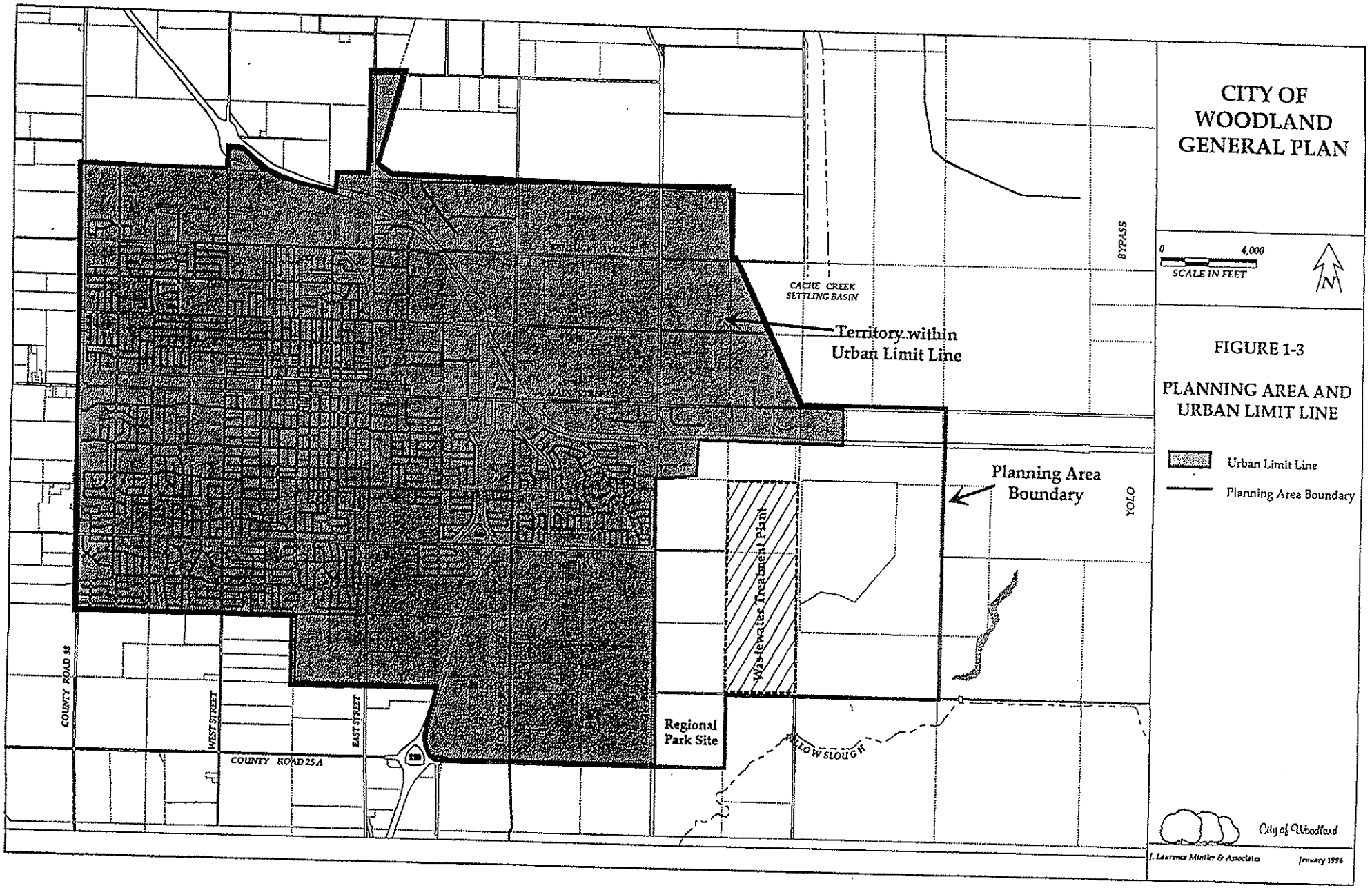
- Agriculture



Land Use Diagram

Willow Oak & Monument Hills

Figure 1-2


CITY OF WOODLAND GENERAL PLAN
0
4,000
SCALE IN FEET
N
FIGURE 1-3
PLANNING AREA AND URBAN LIMIT LINE
Urban Limit Line
Planning Area Boundary
Territory within Urban Limit Line
Planning Area Boundary
CACHE CREEK SETTLING BASIN
BYPASS
YOLO
Wastewater Treatment Plant
Regional Park Site
WILLOW SLOUGH
COUNTY ROAD 98
WEST STREET
EAST STREET
COUNTY ROAD 25A
City of Woodland
J. Laurence Mintier & Associates
January 1996

CITY OF WOODLAND GENERAL PLAN

0 4,000
SCALE IN FEET

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FIGURE 1-4
PLANNING AREA LAND USE DIAGRAM

RESIDENTIAL

- RR Rural Residential
- VLDR Very Low Density Residential
- LDR Low Density Residential
- MLDR Medium Low Density Residential
- NP Neighborhood Preservation
- MDR Medium Density Residential
- PN Planned Neighborhood

COMMERCIAL

- NC Neighborhood Commercial
- CC Central Commercial
- GC General Commercial
- HC Highway Commercial
- SC Service Commercial

INDUSTRIAL

- I Industrial
- BP Business Park

OTHER

- PS Public Service
- OS Open Space
- A Agriculture
- UR Urban Reserve
- ····· URBAN LIMIT LINE
- ——— PLANNING AREA BOUNDARY

City of Woodland

J. Laurence Mintier & Associates February 1996

APPENDIX D

MASTER PLAN MAPS

BIKEWAY MASTER PLAN

1"=2500'

LINE TYPE LEGEND

- CLASS I BIKEWAY (OFF STREET)
- CLASS II BIKE LANE (ON STREET MARKED AND SIGNED)–W/ PARKING
- CLASS II BIKE LANE (ON STREET MARKED AND SIGNED)–W/O PARKING
- CLASS III BIKE ROUTE (ON STREET, SIGNED ONLY)
- YOLO COUNTY BICYCLE ROUTES
- FUTURE BIKE/PED OVERCROSSING
- WOODLAND CITY LIMITS
- WOODLAND URBAN LIMITS

COLOR LEGEND

- EXISTING BIKEWAYS
- PROPOSED NEW BIKEWAYS ON EXISTING STREETS
- FUTURE BIKEWAYS ON FUTURE STREETS

REVISED: January 2002
MAY 2002
AUGUST 2002

BIKEWAY EXISTING PLAN

1"=2500'

LINE TYPE LEGEND

- CLASS I BIKEWAY (OFF STREET)
- CLASS II BIKE LANE (ON STREET MARKED AND SIGNED)–W/ PARKING
- CLASS II BIKE LANE (ON STREET MARKED AND SIGNED)–W/O PARKING
- CLASS III BIKE ROUTE (ON STREET, SIGNED ONLY)
- YOLO COUNTY BICYCLE ROUTES
- WOODLAND CITY LIMITS
- WOODLAND URBAN LIMITS

COLOR LEGEND

- EXISTING BIKEWAYS
- PROPOSED NEW BIKEWAYS ON EXISTING STREETS
- FUTURE BIKEWAYS ON FUTURE STREETS

REVISED: January 2002
MAY 2002
AUGUST 2002

BIKEWAY FUTURE PLAN

LINE TYPE LEGEND

- CLASS I BIKEWAY (OFF STREET)
- CLASS II BIKE LANE (ON STREET MARKED AND SIGNED)–W/ PARKING
- CLASS II BIKE LANE (ON STREET MARKED AND SIGNED)–W/O PARKING
- CLASS III BIKE ROUTE (ON STREET, SIGNED ONLY)
- YOLO COUNTY BICYCLE ROUTES
- FUTURE BIKE/PED OVERCROSSING
- WOODLAND CITY LIMITS
- WOODLAND URBAN LIMITS

COLOR LEGEND

- EXISTING BIKEWAYS
- PROPOSED NEW BIKEWAYS ON EXISTING STREETS
- FUTURE BIKEWAYS ON FUTURE STREETS

1"=2500'

REVISED: January 2002
MAY 2002
AUGUST 2002

APPENDEX E

REFERENCES

1. City of Woodland Bikeway Master Plan, 1993/1997.
2. City of Woodland General Plan, 1988/2002.
3. California Department of Transportation, Highway Design Manual, Chapter 1000.
4. AASHTO Guide for the Development of Bicycle Facilities, 1999
5. Yolo County Bikeway Master Plan.
6. California Bicycle Transportation Act - Streets and Highways Code Section 890-894.2
7. Davis-Woodland Bikeway Feasibility Study, July 2001