

City of Davis Comprehensive Bicycle Plan



City of Davis
Public Works Department
and
City of Davis
Bicycle Advisory Commission

October, 2006

BICYCLE PLAN

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INTRODUCTION

PURPOSE

The purpose of this Bicycle Plan is to improve bicycle transportation in Davis. This is an update of the 2001 Draft Bikeway Plan in an effort to maintain a Bicycle Plan which is meaningful to the city and which meets the requirements contained in Section 891.2 of the California Streets and Highways Code.

SETTING

The City of Davis is located in the southern part of Yolo County, a predominantly agricultural county in California's central valley. Davis is the largest urbanized area within Yolo County.

In 1906, The University of California, Berkeley established the State Agricultural Experiment Station at Davis. The college became a general campus of the University of California System in 1959. Between 1950 and 1987, the average annual growth rate was 6.4 percent per year as the urban population grew from under 5,000 to 48,700. The 2005 in-city population of Davis is approximately 64,259. Approximately 10,000 of the 30,000 UCD students reside within the city limits and are included in the population figure.

Yolo County temperatures are generally mild in the winter and hot in the summer. October through April is the rainy season, and accounts for approximately 90% of the area's annual precipitation.

South Davis is separated from the rest of the City by Interstate Highway 80, which is the major freeway serving the area. State Route 113 connects I-80 in Davis with the City of Woodland and Interstate Highway 5 to the north.

Davis is known for bicycles, energy conservation, and a preference for slow, carefully managed growth. Its notable physical characteristics are small scale in relation to UCD, innovative neighborhood design, a traditional downtown, and an absence of large scale shopping centers.

BACKGROUND

The University has always had a significant impact on the City of Davis. Historically, the population and geographic spread of the City has been driven by University enrollment. The ratio of City population to UCD enrollment has been steady at about 2:1 over the last twenty years. There is, however, a dramatic shift in demographics now occurring within the City. As the Interstate 80 corridor continues to grow between San Francisco and Sacramento, Davis is becoming the new “suburb” or “bedroom community” to larger cities in northern California, such as Sacramento. There also appears to be a growing number of city residents that commute to the San Francisco Bay Area.

Significant use of bicycles in the vicinity of Colleges and Universities is not uncommon. Bicycles serve the transportation needs of students, faculty, and staff in this setting perhaps better than any other mode. As the university grew from about 2,200 students in 1958 to its current enrollment of approximately 30,000, the demands for adequate bicycle facilities and minimization of bicycle-motor vehicle conflicts have continued to increase. The boundary between the University Core and the City has not appreciably changed during this period of

student growth. Traffic data suggest that the bicycle is probably the dominant transportation mode for trips crossing the City-University boundary. By the mid-1960's it became apparent that the existing street network, designed and delineated only for motor vehicles, was inadequate to provide for both bicycle and motor vehicle volumes in the vicinity of the University. A plan to adequately provide for cyclists was needed.

The transportation system pressures described above were finally resolved within the system and processes of municipal government. The primary issue of the April, 1966 City Council election was the provision of bikeways for commuters on the public streets. The pro-bikeway candidates were elected. A trial system of bike lanes was quickly installed and proved immensely popular. Rapid expansion of the system followed. The City bikeway system has steadily and consistently expanded and matured to its present state. The City of Davis has attained national preeminence in bikeway planning and design through its experience and lessons learned during the evolution of the system.

CURRENT CONDITIONS

Nearly four decades after the City began to actively promote bicycling for transportation Davis was recognized as "America's Best Cycling City" by the Bicycle Federation of America in 1995. The League of American Bicyclists designated the City of Davis as a "Bicycle Friendly Community" in May, 2000 and in October, 2005 the League awarded the City of Davis "Bicycle Friendly Community" status at the Platinum level – the highest level ever awarded to a city in the U.S. Other communities were given Gold, Silver, or Bronze awards. With an area just under ten square miles, Davis has approximately 50 miles of bike lanes and 52 miles of bike paths. More than 90% of all the collectors and arterial streets within the City have bike lanes and/or bike paths.

As a result of aggressively planning for bicycle transportation, ridership within the City is quite high. Estimates from the last census (2002) indicate that approximately 17 percent of all journey-to-work trips are made by bicycle. For most cities, 2% - 3% is considered significant. Although it is recognized that the population of the City has increased, and that the demographics have changed as well, there continues to be a dedicated population of cyclists that utilize bicycles for their primary commute mode. For example, at UC Davis, where the majority of students live off campus, approximately 15,000 students ride a bike or walk as their primary mode of getting to class (48%). This is in addition to the 1,800 faculty and staff members that also walk or ride their bikes to campus (20%). Many of the university based bike commuters live in Davis, but others pedal from as far away as Sacramento or Woodland.

For the rest of Davis residents, the mode share is also quite high. There are no public school busses used by the Davis Joint Unified School District, so most of the school aged children walk or ride their bikes to school. For many of the younger children, parents that commute to work on bikes will transport them in bike trailers, and drop them off on their way to work. Out of a population of 64,000 residents, it is estimated there are over 60,000 bikes in the City of Davis.

Although a 17% mode share for bicycles is still quite high, the share has decreased from where it was 10 – 15 years ago. The 1990 census indicated that the percentage of all journey-to-work trips being made by bicycles was hovering around 20 – 25%. It is apparent that the City of Davis

must still continue to work hard, particularly by education and encouragement to increase the level of bike ridership if it is to remain “America’s Best Cycling City.”

City of Davis Bicycle Advisory Commission

In February of 2005, the Davis City Council established the Bicycle Advisory Commission to address bicycle issues related to education, enforcement, engineering and encouragement. In order to expand public participation in addressing these issues, membership of the Task Force includes representatives from the general public, the Davis Bike Club, UCD Administration, and UCD students, among others.

Bicycle Advisory Commission Members

John Berg	Chair; Member, Davis Bike Club
Jack Kenward	Vice-Chair; Alternate, Davis Bike Club
Earl Bossard	Public at Large
Ken Gaines	Public at Large
Richard Haggstrom	Public at Large
Daniel Kehew	Public at Large
Anthony Palmere	Public at Large
Julia Silvis	UC Davis Student
Lise Smidth	Public at Large
Michael Chordas	Alternate
David Takemoto-Weerts	UC Davis Administration, Ex-Officio

COUNCIL LIAISON to the BAC

Sue Greenwald, Mayor

STAFF LIAISON TO THE BAC

Timothy Bustos, Sr.,
Bicycle and Pedestrian Coordinator

The Bicycle Advisory Committee meets on the third Monday of each month at the Veteran’s Memorial Center, 203 E. 14th Street

RESOLUTION OF ADOPTION

RESOLUTION NO. _____, SERIES 2006
RESOLUTION ADOPTING THE CITY OF DAVIS
COMPREHENSIVE BICYCLE PLAN

WHEREAS, the Metropolitan Transportation Plan supports and encourages local agencies to develop comprehensive bicycle plans consistent with the regional plan; and

WHEREAS, the City of Davis Bicycle Advisory Commission (BAC) has reviewed the Davis Comprehensive Bicycle Plan and recommends its adoption; and

WHEREAS, the proposed Bicycle Plan is consistent with the City of Davis General Plan and General Plan environmental impact report, and no additional environmental review is necessary; and

WHEREAS, this Bicycle Plan is a document to guide future actions with specific projects and goals will requiring further council approvals and funding; and

WHEREAS, the Legislature of the State of California has established a Bicycle Transportation Account (BTA) to fund the construction of bikeway projects, and has required local agencies requesting funds from this account to have an adopted Bicycle Plan as a minimum requirement for eligibility.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Davis hereby approves and adopts the 2006 Comprehensive Bicycle Plan.

PASSED AND ADOPTED by the Davis City Council on this _____ day of _____ , 2006, by the following vote:

AYES:

NOES:

ABSENT:

Sue Greenwald, Mayor

ATTEST:

Margaret Roberts, City Clerk

GOALS AND OBJECTIVES

It is the goal of the city of Davis to create and maintain, through this plan, an integrated system of bicycle facilities. These facilities provide safe, convenient travel for bicyclists throughout the City. The City recognizes the need to encourage bicycle travel for both transportation and recreation. Bicycle use conserves energy, contributes to cleaner air, reduces traffic, reduces the need for automobile parking, and improves personal fitness.

The city's General Plan Update, last updated in 2001, refers to bicycles in various elements contained in the plan. Chapter IV-2, the Mobility element, contains many of the goals and policies relating to bicycle and pedestrian circulation.

GENERAL PLAN UPDATE BICYCLE POLICIES

Guiding Policies

- Assure safe and convenient bicycle access to all areas of the city.
- Promote use of bicycles as a viable and attractive alternative to cars.

Implementing Policies

- Provide bicycle lanes along all collector and arterial streets.
- Consider bicycle-operating characteristics in the design of intersections and traffic control systems.
- Develop and implement bicycle parking standards.
- Maintain an education program to promote bicycle use and safety.
- Require compliance with bikeway policies and standards for new development including bikeways within greenbelts. Ensure interconnection of new facilities with the existing bikeway system.

BICYCLE PLAN GOALS AND OBJECTIVES

The Ad Hoc Bicycle Task Force, which provided the last update to the City of Davis Comprehensive Bicycle Plan in 2001, had previously developed the following Goals and Objectives to provide greater detail than the General Plan Goals and Policies they support. These Goals and Objectives provide specific guidance to the city for further development of bicycle programs. The Bicycle Plan's guiding policy is to promote bicycle use as a viable, attractive, healthy, non-polluting form of transportation and to assure safe and convenient access to all areas of the city. The four "E's" (Education, Enforcement, Engineering and Encouragement) contribute to enhanced bicycle use.

GOAL: Maintain a comprehensive and coordinated bicycle program.

Objectives:

1. Ensure adequate funding is available to continue the bicycle program within the Public Works Department.

EDUCATION

The issues of bicycle safety cannot be fully addressed without mentioning the importance of educational programs. Much of the bicycle crash data shows that the preponderance of bike collisions involve improper actions on the part of bicyclists, motorists, or both. Therefore, crash reduction efforts need to include educational programs to increase awareness of improper motorist and cyclist actions that are known to contribute to crashes and to promote correct actions for both. The education program must include components for bicyclists as well as motorists. The city's on-going bicycle education programs have contributed greatly to the excellent bicycle safety record in Davis, as have the enforcement activities of the police department. In addition, the proposed goals and objectives developed by the Bicycle Task Force have strong components of education and safety.

Formal education programs alone will not provide all the needed education on bicycle safety. It is important that parents inform themselves of the proper safety considerations and pass these on to their children. Parents must train their children and regularly monitor their actual performance when riding a bicycle. Also, adult bicycle drivers must inform themselves of the rules and regulations for safe operation of a bicycle just as they would for safe operation of a motor vehicle.

GOAL: Enhance educational programs to teach children and adults safe bicycle driving techniques.

Objectives:

1. Support and enhance existing programs that promote safe driving techniques and make the information available through schools, work sites and general publicity efforts.
2. Expand and support a citywide helmet promotion program.
3. Investigate other safety programs (e.g. the League of American Bicyclist's "Bike Ed") that should be taught to school-aged children as well as adults.
4. Investigate development and promotion of a monthly "riding tips" clinic aimed at new riders.

GOAL: Provide literature and current bicycle route maps for public use.

Objectives:

1. On a regular basis, update the UCD/City of Davis bicycle map for public use. The map, free of charge, shall be distributed to employers, bike shops, public buildings and schools.
2. Acquire or develop literature promoting appropriate bicycle laws, safety tips, bike commuting, etc., for dissemination to the general public.

ENFORCEMENT

The city council should adopt more effective procedures for dealing with “abandoned” bicycles. There is an ordinance already in existence that allows for the removal of some abandoned bicycles that are blocking the public right-of-way, but the ordinance needs to be more comprehensive. There should also be provisions for dealing with bicycles that are abandoned at apartment complexes, bus stops and other locations where bike racks get so clogged with bikes that other cyclists cannot use them. Once adopted, these provisions should be freely distributed to business owners and apartment managers, and the general public should be thoroughly educated so that abandoned bikes can be identified and removed in a timely fashion.

GOAL: Continue the enforcement of bicycle rules and regulations in order to reduce violations and crashes.

Objective:

1. Study bicycle/auto crash records and develop a focused enforcement effort with the goal of reducing crashes by 10 percent .

GOAL: Enhance educational programs with emphasis on bicycle safety and laws relating to bicycle driving.

Objective:

1. Strengthen educational programs used for traffic violators.

GOAL: Promote programs that reduce incidents of theft and continue efforts to recover stolen bicycles.

Objectives:

1. Develop informative material for use with schools, neighborhood groups, DCN and Cable TV on incidents of bike theft from private property.
2. Promote bicycle-licensing system.

GOAL: Police Enforcement of Traffic Laws

Objective:

1. The Police Department should seek out effective training that will enable it to become more sensitive to bicycle issues and laws related to bicycle enforcement.
2. Seek changes in county court procedures to allow court appearance in Davis for bicycle rider traffic law violations.

ENGINEERING

For decades, the city of Davis has led the nation in the design and construction of innovative bicycle facilities. Most of the engineering guidelines resulting from these efforts have already been adopted, and are contained in "Appendix 2: Engineering Standards and Guidelines," of this document. However, there are still some aspects of the city's bicycle network that continue to evolve, or they have remained on the forefront because they continue to be an issue with local cyclists. One such issue is traffic calming. The primary purpose of traffic calming is to reduce motor vehicle speeds, particularly in residential areas. Traffic calming projects are ostensibly undertaken for the benefit of bicyclists and pedestrians. However, without careful planning and design work, the traffic calming improvements may actually may have an adverse impact on cycling and walking. An analysis should be conducted by staff to evaluate which type of traffic calming measure is appropriate for a given location. Based on this evaluation and the subsequent development of criteria, guidelines should be adopted by the city to ensure the appropriate siting and design of traffic calming projects.

The city of Davis has been using a traffic control device for a number of years known as a "bicycle signal head." These are similar to a standard traffic signal, except that it uses red, yellow and green bike icons rather than red, yellow and green "balls." Bicycle signal heads are commonly used around the world in such places as the Netherlands, England, Germany, and China. The city of Davis began using this type of traffic signal to help expedite the safe movement of bicycles through the city's more heavily used intersections (one intersection where these are in use has had counts of more than 1,000 bicycles an hour). The city of Davis is the first city in the country to utilize this innovative traffic control device, and the city was the driving force in getting California traffic laws changed in order for its use to be allowed on public streets. These new traffic signals have performed admirably since the city began using them on a trial basis in 1990. Bicycle circulation was enhanced and safety has been improved at locations where these have been installed. Staff should continue to evaluate additional locations, as appropriate, for this type of signal.

GOAL: Placement of Yard Debris in Bike Lane

Objective:

1. When yard and garden waste is piled by the edge of the road and begins to block the bike lane, it becomes a significant safety hazard. The hazard is that a cyclist may actually collide with a pile of debris, or worse, cyclists may suddenly veer out of the bike lane into the motor vehicle travel lane to avoid debris, and collide with a motor vehicle. The city should reconsider the way in which yard debris is picked up. At a minimum, there needs to be a concerted effort to better educate residents as to proper procedures for putting the waste out for collection in order to minimize hazards for bicycle drivers.

GOAL: Planning for Bicycles in New Developments

Objective:

1. Planning Department staff and the city's Planning Commission should become more familiar with the guiding principles of a good bicycle and pedestrian transportation system, and with the guidance of the Public Works Department, ensure that these are used in the design of new developments.

GOAL: Provide bike lanes along all arterial and collector streets. Provide separated bike paths adjacent to arterial and collector streets only where justified, with full consideration of potential safety problems this type of facility can create.

Objective:

1. Develop standards to be used for planning decisions on where to place pathways adjacent to arterials. Issues such as speed and volume of motor vehicles, number of driveways and other curb cuts, and the age and skill level of the bicycle driver shall be considered.

GOAL: Ensure that bicycle routing is an integral part of street design so that lanes and pathways form an integrated network.

Objective:

1. Identify weak links and discontinuities in the existing network, and develop a plan for prioritizing and funding solutions.

GOAL: Consider bicycle-operating characteristics in the design of bikeways, intersections and traffic control systems.

Objective:

1. Develop standards for signal timing to facilitate movement of bicycles at intersections.

GOAL: Coordinate and cooperate with surrounding jurisdictions such as UCD, and Yolo and Solano counties, to create a continuous and interconnected bikeway network.

Objectives:

1. Participate in regional bicycle and pedestrian planning activities such as the SACOG Bicycle and Pedestrian Advisory Committee. The Yolo-Solano Air Quality Management District's Bicycle Advisory Committee, and the Woodland-Davis Bikeway Steering Committee.
2. Comment on Yolo County Bikeway Plan revisions and assist in identifying improvements needed in the network.

GOAL: Improve the campus-to-core bikeway along Third Street.

Objective:

1. Continue efforts to improve surface quality and safety of the railroad at-grade crossings at Fourth and Fifth Streets.

GOAL: Promote intermodal transportation.

Objectives:

1. Enhance and maintain a multi-modal transportation center in the Core Area.
2. Where appropriate, promote the transport of bicycles on all public transportation systems serving the city.

GOAL: Provide adequate bike parking.

Objectives:

1. Research the best bicycle parking facilities available, such as lockers and secure racks, and provide guidance for appropriate installation in all new developments, businesses and business expansion.
2. Develop a complete plan for bicycle parking in the Core Area and integrate it with the revised Core Area Specific Plan.
3. Formalize standards for bicycle parking requirements related to new development and incorporate into the Bicycle Plan.

GOAL: Design bike routes as integral parts of new greenways, open space areas (where appropriate) and "greenstreets" to complete and expand the existing bikeway system.

Objectives:

1. Develop criteria for bicycle access to open space areas preserved outside the city limits. The criteria should be available for open space plan consultants.
2. Adopt standards for the mixed use of off-street routes by bicyclists, pedestrians, equestrians, skaters and persons with disabilities.

GOAL: Plan bikeways to provide attractive, shaded linkages between destinations.

Objective:

1. Explore alternative street cross-sections for collectors and minor arterials that will result in more shaded bike lanes

GOAL: Freeway Interchange Safety Improvements

Objective:

1. Crossing freeway interchanges is potentially hazardous for bicyclists because of the fast merges that automobiles make as they enter and exit the freeway. The city should work with and encourage Caltrans to study various ways to minimize this problem such as signalization, signage, or modification of the intersection geometry (e.g. "T" intersections).

GOAL: Bicycle Circulation Enhancement

Objective:

1. The city should consider the development of a comprehensive bicycle circulation plan. Elements should address the guidelines for installation of bicycle signal heads, bicycle detection mechanisms at intersections controlled by traffic lights, feasibility of separated signal phases for bikes and motor vehicles, traffic calming, and the determination of where separated bike paths are appropriate.

GOAL: Maintain roadways and bicycle related facilities so they provide safe and comfortable conditions for the bike driver.

Objectives:

1. Complete efforts to establish a routine inspection program for all Class I facilities.

2. Develop a list of priorities for pathway overlay and reconstruction to be considered during budget preparation.
3. Develop a procedure for routine inspection and maintenance of bicycle parking facilities.

GOAL: Design bicycle facilities to minimize maintenance costs by specifying quality materials and standard products.

Objective:

1. The city's policy of building its bike paths out of concrete should reduce bike path maintenance problems. Additional funds should be programmed each year to maintain the asphalt bike paths that have already been developed. Additionally, a program should be developed for the cleaning and repair of bike paths on a regular basis, because these are sometimes covered with broken glass, mud and encroaching vegetation. Maintenance problems on bike paths not only cause mechanical difficulties for bikes (e.g. flat tires), but adverse conditions can also be a deterrent to individuals just beginning to commute by bike.

GOAL: Bike Path Maintenance

Objectives:

1. The city already has an annual bike path resurfacing program, but there are still problematic areas that need to be addressed. Rather than continually spending limited funds on recurring maintenance problems, a preferred approach would be to avoid practices that are major contributors to accelerated bike path deterioration. Specifically, problem areas include the following:
 - Maintenance and construction vehicles driving on the bike paths are a major contributor to deteriorating bike path conditions. The use of full-sized motor vehicles, mainly trucks, that use bike paths as shortcuts when it is not always necessary, should be minimized. Smaller sized vehicles such as electric “golf cart” or “Cushman” type vehicles should be considered by the city and used whenever possible. There are also many types of human powered vehicles that may be appropriate. Additionally, policies should be developed that will only allow emergency vehicles and other vehicles that specifically have to get to a portion of the bike path for maintenance purposes. Indiscriminate use of the bike path network by city vehicles should be prohibited.
 - Bike path degradation due to over-watering is exacerbated by the problem referenced above. Heavy vehicles driving over bike paths with a soaked and unstable base causes them to deteriorate more quickly. The city should look at its watering practices, particularly near bike paths.

ENCOURAGEMENT

GOAL: Establish a centralized program for interaction with and education of the public.

Objectives:

1. Hold an annual forum in conjunction with major bicycle events to receive input on the bicycle program, as well as to educate the public as to the benefits of the program.
2. Publish an annual report summarizing bicycle program activities and accomplishments.

GOAL: Increase local coverage of bicycle events and present accurate information about bicycle safety and activities.

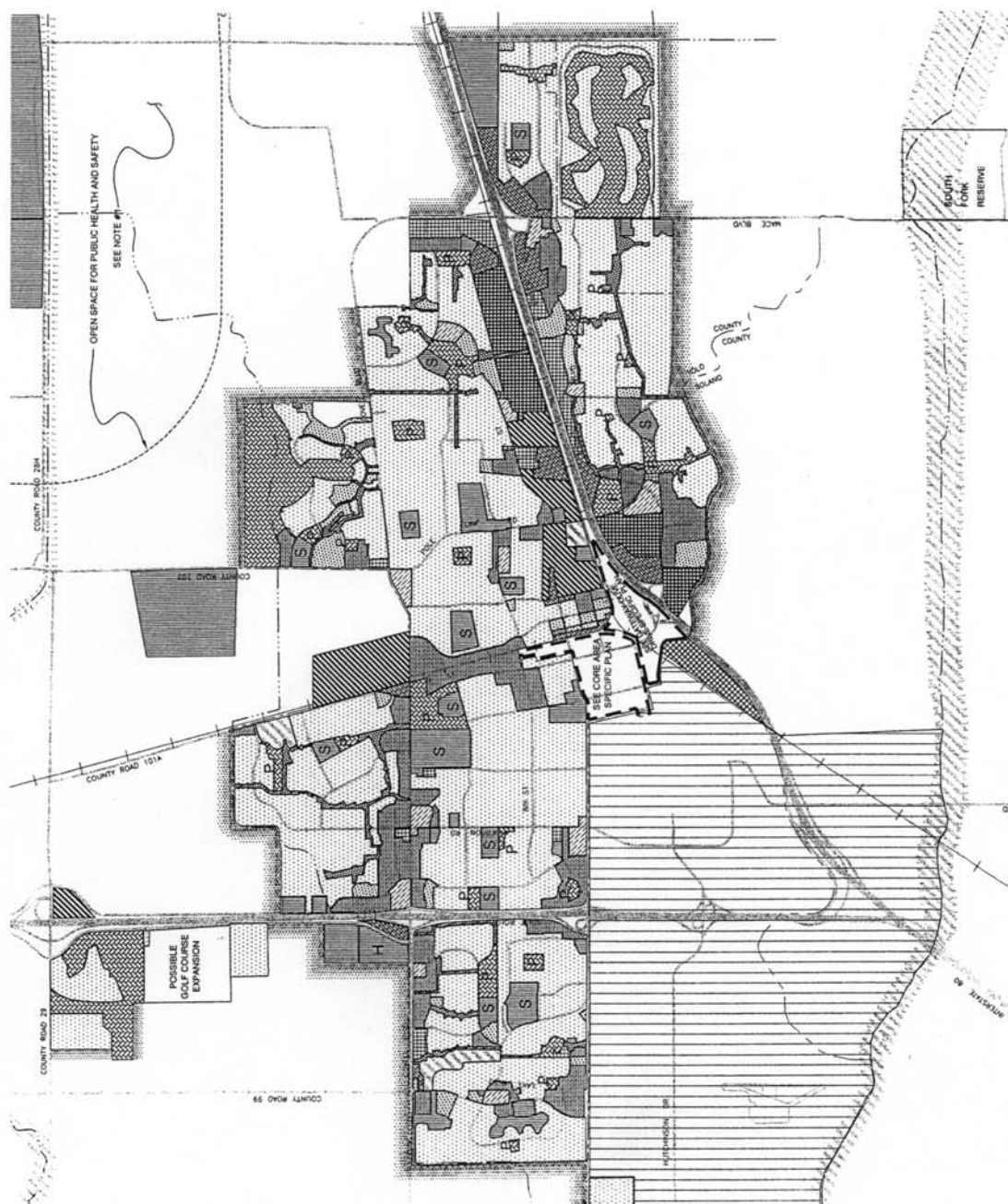
Objectives:

1. Include articles on bicycle issues in the city's newsletter, and distribute to local newspapers.
2. Establish a "bicycle column" in the Davis Enterprise.
3. Place advertisements in the local newspapers to promote bicycling.

GOAL: Share information and resources with UCD regarding bicycle activities.

Objectives:

1. Continue liaison with UCD via Committee on Bicycle Programs.
2. Continue/expand annual events where the city and UCD join efforts to promote bicycling.
3. Investigate joint sponsorship of special bicycling events.



- Residential-Low Density
3.00-5.99 Units Per Gross Acre and 3.60-7.19 Units Per Net Acre
- Residential-Medium Density
6.00-13.99 Units Per Gross Acre and 7.20-16.79 Units Per Net Acre
- Residential-High Density
14.00-25.00 Units Per Gross Acre and 16.80-30.00 Units Per Net Acre
- Neighborhood Retail
Community Retail
Applicable to Only the "Community Expansion" Alternatives
- General Commercial
- Office
- Business Park
- University Related Research Park
- Industrial
- University Of California, Davis
Public/Semi Public
S = School, H=Hospital
P = Park
- Parks/Recreation
- Neighborhood Greenbelt
- Urban Agriculture Transition Area
- Agriculture
- Natural Habitat Area
- Urban Reserve
- City Limit
- Yolo/Solano County Border
- Creeks, Sloughs, Channels
Including Levees

NOTES
1. See Open Space chapter for description of "Open Space for Public Safety"
Zone within one mile of the health and sewage treatment facilities.

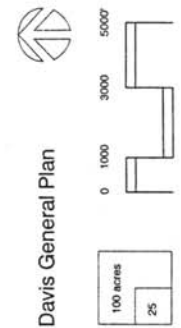


FIGURE 1

APPENDIX 1

BICYCLE FACILITY GUIDELINES

The City of Davis has been developing bikeways for nearly 40 years. During this period, bicycle use as a primary mode of transportation has steadily continued to increase. The most recent census figures indicate that approximately 17 percent of all trips in Davis are made by bicycle.

As the cycling population continued to grow, the bicycle transportation network continued to grow and evolve as well. The development of the city's bicycle transportation system over the years, and the lessons learned during that time, have helped to evolve a set of bicycle facility planning principles that have served the city well. Additionally, the standards that have been developed have benefited other jurisdictions within the state as well as other parts of the country. In order to ensure these systems are functioning as safely and as efficiently as possible, procedures to effectively resolve bicycle circulation and safety issues have been institutionalized so that these issues are dealt with routinely.

CYCLIST POPULATION

The bicycling population in Davis is comprised of wide and diverse segments with differing skills and abilities, as well as differing motivations for cycling in the first place. The type, location, and characteristics of bicycle facilities must necessarily take into account these segments of drivers if they are to be served adequately. A given set of bicycle facilities and routes will not be suitable for the entire cycling population. The following list is one attempt to classify this population into identifiable categories:

1. Avid cyclists. Considers the bicycle as the primary transportation mode for most trips. The availability of direct, high speed routes that are relatively unfettered by traffic lights and stop signs is important. The avid cyclist will often choose to ride in the motor vehicle travel lane, and along major routes without separate bicycle facilities. This group of experienced cyclists will typically shun separated bike paths, particularly in neighborhood greenbelts. Avid cyclists are highly attuned to bicycle safety, so they are sensitized to potential hazards, and they continually anticipate and avoids compromising situations while riding. This group, although typically the most visible and vocal component of the bicycling community, is actually a relatively small segment of the cycling population.
2. Regular bicycle riders. This group of cyclists will typically utilize a bicycle as a preferred transportation mode, provided that the destination is reasonably close and a good bicycle route exists. The individuals in this group are usually working adults, UCD students, or mature high school students. This group also includes parents with child seats/carts. They appreciate the relative speed and convenience of the bicycle as compared to the car. These cyclists desire safe and efficient bicycle facilities and routes. They are willing to accept some out of direction travel to avoid perceived hazardous locations. Some cyclists in this group feel uncomfortable riding along high speed arterial streets even when bike lanes are provided. They are usually attuned to potential hazards

such as opening car doors, and cars exiting or entering driveways. The regular bicycle rider wants to maintain momentum but usually obeys traffic controls. This type of cyclist comprises a large segment of the cycling population in Davis

3. Young regular bicycle riders. This is usually a child of junior high or high school age who routinely rides to and from school. Other trip purposes include riding to visit friends, to the park, to shop, and for other after school activities. This group of cyclists tends to have less experience negotiating traffic, so they are not always aware of potential hazards. They may choose routes unsuitable to their ability, and they often disobey traffic laws and traffic control devices. This group of cyclists tends to prefer the shortest route possible, because minimal pedaling effort seems more important than speed, and they tend to prefer bike lanes and bike paths. In Davis, this is a large segment of the cycling population.

4. Beginning bicycle rider. These are school age children up to about the fourth grade level. They ride bikes to and from school only if a route exists consisting of bike paths and bike lanes on streets with relatively low traffic volumes. Beginning bike riders will typically only pedal to destinations in their neighborhood, and they seldom ride bikes across town. They are not “little adults” as some people seem to think, but individuals within the bicycling community that have very real experiential and physiological limitations. Cycling skills are not fully developed in this age group, and most of them have relatively limited experience riding a bike in traffic. Developmentally, this age group has physical limitations as well. Up to about age nine or ten, most children do not have well developed peripheral vision, and they have difficulty with concepts such as closure speed (e.g. approaching motor vehicles). Younger bicycle riders typically have difficulty following a straight track, and they frequently weave from side to side when riding. Beginning bike riders are a relatively smaller segment of the cycling population.

There are other ways that cyclists can be categorized, such as by trip purpose. The descriptions detailed above only serve to represent the major categories of cyclists in Davis, but they do not imply that the categories are exclusive, or the descriptions absolute.

ROUTE SELECTION

Route selection factors commonly used by bicycle facility planners include factors such as:

Rider Safety - Routes are chosen considering various safety factors, including traffic volumes, motor vehicle speeds, shoulder width, and the presence of parked cars.

Rider Convenience - Convenience factors usually considered include most destination points, fewest stop signs, most side streets with stop signs, and least debris on shoulders.

Rider Volume - Emphasis placed on limiting the number of bikeways designated in order to concentrate on bikeways with the highest bicycle volumes.

Selection criteria such as the above would result in too limited a bikeway system to adequately provide for the cycling population in Davis. In order to increase the already high 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.

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 all arterial and collector streets. In addition, Class I bicycle facilities are provided in neighborhood greenbelts and along high demand bicycle corridors. A more austere circulation system would not meet the goal of providing safe and convenient bicycle access to all areas of the city.

ROUTES SELECTED

The bikeway system is shown on the City Bikeway Map (please see Appendix 7). Both existing and planned facilities are shown. The planned facilities serve to augment the existing system, correct specific deficiencies, and extend the network to newly developing areas. Several features of the System are worthy of note:

- Bike lanes are shown along all arterial and collector streets. (with the exception of Fifth Street west of Pole Line Road)
- Grade separated facilities are provided to facilitate crossing of busy streets and highways.
- Class I facilities (bike paths) are provided within neighborhood greenbelts.
- Class I facilities are shown to provide alternative facilities to using on street bike lanes along high traffic routes.
- Continuity of the system is important and wherever possible, all facilities are joined in a network providing continuous service for cyclists.

Since this bikeway system extends throughout the City, it accommodates the commuting needs of employees, shoppers, faculty and students regardless of the trip origin or destination. These facilities are included as part of the normal street design and construction process. Land use adjacent to bikeways includes all the land uses within the city. Since the policies contained in this plan require integrated bikeways throughout the city, all land uses and combinations of bicycle trips are accommodated. Land use designations in the City of Davis are contained within the General Plan and the various other plans and maps maintained for that purpose. See Figure 1 for a general picture of land uses. For specific land use designations adjacent to bikeways, reference is made to those documents.

APPENDIX 2

ENGINEERING STANDARDS & GUIDELINES

STATE DESIGN STANDARDS

Chapter 1000 of the CALTRANS Highway Design Manual is the guiding reference for planning and design of bikeways. The cases where City of Davis guidelines are more stringent are identified below. It must be emphasized that a careful evaluation of conditions for a specific bikeway may justify an easing of some requirement or necessitate a more stringent requirement, as the case may be, for the appropriate reasons. 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.

BICYCLE FACILITIES DESIGN

A. Design speed

The selected design speed of a bikeway facility is the single criterion that dictates facility geometry to result in safe bikeways. Therefore, the selected design speed for a bikeway segment should be the uppermost speed expected for the bulk of riders using the facility. The design speed for bikeways within the City of Davis is 20 MPH. For downhill grades exceeding 4 percent, the design speed is increased to 30 MPH.

B. Grades

For most facilities, sustained grades should not exceed two percent if a wide range of riders is to be accommodated. However, undercrossings and overcrossings cannot be limited to this grade criterion however, due to the vertical rise that such structures typically require. Fortunately, the city landscape is nearly flat in most areas, thereby eliminating grade limits as a significant design parameter except for grade-separated crossings. The safety of a given grade is based on criteria for stopping sight distance, which, in turn, is dependent upon grade and design speed.

Much of the literature suggests that grades should be kept to 5 percent or less where possible. The reasons for this are that cyclists may avoid facilities with steeper grades, or that some cyclists may be unable to negotiate the grade due to physical limitations. Aside from the practical aspects of minimizing grades whenever possible, the Americans with Disabilities Act (ADA) prohibits the construction of facilities steeper than 5 percent to ensure access to individuals with disabilities.

There are two primary safety issues with steep grades. If overcrossing grades are too steep, cyclists may seek an alternative at-grade crossing at an unsafe location to avoid the effort of using the overcrossing. For undercrossings or bike tunnels, if the grades are too steep, cyclists may choose to attain unsafe speeds while descending in order to gain momentum to negotiate the ascending grade. Other than these two situations, steeper grades do not create safety problems while ascending or descending, provided adequate stopping sight distance is maintained. Of course, factors such as debris on the roadway, weather, and the mechanical condition of the bike also have an effect on stopping distance.

Another factor to consider about grades is the distance that a given grade persists. The acceptability of a relatively steep grade depends on the length of the grade. Steep grades are

tolerable for relatively short distances and are preferable as an alternative to much lesser grades that last long distances.

C. Grade Separated Crossings

This plan provides for some grade separations where separated bike paths cross arterial streets and highways. Such crossings are planned to provide for relatively unimpeded bicycle routes interconnecting all areas of the city and the University. Additionally, grade separated crossings afford continuity along neighborhood greenbelt bike paths by eliminating the need to cross arterial streets at grade.

1. Undercrossings

The preferred grade separation is the undercrossing because it allows shorter and flatter approaches than an overcrossing. However, close attention to the design is needed because of the bicyclist's tendency towards excessive speed in an effort to contend with the adverse ascending grade. Therefore, approaches should be kept to no more than 5 percent grade. In addition, the roadway should be raised so that the upper portion of the bicycle tunnel is above the elevation of the surrounding terrain. This design approach usually allows relatively short approaches of modest grade thus moderating the tendency to excessive speed in the tunnel. In addition, this design feature may allow drainage to be accomplished by gravity. Undercrossings shall be fully lighted for safety. Finally, visibility into and through a raised tunnel enhances the sense of safety compared to a deeper structure with less visibility.

2. Overcrossings

Overcrossings are generally needed where roadway curb-to-curb width exceeds about 90 feet due to concerns of personal safety. Steep grades should be moderated as much as possible so that ridership is not unduly discouraged. Grades exceeding 4 percent for downhill travel do not, by themselves, create a safety problem, provided that safety criteria derived from the 30 MPH design speed are followed. For ascending cyclists, a combination of length and grade should be selected that carefully balances the two as necessitated by the total climb required. Short, steep grades are preferable to modest grades of 2-4 percent, if those modest grades must persist for distances significantly in excess of 500 feet.

D. Typical Cross Sections

The bicycle facility cross sections depicted in Figure 2 are the desired minimum widths for these facilities within the City of Davis. Lesser widths may be considered for low volume streets/paths, existing roadways narrower than city standards, or where other circumstances warrant. State bikeway standards shall be considered the absolute minimum when considering deviations from these guidelines.

E. Intersection Considerations

Intersections are the problematic locations where many bicycle/auto conflicts occur. Skilled cyclists usually have little problem making the appropriate transitions when using on-street lanes. Lesser skilled bike riders may have difficulty performing weaving maneuvers near intersections safely. These bicycle drivers need alternate, less demanding routes as an alternative to using the on-street bike lanes. When using such alternate routes, the cyclist will still need to cross busy arterial streets, usually at signalized intersections. Special loop detectors, which can detect bicycles, as well as bicycle oriented signal call buttons can all facilitate the crossing. Bicycle routes typically used by younger children need to provide protected signalization for crossing major streets, both at intersections and at other locations where crossings are needed. Grade separated crossings are an alternative to protected at-grade crossings. Such crossings tend to be very expensive, which limits where they can be considered to only a few high priority locations. Neither bike overpasses nor underpasses work well near intersections. The crossing length is longer and there is not the opportunity to adjust the road grade to shorten the slopes of the crossing. Also, the transitions between on-street lanes and the separate crossing path create the possibility of unsafe movements. Underpasses can prompt personal safety concerns if their required length is too great and/or visibility through the underpass is limited.

Research has shown that the majority of bicycle/motor vehicle crashes occur at intersections. Therefore, special consideration must be given to bicycle and vehicle movements at intersections. Bicycle lanes enhance visibility between bicycles and motor vehicles and provide the best opportunity for a safe interaction between vehicles. Typical treatment of these lanes is shown in Figures 3, 4 and 5. Note that a weaving section of sufficient length, considering prevailing vehicle speeds, is essential for the left turn and through bicycle lanes to be effective.

Figure 5 shows typical intersection treatment where a Class I facility interacts with an intersection. The bike path may or may not continue beyond the intersection. The advantage of this intersection design is that it places the bicyclist in a predictable location and minimizes the distance to cross opposing vehicle lanes during the prescribed signal phase.

Figure 6 displays a plan view of a street segment constructed with a continuous center left turn lane. This lane, combined with on-street bike lanes creates a bicycle friendly route by making it easier and safer to cross the street compared to a four-lane road. Figure 7 provides some additional information about the traffic islands for bicycles at arterial intersections. These islands make it easier for bicyclists to approach the intersection, make a convenient and safe crossing, and then continue along on available routes in any direction.

F. Roundabout Design and Operation

Within recent years, the City of Davis has begun using roundabouts as traffic control devices, where appropriate. Roundabouts also tend to provide a measure of “traffic calming”. Although the use of roundabouts has been common in a number of countries for many years, particularly in Europe and Australia, their potential for reducing conflicts between motor vehicles, bicycle riders and pedestrians has contributed to their design and construction in Davis. Roundabouts improve safety for all road users by simplifying conflicts, reducing motor vehicle speeds, and providing a clearer indication of right-of-way relative to other types of intersection controls. Figure 8 illustrates a generalized design standard for what is currently being used in Davis.

Although navigation through a roundabout may appear daunting for cyclists and pedestrians the first time one is encountered, their operation is actually quite simple. For cyclists, the first thing to remember is that the bike lane is dropped prior to entering the roundabout, just as it is at more conventional intersections. This is done so that a through cyclist is not "cut off" by a right turning motorist. The cyclist merely "takes the lane", which is made easier by the fact that motorist's speed is reduced by the design of the roundabout due to "deflection". Within the circulating roadway, the speed of motorists and bicyclists speed are more closely matched, which makes the process of merging into the circulating roadway easier. As the cyclist approaches the roundabout, they must yield to any other bicycles or motor vehicles already in the roundabout, and proceed through in a counter clock-wise direction, and then turning right as they approach their intended direction.

The design concepts of roundabouts also makes it safer for pedestrians. Crosswalks run through the middle of the "splitter islands" that create the deflection for bicyclists and motor vehicles. These islands provide a refuge for pedestrians between traffic lanes, so that they only need to be concerned with one conflicting movement of traffic as they cross the street.

G. Bike Lanes

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

Generally, bicycle lanes are provided or planned for all collector and arterial streets. The city's guideline width for on-street bike lanes is 8 feet when adjacent to the curb where no parking is permitted and 7 feet where parking is allowed. Where parking is allowed, the total width from the curb to the bike lane line is 15 feet. There is a consensus among bicycle planning and safety experts that bike lanes constructed to the Davis guidelines are appropriate.

Bike lanes may be unsuitable for bicycle riders that lack the necessary skills to safely use them when traffic volumes are heavy and/or vehicle speeds are high. These individuals should consider the use of alternate routes. There are cyclists who have the desire and skill to use on-street lanes, such as bike commuters, so these facilities are still very much needed.

Width criteria for bike lanes takes into account that occasional obstructions, such as leaf piles and yard debris, may exist in the bike lanes that would require bicyclists 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 crashes. Mid-block crashes between bikes and cars are rare where bike lanes exist. More common are bike/bike accidents and bikes running into fixed objects such as parked cars. The majority of bike/car crashes occur at intersections rather than at mid-block locations.

H. Bike Paths

Bike paths, when properly designed and constructed, provide good routes for bicycle circulation separated from vehicles. Separate bike paths are not always a good choice to replace on-street lanes when they are along high volume, relatively high-speed arterials. In these circumstances, retrofitting within the existing right of way to add paths can prove difficult or impractical. In addition, the presence of numerous driveways, which for the cyclist, function as unsignalized intersections, can be problematic. Paths within neighborhood greenbelts provide a good alternative to on-street facilities for large numbers of young and beginning bicycle drivers. These are being provided throughout newly developing areas.

I. Alternative Routes

Good bicycle circulation can best be achieved with the appropriate mix of bicycle facilities for the respective segments of the cycling population. Such facilities will provide reasonably direct and convenient bicycle access throughout the city. Because the cycling population is segmented, the infrastructure must provide alternative routes and types of facilities for the respective segments. While on-street bike lanes along a high-demand route may serve large numbers of cyclists well, alternatives to bike lanes may be necessary for less skilled drivers.

As an example, the design of the Pole Line Road Overcrossing took into account the varying needs of cyclists. The route includes on-street lanes because these lanes are needed for a large segment of the cycling population. A separate path is included on the west side of the structure to serve those cyclists that feel uncomfortable using the bike lanes or do not have the skills necessary to use them safely.

BICYCLE PARKING GUIDELINES

The requirement to provide adequate bicycle parking for the various land uses within the city is contained in the city's zoning ordinance. It is the function of the Design Review Process to assess the bicycle parking plan of developers and project applicants to ensure that adequate facilities are provided. The following features shall be considered.

1. The quantity of parking shall adequately consider the nature of the land use, its proximity to bike routes, and other factors that may affect bicycle parking.
2. Bicycle parking shall be located on the project to promote its use. Bike racks should be visible and as close as possible to the main entrance or doorway of the cyclist's destination.
3. The bicycle circulation within the project shall be adequately considered to minimize conflicts and hazards with motor vehicles.
4. Bicycle racks must be conducive for use with the most common locking devices: "u-locks."
5. Bicycle parking must be illuminated at night.
6. Bicycle parking should be sheltered, if possible.
7. Bicycle parking shall be at least as convenient as the planned motor vehicle parking.

8. In order to prevent damage to bicycles, racks must support them with at least two contact points (e.g. inverted “U” racks). Therefore, some rack types formerly used by the city (e.g. “ribbon racks”) are no longer considered acceptable. Examples of acceptable rack types are included in Appendix 6.

The amount of bicycle parking needed for a particular project depends upon a variety of factors such as the type of occupancy, the location and proximity to streets with heavy bicycle traffic, and the relationship of the project to adjacent and nearby businesses, etc. The following are suggested amounts of bicycle parking for several types of land use. These amounts can be adjusted up or down for a particular project as circumstances suggest.

1. For multi-family residential, two bicycle parking spaces per dwelling unit.
2. Commercial, all zones, bicycle spaces numbering 30 percent of motor vehicle spaces otherwise required.
3. Provide one bicycle space for every two employees during the heaviest work shift in addition to bicycle parking otherwise required for visitors/patrons. This parking may be located separately from the public parking but shall be at least as convenient as employee motor vehicle parking.
4. For public facilities (such as municipal offices, parks, swimming pools, museums, parks, auditoriums, churches and similar uses), provide bicycle spaces numbering 30 percent of the motor vehicle parking normally required or immediately available to the facility.
5. Public and private schools K-12, provide bicycle spaces numbering 85 percent of peak enrollment. For post-secondary, provide spaces at least 50 percent of peak enrollment.

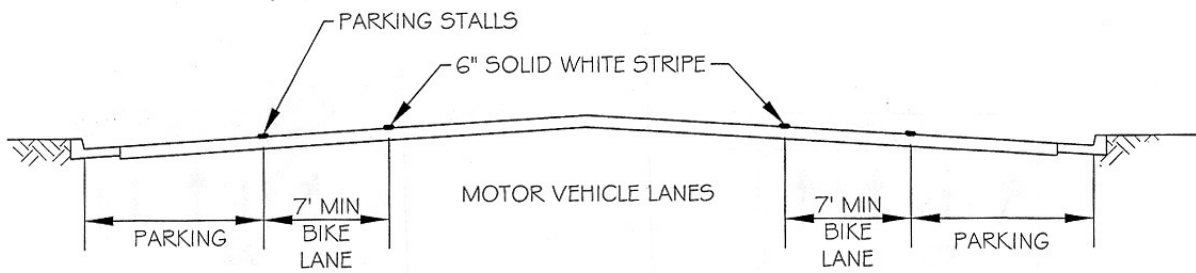
Experience has shown that modest amounts of bicycle parking at many dispersed locations is preferable to a few high capacity facilities. Cyclists tend to avoid bike parking facilities unless they are very close to their destination. The best way to determine the need and amount of bicycle parking is to identify those locations where parked bikes exceed the available parking, and to find those locations where bikes are parked and no parking is provided. In this manner, parking can be provided to meet the need. The relocation of unused parking facilities to higher demand locations can help make available resources go farther.

REST FACILITIES

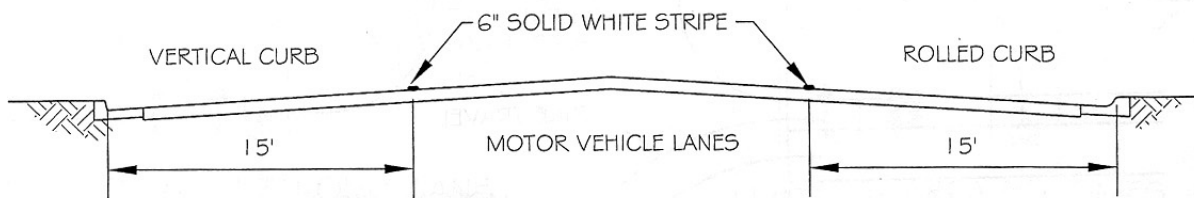
The city's bike map shows rest facilities (generally day use areas with rest room facilities) that may be used by bicyclists. Also shown are bike shops and a few points of interest. Since Davis is an urban area, commercial establishments that provide air, water, shopping, food, telephones, etc. are readily available either along the bicycle routes or in close proximity to them.

COORDINATION WITH OTHER TRANSPORTATION MODES

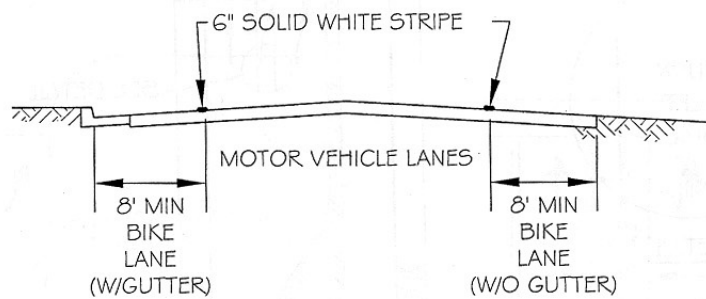
Unitrans, YoloBus, Citylink and Bay Link provide bus service in Davis. The bus routes used by these systems are directly served by bicycle facilities. The city's intermodal rail facility brings together rail, bus, bicycle, and motor vehicle modes at one location. The city provides for the installation of bicycle parking at bus stops to facilitate bus/bike trips. Additionally, YoloBus and Citylink have both added bike racks to their buses, and the Amtrak "Capitol Corridor" train has installed bike racks on their passenger cars as well.



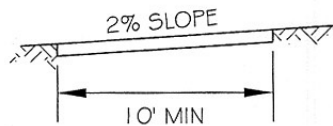
STRIPED PARKING



PARKING PERMITTED WITHOUT
PARKING STRIPE OR STALL



PARKING PROHIBITED



BIKE PATH

FIGURE 2
TYPICAL BIKE LANE AND BIKE PATH CROSS SECTIONS
(ON 2-LANE OR MULTILANE HIGHWAYS)

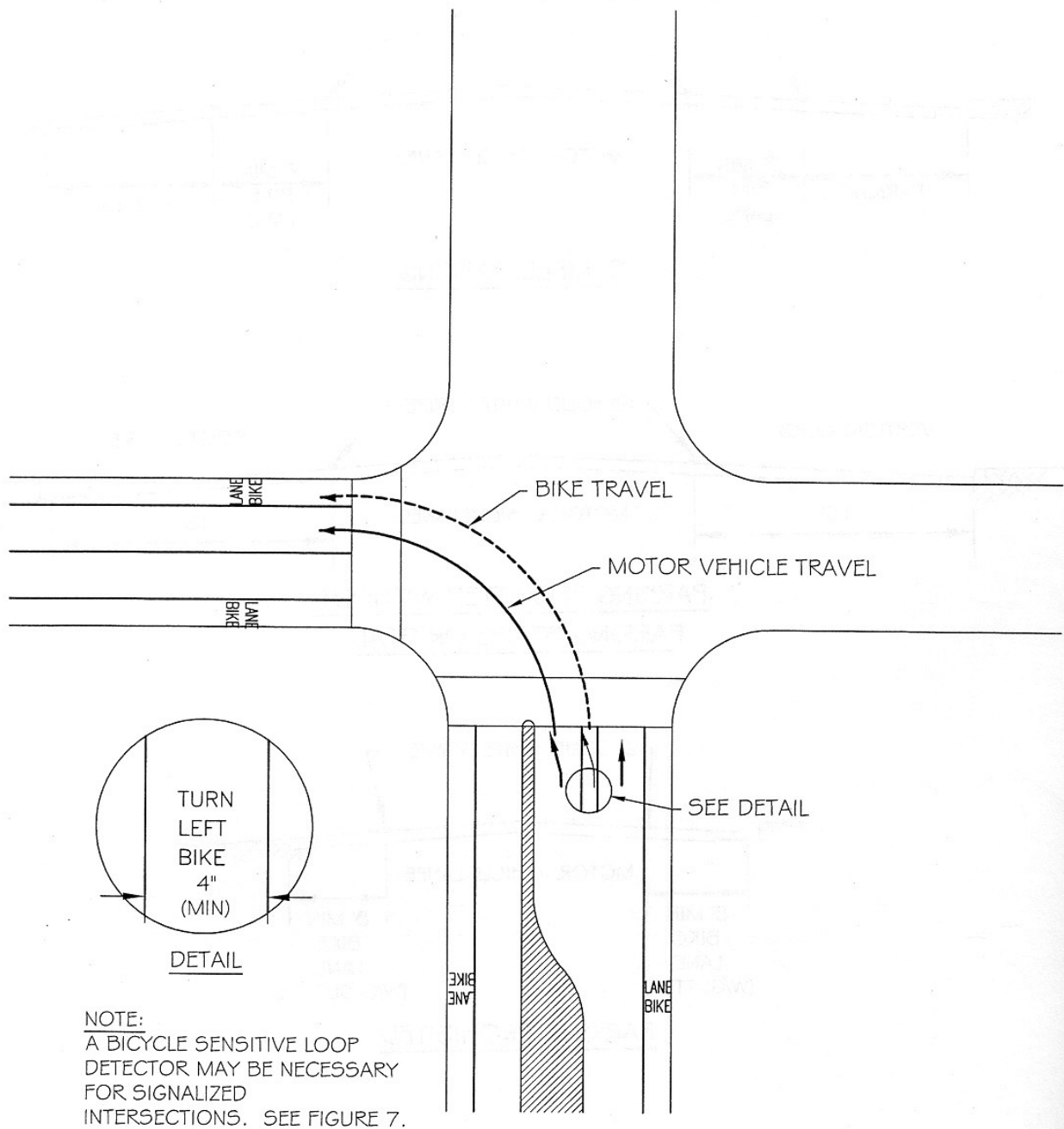
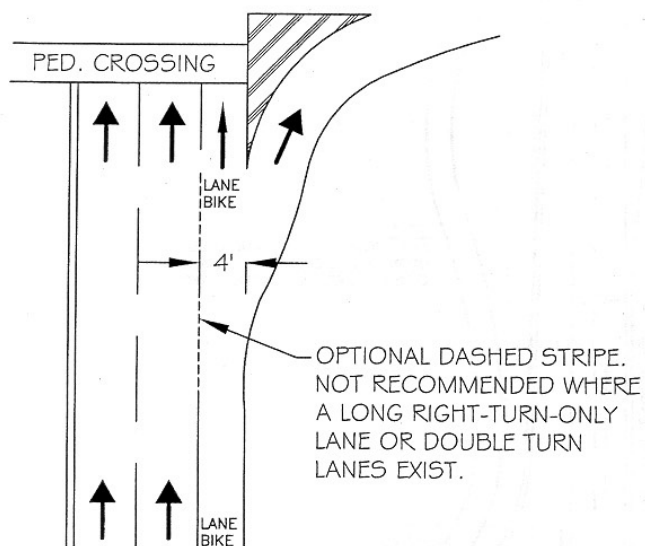
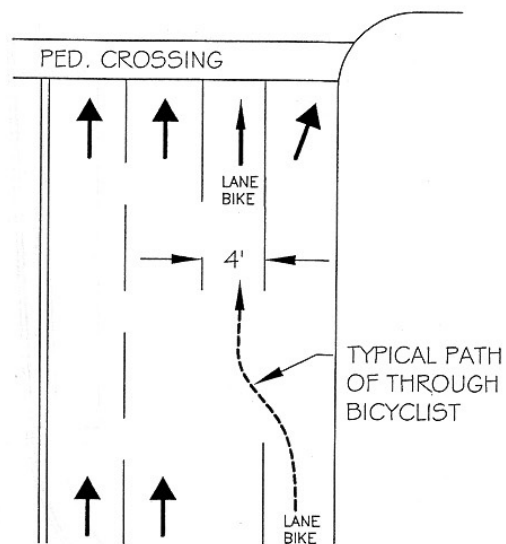


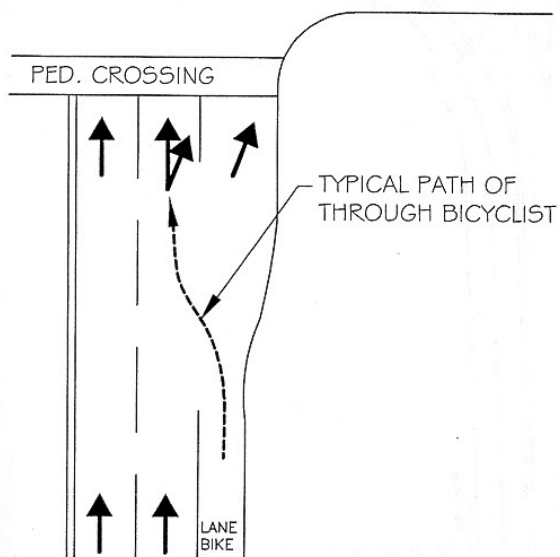
FIGURE 3
BIKE LEFT TURN LANE



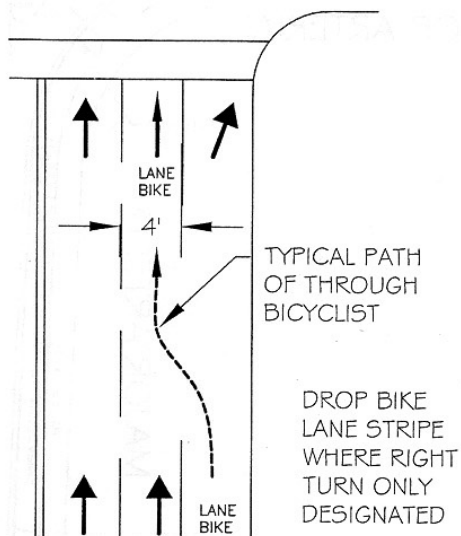
RIGHT-TURN-ONLY LANE



PARKING AREA BECOMES RIGHT-TURN-ONLY LANE



OPTIONAL DOUBLE RIGHT-TURN-ONLY LANE



RIGHT LANE BECOMES RIGHT-TURN-ONLY LANE

FIGURE 4
BIKE LANES APPROACHING MOTORIST
RIGHT-TURN-ONLY LANES

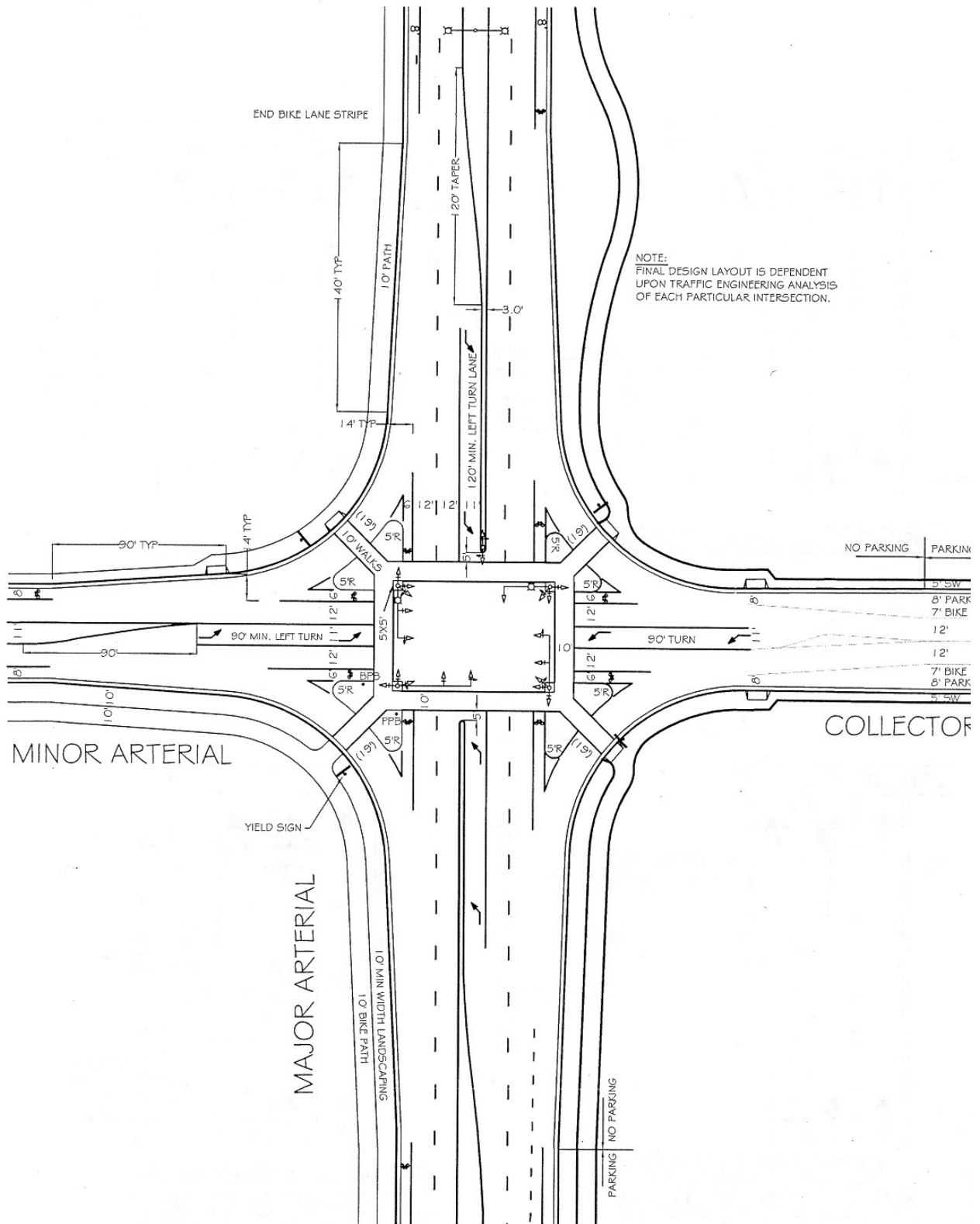


FIGURE 5
TYPICAL ARTERIAL INTERSECTION

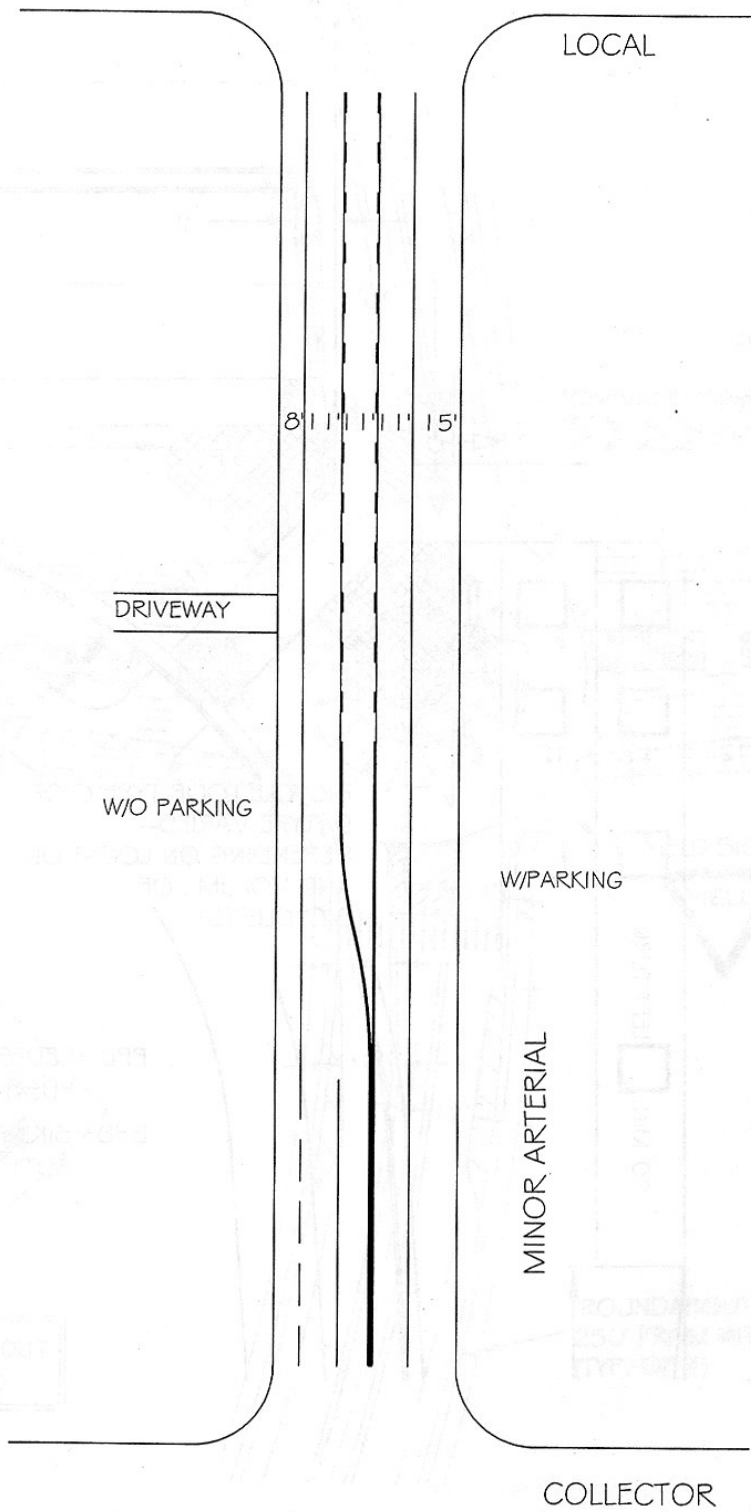


FIGURE 6
 MINOR ARTERIAL BIKE LANES AND
 TWO WAY LEFT TURN LANE

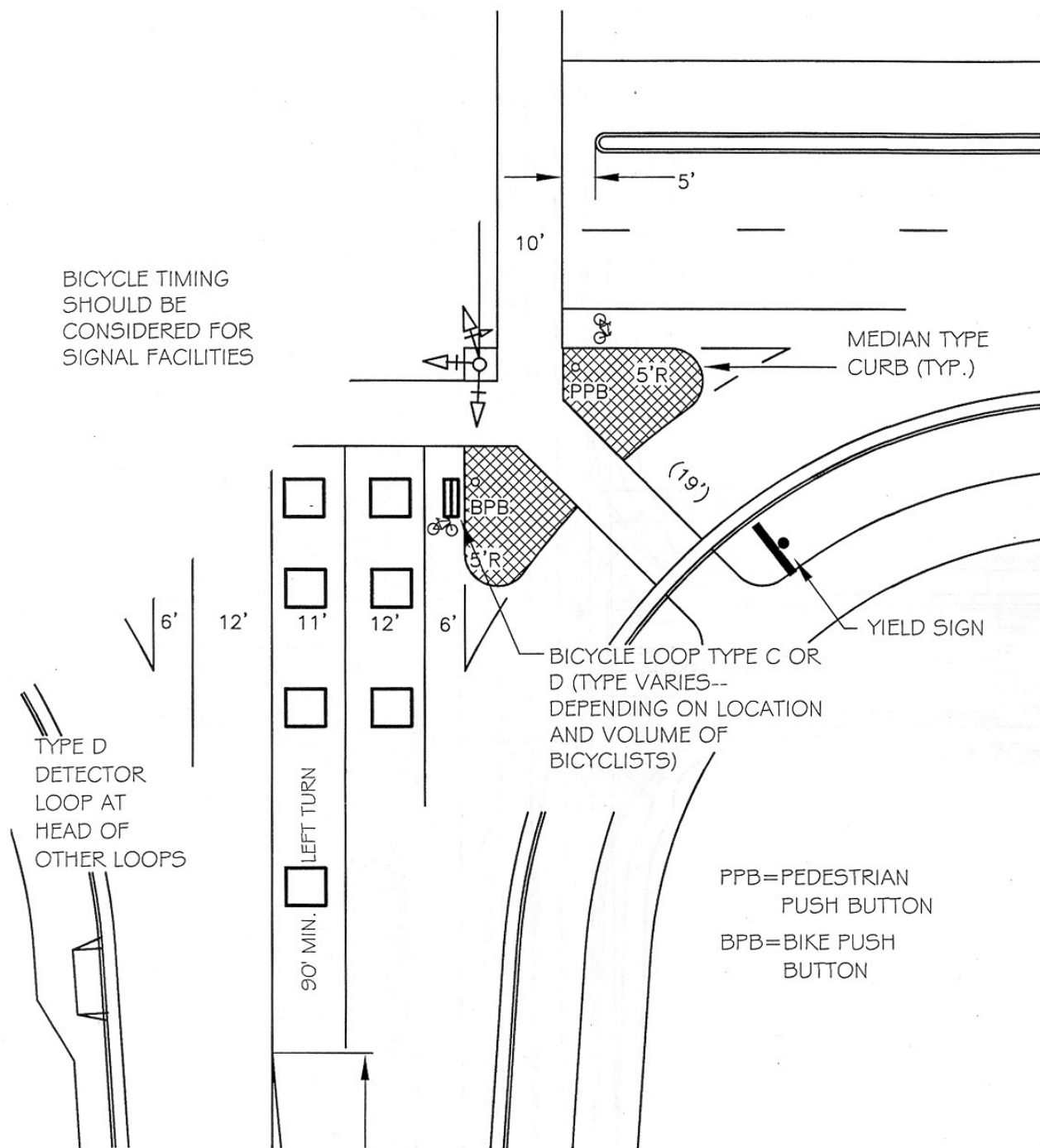


FIGURE 7
ARTERIAL STREET SIGNALIZATION
FOR BICYCLES

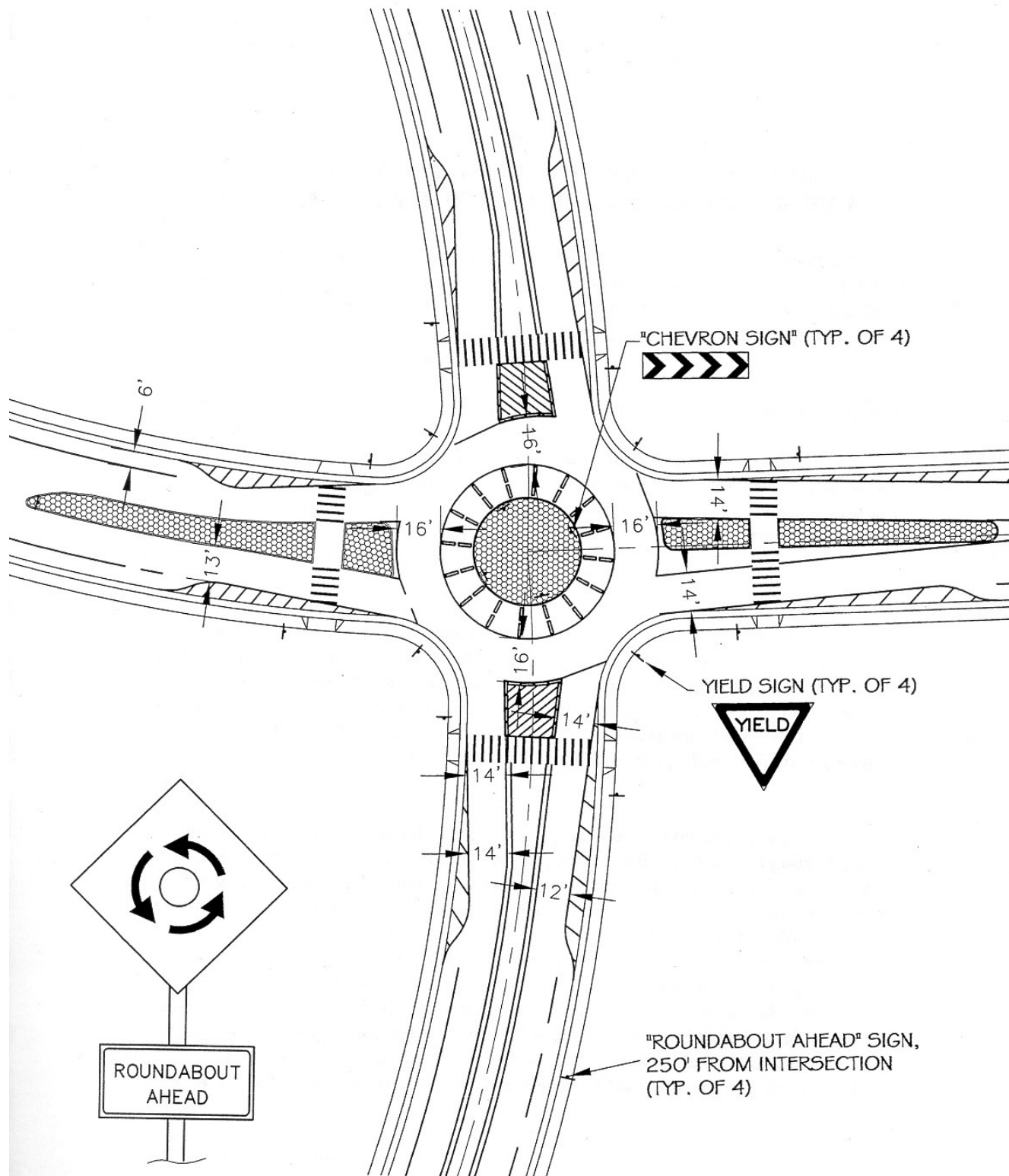


FIGURE 8
TYPICAL ROUNDAABOUT INTERSECTION

APPENDIX 3

SUMMARY OF ISSUES AFFECTING BICYCLING IN DAVIS AS IDENTIFIED BY THE AD HOC BICYCLE TASK FORCE

Since the mid-1960's, the city of Davis has led the nation in the design and construction of bicycle facilities. As a result, this exemplary bicycle network provides the opportunity for cyclists to travel to all corners of the city with few impediments and even fewer hazards. However, there are still some issues and conflicts the bicycling community feels the need to resolve in order to encourage more bicycle use.

These issues are presented in the bike plan more for informational purposes, since some of the more difficult issues will require much work or long-term solutions with a multi-faceted approach. As mentioned previously, task force members felt strongly that a permanent bicycle advisory committee is necessary and appropriate if Davis is to retain its prominence as a premiere bicycling community. As such, many of these issues should and could be addressed by the Bicycle Advisory Commission with coordination through existing entities such as the Safety Advisory Commission.

1. Overriding Theme

Bicycle travel should be considered on an equal level of importance with motorized vehicle travel in the planning and design of all transportation projects. Bicycles are a legally recognized mode of transportation, and not just recreational in nature. This implies that bicycle facilities should be as direct, convenient and safe as the facilities designed for motor vehicles. Davis should not “rest on its laurels” as “America's Best Cycling City,” but should continue to develop innovative bicycle facilities and policies. There are many good models to follow.

The Dutch bikeway system has often been cited as a good example to follow, but this perspective is controversial, even among bicycle professionals. It has been pointed out that what will work in one community, may not necessarily work in another. Also, like Davis, many Dutch cities have been accommodating bicycle transportation for decades. As a result, many bicycle facilities were built prior to the development and adoption of standardized guidelines. Consequently, some of these facilities have proven to be outdated, inefficient, or potentially hazardous. Also, certain facilities that work well in the Netherlands may not work in the U.S. for a variety of reasons. These include cultural differences, unique attitudes towards bicycles and motor vehicles, dissimilar urban design, etc. There are, however, examples from Holland, China, and other locations abroad and within the United States that could provide examples of favorable projects from which we could learn.

2. Conflicts with Other Users

As the city of Davis continues to grow and the population increases, potential conflicts with other transportation modes will be inevitable. Aside from “traditional” conflicts with motor vehicles, there are growing numbers of electric-assist bikes, golf carts, pedestrians, joggers, people with baby carriages and dogs, and more recently, a growing number of in-line skaters. While many of these diverse user groups represent “one less car” (which is a good thing), they also represent additional challenges to managing the non-motorized transportation network.

Bicyclists using bike lanes and bike paths are reporting increased levels of congestion (particularly from in-line skaters) that will eventually necessitate appropriate action. The Davis City Council should take appropriate actions to educate bicycle facility users about sections of the existing California Vehicle Code that already regulate the use of these facilities (e.g. bike lanes). Additionally, they should consider adopting supplemental guidelines where there are “gray areas” to supplant existing laws.

3. Bicycle Parking

The city should ensure adequate bicycle parking in public locations. This is a particular problem in downtown Davis and at transit stops. More definitive guidelines need to be developed that specifically address bike rack types, quantity and location. Other parameters include minimum space requirements for the cement pad or sidewalks, including clearance requirements mandated by the Americans with Disabilities Act (ADA).

4. Traffic Signal Activation

Standards should be developed to ensure that all signalized intersections with signal triggering devices (e.g. loop or video detectors) are equipped with mechanisms sensitive enough to detect bicycles. Signal activating push buttons for cyclists' through movements should not be placed where the only access is to the right of the "right turn only" lane. This configuration puts a cyclist at risk when they are going straight ahead because of the increased likelihood of being cut-off by a right turning motorist.

5. Re-establish the City Bike Auction

For many years, the city conducted biannual bicycle auctions through the Davis Police Department. Abandoned or unclaimed bicycles made available to the general public through these sales provided revenue to the city and a source of inexpensive bicycles for the community and the region. Recently the Police Department decided to engage the services of a commercial auctioneering firm that regularly removes the impounded bicycles to the Bay Area for public sale. This procedural change, apparently a result of cost and staffing concerns, has raised questions among some in the community who believe that local residents should have the first opportunity to bid on these bicycles. The Bicycle Task Force requests the City Council to look into this issue and explore alternative fiscal strategies that could lead to a reinstatement of the city bike auctions.

APPENDIX 4

IMPLEMENTATION AND FUNDING

BIKE PROGRAM FINANCING

Bikeways in Davis may be funded from the full range of financial resources available to the city. These resources include the General Fund, Construction Tax, development impact fees, redevelopment monies, Mello-Roos Bonds, and cost participation by other entities. The appropriate funding is applied to the specific project according to the program or programs to which the project belongs.

Additionally, bikeway projects may be eligible for State or Federal funding when a bikeway project meets the appropriate program criteria. These funding sources include the newly enacted “Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users”, or SAFTEA-LU for short, a Federal program that makes funding available for bicycle projects.

The State of California has also established dedicated funding for bicycle projects as well. For many years, the California Bicycle Lane Account (BLA) had provided only about \$360,000 per year, *statewide*, for bike projects. As a direct result of lobbying by the California Bicycle Coalition (CBC), this amount was increased to approximately \$1,000,000 per year in FY 1999/2000, with a sliding scale that brought it up to \$5,000,000 per year by 2004, and annually thereafter. It was actually up to 7.2 million last fiscal year, but despite aggressive lobbying by CBC to keep it at this amount, it appears that it will be going back down to 5 million for the 2006/2007 fiscal year. To be eligible for BTA funds, a local agency must have a current bike plan (as defined in the schedule for each annual application cycle). These plans must address the elements described in Section 891.2 of the Streets and Highways Code. The account is administered by Caltrans and a local match is required.

In addition to BTA Funds, another significant funding source for bicycle and pedestrian projects is the “Safe Route to School,” (SRTS) program, which is administered by Caltrans with funding from state and federal sources.

VARIABLES IN PROJECT FINANCING AND SCHEDULING

Prioritizing bikeway projects in the City of Davis involves a number of variables that include, but are not limited to the following:

1. Bikeway projects are accomplished from a variety of funding sources and combinations of funding sources. Every bikeway project does not compete for funding with all other bikeway projects.
2. Many bikeway projects are undertaken concurrent with a larger project such as a street reconstruction or widening. The priority of the more significant project often determines when a bikeway project will be accomplished.

3. Many identified bikeway projects are closely linked to, or a result of development. These projects are often not needed until development actually occurs, and construction of such projects is dependent upon funding provided by the new development. It is difficult to predict accurately the timing for these projects due to the many uncertainties inherent to the development process.
4. Occasionally, the identification, and subsequent accomplishment of a project occurs so quickly (e.g. due to safety concerns, etc), that programming the project is impractical.

Historically, the greatest deficiency for the city and the university has been the lack of a good bicycle route connecting south Davis to the university and other destinations north of Interstate 80. The Mace Boulevard and Richards Boulevard interchanges have been highly congested for years, and to cross these structures, cyclists must cross freeway on- and off-ramps. For these reasons, projects that facilitate the safe movement of bicycles across the freeway have had the highest priority. Improvements to the Richards Boulevard interchange were completed in 1994, and the Mace Boulevard interchanges improvements have been completed as well. The Putah Creek bicycle undercrossing, in the planning stages for almost a decade, was finally completed in 2003. This latter project had a cost of approximately 7.2 million dollars. Additionally, a bicycle overcrossing of Interstate 80, immediately west of Mace Boulevard, was completed in 2002. This was named the “Dave Pelz Bicycle Overcrossing” after the long-time Davis Public Works Director of the same name.

PROJECT PRIORITIES

Aside from the factors referenced above, the following section details the priorities that are considered when making project approval and funding decisions on bike projects:

1. Bicycle facility projects with significant safety concerns are accomplished expeditiously, and placed ahead of system expansion. Projects of this nature are typically submitted to the Safety Advisory Commission and Bicycle Advisory Commission for review.
2. Projects that will close gaps or improve the operation of the existing bikeway system are given high priority.
3. Projects that expand the bicycle facilities network, including connections to the existing system, are analyzed annually as part of the normal budget process. Projects needed to integrate bicycle facilities provided by development are scheduled and funded during this annual review process.
4. Bikeway projects that enhance the existing system or bring substandard facilities up to standard are balanced according to their importance against other competing projects. The city has an annual program for maintenance and repair of existing bicycle facilities. These efforts are not sacrificed by diverting resources to construct new facilities.

APPENDIX 5

ADVISORY GROUPS

The city currently addresses safety issues, including bicycle safety, on a continuing basis. This function was formerly performed primarily by the Safety Advisory Commission (SAC), with technical support and guidance from engineering staff. When safety concerns arise, they are often directed to the SAC for staff investigation and resolution. The on-going “Suggested Routes to School” initiative is an example of the manner in which potential safety issues are addressed. The SAC process involves a report prepared by engineering staff (Public Works) which is then placed on the SAC agenda for action. If a roadway improvement project is planned near a specific school, bicycle and pedestrian safety and circulation considerations are included as part of the project development process. These issues are then reviewed by the Safety Advisory Commission as necessary.

In 2005, the Davis City Council created the Bicycle Advisory Commission, in part to address the concern among Bicycle Task Force members and other cyclists in the community that adequate consideration was not being given to bicycle transportation issues other than safety. Although the Safety Advisory Commission performs an admirable job in responding to safety concerns across a broad spectrum of issue areas (predominantly transportation related), that commission is not intended to promote bicycle transportation. The Bicycle Advisory Commission was created to expand opportunities to improve the bicycle program in Davis.

City and county bicycle advisory commissions, or committees, are standard components of most successful bike programs nationwide, and they allow for a more comprehensive pursuit of activities necessary to improve conditions for bicycling. These activities include what bicycle advocates refer to as the "Four E's" (in relative order of priority):

- Education
- Enforcement
- Engineering
- Encouragement

Whereas the Safety Advisory Commission is primarily charged with addressing the engineering component of this four tiered approach, the Bicycle Advisory Commission (BAC) is well suited to pursue the other emphasis areas. A well-informed BAC will help facilitate educating cyclists and motorists, and work with law enforcement to help reduce avoidable bicycle crashes and the incidence of bike theft. Finally, the Bicycle Advisory Commission can be instrumental in helping to develop and implement encouragement programs such as “Bike Commute Day” and “Cyclebration.” Cyclebration is a month-long celebration of the bicycle, which includes activities such as the “Cyclebration Classic,” a day-long festival including antique high-wheeler races, unicycle races, bike history, music, food and entertainment.

Although some cyclists, and parents of younger cyclists, believe that all bicycle safety issues can be solved through engineering (e.g. bike lanes and bike paths), this is actually just one component of many that is necessary to make our transportation networks safer for all road users. In the same way that the existing Safety Advisory Commission addresses engineering issues, the Bicycle Advisory commission is well placed to complement the work of the SAC by pursuing the remaining emphasis areas necessary to maintain a safe and effective bicycle transportation system.

An important issue with local bicyclists is the perception that bicycling for transportation is not as prominent in Davis as it once was. Although bicycle ridership is still quite high, the percentages are not as high as they were during the 1970's and 80's. A primary goal of the proposed bicycle advisory committee will be to ensure that cycling increases as a viable mode of transportation, and to encourage all residents to use bikes more frequently for as many purposes as possible. This includes commuting, running errands, shopping and recreation.

APPENDIX 6

BICYCLE FACILITY CLASSIFICATIONS

Bikeway means all facilities that provide primarily for bicycle travel. Topic 1003 of Chapter 1000 of the Caltrans Highway Design Manual categorizes bikeways as follows:

Class I

Class I bikeways (bike paths) are facilities with exclusive right of way, with cross flows by motorists minimized. Chapter 1000 of the California Highway Design Manual defines Class I bikeways as serving the exclusive use of bicycles and pedestrians.

Class II

Class II bikeways (bike lanes) provide a restricted right of way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians is prohibited, but with vehicle parking and cross flows by pedestrians and motorists permitted.

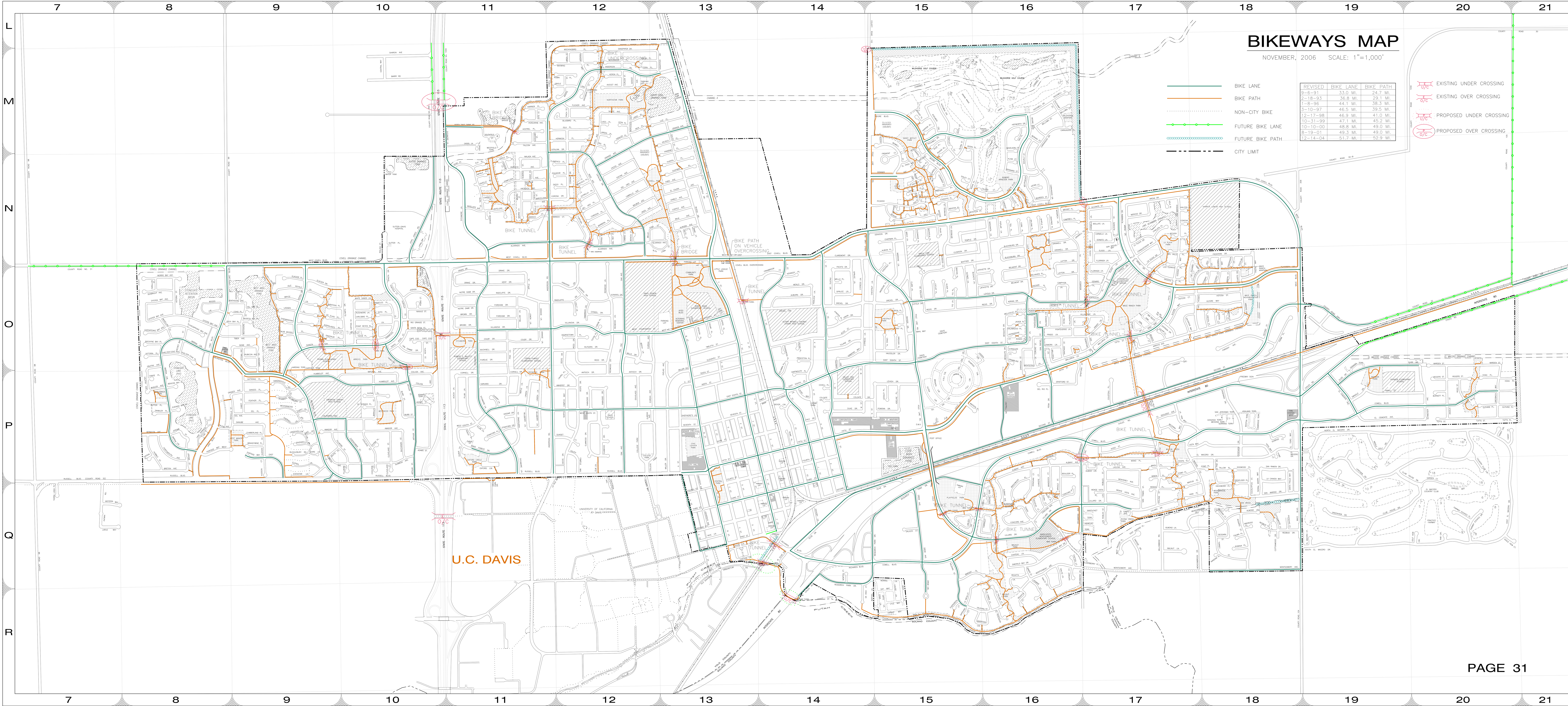
Class III

Class III bikeways (bike routes) provide a right of way designated by signs or permanent markings and shared with pedestrians or motorists. It is the policy of the City of Davis that this class of bikeway not be used.

APPENDIX 7

REFERENCES

1. City of Davis General Plan, 2001.
2. South Davis Specific Plan.
3. East Davis Specific Plan.
4. City of Davis Major Projects Financing Plan (MPFP).
5. SACOG Regional Transportation Plan.
6. Transportation Improvement Program (SACOG).
7. Yolo County Bikeway Plan.
8. UCD Long-Range Development Plan.
9. California Department of Transportation, Chapter 1000, Highway Design Manual.
10. Smith, Daniel T., Jr., DeLeuw, Cather & Company, Bicycle Circulation and Safety Study, prepared for the City of Davis and the University of California at Davis, August 31, 1972.
11. Maryland Department of Transportation, A Bikeway Criteria Digest, FHWA-TS-77-201, prepared for the Federal Highway Administration, Washington, D.C. 28590, 1978.
12. Lott, Dale F. and Donna Y., and Tammie Miller Harrington, Bikeway Usage and Design, DOT-FH-11-8134, prepared for the Federal Highway Administration, Washington, D.C., 1975.
13. California Department of Transportation, Bikeway Planning and Design, July 1990.
14. American Society of Civil Engineers, Bicycle Transportation, New York, N.Y. 10017, 1980.



BIKEWAYS MAP

NOVEMBER, 2006 SCALE: 1"=1,000'

- BIKE LANE
- BIKE PATH
- NON-CITY BIKE
- FUTURE BIKE LANE
- FUTURE BIKE PATH
- CITY LIMIT

REVISED	BIKE LANE	BIKE PATH
9-6-91	33.0 MI.	24.7 MI.
2-18-93	36.8 MI.	29.1 MI.
1-8-96	44.1 MI.	38.3 MI.
3-10-97	46.5 MI.	39.5 MI.
12-17-98	46.9 MI.	41.0 MI.
10-31-99	47.1 MI.	45.2 MI.
10-10-00	48.8 MI.	49.0 MI.
8-19-01	49.3 MI.	49.0 MI.
12-14-04	51.7 MI.	52.9 MI.

- EXISTING UNDER CROSSING
- EXISTING OVER CROSSING
- PROPOSED UNDER CROSSING
- PROPOSED OVER CROSSING