City of Lathrop
Bicycle Transportation Plan

Final Plan

August 9, 1995

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City of Lathrop
Bicycle Transportation Plan

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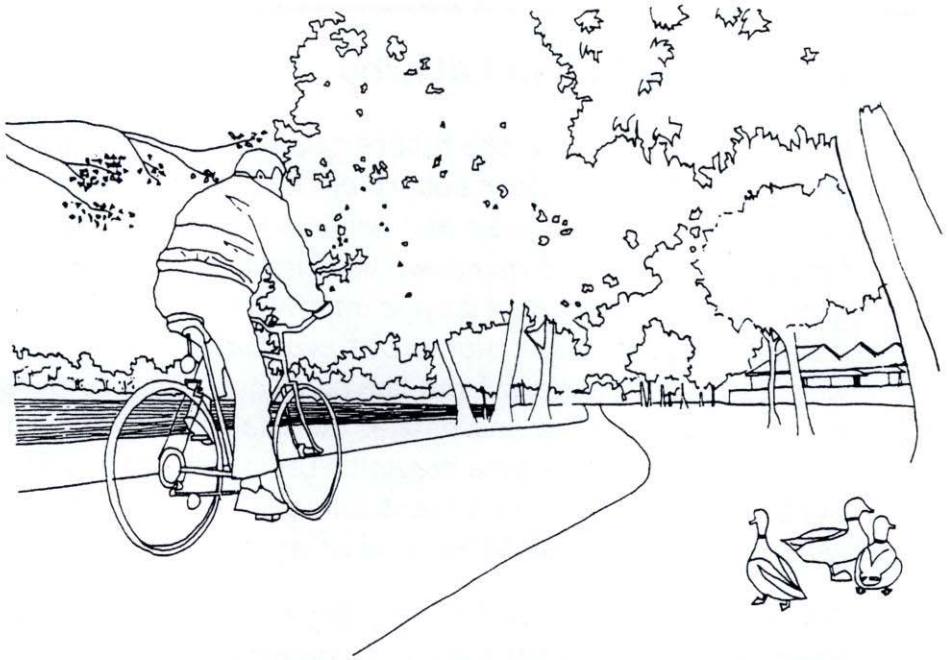


The Bicycle Plan provides a 20 year program for the development of a comprehensive network of community bikeways

I. Introduction

The Lathrop Bicycle Transportation Plan is a long range plan for a comprehensive bikeway system. When complete, the bikeway system will provide safe and convenient bike routes throughout the existing City Limits as well as future growth areas within the General Plan Sphere. The Plan has been prepared consistent with state, regional and local plans and requirements. Chapter I, provides an overview of the plan and its relationship to other plans and laws.

Chapter I consists of the following sections:

A. Vision Statement

B. Purpose

C. Process

D. Relationship to State Law

E. Relationship to Other Plans

F. Community Involvement and Citizen Participation

A. Bike Plan Vision Statement

A Summer Day in Lathrop

Imagine 20 years into the future, the once sleepy town of Lathrop has grown into a modern suburb of 30,000 residents. New parks, schools, shopping villages and neighborhoods have sprouted up from De Lima Road all the way down to Paradise Cut. As the community grew the City prioritized bicycle improvements as a part of all new development. It began slowly, but eventually a system of bikeways were extended outward from the city core into a comprehensive network of bike lanes and paths. As the bikeway system expanded, more and more residents began to utilize the safe and convenient system. Some residents eventually preferred riding their bicycles to work and to run errands instead of driving.

As new residents moved in, bicycling became a part of life in Lathrop. Every morning bicyclists are seen commuting to work or to transit stops. Because plenty of bicycle storage and changing facilities are located throughout town, bicycling is just as convenient as driving. During the day, children and families use the bikeways to get to school and run quick errands to the stores. Meandering through the landscape corridors that adjoin the streets and expressways, Lathrop's bikeways provide a scenic element throughout the community. At the end of each day, the bike system takes on a new life, as the recreational riders, joggers, and dog walkers take to the paths for a little fresh air and exercise. The miles of greenbelt and River pathways attract scores of riders and provide for community activity that brings people together.

B. Purpose

Both the State Legislature and the City of Lathrop recognize that in order to maintain a high quality of life, transportation alternatives to the automobile need to be provided. As a component of the City's overall transportation system, increased bicycle circulation promises to help relieve congestion, improve air quality, save money, and provide recreational opportunities. As a transportation mode, bicycling offers an efficient and cost effective method of transportation that is available to most residents regardless of age.

The purpose of the City of Lathrop's Bicycle Transportation Plan (BTP) is to: "improve and expand bicycling opportunities in Lathrop." The Bicycle Transportation Plan (BTP) provides goals, policies, and programs for the improvement of bicycling conditions within the community. It also provides direction for the development of new bikeways as future growth occurs in Lathrop's sphere of influence. The Plan outlines a comprehensive system of bikeways, that when fully improved and developed, will provide safe and convenient bicycle travel throughout the community.

Lathrop's Bicycle Transportation Plan provides a 20 year plan for bicycle improvements and development programs for bicycle facilities. Recommended intermediate bicycle improvements are identified and prioritized. The Plan coordinates local improvements with planned regional improvements as well as identifying potential funding sources.

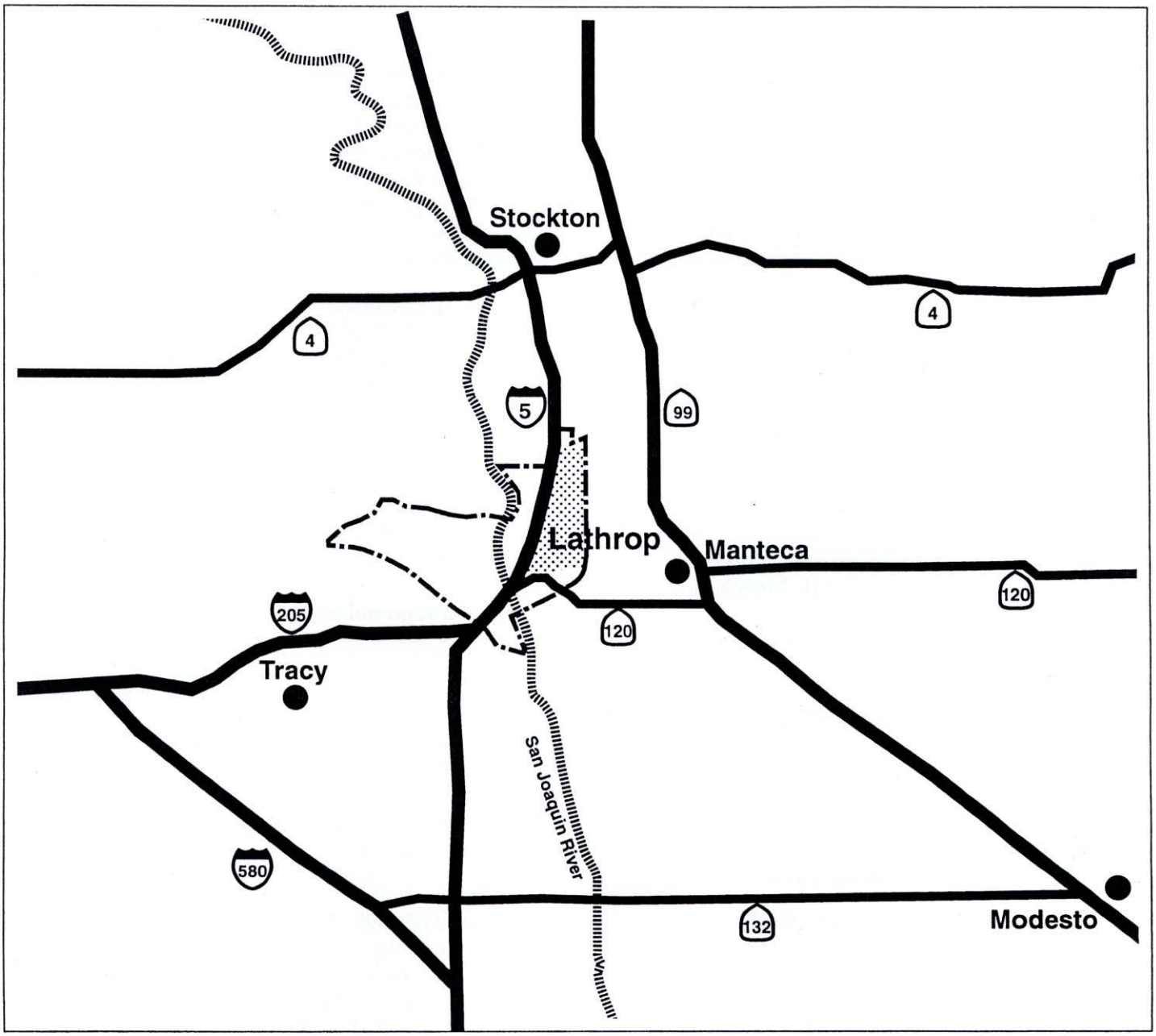
C. Process

The Bicycle Transportation Plan process was initiated by the City of Lathrop Parks and Recreation Department. The development of the Plan has been coordinated with the City's General Plan and the San Joaquin County's Regional Bicycle Master Plan. Funding for the Plan was provided through a Measure K assistance grant.

The bicycle planning process began in January of 1995. Based on the requirements of the California Bicycle Transportation Act, a comprehensive analysis of existing conditions combined with a community involvement program were undertaken to identify bicycle issues and problem areas. The results of this analysis provided the basis for the development of the Plan's goals, policies and implementation programs.

D. Relationship to State Law

The Lathrop Bicycle Master Transportation Plan has been prepared consistent with the California Bicycle Transportation Act §890-894.2 of the California Streets and Highways Code. Adoption and certification of the Bicycle Master Transportation Plan entitles the City to apply for funding sources that implement the Plan (§891.4).



Key

- 20 Year General Plan Area
- City Limits
- State Highway
- Interstate

Figure1

Location Map

City of Lathrop

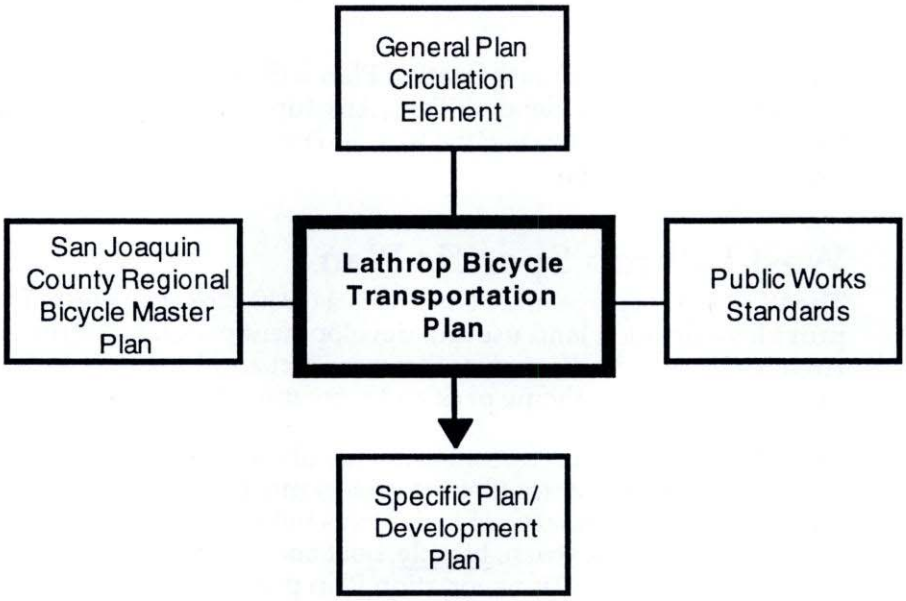
Bicycle Transportation Plan

E. Relationship to Other Plans

The following section describes the coordination of the Bicycle Master Transportation Plan with local and regional plans. This section satisfies Section 891.2.(i) of the California Bicycle Transportation Act.

1. City of Lathrop General Plan

The City of Lathrop adopted its first General Plan in December, 1991 following incorporation. Acting as the City's "road map", the General Plan provides long-range, comprehensive goals and policies for the development of the community over the next twenty years. Within the General Plan, the Transportation and Circulation Element outlines policies and proposals to maintain and improve the City's circulation system as growth occurs. It addresses components of the system such as state highways, inter-city and intra-city street networks, pedestrian ways, alleys, bicycle routes, railways, local and regional transit, and regional air access.



The Bicycle Transportation Plan provides an additional level of refinement to the General Plan's Transportation and Circulation Element, by providing a detailed set of policies and programs for bicycle circulation improvement. The Plan has been prepared to ensure consistency with the City of Lathrop General Plan and its transportation-related policies and proposals.

An important goal of the General Plan is to **"...de-emphasize reliance on the automobile to the extent possible while continuing to recognize its practical necessity as a dominant mode of surface transportation."** (G.P., pp. 2-17) The Plan addresses bikeways in a very general manner to offer flexibility for future improvements and construction. Though some specific proposals have been made for improving bikeways on existing roads, most recommendations are in the form of policies and objectives. The General Plan's Transportation Section outlines specific road improvements to accommodate bikeways and the Resource Management Element addresses future development of bikeways through open space corridors. Other bikeway improvements are intended to remain consistent with the Plan's statutes.

Applicable General Plan Goals and Policies

- The system of open space corridors proposed throughout existing and future areas of urban development are intended to accommodate bike paths and walkways separate from the street system.
- Pedestrian parkways (will be) located alongside a public street for the purpose of creating aesthetically pleasing corridors for both drivers of vehicles, bikers, and pedestrians.

The Lathrop Bicycle Transportation Plan will supplement the Circulation Element of the City's General Plan. Any future amendments or updated versions to the Plan should reference the Bicycle Transportation Plan and include policies for its implementation.

2. West Lathrop Specific Plan

The West Lathrop Specific Plan covers a 6,960 acre area West of town, and provides a detailed land use and development program for the site. (See Sub Area 3 in Figure 3). Known as Stewart Tract and Mossdale Village, the Plan calls for a Gold Rush era theme park and recreational, residential development.

The Specific Plan addresses all elements of the city's General Plan. Objective 6A of the Specific Plan states that the project must "Provide a circulation system that accommodates necessary vehicular trips but emphasizes the ease and convenience of pedestrian, **bicycle**, boat and public transit." (DWLSP, pp. 12) The Lathrop Bicycle Transportation Plan provides additional policy and bicycle routing criteria that will guide all bikeway improvements in the West Lathrop Specific Plan and future specific plans in the Lathrop sphere of influence.

3. San Joaquin County Regional Bicycle Master Plan

The primary goal of the San Joaquin County Regional Bicycle Plan is creation of a regional bikeway system through the coordination of local bicycle plans. The San Joaquin County Regional Bicycle Master Plan will provide linkages between the Lathrop Bicycle Transportation Plan and surrounding communities including Stockton, French Camp, Manteca, and Tracy. Within Lathrop's sphere of influence, the Plan recommends the following regional linkages:

San Joaquin County Regional Bicycle Master Plan Bikeways **(refer to Figure 2)**

- Class I path along the western section of Yosemite Road
- Class II lanes along Manthey Road and Airport Way
- Class III route along the eastern section of Yosemite Road accessing Manteca

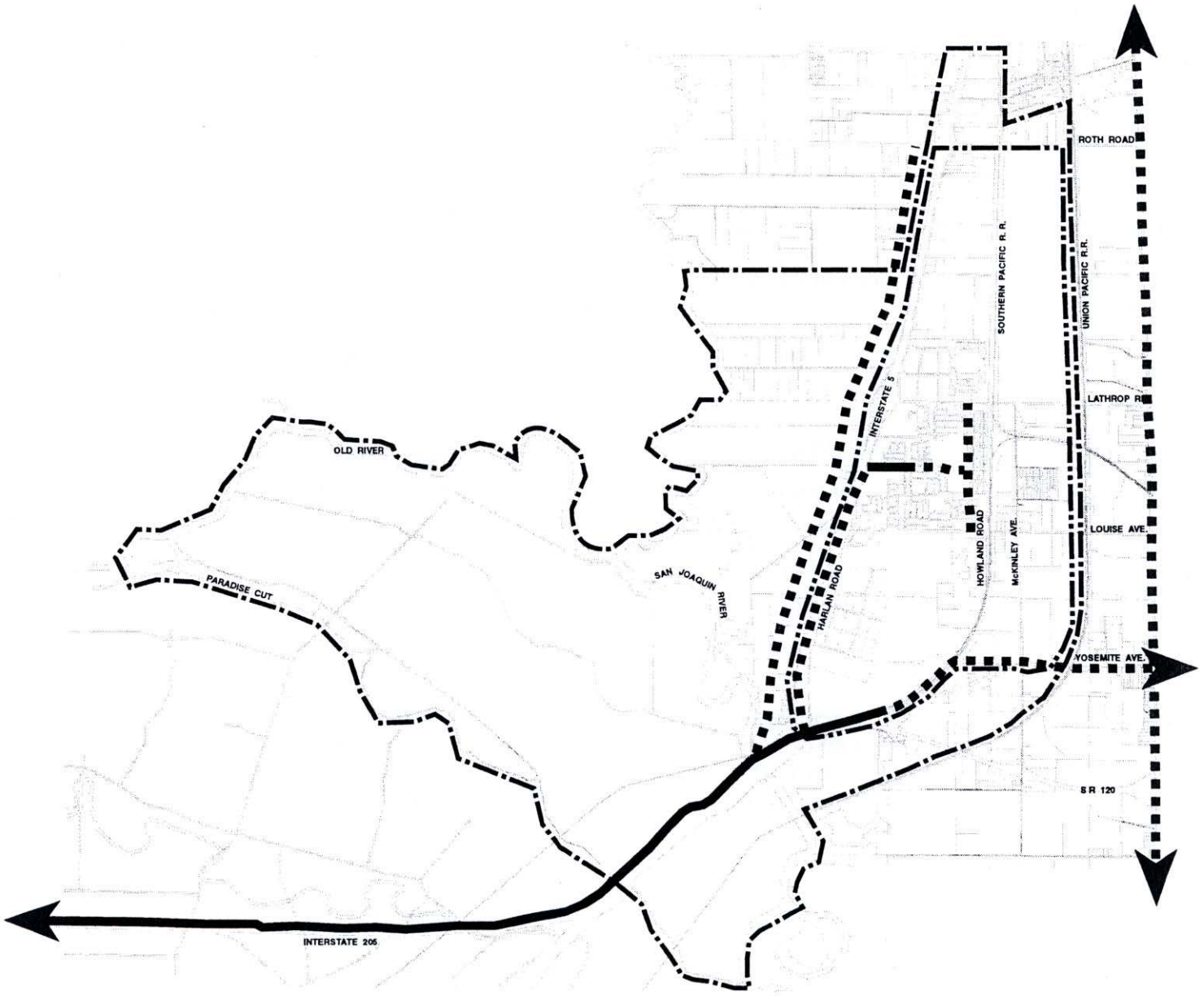
4. Regional Plans

A number of regional plans have been adopted recently that address county wide circulation and air quality issues. The primary purpose of these plans is to coordinate transportation improvements to maximize efficiency and reduce environmental impacts.

Regional Plans and Programs

- San Joaquin Unified Air Pollution Control District and Air Quality Attainment Plan
- 1991 San Joaquin County Congestion Management Program (CMP)
- 1993 Regional Transportation Plan (RTP)
- 1990 Measure K Strategic Plan
- 1992 Regional Transit Systems Plan

Bicycle circulation system improvements have been identified as a necessary component of improving the regional circulation system. Consequently, the Bicycle Transportation Plan's purpose is to increase bicycle commuting within the City of Lathrop and ensure consistency within the intent of these regional plans.



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miles

Key

- 20 Year General Plan Area
- City Limits
- Existing Bikeways
- Proposed Bikeways

City of Lathrop
Bicycle Transportation Plan

Figure2

Proposed County Bikeways

F. Community Involvement and Citizen Participation

The following section describes the community involvement and citizen participation component of the Bicycle Transportation Plan. This section satisfies Section 891.2.(h) of the California Bicycle Transportation Act.

A comprehensive program to involve Lathrop's citizens was a key component during preparation of the Bicycle Transportation Plan. The effort provided public participation through written questionnaires, public workshops, and public hearings. Table 1, Community Involvement Programs, summarizes the community involvement programs that were conducted as part of the planning process.

Table 1 Community Involvement Programs

Date	Program	Response
3/9/95	Lathrop Community Workshop	19 attendees
2/18 to 3/8/95	Bicycle User Profile Questionnaire	48 responses
3/1/95	News Articles in Manteca Bulletin and Bee	
3/1/95	Article in Lathrop City Newsletter	
(5/9/95)	Parks and Recreation Committee Meeting	
(5/24/95)	Planning Commission Hearing	
(6/6/95)	City Council Hearing	

2. Community Survey

In mid-February 1995, a Bicycle Profile Questionnaire and workshop notice was directly mailed to all households in Lathrop regarding the Bicycle Transportation Plan. The Technical Appendix, Chapter 5, provides a copy of this mailer. The purpose of the survey was to educate the public about the Plan and to obtain input from local citizens. Included was a letter from the City discussing the intent of the Plan and the importance of local citizen participation in its development. The questionnaire requested participants to identify what bicycle issues, opportunities, and problem areas exist in Lathrop. The survey also prompted citizens to list improvements that could be made to the City's existing bikeway system that might encourage more bicycle use. The results of the survey were used to estimate the population of bicycle commuters, create the Plan's goals and objectives, and prioritize project improvements.

3. Bicycle Questionnaire Results

A general trend of bicycle issues became apparent through the responses to the Bicycle Profile Questionnaire. Of the people surveyed, approximately 90% currently own bikes and about 31% work in Lathrop or Manteca. Though this is a small population who could potentially bicycle to work or school, about 23% of those surveyed commute by bike on a daily or weekly basis. Generally, however, most bicycle ridership in Lathrop is for recreation. A combined total of

69% of those people responding ride a bicycle for recreation on a daily or weekly basis.

The questionnaire also revealed some key destination points for those who do use their bikes. Approximately 30% of the people use their bike occasionally. Trips were made primarily to Lathrop's Delta Market, the Post Office, and Manteca's Raley's and Orchard Supply Hardware store. Over 43% of Lathrop's bicycle users are recreational riders. Though many of those surveyed did not specify their recreational destinations, some identified rides to Mossdale River, Mossdale Park, and Dos Rios Park.

Many bicycle issues and problem areas were identified through the questionnaire, with 32% identifying bicycle safety as a major concern. The current network of roads in Lathrop are not conducive for safe bicycle travel because there is a lack of shoulder space and many motorists do not obey traffic laws. Other issues that arose were proper linkage of bicycle routes, secure bike storage, and bicycle safety education. Locals also identified unsafe roads within the City. Repeatedly, Lathrop Road and Louise Avenue were targeted with having high-speed traffic and being a crossing hazard for bicyclists.

To encourage more bicycle use in Lathrop, citizens overwhelmingly suggested that more paved paths and bike lanes be installed. Other incentives included making bike routes safe, providing more bike racks at stores and parks, and implementing education programs for bicycle safety and use.

4. Community Workshop

A community workshop was held on March 9, 1995 at the City's Community Center. The purpose of the workshop was to educate local citizens about the Plan and to obtain their input regarding bicycle issues in the town. To accomplish this, the workshop was divided into two segments. The first summarized all of the existing conditions within Lathrop in regard to bicycle facilities.

The second segment of the workshop allowed citizens to participate in the design of their bikeway system. Small groups were created which allowed citizens and members of Lathrop City and School staff to draw where they would like to see bikeways. The goal with this exercise was to personalize the City's Bicycle Transportation Plan and build consensus. Following the mapping exercise, a presentation of each Plan was made and discussed. The result was a general consensus regarding the location and types of bikeways the community prefers. This exercise provided the basis for the Plan's Bicycle Circulation Diagram.

A lack of bikeways in Lathrop hinder safe cycling.

II. Existing Bicycle Conditions

Chapter II describes the bicycling conditions that exist within the City of Lathrop in February, 1995. The following existing conditions have been evaluated: Land Use Patterns, Bicycle Commuters, Existing Bikeways, Bicycle Parking Facilities, Proposed Bikeways, Transit Connections, Changing Facilities, Safety Programs, and Past Expenditures. This portion of the Lathrop Bicycle Transportation Plan satisfies Section 891.2. (a)-(k) of the California Bicycle Transportation Act.

Chapter II is divided into the following sections:

A. Land Use Conditions
B. Bicycle Commuters
C. Existing Bikeway System
D. Planned Bikeway Facilities
E. Existing Bicycle Parking Facilities
F. Existing Connections to Transportation Modes
G. Existing Changing Facilities
H. Bicycle Safety Program
I. Past Expenditures

A. Land Use Conditions

The following section responds to Section 891.2.(b) of the California Bicycle Transportation Act.

1. Project Setting

The City of Lathrop is located approximately 20 miles south of Stockton in San Joaquin County. Located originally between the San Joaquin River as well as the Central Pacific and Union Pacific Railroads, the town has grown in size to a population of approximately 8,500 people. Though the City has 15,436 acres in its Planning Area, of which about 15% is developed, only 4,150 acres exist within its current city limits. Today, Lathrop finds itself at a conflux of freeways including Interstate 5, Interstate 205, and State Route 120. Due to its regional location, Lathrop enjoys close proximity to air, highway, rail, and water transportation modes.

Interstate 5 divides the Lathrop General Plan area. Currently, the City Limits are located east of Interstate 5 and north of State Route 120. Most of the commercial, public, and residential uses are between Lathrop Road and Louise Avenue. Industrial uses surround the City to the east and south along the railroad lines and freeways. The undeveloped land west of Interstate 5 is currently used primarily for agriculture, but is planned for annexation and development as part of the City of Lathrop.

2. Land Use Summary

The City of Lathrop has been divided into three distinct planning areas by the General Plan: Sub-Plan Areas 1, 2, and 3. (See Map) Because the three areas are comprised of differing development policies and proposals, they were separated for ease of reference.

a. Sub-Plan Area # 1

Sub-Plan Area #1 refers to all land within the city's limits and some acreage north of Roth Road and south of State Route 120. The area is located east of Interstate 5 and holds most of the development of the town. Uses such as schools, public services, residences, commercial outlets, and general employment industries are located within Sub-Plan Area #1.

b. Sub-Plan Area # 2

Sub-Plan Area #2 is located west of Interstate 5 and north of the San Joaquin River. The majority of this land is currently in agricultural use, but has high development potential. The primary proposed development in this area has community commercial uses near the Interstate and low density residential extending further westward. It will also have a central business district providing a variety of commercial and entertainment needs.

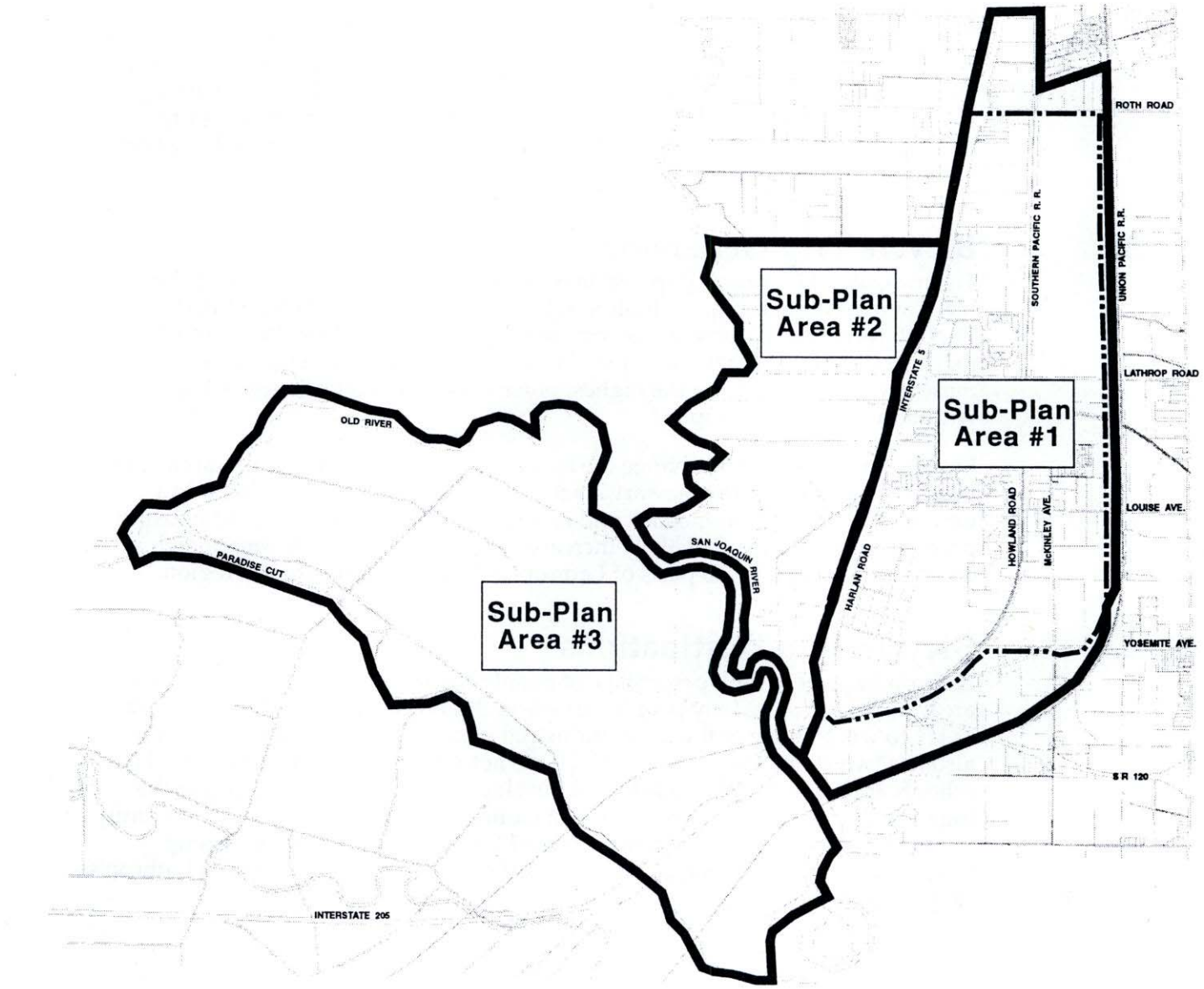


Figure 3

General Plan Map

City of Lathrop

Bicycle Transportation Plan

c. **Sub-Plan Area # 3**

Sub-Area Plan #3 is also located west of Interstate 5, but south of the San Joaquin River. Though a resort development and theme park is proposed for this area, the current use is agricultural. Known as the Stewart Tract, the West Lathrop Specific Plan outlines future uses in this area. The primary proposals for this land include resort residential bordering Old River and a theme park based on the Gold Rush Era circa 1850.

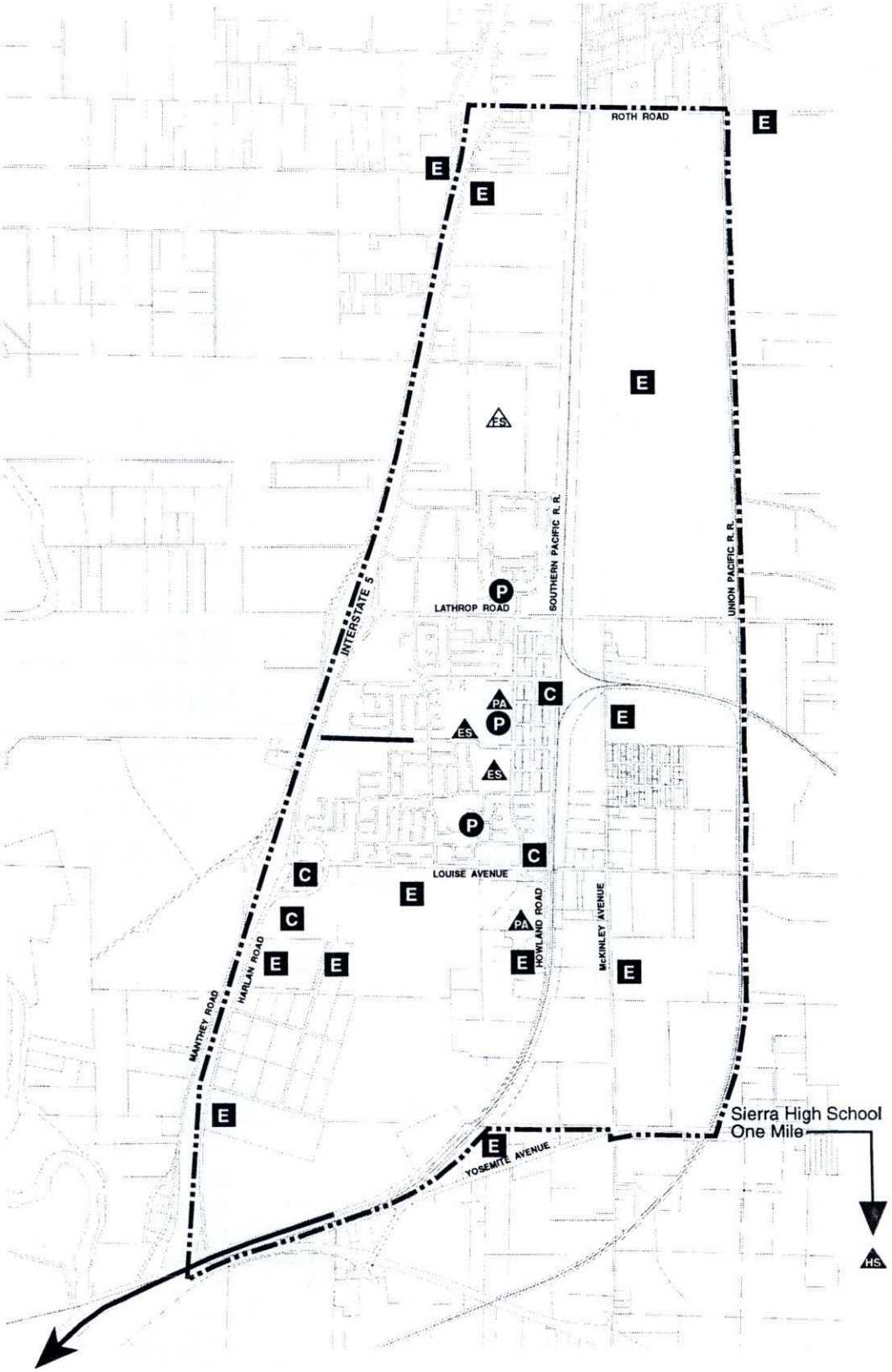
3. Bicycle Trip Generators

The majority of Lathrop's population resides in housing within the boundary of Interstate 5, Southern Pacific Railroad, Louise Avenue, and Lathrop Road. Though recent development has occurred just north of Lathrop Road, much of this area consists of a network of residential and collector streets. Presently, these neighborhoods have the highest potential for generating bicycle trips within the City of Lathrop.

Future development will change the bicycle trip patterns in Lathrop's sphere of influence. Growth in the Stewart Tract and Mossdale Village will include a variety of housing, commercial, and recreational uses. The content of housing proposed for this area will likely increase the daily bicycle trips generated by commuters who travel to parts of Lathrop and outlying areas of the region.

4. Bicycle Trip Destinations

Lathrop has a very high percentage of people who commute to work from other areas of the region. Many people drive from Manteca, Stockton, Modesto and Tracy to work at one of the many industrial plants located in the town. Lathrop also has two elementary schools which are not serviced by district busses. These schools are located within residential development, however. Because of the high number of destinations existing in Lathrop, and its close regional proximity to other towns, the City has great potential for increasing bicycle ridership through improved bikeways. See Table 2 for a descriptive summary of Lathrop's major trip destinations.



Source: RRM Design Group 1995

Key

- Existing Bikeways
- Public Agency Building
- Schools
- Future Schools
- Commercial Center
- Employment Center
- Parks

Figure 4

Bicycle Trip Patterns

City of Lathrop

Bicycle Transportation Plan

Table 2 Employer and Bicycle Commuter Relationship

The information contained in this table reflect the conditions surveyed in February, 1995.

Employer	Bike Commuter/ Employees	Bike Storage Facilities	Changing Facilities
City of Lathrop, City Offices 16775 Howland Road, Lathrop	0 / 45 Approx. 8 reside in Lathrop	None	Change in restrooms; lockers avail.
City of Lathrop, Community Center 15557 Fifth Street, Lathrop		10-space rack	Restrooms and no lockers
Lathrop School 15851 5th St., Lathrop	50-60 / 700 (students) 0 / 50 (faculty)	70-space bike rack	Bathrooms and locker rooms
Libbey Owens Ford Company 500 E. Louise Ave., Lathrop	2 / 425	No racks, but storage inside plant is O.K.	Locker room with showers available
Superstore Industries 16888 S. McKinley Ave., Lathrop	3-4 (summer) / 400	8-space bike rack	Lockers avail.
Steelgard, Inc. 15700 S. McKinley Ave., Lathrop	0 / 40	No racks, but storage avail.	Bathrooms and clothing storage avail, no lockers
E. R. Carpenter 17100 S. Harlan Rd., Lathrop	0 / 230	None	Restrooms and lockers avail.
J. R. Simplot Company 16777 Howland Rd., Lathrop	4-5 / 160 (weather permitting) 5 reside in Lathrop	8-space bike rack	Showers and lockers avail.
Defense Distribution Region West 500 Roth Road, Lathrop	8-10 / 1,100 70 reside in Lathrop	None, but storage avail.	Restrooms and lockers available.
Patio Industries 2050 E. Louise Ave., Lathrop	1 / 40 3 reside in Lathrop	None, but storage avail. in warehouse	Restrooms avail., but no storage.
Lathrop Elementary Annex 721 Thomsen Rd., Lathrop	3-5 / 380 (students) 0 / 20 (faculty)	10-space bike rack	Restrooms avail., but no storage.
Sierra High School 1700 Thomas St., Manteca	3-4 / 605 (students) 1 faculty commuter	2 bike racks	School locker room with changing and storage facilities avail.
Tru-Fit Manufacturing 3515 W. Yosemite Ave., Lathrop	0 / 9	No racks, but storage avail.	Restrooms and lockers avail.
Nestle 2 Nestle Way, Lathrop	0 / 130 10-15 reside in Lathrop	None	Restrooms and lockers available.
Factory Stores of America	0 / 156	2, 4-space racks	None
San Joaquin Cogen Power Plant 17200 S. Harlan Road, Lathrop	0 / 13	None, but storage avail.	Restrooms and lockers available
CBC Steel Buildings 1700 E. Louise, Lathrop	0 / 100 Less than 10 reside in Lathrop	No storage currently avail., but may be provided	Restrooms and lockers available.
Union Pacific Intermodal Facility 1000 E. Roth, French Camp	0 /	None	Restrooms and lockers available
San Lorenzo Lumber Company 11800 S. Harlan, Lathrop	0 / 25 One resides in Lathrop	Bike racks avail. for internal bike use	Restrooms and lockers available

B. Bicycle Commuters

The following section responds to Section 891.2.(a) of the California Bicycle Transportation Act. A "bicycle commuter" is defined in § 890.3 as "a person making a trip by bicycle primarily for transportation purposes, including, but not limited to , travel to work, school, shopping, or other destination that is a center of activity, and does not include a trip by bicycle primarily for physical exercise or recreation without such a destination."

1. Estimated Bicycle Commuters

The majority of bicycle commuters in Lathrop are children who ride to school on a daily basis. A much smaller percentage of people commute to work by bike. In general, approximately 2% of the residents in Lathrop rely on their bicycle to commute to school or work. The bicycle commuter population was developed through site surveys, questionnaire results, and phone surveys of local public agencies and employers. Table 3, Bicycle Commuter Population, summarizes the characteristics which comprise the bicycle commuter population in Lathrop.

Table 3 Bicycle Commuter Population

The information in this table reflects the conditions surveyed in February, 1995.

	Number of Employers Surveyed	Estimated Daily Site Population	Average Daily Bicycle Riders	% Bicycle Commuters
Workers / Faculty	17	2,944	23	.78 %
Students	3	1,685	69	4.1 %
TOTAL	**20**	**4,269**	**92**	**2.2 %**

2. Intra-Business Bicycle Use

Some of the major employers surveyed in Lathrop use bikes internally as a part of daily business. Defense Distribution Region West and Lorenzo Lumber Company are two industries in Lathrop which utilize this inner transportation mode. Because of each site's large size, both employers find that bikes are a convenient and effective form of transportation within the facility. Both of these industries view the bicycle use as a very positive aspect of daily business.

3. Recreational Bicyclists

Currently, the City of Lathrop does not have formal recreational bicycling areas within its city limits. The City is comprised of a semi-urban street network which caters mainly to automobile traffic. Lathrop does have great potential for the development of recreational bikeways within its sphere of influence. However, the Stewart Tract and Mossdale Village offer prime locations for bike paths along river levees and railroad right-of-ways. The West Lathrop Specific Plan also proposes many open space corridors and nature preserves which would be suitable for recreational riding.

4. Community Perspective

Bicycle use in Lathrop varies tremendously. For much of the City, bicycle use mainly occurs with people who are recreational riders. More than half of the population reports that they use their bikes on a daily or weekly basis for fun and recreation. A small percentage of these people, however, use their bikes for commuting to work or doing errands. Commutership is also low with children who could use their bikes to ride to school. Though daily bicycle use is low in Lathrop, a majority of its citizens own bicycles.

A major factor keeping local adults and children from riding their bikes to work and school is a perceived lack of safety on the roads. Bicyclists in Lathrop simply do not feel safe sharing the roads with motorists. Many citizens note that Lathrop and Louise Avenue are not safe for bicycle travel and there is a general consensus that roads are not maintained for safe bicycle use. Potholes, road debris, and a lack of shoulder space are key issues from local residents.

C. Existing Bikeway System

1. Built Bikeways

The following section responds to Section 891.2.(c) of the California Bicycle Transportation Act. Bikeways are defined in § 890.4 as "all facilities that provide primarily for Bicycle travel."

Bikeways are categorized in three types: Class I Bike Paths, Class II Bike Lanes, and Class III Bike Routes. Class I Paths give bicyclists and pedestrians a separated right-of-way for their exclusive use. Class II Lanes give bicyclists a semi-exclusive right-of-way for travel within the street, but allow crossflow from vehicles and pedestrians. Class III Routes are marked with signs where bicyclists share the street right-of-way with motorists and pedestrians.

The City of Lathrop has very few existing bikeways and has not recently made any improvements. Lathrop is now using San Joaquin County standards for all street and bikeway improvements. Currently, a partial Class II Lane on Thomsen Road is the only bikeway in the city limits. This lane is marked with road striping, but has not been marked with Class II bike lane signs. Within Lathrop's sphere of influence, existing bikeways include a Class I Path parallel to Interstate 205 and a Class III Route on S. Manthey Road. Though the City has proposed bikeways within its current city limits, the General Plan does not address any of its existing routes. (Refer to Figure 5)

Many of the roads in Lathrop are wide enough to accommodate Class II bike lanes, thus enabling bikeway improvements to be made with the addition of road striping and proper signage. The following roads may be suitable for Class II or Class III bikeways: South Harlan, Nestle Way, Louise Avenue, Yosemite Avenue, Seventh Street, Fifth Street, J Street, and O Street. Refer to Chapter III of this Transportation Plan for additional information.

2. Existing Street System

A number of street improvements are outlined in Lathrop's General Plan and Capital Improvement Program. Though these provisions do not include specific measures for constructing bikeways on these roads, the General Plan intends to have Class II Bike Lanes become a part of this improved street system. The major arterials for improvement are as follows:

General Plan Designated Bikeways

- Roth Road expanded to six lanes between Interstate 5 and Airport Way.
- Airport Way expanded to six lanes between Roth Road and State Route 120.
- Yosemite Avenue expanded to six lanes from State Route 120 to Manteca city limits.
- Lathrop Road and Louise Avenue expanded to four lanes from Interstate 5 to Manteca city limits.

D. Planned Bikeway Facilities

1. City of Lathrop

The General Plan addresses proposed bikeways within the existing city limits of Sub-Plan Area 1. All proposed routes in this area will become a part of the existing street system and will be Class II lanes. Improvements are recommended for Roth Road, Lathrop Road, Louise Avenue, Harlan Road, and Seventh Street. The Plan suggests that all other routes in this area exist without road striping and it does not address signage for these routes.

Because Sub-Plan areas 2 and 3 are currently not developed, the General Plan addresses proposed routes in these regions in a general manner. The Plan recommends that a basic bikeway system be developed that connects all school sites, parks, commercial areas, and transportation modes. Other goals for future development in these areas include minimizing the intrusion of automobiles and including Class I bike paths in open space corridors where possible.

2. San Joaquin County

San Joaquin County's Regional Bicycle Master Plan addresses the local bicycle plans of Stockton, Tracy, Manteca, Escalon, Lathrop, Lodi, and Ripon. The plan's provides a regional framework for bikeway improvements. San Joaquin County has proposed Class I, II, and III bikeways that regionally connect its cities. Through Lathrop, proposed bikeways on Manthey Road, Airport Way, and Yosemite Avenue offer access to other towns in San Joaquin County. The County Plan also suggests Class II bikeways within Lathrop's inner street network along Thomsen Street and Fifth Street.

E. Existing Bicycle Parking Facilities

The following section responds to Section 891.2.(d) of the California Bicycle Transportation Act. Bicycle parking facilities refer to areas, racks, and lockers providing for the secure storage of bicycles.

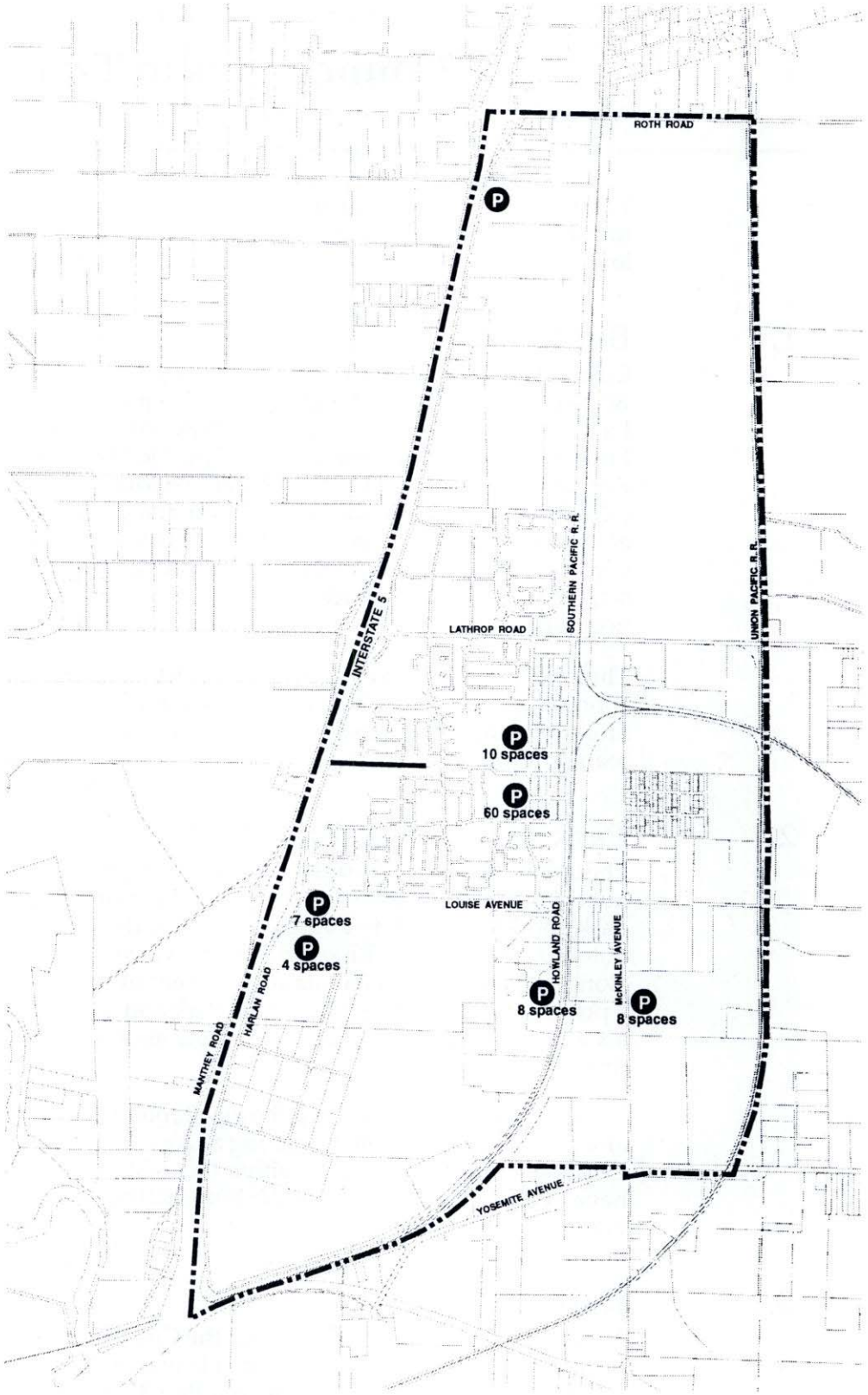
The current supply of the city's parking facilities were determined from a field survey in February, 1995. Table 4 summarizes bicycle parking facility characteristics in Lathrop. Few parking facilities are located within the city, and those provided are primarily located in newer commercial and industrial developments. The Factory Stores of America and the fast food restaurants along S. Harlan and Louise Ave. exemplify newer developments which provide bicycle parking. Facilities are also adequately supplied at the City's Community Center and at the local schools.

Very few of Lathrop's industrial employers offer bicycle parking though. Of the major employers surveyed, only Superstore Industries and J. R. Simplot Company offered bike racks for its employees. However, the City does have an active bicycle parking policy for new commercial and industrial developments which occur in the Crossroads area. "Crossroads" refers to the industrial area south of Louise Ave. and between Harlan Road and Howland Road. A secure bicycle storage facility must be provided for projects with twenty or more required parking spaces, and the facility must have a minimum capacity of one bike space per twenty car spaces. In general, the current supply of bicycle parking facilities are inadequate throughout the city. Figure 5, Existing Bicycle Facilities, indicates the location of bicycle parking facilities in Lathrop.

Table 4 Bicycle Parking Facilities

The information contained in this table reflect the conditions surveyed in February, 1995.

#	Location	Type	Capacity	Comment
1	City of Lathrop, Community Center	Rack	10 spaces	
2	Lathrop School	Rack	70 spaces	
3	Lathrop Elementary Annex	Rack	10 spaces	
4	Sierra High School	Rack	2 racks	
5	Superstore Industries	Rack	8 spaces	
6	J. R. Simplot Company	Rack	8 spaces	
7	Factory Stores of America	Rack	2, 2-space racks	Connection to transportation mode
8	San Lorenzo Lumber Company	Rack	Ample spaces	Used internally for business
	Total Parking Facilities		**112 spaces**	



0 1/2
miles

Source: RRM Design Group 1995

Key

- City Limits
- Existing Bike Route
- Existing Bicycle Parking Facilities

City of Lathrop
Bicycle Transportation Plan

Figure 5

Existing Bicycle Facilities

F. Existing Connections to Transportation Modes

The following section responds to Section 891.2.(e) of the California Bicycle Transportation Act. "Transportation Modes" are defined as: "parking facilities at transit stops, rail and transit terminals, ferry docks and landings, park and ride lots..."

1. Bus Service

Currently, no rail terminals, transit terminals, ferries, or park and ride lots exist within the City (refer to Figure 6). San Joaquin County-Area Transit services Lathrop and Manteca via a fixed-route schedule operating Monday through Friday. A Dial-A-Ride service is also provided for the elderly and handicapped. Regional public transit is provided by the San Joaquin Regional Transit District (SMART) with destinations in Lodi and Tracy. Transfer points are also available at these locations for access to other parts of the region. As Lathrop grows, the City does plan to improve its mass transit system. Though no timeline has been set, the frequency of service for these bus routes will be increased as deemed necessary.

Through the field survey conducted in February, 1995, one transportation mode connection was located in Lathrop city limits. Within the parking lot of Factory Stores of America, a two-space bicycle rack was located next to a bus stop for San Joaquin County Area Transit.

2. Park & Ride Facilities

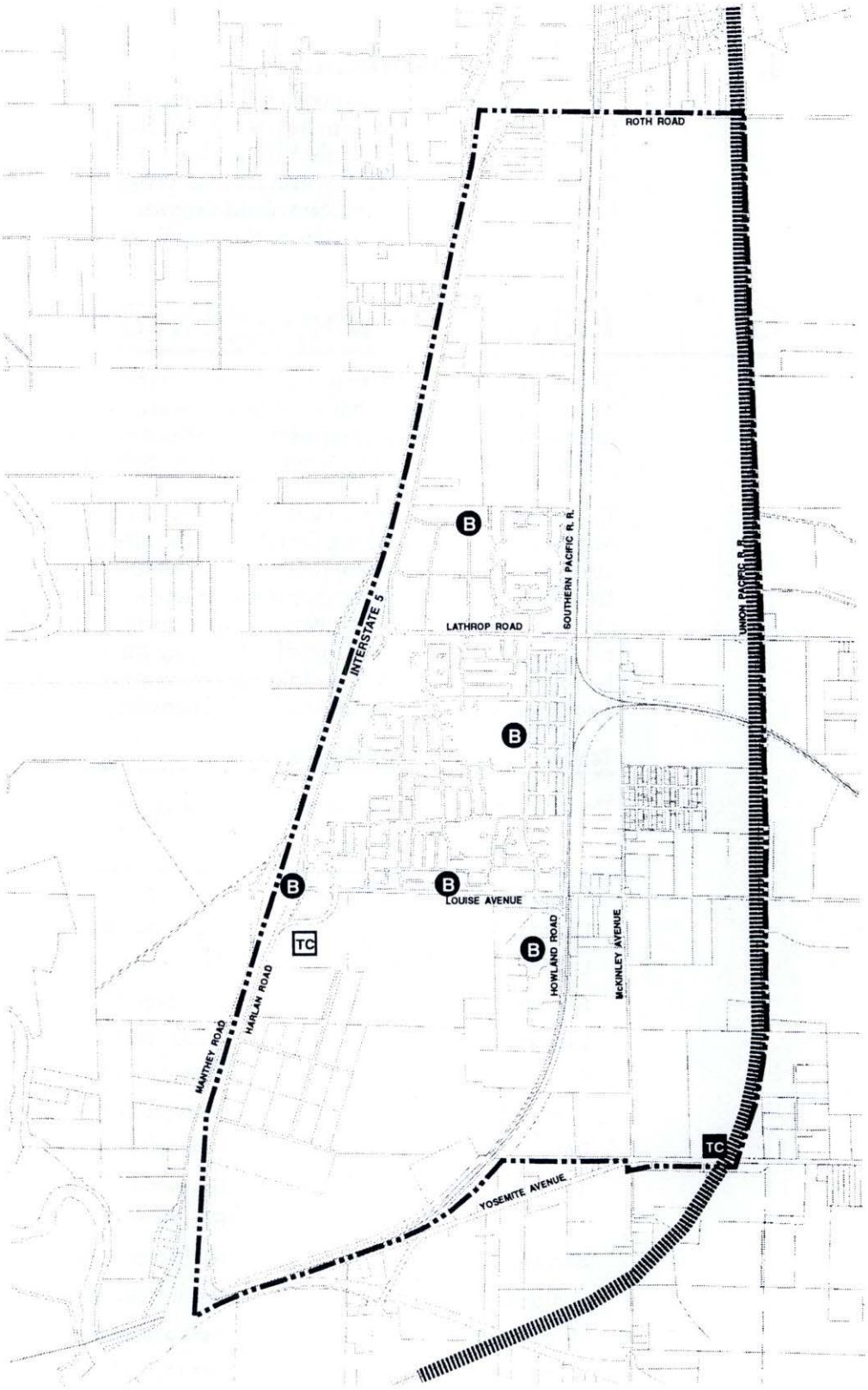
Though Caltrans recognizes a private lot north of Louise Avenue at its intersection to Interstate 5 as an informal parking facility, no officially designated Park and Ride lots were located during the field survey. The City has great potential for Park and Ride facilities, however. Because of its regional location along major highways and its acquirement of several large industries, Lathrop is a prime location for these facilities. Park and Ride lots along the Interstate could act as "Transportation Mode" connectors and improve access throughout the region.

Lathrop is currently pursuing the development of a formal Park and Ride facility along Interstate 5. Though funding and a site location have not been secured, the City is planning for a facility within the existing city limits. General provisions have also been made for a Park & Ride facility under development in the West Lathrop Specific Plan.

3. Railroads

Though two railroads pass through the City, their present use is for industrial purposes. A railroad passenger stop is planned at the Union Pacific RR and Yosemite Rd. as part of the Altamont Pass Passenger Rail Demonstration Project. Service will likely commence in 1996. This project will offers a rail commuter service with regional destinations in Stockton, Lathrop/Manteca, Tracy and the East Bay.

Dial-a-ride service provided by San Joaquin County Area Transit (CAT)



Key

- Future Rail Transit Route
- B — Bus Stop
- TC — Existing Transit Connection Point
- TC — Proposed Transit Connection Point

Figure 6

Existing Transit Connections

City of Lathrop
Bicycle Transportation Plan

4. Water Transportation

The City of Lathrop also seeks to maximize its potential modes of water transportation. With branches of the San Joaquin River in close proximity to the Stewart Tract and Mossdale Village, boat transportation can also provide access throughout the region. Several marina projects are proposed under the West Lathrop Specific Plan which would provide yacht and boat accommodations as well as a riverboat service from the San Francisco Bay Area.

G. Existing Changing Facilities

The following section responds to Section 891.2.(f) of the California Bicycle Transportation Act. Changing facilities are defined as "facilities for changing and storing clothes and equipment. These shall include, but are not limited to, lockers, restrooms, and shower facilities that exist near bicycle parking facilities".

Formal bicycle changing facilities with lockers and showers are not available at any of the bicycle parking facilities within the city. Most of the employers surveyed have accessible restrooms available to employees needing to change their clothes should they commute to work by bike. The local schools and the city's Community Center can also accommodate riders who need to change clothes. Though formal bicycle changing facilities are not provided, all locations have restrooms, some providing showers and lockers. Table 5, Changing Facilities, summarizes the available changing facilities.

Table 5 Changing Facilities

The information contained in this table reflect the conditions surveyed in February, 1995.

Location	Changing Facility
City of Lathrop, Community Center	Restrooms
Lathrop School	Restrooms / locker rooms
Lathrop Elementary Annex	Restrooms
Sierra High School	Restrooms / locker room / showers
Libbey Owens Ford Company	Locker room / showers
E. R. Carpenter	Restrooms / lockers
J. R. Simplot Company	Locker room / showers
Defense Distribution Region West	Restrooms / lockers
Tru-Fit Manufacturing	Restrooms / lockers
Nestle	Restrooms / lockers
San Joaquin Cogen Power Plant	Restrooms / lockers
CBC Steel Buildings	Restrooms / lockers
Union Pacific Intermodal Facility	Restrooms / lockers
San Lorenzo Lumber Company	Restrooms / lockers

H. Bicycle Safety Programs

The following section responds to Section 891.2.(g) of the California Bicycle Transportation Act.

1. Educational Programs

Bicycle safety programs are conducted by the Lathrop STARS program (Sheriff Team of Active Retired Seniors) during "Lathrop Days" to offer education in proper bicycle conduct. The Lathrop Police Department also visits the local elementary schools annually to educate children about bicycle rules and helmet laws. Both the Police Department and the STARS offer educational pamphlets about bicycling.

Together, the Manteca Bicycle Club and the Manteca Bulletin also conduct educational programs. Their programs cover the topics of proper bicycle operation, traffic laws, and safety equipment.

2. Responsible Law Enforcement Agencies

Three separate law enforcement agencies have jurisdiction within the Bicycle Transportation Planning Area. The City of Lathrop Police Department provides bicycle safety and traffic enforcement within the city limits.

The City of Lathrop does not offer any bicycle licensing programs. The local police department does suggest that individuals wishing to license their bike for protection, should engrave their Driver's License number on the bicycle.

Law Enforcement agencies with Jurisdiction

- **Lathrop Police Department**
  traffic safety, traffic law enforcement on all streets in city limits
- **California Highway Patrol**
  jurisdiction along all state highways, maintain records on bicycle accidents
- **San Joaquin County Sheriff Department**
  jurisdiction in unincorporated areas of Lathrop

3. Accident Rates and Locations

Records of bicycle accidents are maintained by the California Highway Patrol. A record search was conducted for accidents involving bicyclists during the past three years (1992 to 1994). Refer to Figure 7. Five bicycle accidents have been reported in the past three years; zero in 1992, three in 1993, and two in 1994. The three accidents in 1993 occurred along Cambridge Avenue at various locations. In 1994, one accident occurred at the intersection of Lathrop Road and Interstate 5 and the other occurred at the intersection of McKinley Avenue and North Vierra Road in the southeast side of the city boundary. Of these five accidents in the past three years, no fatalities were reported.

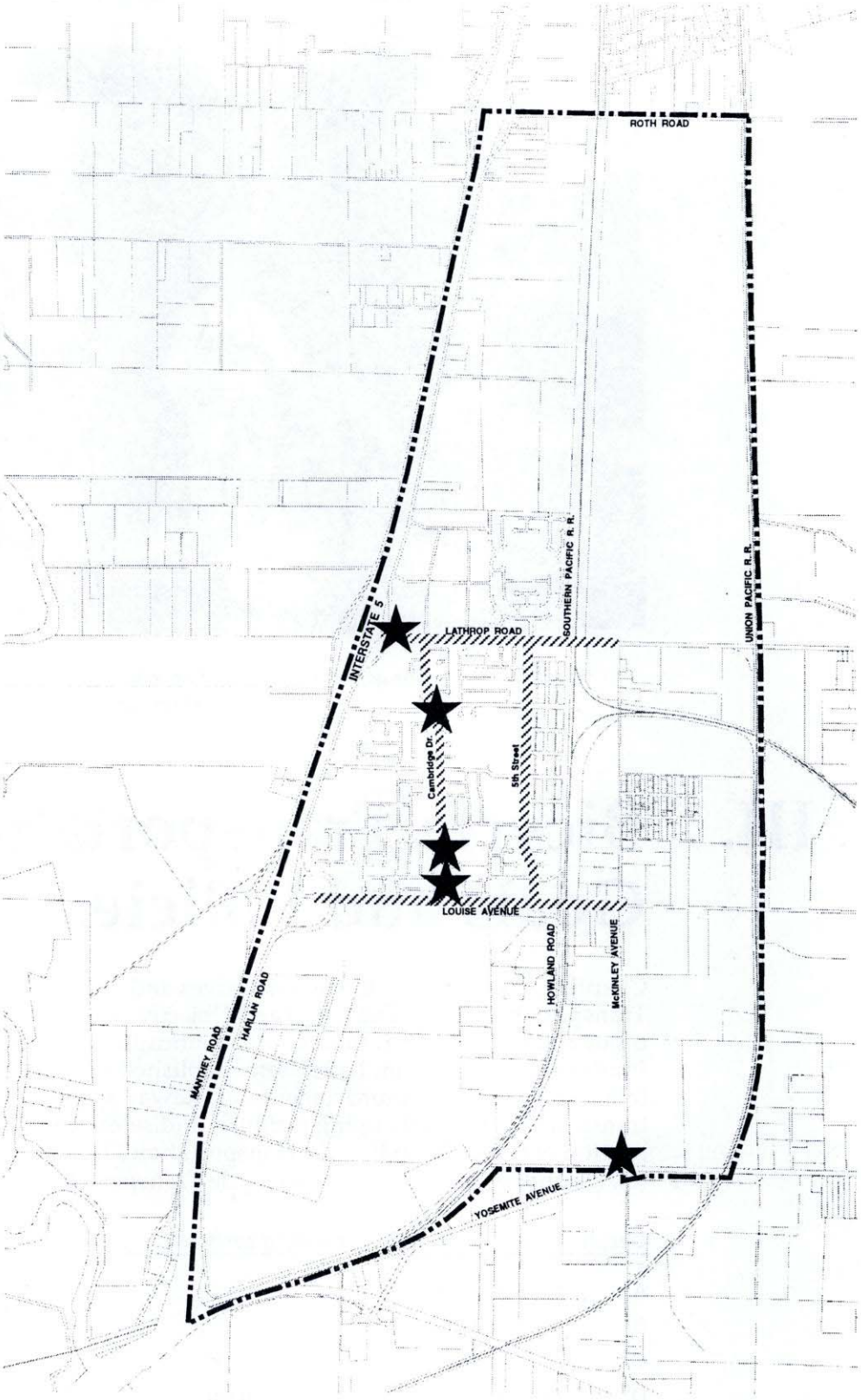
I. Past Expenditures

The following section responds to Section 891.2.(k) of the California Bicycle Transportation Act.

The City of Lathrop has not obtained funding for the purposes of providing or improving bicycle facilities within the City. On Thomsen Street, a Class II bike lane with no signage is the only existing bicycle facility at the time of the site analysis. Currently, the City has no money budgeted for bicycle improvements in its Capital Improvement Program.

Table 6 Capital Improvement Program Expenditures

Fiscal Year	Total Budget for Street Construction	Total Budget for Street Improvements	Allotment for Bikeway Improvements
1992-1993	$2,241,000	N/A	$0
1993-1994	$1,400,000	N/A	$0
1994-1995	$850,000	$181,000	$0
1995-1996	$0	$170,000	$0
1996-1997	$15,300,000	$210,000	$0
TOTAL FY 1992-1997	**$19,979,000**	**$561,000**	**$0**



Key

- Accident Location
- Bicycling Hazard Area

Figure 7

City of Lathrop

Bicycle Transportation Plan

Bicycle Accident Map

The goal of the Bicycle Plan is the creation of a community wide network of safe and convenient bikeways.

III. Bicycle Transportation Plan Goals and Policies

Chapter III contains the Goals, Objectives and Policies for the Bicycle Transportation Plan. The Goals and Objectives were created based on citizen input and provide the rationale and justification for Plan policies. Implementation policies have been established to assure the completion of the following proposed improvements: a bikeway system, bike parking facilities, transit connections, changing facilities, and safety education programs. This portion of the Lathrop Bicycle Transportation Plan satisfies Section 891.2 (c), (d), (e), (f), and (g) of the California Bicycle Transportation Act.

Chapter III is divided into the following sections:

A. Proposed Bikeway System

The following section responds to Section 891.2 (c) of the California Bicycle Transportation Act. Figure 9, Bicycle Circulation Diagram, is hereby adopted and incorporated into the Lathrop Bicycle Transportation Plan.

The proposed bikeway system will consist primarily of a network of Class II bike lanes and Class I bike paths. Within the existing City limits, bikeways will be added to existing streets or installed as part of road widening projects. Throughout the City's General Plan area, bikeways will be provided as a condition of development. In addition, a system of scenic and recreational trails will be planned for along the San Joaquin River corridor and other appropriate open space corridors. The intent of the bicycle system is to maximize the number of bicycle commuters within the City, by providing safe and convenient cycling facilities.

1. Bikeway Classifications

Bikeways are defined in § 890.4 of the California Bicycle Transportation act as "all facilities that provide primarily for bicycle travel." Under Caltrans Bikeway Planning and Design standards, bikeways are defined in three classes: Class I Bike Paths, Class II Bike Lanes and Class III Bike Routes. Refer to Figure 8, Caltrans Bikeway Classifications, for schematic illustrations of the different classes of bikeways.

Bikeways are defined in three categories:

- **Class I Bikeways:** "Bike paths" provided within a completely separated right-of-way designated for the exclusive use of bicycles and pedestrians with crossflows by motorists minimized.

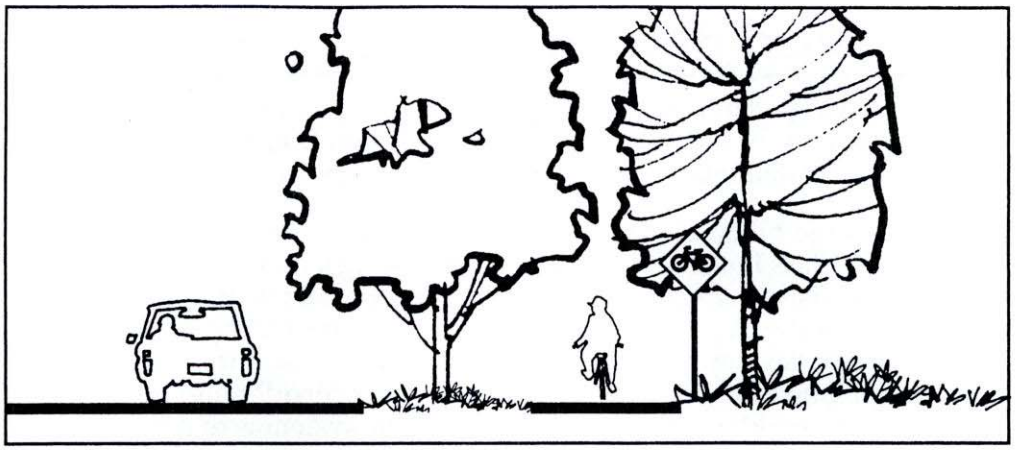
  Caltrans standards require bike paths to have a minimum paved width of 8 feet and be completely separated from a street.

- **Class II Bikeways:** "Bike lanes" provided within a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted.

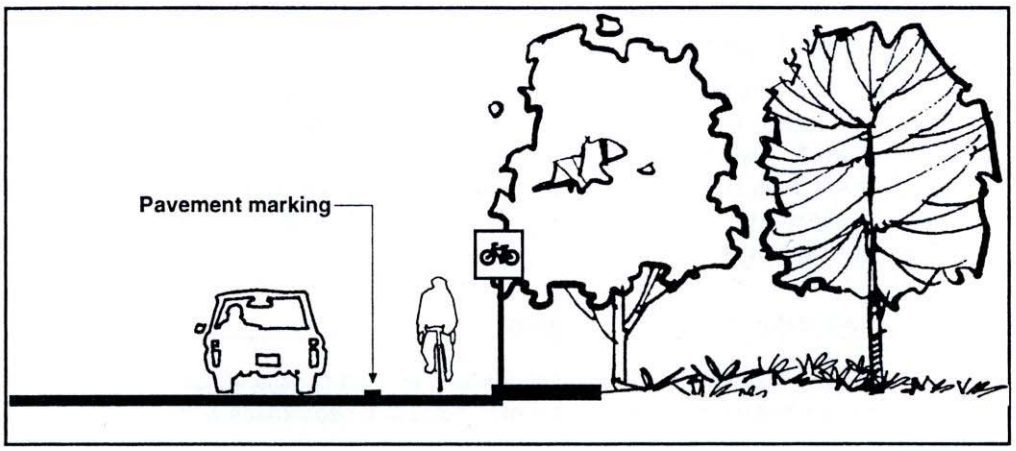
  Caltrans standards require bike lanes to be striped with a 6 inch solid white line that provides a minimum 4 foot exclusive bicycle travel lane.

- **Class III Bikeways:** "Bike routes" provided within the street right-of-way designated by signs or permanent markings and shared with pedestrians or motorists.

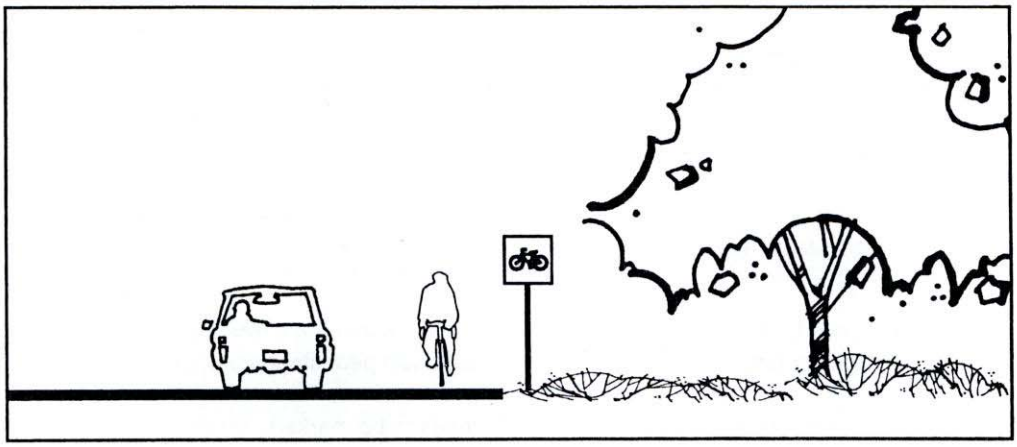
  Caltrans standards require Class III routes to be marked with the appropriate Bike Route signs.



Class I Bike Path - Separated Right-Of-Way



Class II Bike Lane - Designated Right-Of-Way



Class III Bike Route - Shared Roadway

Figure 8

Bikeway Classifications

2. Bikeway System Policies

Goal A **To create a bikeway system that provides for convenient and safe bicycle circulation throughout Lathrop and maximizes the number of bicycle commuters.**

Objective A.1 **Provide a comprehensive network of bikeways that provides access to destination points throughout the community.**

Implementation Policies

A.1.a. Bikeways shall be provided, at a minimum, along all routes indicated in Figure 9.

A.1.b. The bikeway system shall consist of Class I and Class II bikeway facilities. Class III bike routes should be used only to provide route connections where constraints make other bikeways unfeasible.

A.1.c. Bikeway access shall be provided to all schools, parks, recreation facilities, employment uses, shopping areas and public facilities.

A.1.d. Bikeway facilities shall be installed on new streets, designated as bikeways, at the time of improvement.

A.1.e. The City shall actively pursue the development of a perimeter bikeway loop around the City.

A.1.f. Class II Bicycle Lanes shall be provided along all major arterial streets.

A.1.g. Class I Bicycle Paths shall be considered for all linear parks, green belts and parkways.

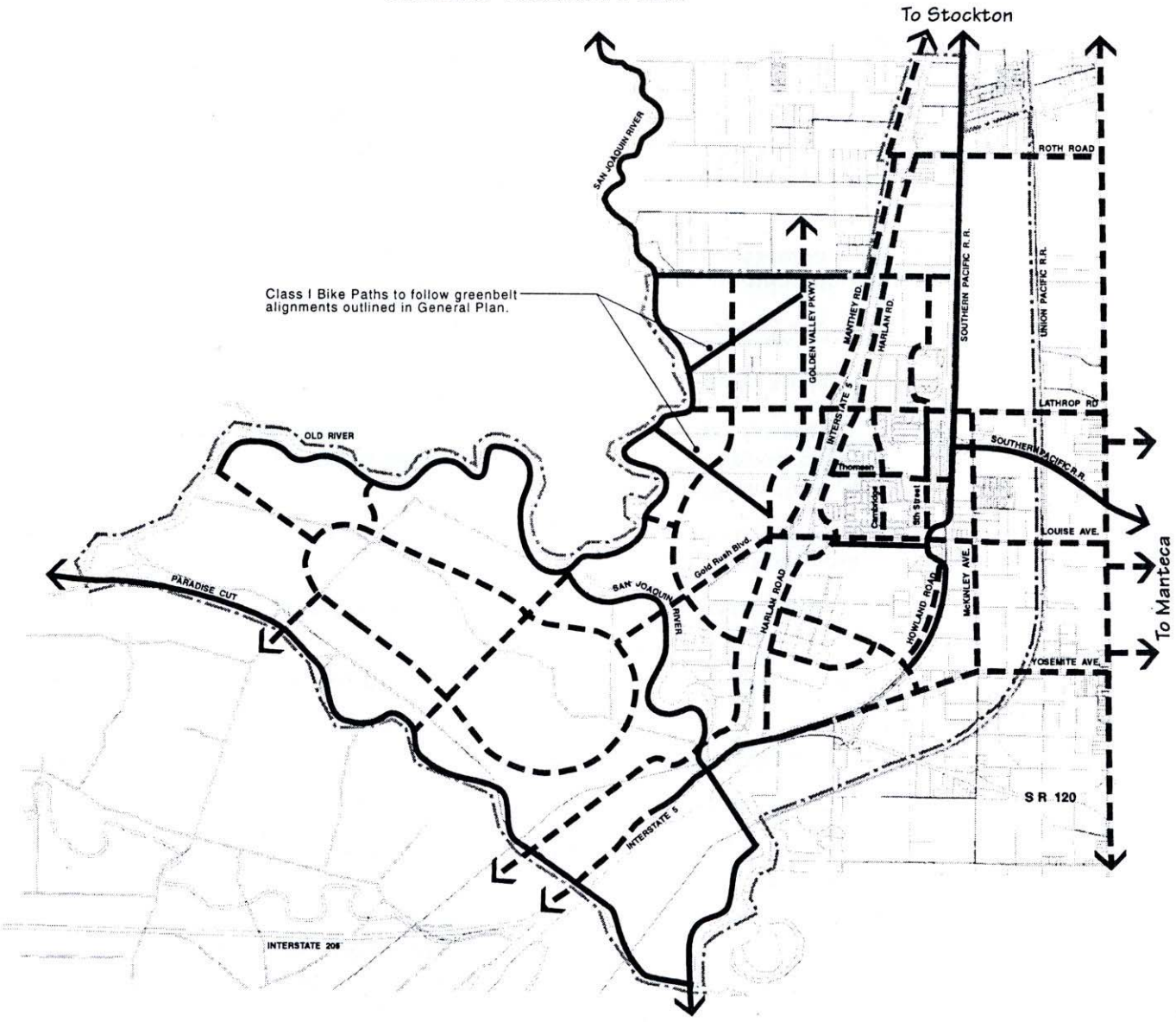
A.1.h. The City shall pursue the development of a recreational Bicycle Path system along the San Joaquin River corridor.

A.1.i. The City shall allow alternative locations and flexibility in the provision of bicycle facilities throughout the planning area including the Stewart Tract region as long as the facilities are consistent with the intent of the General Plan. Due to the unique and innovative nature of the proposed development on the Stewart Tract, implementation of specific facilities shall be in accordance with a specific plan adopted by City Council. Implementation of facilities in other regions of the planning area shall be in accordance with subsequent specific plans in those regions.

Objective A.2 **Assure bikeways are fully integrated into all future development occurring within the City's General Plan Sphere.**

Implementation Policies
The following Policies apply to all annexation areas within the City's General Plan Sphere.

A.2.a A "Bicycle Circulation Plan (BCP)" shall be prepared as part of all Specific Plans or development plans for future annexations. A Bicycle Circulation Plan shall provide both text and diagrams that indicate the location of all proposed bikeways and a statement of consistency with the provisions of this Plan. The BCP shall also include a description of phasing and financing for all proposed bikeways.



Interpretation

This diagram indicates the general location and framework of Class II and Class I bikeways within the General Plan Area. Additional minor routes shall be added as needed to provide connections to schools, parks, commercial centers, employment areas, and public buildings. Precise location and design of bikeways shall be determined at the time of improvement, consistent with the General Plan and Circulation Element. Class II facilities shown west of I-5 may be upgraded to Class I paths at the City's discretion at time of approval.

0 miles 1

Key

- 20 Year General Plan Area
- Proposed Class I Path
- Proposed Class II Lane

Figure 9

City of Lathrop

Bicycle Transportation Plan

Bicycle Circulation Diagram

August 9, 1995

A.2.b New development shall provide bikeway linkages to the existing City core including connections under Interstate 5.

A.2.c Class II Bike Lanes shall be provided on all proposed future arterials, boulevards and parkways.

A.2.d At a minimum, a Class II bikeway shall be provided within 1/4 mile of all residential dwellings in the City.

Objective A.3 Provide route linkages to regional bikeways.

Implementation Policies

A.3.a Bikeway connections shall be provided to the City of Manteca's bicycle route system.

A.3.b Bikeway connections shall be provided to regional routes specified in the San Joaquin County Bicycle Plan.

A.3.c Route linkages shall be provided to the I-205 Bikeway.

Objective A.4 Provide for a high level of rider safety along all bikeways.

Implementation Policies

A.4.a All bikeway improvements shall be consistent with the Caltrans Highway Design Manual, Chapter 1000. (refer to Technical Appendix)

A.4.b Bikeway improvements shall be generally consistent with typical sections indicated on figures 11-21.

A.4.c Bikeway crossings at all major streets should be designed to maximize the safety of cyclists. Intersection improvements may include, but are not limited to signalization with bicycle activation, traffic safety signage, striped crossings, crossing medians, etc.

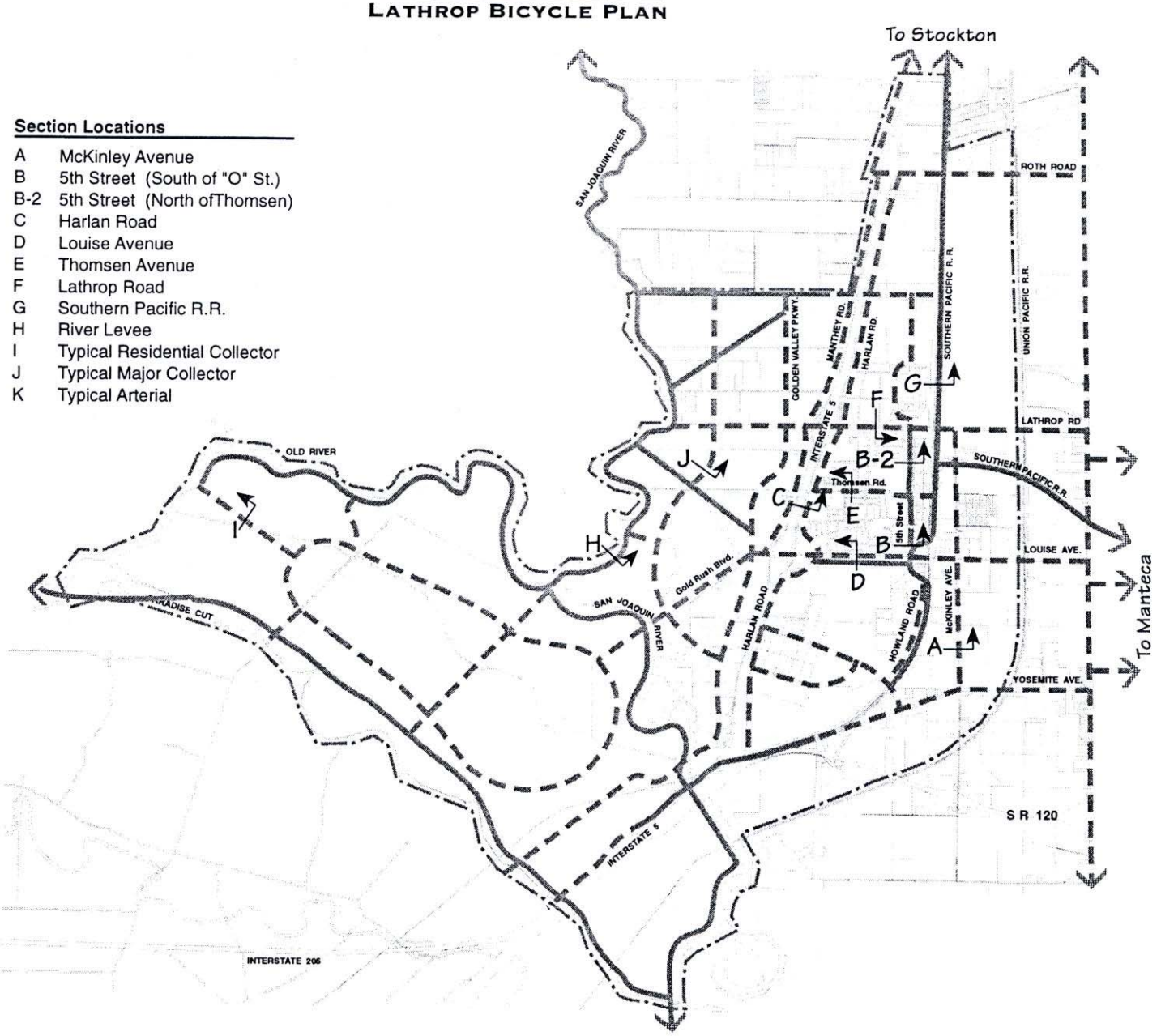
A.4.d Bikeway crossings at railroad tracks should be designed and maintained to facilitate safe crossing for bicycles.

A.4.e All bikeway pavement should be maintained to provide a smooth riding surface, free of pot holes, inlet grates, utility covers , road debris, and obstructions.

A.4.f Adequate lighting should be provided along all bikeways.

Section Locations

A	McKinley Avenue
B	5th Street (South of "O" St.)
B-2	5th Street (North ofThomsen)
C	Harlan Road
D	Louise Avenue
E	Thomsen Avenue
F	Lathrop Road
G	Southern Pacific R.R.
H	River Levee
I	Typical Residential Collector
J	Typical Major Collector
K	Typical Arterial



Note

This diagram identifies the general location of street section segments. Precise location and design shall be determined at time of improvement.

0 miles 1

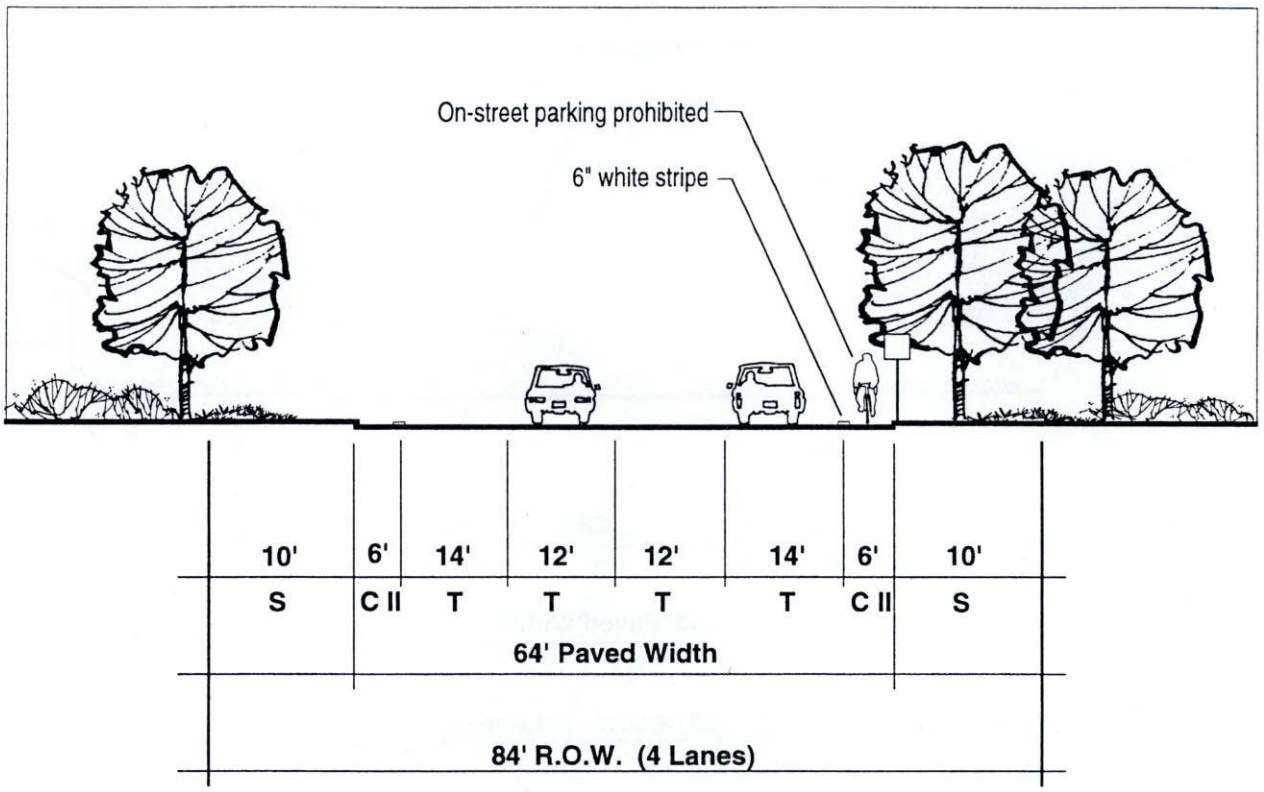
Key

- 20 Year General Plan Area
- Proposed Class I Path
- Proposed Class II Lane

City of Lathrop
Bicycle Transportation Plan

Figure10

Street Section Location Diagram



Note

Refer to Lathrop road section for 100' R.O.W.'s

Key

T Travel Lane
S Sidewalk Area
C II Class II Bike Lane

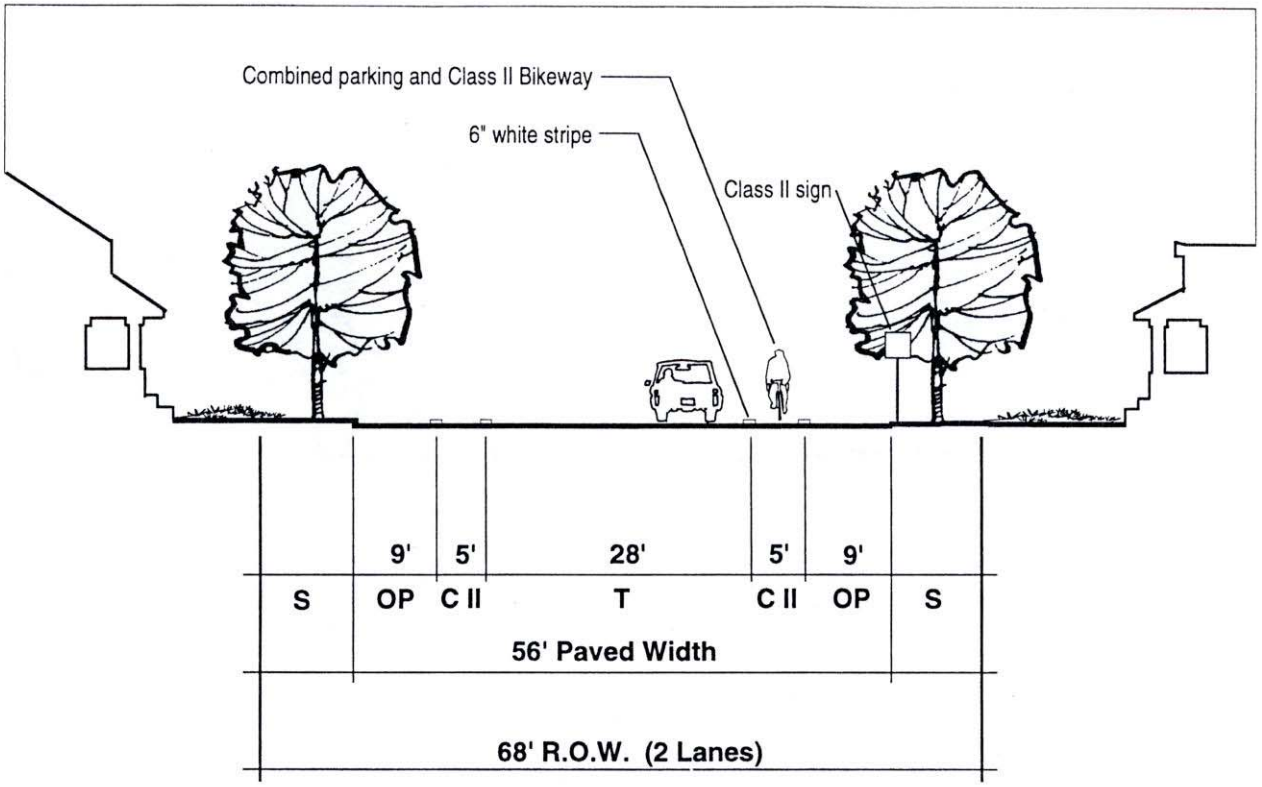
City of Lathrop
Bicycle Transportation Plan

Figure 11

Section A

McKinley Avenue

Typical Bikeway



Key

T Travel Lane
OP On Street Parking
CII Class II Bike Lane
S Sidewalk Area

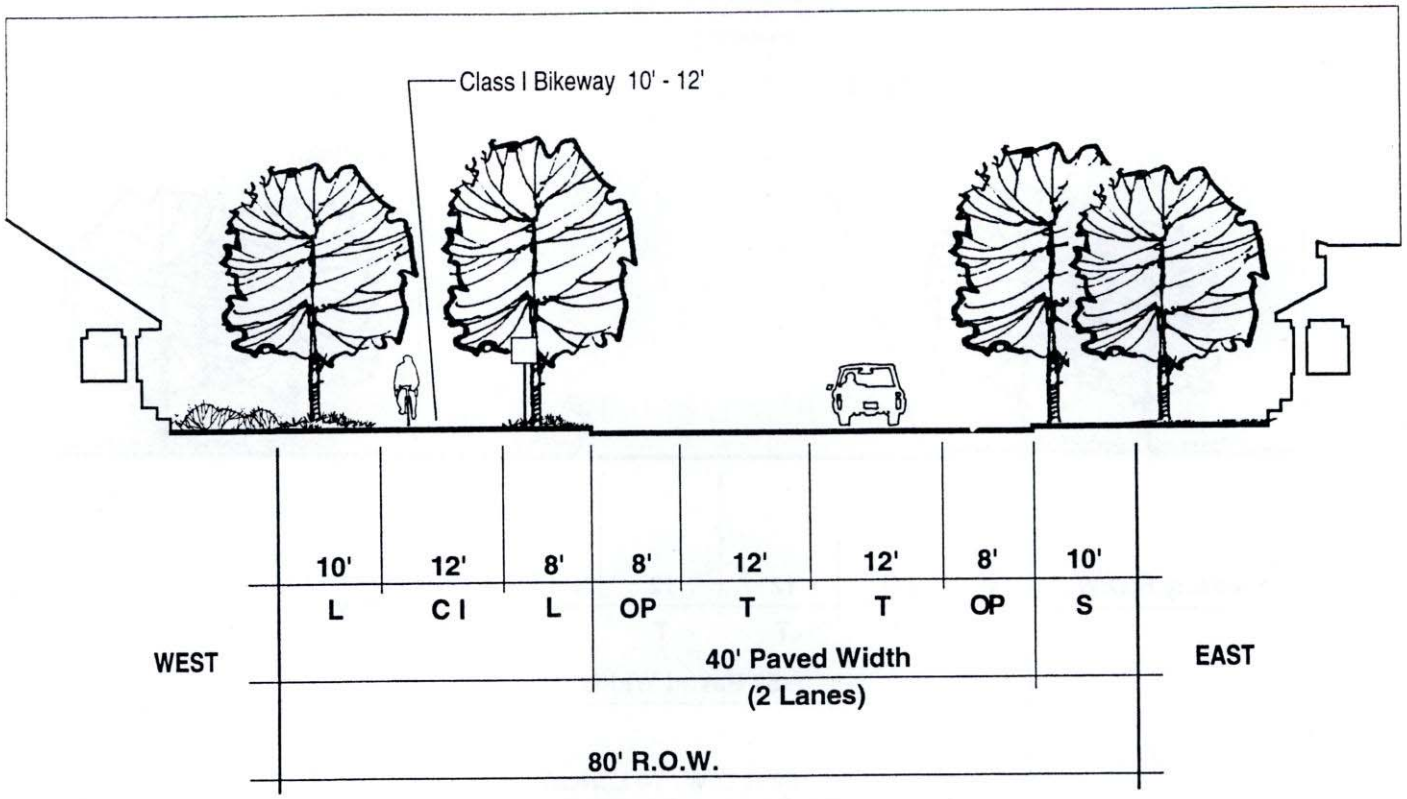
Figure 12

Section B

City of Lathrop
Bicycle Transportation Plan

5th Street (South of "O" Street)

Typical Bikeway



Note:
This section may vary north of Johnquil

Key

- **T** Travel Lane
- **S** Sidewalk Area
- **L** Landscaped Area
- **OP** On Street Parking
- **CI** Class I Bike Path

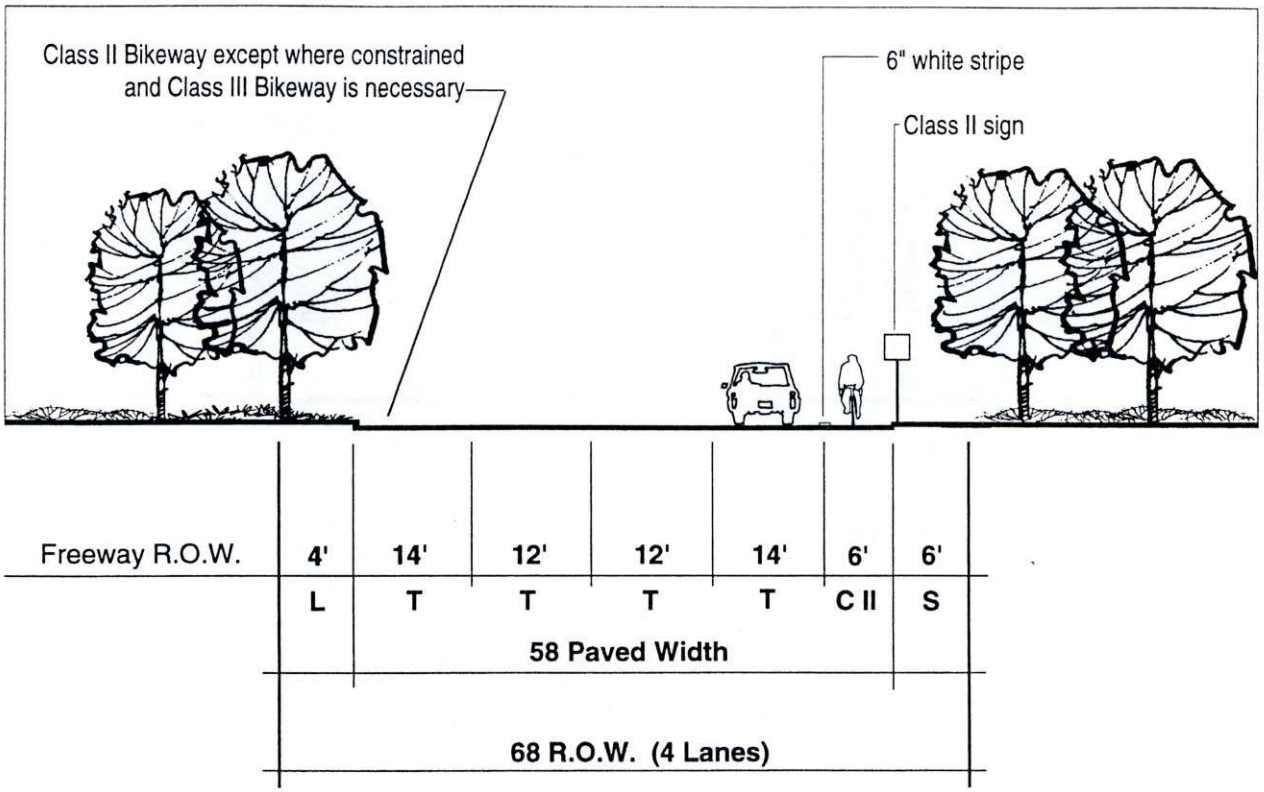
Figure 13

Section B-2

City of Lathrop
Bicycle Transportation Plan

5th Street (North of Thomsen)

Typical Bikeway



Key

- **T** Travel Lane
- **S** Sidewalk Area
- **L** Landscaped Area
- **C II** Class II Bike Lane

Figure 14

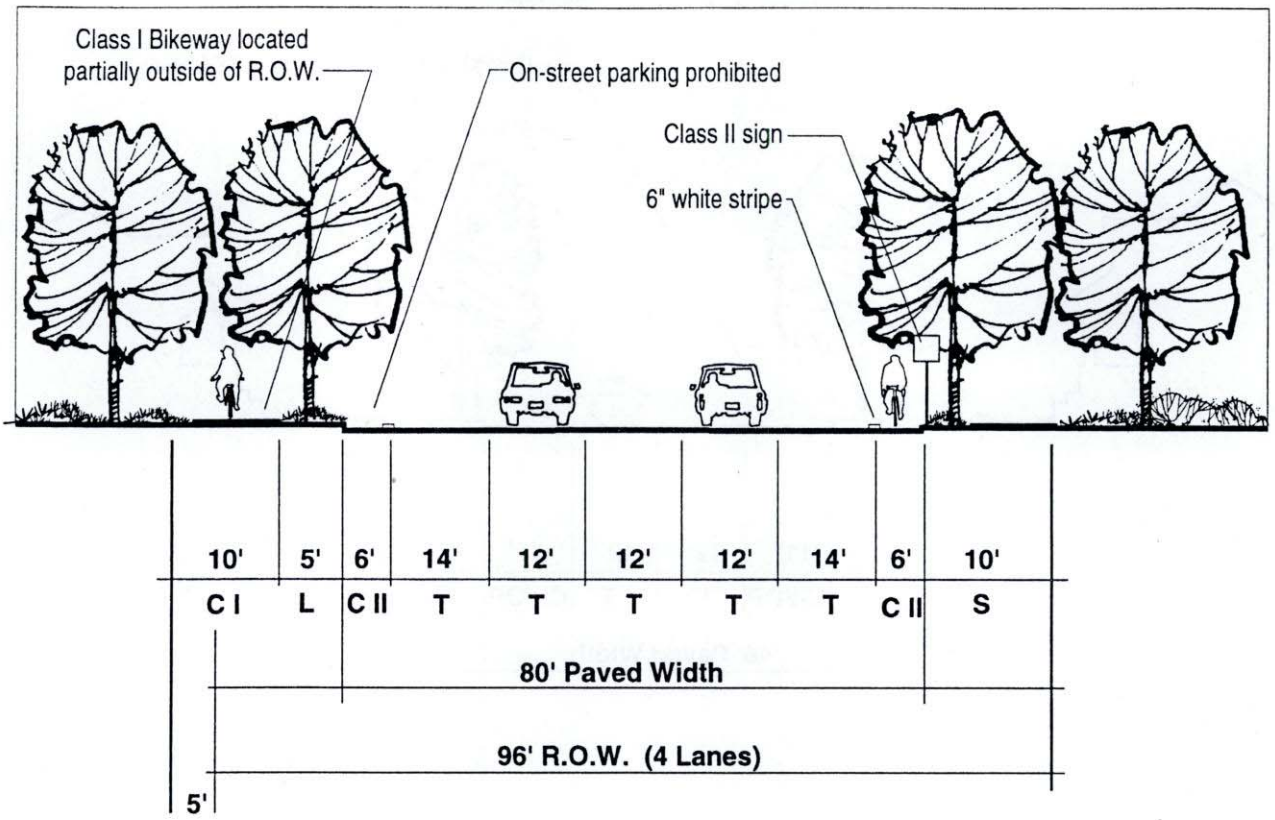
Section C

City of Lathrop

Bicycle Transportation Plan

Harlan Road (North of Louise)

Typical Bikeway



Note:
An addition of 5 - 10 feet may need to be acquired on the south side of Louise Avenue

Key

- **T** Travel Lane
- **S** Sidewalk
- **L** Landscape Area
- **C I** Class I Bike Path
- **C II** Class II Bike Lane

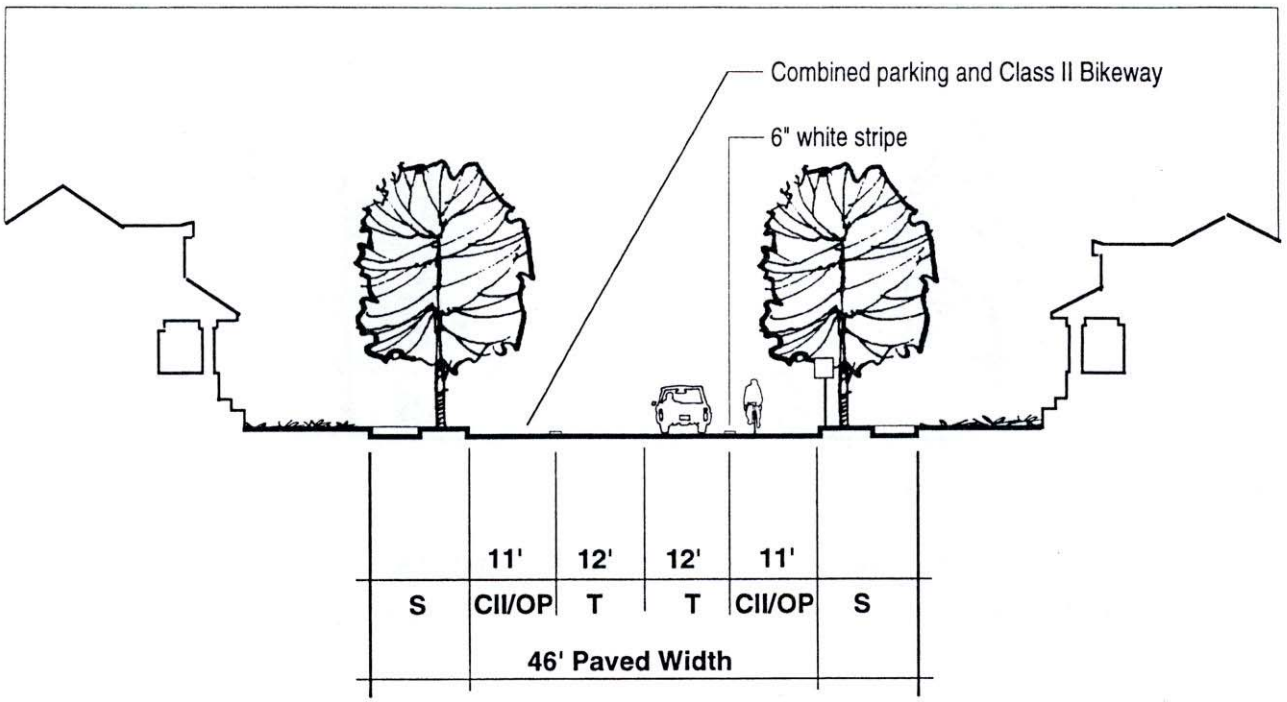
Figure 15

Section D

Louise Avenue

Typical Bikeway

City of Lathrop
Bicycle Transportation Plan



Key

T Travel Lane
OP On Street Parking
S Sidewalk
C II Class II Bike Lane

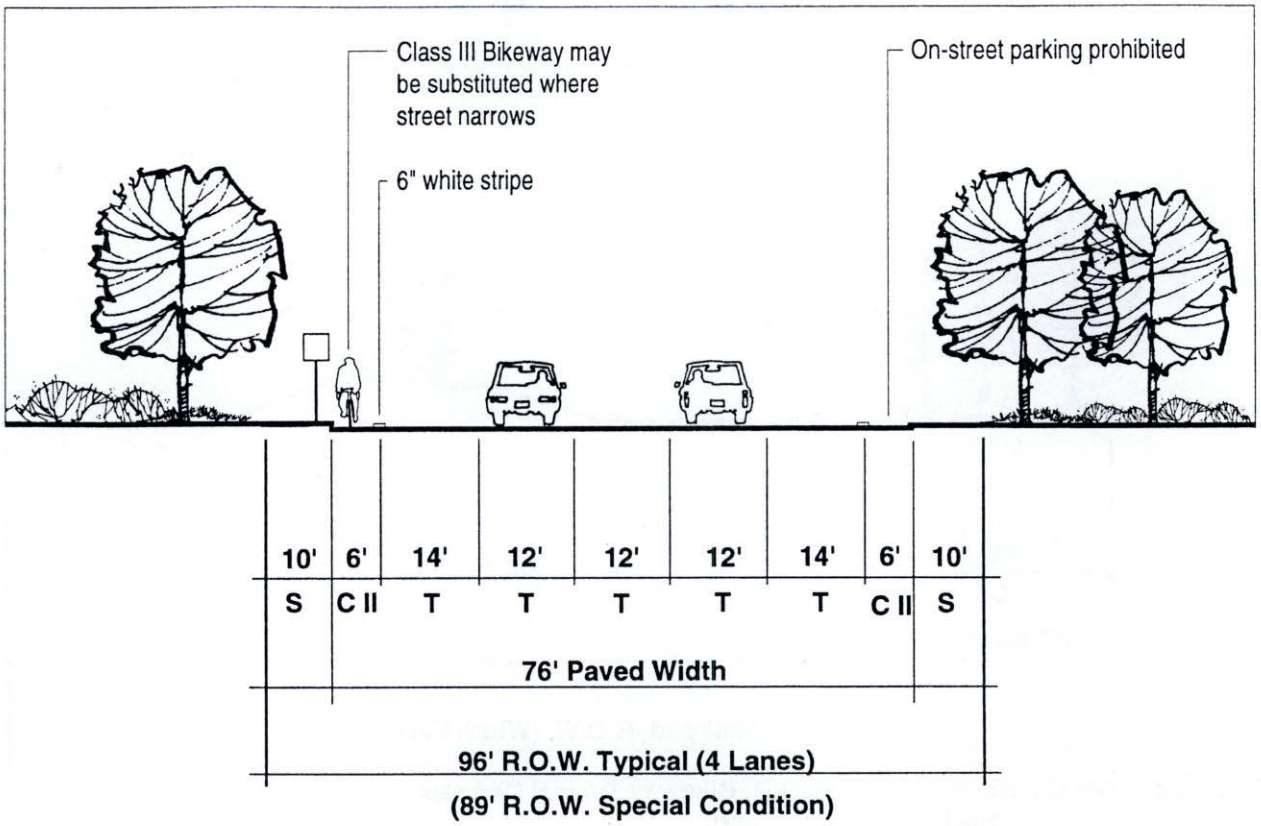
Figure 16

Section E

Thomsen Avenue

Typical Bikeway

City of Lathrop
Bicycle Transportation Plan



Key

T Travel Lane
C II Class II Bike Lane
S Sidewalk

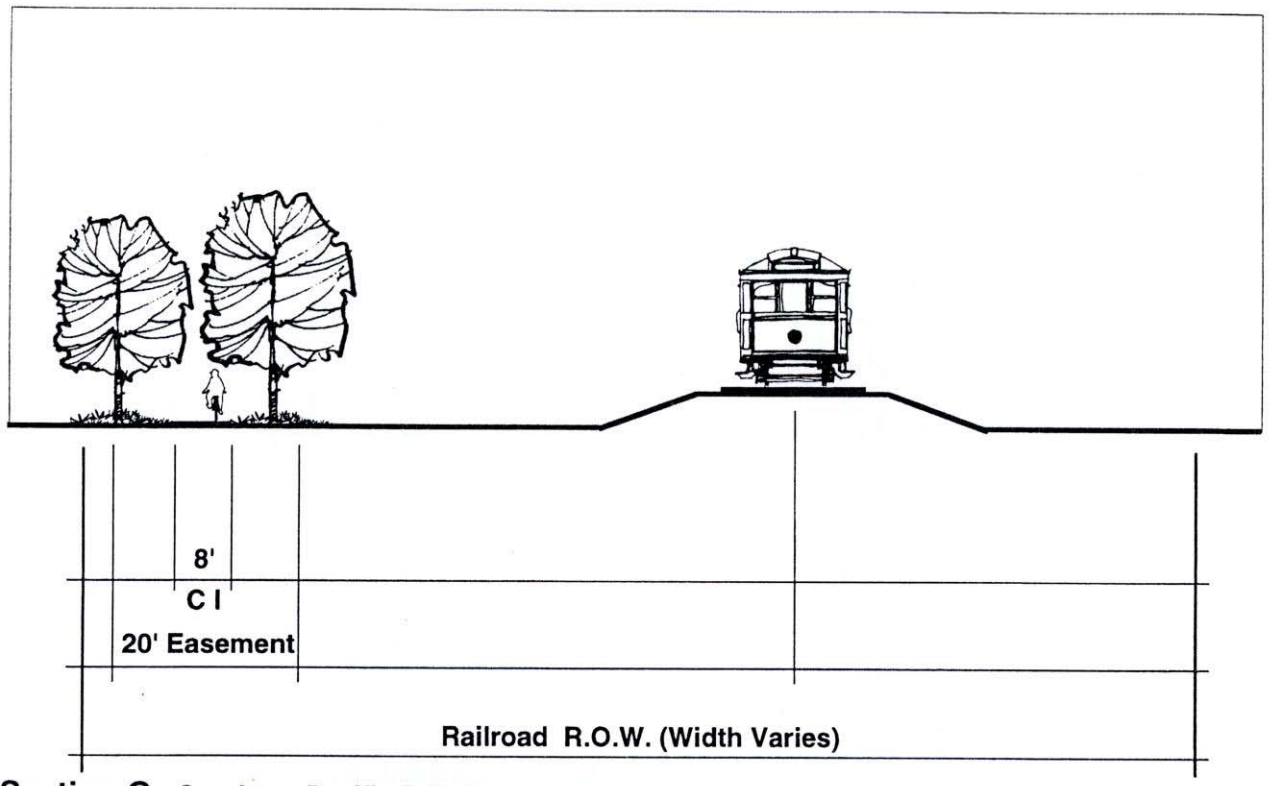
Figure 17

Section F

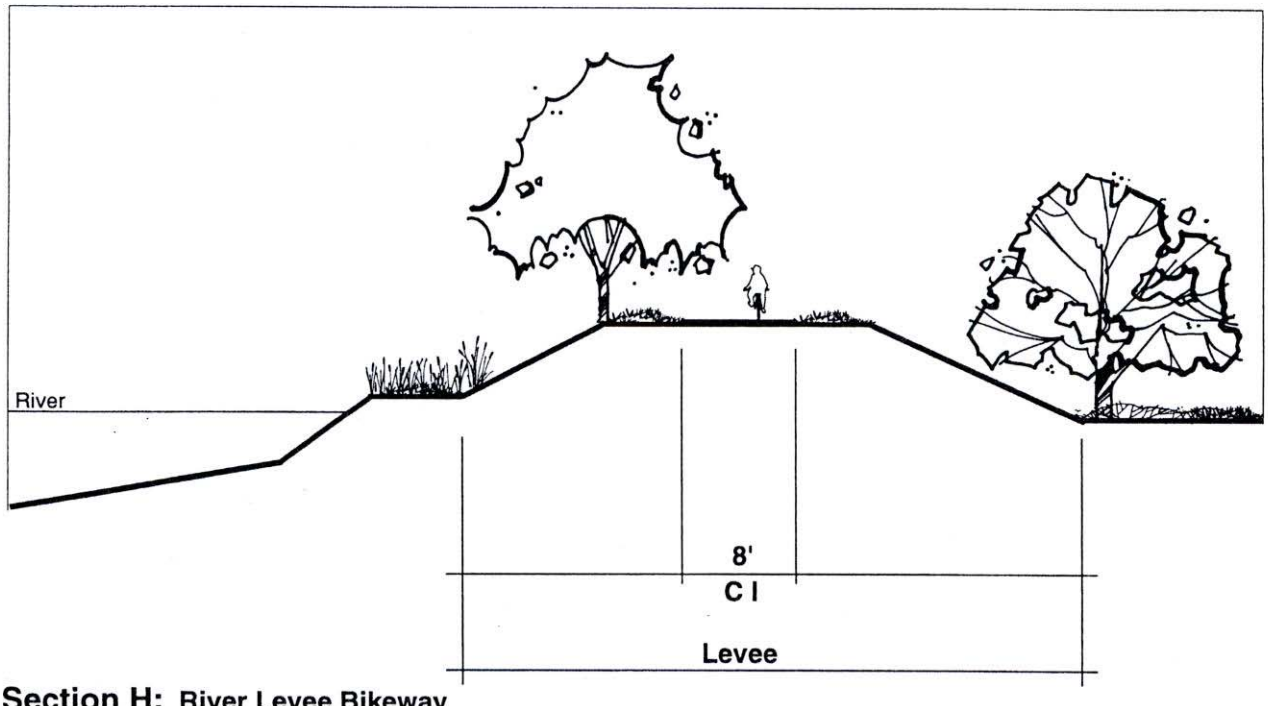
City of Lathrop
Bicycle Transportation Plan

Lathrop Road

Typical Bikeway



Section G: Southern Pacific R.R. Bikeway Typical Concept
North of Lathrop Road



Section H: River Levee Bikeway

Figure 18

Sections G & H

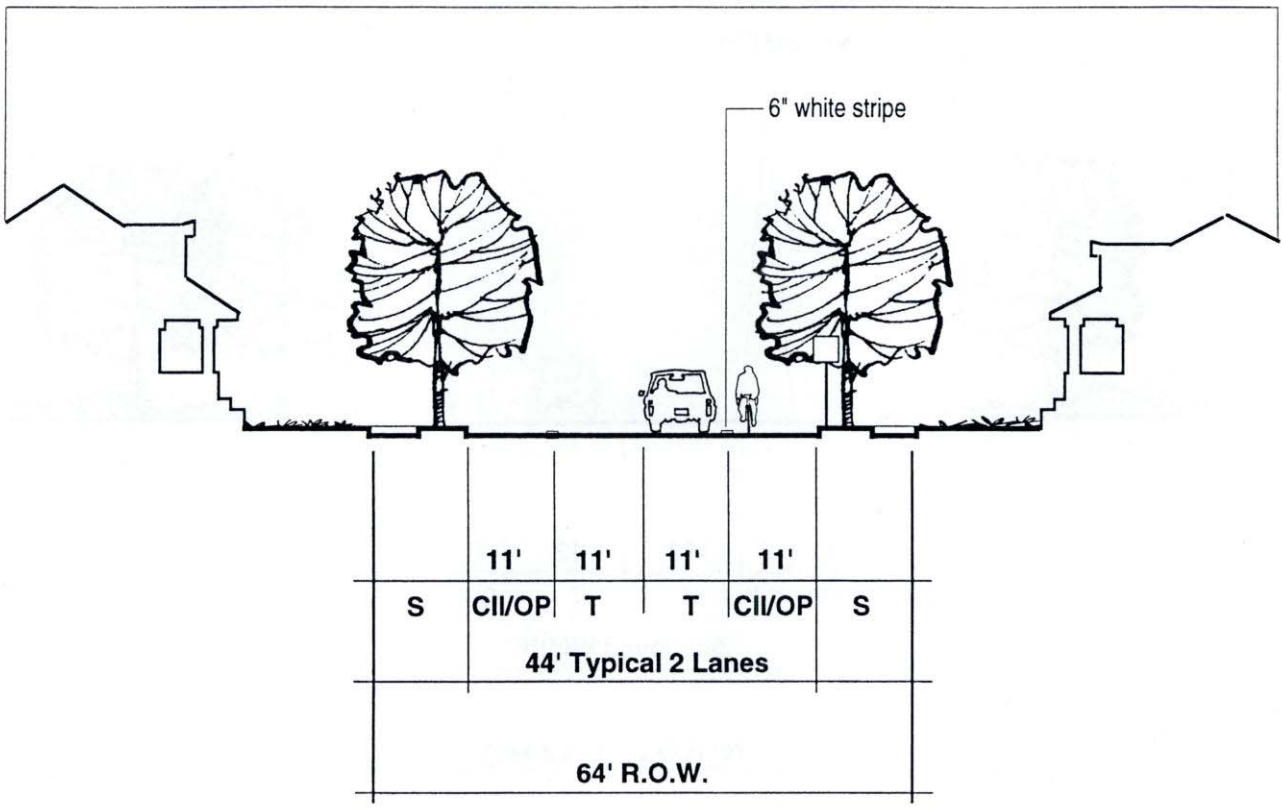
Key

C I Class I Bike Path

City of Lathrop
Bicycle Transportation Plan

Railroad and River Levees

Typical Bikeway



Key

T Travel Lane
OP On Street Parking
S Sidewalk Area
C II Class II Bike Lane

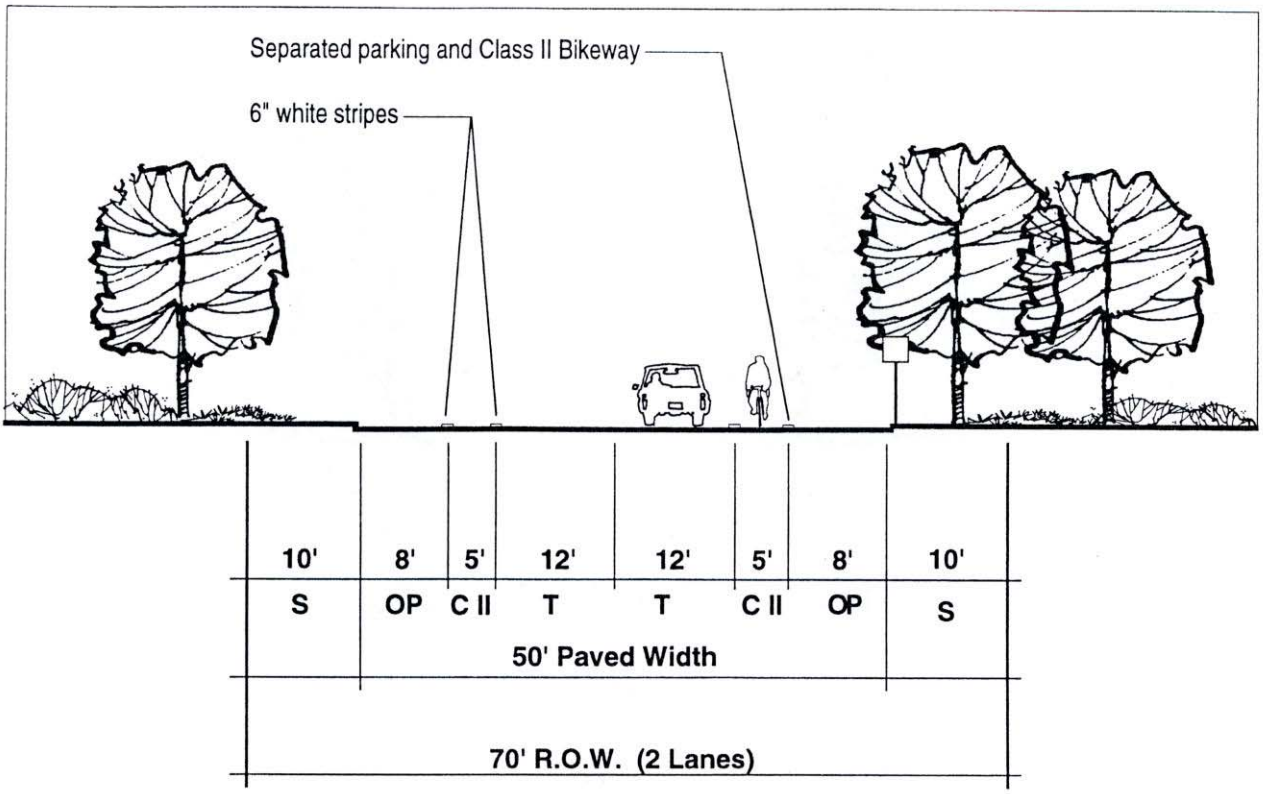
Figure 19

Section I

City of Lathrop
Bicycle Transportation Plan

2 Lane Residential Collector

Typical Bikeway



Key

T Travel Lane
S Sidewalk Area
OP On Street Parking
CII Class II Bike Lane

Figure 20

Section J

Typical Major Collector Street

Typical Bikeway

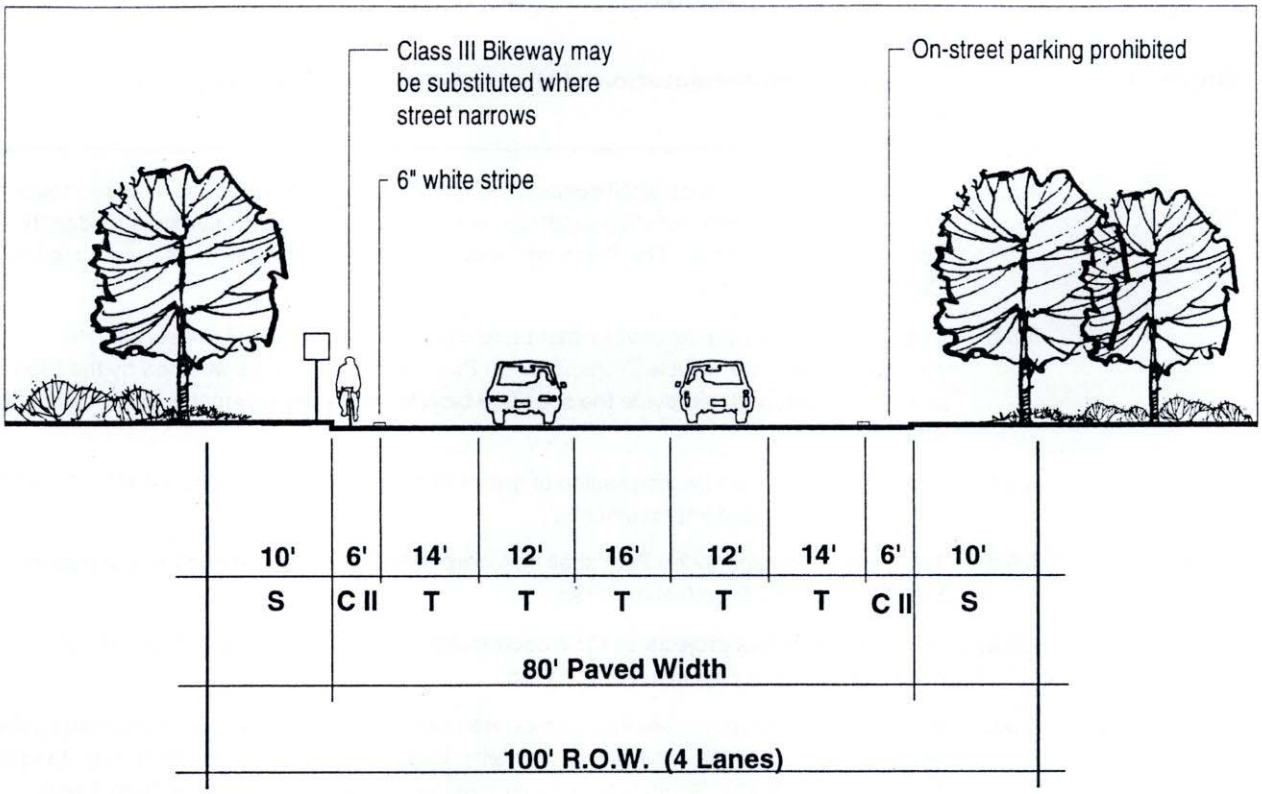


Figure 21

Section K

Typical Arterial Street

Typical Bikeway

Key

T Travel Lane
C II Class II Bike Lane
S Sidewalk

Objective A.5. Ensure the active implementation of the Bicycle Transportation Plan.

Implementation Policies

A.5.a. The Planning Commission shall conduct a biannual review of the Bicycle Transportation Plan to evaluate implementation progress, verify General Plan consistency and identify necessary amendments. The Planning Commission's findings shall be presented to the City Council.

A.5.b. The City shall evaluate all development and use permit applications to assess their consistency with the Bicycle Transportation Plan. Projects that are affected by the Plan shall be conditioned to provide the specified bicycle facility improvements as conditions of approval.

A.5.c. The City shall pursue the acquisition of grants and other moneys available for bicycle and transportation related improvements.

A.5.d. The Bicycle Transportation Plan shall be incorporated by reference into the Circulation Element of the Lathrop General Plan.

A.5.e. All city public works projects shall be coordinated to provide bikeway improvements consistent with the provisions of this Plan.

A.5.f. All bicycle improvements shall be coordinated with regional improvements planned by the San Joaquin County Council of Governments' Regional Bicycle Master Plan, San Joaquin County Public Works, South San Joaquin Irrigation District, Caltrans, Southern Pacific Railroad, and the Union Pacific Railroad.

3. ADA requirements

The guidelines of the American Disabilities Act and California Title 24 were examined to determine what constraints applied to proposed bikeways in Lathrop. It was determined that bikeways are required to be in compliance with the statutes of Title 24 when the pedestrian component is introduced. Thus, shared paths between pedestrians and bicyclists must comply with accessibility standards. If a bikeway is established for the sole purpose of bicycle use, it is exempt from the requirements.

B. Proposed Bicycle Parking Facilities

The following section satisfies to Section 891.2 (d) of the California Bicycle Transportation Act.

The proposed bikeway parking system will consist of bicycle racks, locker boxes, other appropriate bicycle storage facilities strategically located throughout the community. Bicycle storage facilities will be provided at all destination points for bicycle commuters including schools, parks, shopping areas, places of employment and other public facilities. Additional bicycle storage will be provided throughout the existing City limits, while all future development will be required to provide adequate bicycle parking. Bicycle parking facilities will be designed and located to maximize the security of stored bicycles.

Goal B. **To provide adequate, secure and convenient bicycle parking, locking or storage facilities at all bicycle commuter destination points.**

Objective B.1. Ensure the provision of an adequate number of bicycle parking facilities throughout the community.

Implementation Policies
The following Policies apply to all non-residential land uses within the General Plan Area.

B.1.a. Bicycle parking facilities should be provided, at a minimum, in the general location of bicycle commuter destination points indicated in Figure 22.

B.1.b. The City shall prepare and adopt a "Bicycle Parking and Storage Ordinance". This ordinance shall provide standards and criteria for bicycle parking requirements for all City zoning districts.

B.1.c. Adequate bike parking facilities shall be provided at all commercial, park, school, employment, recreation and public places.

B.1.d. The City shall provide a fund or incentive program for the purpose of retrofitting existing bicycle commuter destination points with parking facilities.

Objective B.2. Maximize the convenience, safety and security of all bicycle parking facilities.

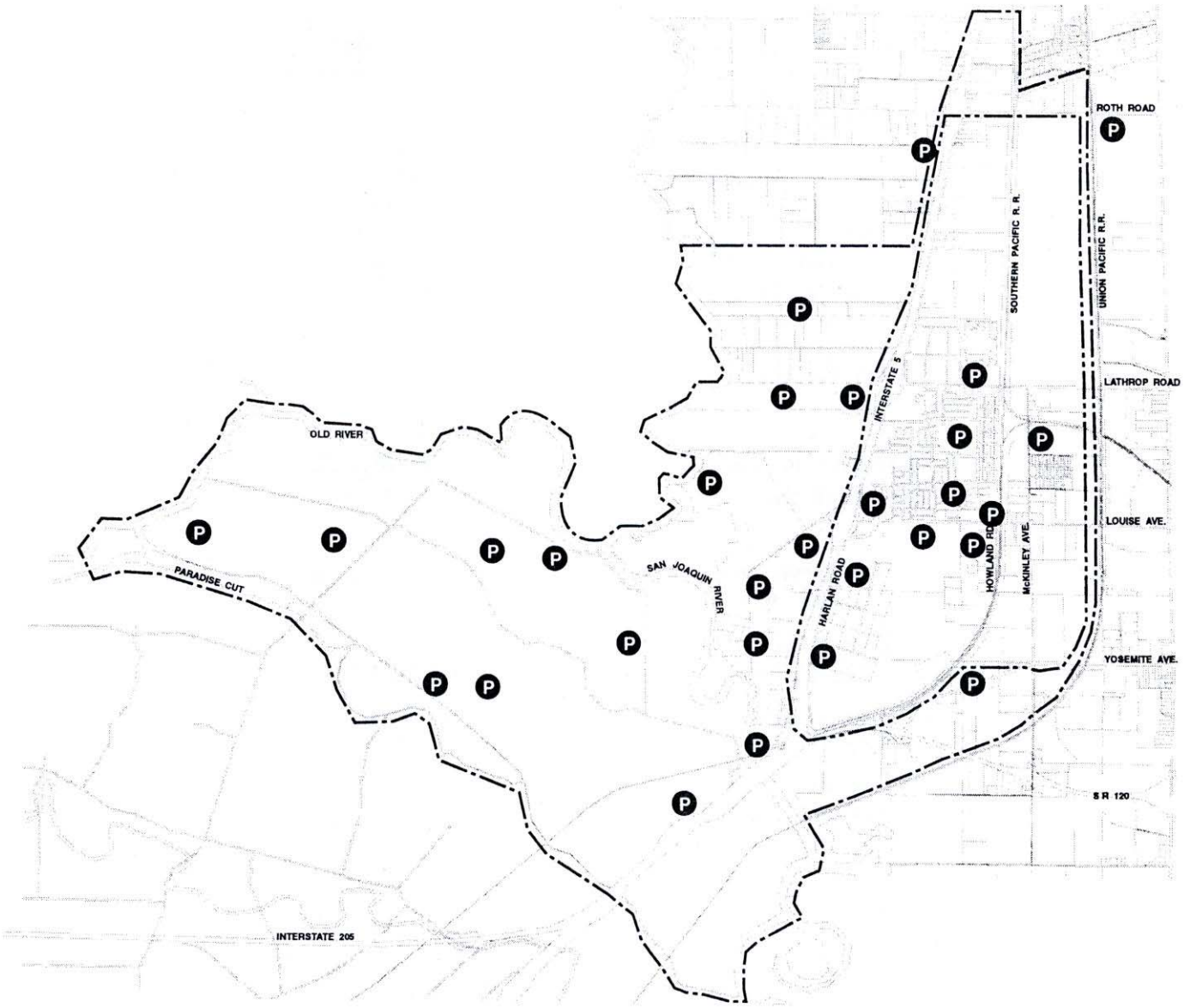
Implementation Policies

B.2.a.. Bicycle parking facilities shall be conveniently located near destination points and building entries.

B.2.b. Bicycle parking areas shall be placed in visible, well lit areas where the potential for damage from vehicles and vandals will be minimized.

B.2.c. Bicycle racks should be selected based on security, ease of use, flexibility, and aesthetics and installed on concrete or asphalt pads.

B.2.d. Bicycle storage lockers should be provided to accommodate long term parking requirements at transit stops, park & rides, passenger rail stops, ferry and boat docks, and other applicable sites.



Interpretation

This diagram indicates the general location of bicycle parking facilities. Precise locations will be determined at time of improvement and shall be consistent with the General Plan and Circulation Element.

0 miles 1

Key

- 20 Year General Plan Area
- City Limits
- New Parking Facilities

Figure 22

Bicycle Parking Diagram

City of Lathrop

Bicycle Transportation Plan

C. Bicycle Commuter to Transit Connections

The following section satisfies Section 891.2 (e) of the California Bicycle Transportation Act.

In order to fully realize the transportation potential of the bicycle, bikeway systems must be integrated with other mass transit systems. Many potential bicycle commuters choose to travel by automobile because of its range and convenience. However, if bicycle circulation can be integrated with bus, train and ride share programs the range and appeal of commuting by bicycle increases. Bicycle-transit connection facilities will provide facilities and systems to link the Lathrop bikeway system to regional mass transit systems.

Goal C. **To provide linkages between the bikeway network and mass transit systems.**

Implementation Policies

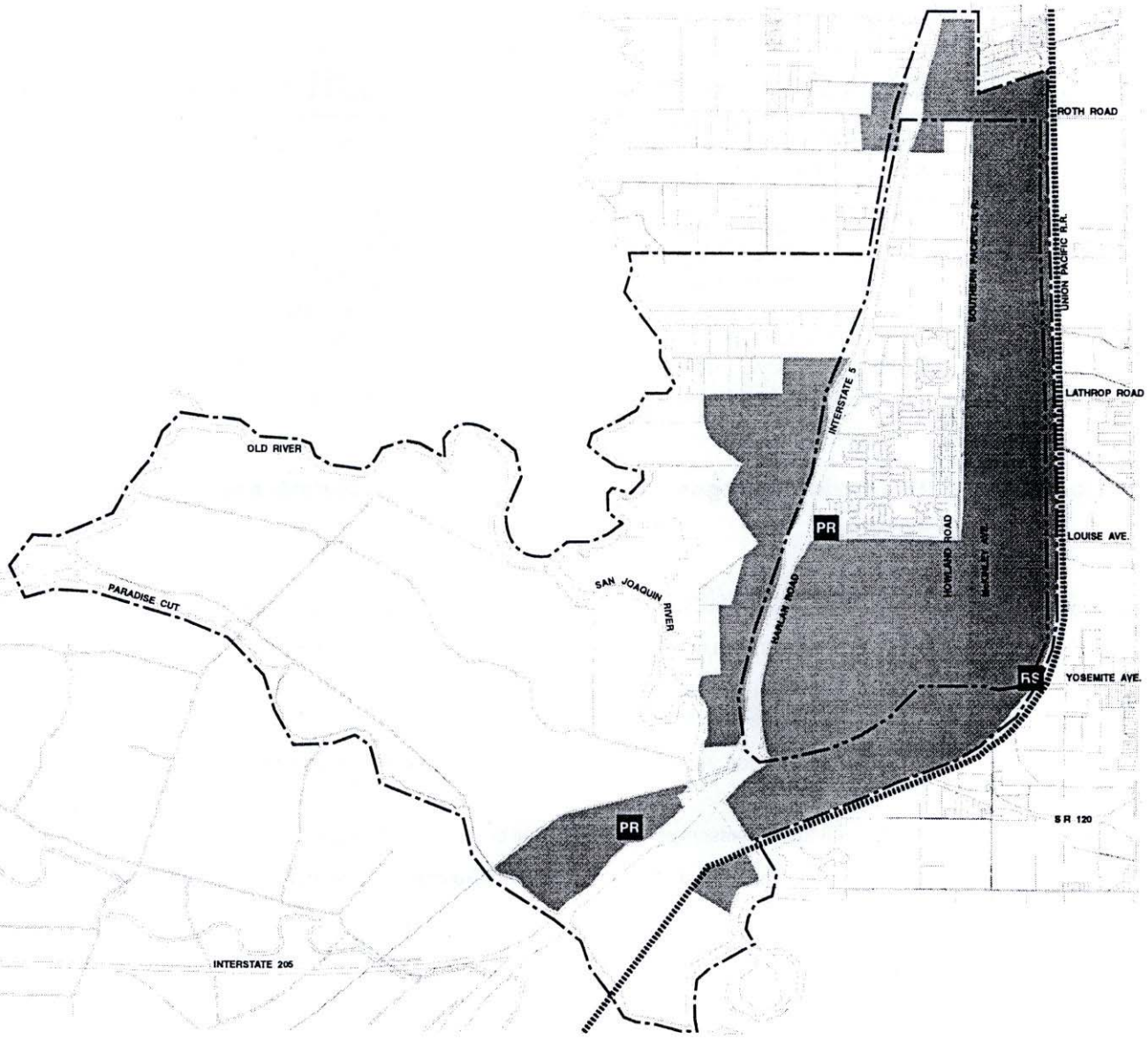
C.1.a. Bicycle transit connections should be provided as generally indicated in Figure 23.

C.1.b. Future transit stops, including bus stops, should be designed with consideration for the requirements of bicycle commuters.

C.1.c. Bikeway connections and bicycle storage lockers shall be provided at all Park & Ride facilities.

C.1.d. All future passenger rail stops shall be designed to accommodate bicycle commuters.

C.1.e. Future marinas shall be designed for bike connections to modes of river transportation.



Interpretation

This diagram indicates general locations for transit connection points and changing facility areas. Precise locations and designs shall be determined at time of improvement and be consistent with the General Plan and Circulation Element.

0 1
miles

Key

- 20 Year General Plan Area
- City Limits
- Changing Facilities Corridor Zone
- Future Passenger Rail Route
- PR — Future Park & Ride Facility with Bicycle Storage Lockers
- RS — Future Passenger Rail Stop

Figure 23

Bicycle Transit Connection Diagram

D. Bicyclist Changing Facilities

The following section satisfies Section 891.2 (f) of the California Bicycle Transportation Act

Changing facilities are an important component of encouraging bicycle commuters. A lack of proper facilities to change clothes and clean up after riding to work provides a strong disincentive for bicycle commuting. The Plan provides mechanisms to encourage businesses to provide reasonable changing facilities. In most case, accessible bathrooms with storage lockers are sufficient.

Goal D. **To provide adequate bicyclist changing facilities at all places of employment.**

Implementation Policies

D.1.a. The provision of bicyclist changing facilities shall be required in all commercial, office, industrial, and public land use districts, with 40 or more employees, as generally indicated in Figure 23.

D.1.b. The City shall provide incentives to encourage major employers to provide bicyclist changing facilities. These incentives may include, but are not limited to, traffic impact fee reductions, automobile parking space reductions, and Average Vehicle Ridership (AVR) credits under the SJVUAPCD Rule 9001 (1/20/94).

D.1.c. Accessible bathrooms that provide secure storage for clothing shall be considered adequate bicyclist changing facilities.

D.1.d. The City shall adopt "Bicyclist Changing Facilities" requirements as part of the "Bicycle Parking and Storage Ordinance" (policy B.1.b.). The Changing Facilities requirements shall implement Policies D.1.a., D.1.b, and D.1.c.

E. Bicyclist Education and Safety Programs

The following section responds to Section 891.2 (g) of the California Bicycle Transportation Act.

Bicyclist safety, especially for children, is a primary issue of concern within Lathrop. Without proper education and bicycle safety training, bicyclists can be a hazard to themselves as well as other vehicles. The Plan seeks to improve bicyclist education and awareness for all school age children in the community.

Goal E **To educate and inform the public about bicycle routes, safety and laws.**

Objective E.1. Provide all school age children with a bicycle safety education.

Implementation Policies

E.1.a. Bicycle safety brochures and pamphlets shall be displayed and made available in public places such as schools, City Hall, the Community Center and the Police Department.

E.1.b. The City shall work with schools, the police department, and citizen organizations to assure all school age children are provided with adequate information on bicycle safety and laws.

E.1.c. The Parks and Recreation Department shall provide an annual bicycle safety and education program (i.e. bicycle rodeo, helmet giveaways) at a central location such as the Community Center.

E.1.d. The City shall offer and publicize programs which educate the public about bicycle laws, proper bicycle operation, safety, and access throughout the region.

E.1.e. The City shall institute a bicycle licensing program to register bicycles owned in Lathrop. Revenues generated from the licensing program shall be used for education programs.

Objective E.2. Publicize bicycle route information.

Implementation Policies

E.2.a. The City shall post permanent route maps at key destination points, transit connections, and parking facilities.

E.2.b. The City shall make publicly available a bikeway map that reflects current facilities.

E.2.c. Thematic routing signage with destination information shall be included on Bikeway signage.

F. Bikeway System Maintenance and Safety

The long term maintenance of all bikeways is a necessity. Without proper maintenance and repairs bikeways will deteriorate, creating safety problems and discouraging bicycle commuting. Under the Plan, bikeways will be routinely inspected and maintained like all other transportation facilities. The Plan provides mechanisms and identifies responsibility for the funding and maintenance of all bikeways.

Goal F **To provide for the long term maintenance and safety of all bikeways.**

Implementation Policies

F.1.a. All bikeways located both inside and outside of a City right-of-way shall be the responsibility of the Department of Public Works.

F.1.b. Funding for bikeway maintenance within street right-of-ways shall be allocated as part of the Capital Improvement Program. The CIP fees shall be adjusted as needed to maintain bikeways.

F.1.c. Within future annexation areas, funding for the maintenance of bikeways located outside of street right-of-ways shall be provided by a single Landscape and Lighting District or comparable benefit assessment district. Participation in said district shall be a condition of approval on all tentative maps.

F.1.d. All City bikeways shall be inspected annually.

F.1.e. Emergency and service vehcile access shall be provided along all bikeways not located adjacent to a public roadways.

F.1.f. Motor vehciles barriers shall be installed as needed on Class I bikeways.

F.1.g. Emergency call boxes or public phones should be considered along remote bikeway sections.

IV. Implementation

A. Agency Coordination

The following section satisfies Section 891.2 (i) of the California Bicycle Transportation Act. Coordination with regional agencies will be a necessary part of implementing the Bicycle Plan. Proper coordination with other agencies will minimize duplication of effort and help to focus resources effectively. The following table provides a list of agencies that need to be coordinated as part of the Plan's implementation.

Ongoing coordination needs to be maintained with the following agencies. Refer to Policy A.5.f.

- San Joaquin County's Council of Governments Regional Bicycle Master Plan
- San Joaquin Valley Unified Air Quality Control District (SJVAQCD)
- San Joaquin County Public Works
- South San Joaquin Irrigation District
- Caltrans
- Southern Pacific and Union Pacific Railroads
- City of Lathrop Planning Department
- City of Lathrop Public Works / Engineering Departments
- Cities of Tracy and Manteca

1. San Joaquin County Council of Governments' Regional Bicycle Master Plan

The San Joaquin County Council of Government Regional Bike Plan will be especially important to maintain coordination with. The County plan designates a number of regionally important bikeways through the Lathrop Sphere. Funding, phasing and improvement of these bikeways must be consistent with Lathrop's Bicycle Transportation Plan.

2. San Joaquin Valley Unified Air Quality Control District

The San Joaquin Valley Regional Unified Air Quality Control District has implemented Rule 9001 in San Joaquin County. Adopted in January, 1994, Rule 9001 is a commute-based trip reduction program for employers with 100 or more employees. Its goal is to improve the County's ambient air quality through the reduction in auto emissions. Employers fitting the previous requirement, and having at least 40 of its workers arrive between 6 and 10 AM, must register into the program and reach its performance objectives. Because the performance

objectives are measured by the company's average weekly vehicle ridership, attainment can be reached through increased bicycle commutership. Coordination with Rule 9001 may help justify and fund certain improvements under the Bike Plan.

3. Interdepartmental Coordination

The Lathrop Bicycle Transportation Plan has been developed by the Department of Parks and Recreation. While Parks and Recreation will remain involved in the organization and funding for implementation projects, the Planning and Public Works Departments will deal with the Plan's implementation on a daily basis. All street improvements, public works projects, development permits and subdivision maps must be consistent with the provisions of the Plan.

B. Bicycle Plan Implementation Strategy

The following section fulfills Section 891.2 (j) of the California Bicycle Transportation Act.

The Bicycle Pan Implementation Strategy summarize the individual projects that need to be completed in order to implement the Bicycle Transportation Plan. Table 8 and 9 outlines each bikeway improvement designated on the Bicycle Circulation Diagram. Cost estimates, linear feet of improvement, project priorities and phasing timelines are provided for each project.

Three separate categories of Implementation Projects have been created. The first category is Bikeway Projects within the 1995 City Limits. These projects consist primarily of adding Class II bike lanes along existing streets. It is expected that many of these projects will occur in the next five to ten years. The second category consists of Bikeway Projects located in unincorporated areas of the General Plan Sphere. These projects will occur concurrently with development in those areas. The third category of project are administrative programs and standards that the City must adopt.

Implementation Projects are separated into three categories

Category 1	Bikeway Projects with in the 1995 City Limits
Category 2	Bikeway Projects within the unincorporated General Plan Sphere
Category 3	Administrative Programs and Procedures

1. Opinion of Probable Cost

As with any construction project, bikeway improvement costs vary depending on a number of factors. Factors influencing cost include timing of construction, the Class of bikeway, length of bikeway, site conditions and site acquisition requirements. Depending on the these conditions, bikeway improvements can vary substantially. For the purposes of determining an opinion of probable cost for improvements, a standard set of assumptions have been made for all bikeway improvements in Table 7. These cost assumptions are intended to provide only

an opinion of probable costs for the purpose of prioritizing and comparing implementation projects.

Table 7 Bikeway Improvement Probable Cost Assumptions

Unit costs assume sites and streets have already been acquired and/or improved.
These cost assumptions reflect 1995 dollars and should be adjusted annually.

Bikeway Facility	Cost/Unit	Assumption
Class I Bike Path	$9/linear foot	Includes: grading, paving, markings, signage
Class II Bike Lanes	$0.80/linear foot	Includes: Striping, signage
Class III Bike Route	$0.20/linear foot	Includes: Signage

2. Category 1 Bikeway Projects

Table 8 provides a break down of planned bikeway projects within the 1995 City Limits. The proposed bikeway projects are consistent with the Bicycle Circulation Diagram. Each project has been assigned a priority (1-3) based on immediate need and assumed development patterns. Funding of Category 1 projects will be provided by both the City and developers as part of scheduled street improvements. Class One pathway improvements may be eligible for certain grants.

Bikeway Project Priorities

- Priority One 1-5 years
- Priority Two 5-10 years
- Priority Three 10-20 years

Table 8 Category 1 Bikeway Project Opinion of Probable Costs

Unit costs assume sites and streets have already been acquired and/or improved.
These cost assumptions reflect 1995 dollars and should be adjusted annually.
Responsiblity of bikeway improvements will be determinded at time of development.

Street Segment	Bikeway Class	Linear Feet	Cost/lf	Cost Estimate	Priority
Harlan Road	Class 2	24,800 lf.	$0.80 / lf.	$19,840	2
Darcy Parkway	Class 2	4,800 lf.	$0.80 / lf.	$3,840	3
Nestle Way	Class 2	5,600 lf.	$0.80 / lf.	$4,480	3
McKinley Avenue	Class 2	10,400 lf.	$0.80 / lf.	$8,320	3
Louise Avenue	Class 2	9,200 lf.	$0.80 / lf.	$7,360	1
5th Street	Class 2	5,200 lf.	$0.80 / lf.	$4,160	1
Howland Road	Class 2	5,600 lf.	$0.80 / lf.	$4,480	2
Woodfield Dr.-Jasper St.	Class 2	11,200 lf.	$0.80 / lf.	$8,960	2
Thomsen Street	Class 2	4,400 lf.	$0.80 / lf.	$3,520	1
Lathrop Road	Class 2	7,200 lf.	$0.80 / lf.	$5,760	1
Roth Road	Class 2	4,800 lf.	$0.80 / lf.	$3,840	3
Squires Road	Class 2	2,800 lf.	$0.80 / lf.	$2,240	2
Sub total		96,000 lf.		$76,800	
Louise Avenue	Class 1	4,400 lf.	$9.00 / lf.	$39,600	2
Southern Pacific RR	Class 1	24,000 lf.	$9.00 / lf.	$216,000	2
SPRR to Manteca	Class 1	4,000 lf.	$9.00 / lf.	$36,000	3
Sub total		32,400 lf.		$291,600	
Total		**128,400 lf.**		**$368,400**	

Table 9 summaries bikeway improvement costs by priority. The estimated cost of Priority 2 projects is substantially higher because it includes the Southern Pacific Railroad Bikeway. In reality the cost of this project, $216,000 will be spread out over the entire 20 years.

Table 9 Category 1 Bikeway Probable Cost Summary

Unit costs assume sites and streets have already been acquired and/or improved.
These cost assumptions reflect 1995 dollars and should be adjusted annually.

Priority 1 Projects	0-5 years	26,000 lf.	$0.80 / lf.	$20,800	1
Priority 2 Projects	5-10 years	72,800 lf.	$4.00 / lf.	$291,120	2
Priority 3 Project	10-20 years	29,600 lf.	$1.91 / lf.	$56,480	3
Total		**128,400 lf.**		**$368,400**	

3. Category 2 Bikeway Projects

Table 10 provides a break down of proposed bikeway projects within the unincorporated areas of the General Plan Sphere. The projects have not been assigned a priority because each will occur in conjunction with annexation and development within the sphere. The majority of the probable improvement costs for these projects will be developer funded.

Table 10 Category 2 Bikeway Project Opinion of Probable Costs

Unit costs assume sites and streets have already been acquired and/or improved.
These cost assumptions reflect 1995 dollars and should be adjusted annually.

Manthey Road	Class 2	16,000 lf.	$0.80 / lf.	$12,800
Golden Valley Parkway	Class 2	28,000 lf.	$0.80 / lf.	$22,400
Gold Rush Boulevard	Class 2	10,000 lf.	$0.80 / lf.	$8,000
Lathrop Road	Class 2	6,000 lf.	$0.80 / lf.	$4,800
Ring Road	Class 2	30,000 lf.	$0.80 / lf.	$24,000
Connector Streets	Class 2	38,000 lf.	$0.80 / lf.	$30,400
Sub total		128,000 lf.		$102,400
San Joaquing River Path	Class 1	40,000 lf.	$9.00 / lf.	$360,000
Paradise Cut Pathway	Class 1	30,000 lf.	$9.00 / lf.	$270,000
Old River Pathway	Class 1	26,000 lf.	$9.00 / lf.	$234,000
Greenbelt Pathways	Class 1	12,000 lf.	$9.00 / lf.	$108,000
Squires Road (west extension)	Class 1	8,000 lf.	$9.00 / lf.	$72,000
Sub total		116,000 lf.		$1,044,000
Total		**244,000 lf.**		**$1,146,400**

4. Category 3 Administrative Programs and Procedures

The following Programs and Procedures must be adopted by the City of Lathrop in order to assure full implementation the Bicycle Transportation Plan.

a. Bicycle Parking and Storage Ordinance

The City of Lathrop shall prepare and adopt a Uniform Bicycle Parking and Storage Ordinance. The ordinance should identify bicycle parking standards for all city zoning districts. The ordinance should also include Bicyclist Changing Facilities standards for all commercial, employment and public land uses. Performance standards should be included for storage facility design, lighting, security and accessibility.

Timeframe 95-96 Fiscal Year
Responsibility Department of Planning and Community Development

b. Public Works Bikeway Standards

The City of Lathrop shall amend and adopt the City's Public Works Standards to include bikeways versions of arterial, collector and primary residential streets. The standards should also include a Class I Bike Path standard and design details for intersections based on the Caltrans Highway Design Manual

Timeframe 96-97 Fiscal Year
Responsibility City Engineering

c. General Plan Amendment

The City of Lathrop shall amend the General Plan Circulation Element to incorporate the Bicycle Transportation Plan. The amendment shall be coordinated with the scheduled 1996 General Plan Update.

Timeframe 96-97 Fiscal Year
Responsibility Department of Planning and Community Development

d. Bicycle Circulation Plan Requirements

Policy A.2.a. requires a Bicycle Circulation Plan be prepared as part of all future annexations. The Department of Planning and Community Development should adopt a standard requirements for the content of a precise Bicycle Circulation Plan.

Timeframe 1996 Fiscal Year
Responsibility Department of Planning and Community Development

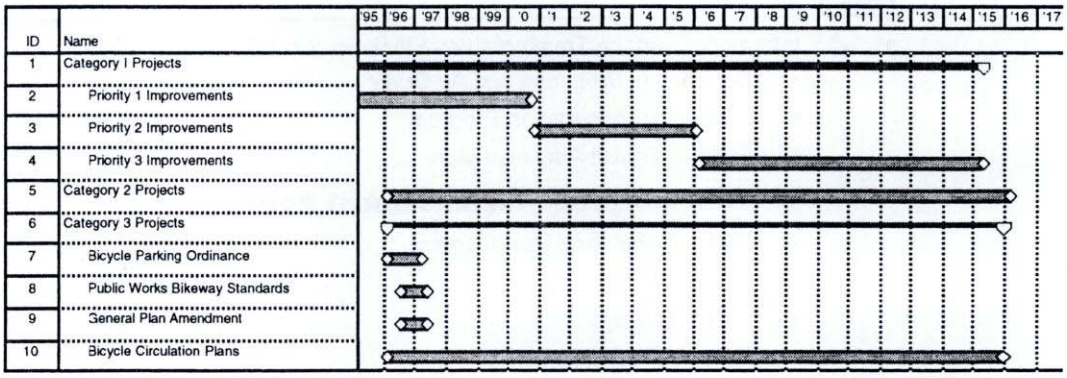
e. Uniform Bicycle Signage Program

All bikeway signage shall be installed consistent with Caltrans standards. Route signage should also include destination signs with directional arrows as shown. The City should also consider adopting a uniform logo for all route signs in order to increase bicycle recognition in the community.

C. Implementation Project Timelines

The Bicycle Transportation Plan provides a 20 year view of bike related improvements that should occur within the City's Sphere. Figure 24 provides a general timeline for implementation project. The timelines are flexible and should be used as benchmarks to assess progress toward implementation of the plan.

Figure 24 Bicycle Transportation Plan Timeline



D. Funding Sources

Financing bikeway improvements is the most crucial aspect of implementing the Bicycle Transportation Plan. Although funding is always illusive, many potential sources are available for bicycle related improvements. Recent changes in Federal transportation legislation have begun to designate funds for non-automobile improvements, including bikeways. In addition, a number of state and regional programs are available to provide bicycle funds.

The City must take a proactive role in pursuing funds for bicycle projects. Creative strategies are required if competitive grant moneys are to be acquired. Combining bikeway projects with other transportation improvements such as street widenings or mass transit facilities increase the likelihood of acquiring funds. Bikeway projects that provide environmental benefits by reducing single occupancy automobile trips are also more likely to receive funding.

The following list identifies a number of funding sources that are currently available. For a detailed explanation of these sources refer to the Technical Appendix.

E.

The following funding sources provide funds for bikeway improvements. Currently the most promising sources of funds are Measure K and Transportation Enhancement Activities (TEA) funds both of which are administered by the Council of Governments. The San Joaquin Air Pollution Control District currently has grants available for bike related projects.

Federal Sources

- Intermodal Surface Transportation Efficiency Act (ISTEA) Of 1991
  - Congestion Mitigation and Air Quality
  - Surface Transportation Program
  - Federal Transit Administration
  - **Transportation Enhancement Activities**
  - Bridge Repair and Replacement
  - Federal Lands
  - Scenic Byways
  - National Recreational Trails
- Land and Water Conservation
- National Highway Safety

State Funding Sources

- Bicycle Lane Account
- Petroleum Violation Escrow Account
- Environmental Enhancement & Mitigation Program (EEM)
- State-Local Transportation Partnership
- Traffic System Management Program

Regional Funding Sources

- **Air Pollution Control District**
- Special Assessment Districts

Local Funding Sources

- Local Transportation Fund
- **San Joaquin County Measure K Program (contact Gary Dickson)**
- Capital Facility Fees
- Local Street Repair Program
- Congestion Relief Projects
- Bus and Rail Services
- Bicycle Facilities Program
- General Fund
- Fees
- Public/Private Joint Development

V. Technical Appendix

A. Funding Sources

The following section is excerpted from the San Joaquin Regional Bike Master Plan.

1. Federal Sources

a. **Intermodal Surface Transportation Efficiency Act (ISTEA) Of 1991**

In late 1991, ISTEA was signed into law providing authorization for highways, highway safety, and mass transportation during the next six years. Total funding of about $155 billion will be made available through FY 98. ISTEA made the most comprehensive revision of federal surface transportation funding in 35 years. The legislation shifted many of the transportation decisions that have been made by the federal government to states and metropolitan planning organizations (MPO's), and provides greater funding flexibility. Many of the funds that were previously reserved for highways are now applicable to either highway or transit projects. **The programs that could serve as principal sources for bicycle system investment are described below.**

Congestion Mitigation and Air Quality

ISTEA created a new funding program for Congestion Mitigation and Air Quality (CMAQ). CMAQ funds are intended for transportation projects in areas which are in non-attainment ozone and carbon monoxide standards. CMAQ funds may be used for transit-related and alternative mode projects and programs.

Examples of eligible projects include:

- new or improved lanes, paths, or shoulders for use by bicyclists,
- traffic control devise to facilitate bicycle travel,
- shelters, and parking facilities for bicycles
- bicycle route maps
- programs for bicycle safety, education, and promotion.

CMAQ funds are apportioned based upon non-attainment area population, and the pollution severity factor. Eligible projects receive 88.53% federal funding, with a required 11.47% local contribution.

Each region is responsible to develop a local scoring criteria for CMAQ funding. In San Joaquin County, priorities have been developed for expansion and maintenance of existing transit and alternative mode services. Transportation Control Measures (TCM's) which include a variety of bicycle improvements are also emphasized.

CMAQ funding in San Joaquin County is estimated at approximately 2 Million/year and projects are selected through a competitive process administered by the COG. In the past programming cycle which covered a 3-year period, $246,000 was allocated to the Manteca Tidewater Bikeway (Class I) and the remainder funded bus and rail projects.

Surface Transportation Program

Under ISTEA, the Surface Transportation Program (STP) was established. The STP is a block grant program and may be used by states and localities for a variety of roadway and alternative mode projects. States and regions each have a separate STP funding category. Eligibility requirements for the STP allow for a broad range of improvements to highways, bridges, and transit systems, including construction and reconstruction. One of the most important aspects of this transportation act authorization is that states and localities now have much greater flexibility to shift funding between transportation modes, such as STP funds for transit improvements, particularly in areas that fail to meet federal ambient air quality standards.

Each region is also required to develop criteria for allocating STP funding. In San Joaquin County, maintenance of the existing infrastructure, and projects with multimodal features rank the highest in the new scoring process.

STP funding in San Joaquin County is estimated at approximately 3 Million/year. A certain portion of STP funds are directly allocated to local jurisdictions in order to maintain the previous federal allocations for local roadway maintenance. The remainder is allocated through a competitive process and administered by the COG.

Federal Transit Administration

The federal government also provides capital and operating funds through its Federal Transit Administration (FTA) Section 3 Mass Transit Capital grants and Section 9 and 18 Mass Transit Formula grants. The Section 3 program provides discretionary grants to urbanized areas with a population of 50,000 or more in order to finance mass transit systems, especially rail systems. The federal share is 75% for all projects except bicycle projects (90%) and disabled access projects (95%). Projects that provide transit station access, such as bicycle parking and bicycle facilities, are also eligible.

Transportation Enhancement Activities

ISTEA calls for 10% of the State's STP moneys to fund Transportation Enhancement Activities (TEA). The TEA Program is the result of concerted efforts by many organizations to develop a means of more creatively and sensitively integrating transportation facilities into their surrounding communities and environment. Projects must have a direct relationship to the multimodal transportation system and provide enhanced features to traditional transportation projects.

TEA projects may include preliminary engineering, right-of-way, and construction. TEA projects must fit one or more of ten categories including: facilities for pedestrians and bicycles; acquisition of scenic easements and scenic or historic sites; scenic or historic highway programs; historic preservation; rehabilitation and operation of historic transportation buildings, structures or facilities; and preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails).

Bridge Repair and Replacement

Bridges are eligible for discretionary funding under the Bridge Rehabilitation and Replacement Program. Bikeways are an eligible expenditure when bikeways exist or will exist on either side of the bridge and where safety permits. ISTEA states that: "In any case where a highway bridge deck being replaced or rehabilitated with Federal financial participation is located on a highway, other than a highway access to which is fully controlled, on which bicycles are permitted to operate at each end of such a bridge deck being replaced or rehabilitated with Federal financial participation is located on a highway, other than a highway access to which is fully controlled, on which bicycles are permitted to operate at each end of such a bridge, and the Secretary determines that the safe accommodation of bicycles can be provided at reasonable cost as part of such replacement or rehabilitation, then such bridge shall be so replaced or rehabilitated as to provide such safe accommodation."

Federal Lands

ISTEA programmed $20.8 billion nationally to be used to maintain the road system funded under the Federal Lands Highways Program. Funds are allocated on a discretionary basis for construction and maintenance of roads (and bicycle facilities) located in national forests or for roads that serve national forests. The funds can be used "for the construction of pedestrian walkways and bicycle transportation facilities in conjunction with such trails, roads, highways, and parkways."

Scenic Byways

There are several programs and provisions throughout ISTEA that receive funding, some with contract authority from the Highway Trust fund and some requiring annual appropriations. Grant funds totaling $50 million are authorized for the planning, design, and development of state scenic byway programs. In addition, an interim Scenic Byways grant program, funded at $30 million, allows states to undertake scenic byway projects. Additionally, scenic byways may be funded through the 10 percent set-aside of the STP funds for the TEA Program. Higher Priority is given to Scenic Byways Program Funds "may be used to construct facilities along the highway for the use of pedestrians and bicyclists."

National Recreational Trails

The Steve Symms National Recreational Trails Fund Act of 1991 was signed into law in December of 1991 as part of ISTEA. These funds are for recreational trails and trail-related projects and moneys transferred to this trust fund are equivalent to "non-highway recreational fuel taxes". These taxes are from fuel purchased for use on recreational trails and for outdoor recreational equipment (e.g., camp stoves). The states in turn may distribute the funds to local agencies, non-profit groups and with strict limitations to federal agencies. Funds are available for motorized and non-motorized trails. The amount of funds available from this

program are so small (California was allocated $292,923 in FY 93) that the funding has stayed at the state level and not filtered to local agencies.

b. **Land and Water Conservation**

The Land and Water Conservation Fund Program provides federal funds administered by the California Department of Parks and Recreation for grants to state and local agencies for the acquisition and development of outdoor recreation areas and facilities. This is a 50% matching program. Trails for walking or bicycling are listed in the Priority 1 category. Funding in recent years has been between $1 to $6 million for California. The 50% required match, however, would leave local agencies with a large funding gap.

c. **National Highway Safety**

National Highway Safety Act Funds are programmed to reduce motor vehicle fatalities and injuries through a National Highway Safety Program. The Office of Traffic Safety gives priority to projects that eliminate or expand an existing safety program, or develop anew safety program. Although bicycle safety is not a priority program, it is still eligible for funding. Eligible projects include pedestrian and bicycle safety programs, program implementation (staff training), and the identification of highway hazards. Ineligible projects include program maintenance and research, highway construction or maintenance, and the purchase of right-of-way.

2. State Funding Sources

a. **Bicycle Lane Account**

The Bicycle Lane Account (BLA) funds bicycle facilities and emphasize improved safety and convenience for cyclists. BLA funds are available to jurisdictions that have approved local agency Bikeway Master Plans which are less than two years old. To be eligible for funding, bikeways must be approximately parallel to state, county, or city roadways, where the separation of bicycle traffic from motor vehicle traffic will increase the traffic capacity of the roadway. Priority projects serve bicycle commuters, have activity centers at each point, are consistent with the bicycle plan/program, and close missing links.

Eligible projects that serve the functional needs of commuting bicyclists may include the following: new bikeways serving major transportation corridors; new bikeways removing travel barriers; and the installation of traffic control devices to improve the safety and efficiency of bicycle travel. In selecting projects to be funded consideration is given to the relative cost-effectiveness of a proposed project. All bikeways projects must comply with minimum safety design criteria and uniform specifications standards. Annually, no agency can receive more than $90,000. No BLA funds may be expended for maintenance purposes.

b. **Petroleum Violation Escrow Account**

Bicycle projects are eligible for Petroleum Violation Escrow Account Funds and must "be used for existing or new energy-related programs that are designed to benefit, directly or indirectly, consumers of petroleum products within the state." State legislators sponsor projects and play the lead role in the project selection process. Under the transportation section, the primary category for possible expenditures is consumer oriented bicycle promotion programs. Projects that

have benefits too far in the future are not eligible. The City of Stockton recently received $250,000 in PEVA funds for the extension of the Calaveras River bikeway along the Stockton Diverting Canal.

c. **Environmental Enhancement & Mitigation Program (EEM)**

The Environmental Enhancement and Mitigation Program was established by the enactment of the California Transportation Blueprint Legislation of 1989. Eligible projects must demonstrate a direct or indirect relationship with the environmental impact of modifying an existing transportation facility or construction of a new transportation facility. Eligible projects must demonstrate additional enhancement above the mitigation required as part of the transportation projects to which they are related. The program funds projects that offset environmental impacts of modified or new public transportation facilities such as streets, mass transit guideways, park and ride facilities, and transit stations. In order to establish that the proposed grant project affords benefits over what is required, the applicant agency is required to submit a statement regarding the status of the environmental review process for the transportation project, a detailed description of the mitigation requirements and the relationship of the transportation facility's environmental impacts to the proposed enhancement project. EEM program funding is allocated by the California Transportation Commission on the basis of statewide competition.

d. **State-Local Transportation Partnership**

The legislative intent of the State-Local Transportation Partnership Program is to identify eligible locally funded projects which are ready to construct with minimal state planning and review. An eligible project must be constructed by awarded contract, be a usable transportation segment and meet one of the following criteria: increases capacity, extends service to a new area, or extends the useful life of the roadway by ten years as a qualified rehabilitation project. For example, in the course of completing a roadway maintenance project (overlay) supplementary pavement could be added to accommodate a Class II bicycle facility (bike lane). The project must have a committed local share without state funds and be capable of awarding the contract within two years.

e. **Traffic System Management Program**

The State develops and implements the Traffic System Management (TSM) Program in the major urban areas of the state. Projects are designed to increase the number of person-trips which can be carried on the highway system in a peak period without significantly increasing the designed capacity of the highway system when measured by the number of vehicle trips which can be carried on the highway system in a peak period without significantly increasing the designed capacity of the highway system when measured by the number of vehicle trips and without increasing the number of through traffic lanes. Eligible projects include those that achieve the most traffic congestion relief rapidly for each state dollar spent while demonstrating the usefulness of research and development in the field of traffic operations control systems. San Joaquin County does not have projects that aggressively implement TSM projects, therefore, this source of funding has only had limited application as an "automatic" match fund for certain eligible CMAQ and STP projects.

3. Regional Funding Sources

a. Air Pollution Control District

Regional Air Pollution Control Districts around the state have the authority to collect motor vehicle registration fees of up to $4 per vehicle to fund projects which contribute toward meeting new responsibilities mandated under the California Clean Air Act. Assembly Bill 2766 authorizes the San Joaquin Valley Unified Air Pollution Control District to impose a $4 fee to fund emission reduction programs within its eight county jurisdiction; one of which is San Joaquin County.

Emission reduction projects or programs eligible for funding include:

- Local government projects that implement the transportation control measures of the Air District's Air Quality Attainment Plan.
- Any program or project that would result in reductions of emissions from motor vehicles, reductions in vehicle miles traveled or reductions in vehicle trips.
- A public education/awareness program that supports any of the above programs.

Possible expenditures include air quality related studies, Transportation Control Measures (such as bicycle-facility improvements, bicycle safety enforcement, and commuter-education programs), and programs which have a high potential to improve air quality. Proposals must show the project's anticipated air quality benefits through trip or emissions reduction forecasting. San Joaquin County jurisdictions have been successful in securing funds under this program. Legislation has been introduced in the State Assembly seeking to allow additional increases in registration fees due to the considerable response by local agencies to recent calls for projects.

b. Special Assessment Districts

Assessment districts have been used to fund a variety of public works improvements and are most appropriate when a well-defined and limited area of land benefits from the improvement. Assessments do not require a vote of the owners or voters in the assessment area, but rather are created through administrative procedures. Bonds issued to pay for improvements are exempt from state and federal taxes, so they carry a lower interest rate than privately raised capital. Assessments can be levied by a general government (city or county) and can overlap jurisdictional boundaries with the consent of the general governments involved. The distribution of assessments is done by formula and must be reasonably related to the benefits received. The assessment can be a flat fee (e.g., $/parcel) or it can relate to the benefit conferred on a parcel (e.g., a graduated fee based on distance from the project). Operating and maintenance costs may be paid for through assessments, which is frequently done for sewage and lighting districts. Special assessments have not been frequently used for alternative mode improvements in California, however, they could have potential as a construction and maintenance source for major bicycle facilities. Assessments have been applied on a limited basis recently in the Los Angeles area, but encountered sharp opposition from land owners.

4. Local Funding Sources

a. **Local Transportation Fund**

Local Transportation Fund (LT) revenues are an important source of transit and roadway funding in San Joaquin County. Revenues are derived from one-quarter cent local retail sales tax returned to the county of origin. State law prescribes the use of these funds in great detail, and in general, LT is used for transit capital and operating support, or when no transit needs have been identified. 2 percent, however, is earmarked for bicycle and pedestrian facilities. While transit projects have priority for receiving LT funds, state law permits these funds to be used for street and highway projects once transit needs are met. An advantage of LT funds is that unused funds can accrue interest at prevailing market rates and may be "banked" for major capital projects. San Joaquin County relies heavily on LT funds to pay operating costs of the fixed route transit system. Countywide, about one-third of these funds are currently being used for roadway purposes. Each jurisdiction must make a determination regarding transit needs, after which funds can be used to fund streets, roads, pedestrian, and bicycle related facilities. However, the San Joaquin County Transit Systems Plan has recommended that the portion of these funds now used for road purposes be used toward intercity and inter-regional transit services by 1996.

b. **San Joaquin County Measure K Program**

In November 1990, San Joaquin County voters approved Measure K, a proposal to increase the local sales tax by a half-cent to fund transportation improvements throughout the County. The 20-year program is anticipated to generate around $400 million (in constant 1990 dollars) for local street repairs, congestion relief projects, passenger rail and bus service improvements, and railroad crossing safety projects. COG administers the relevant funding categories are as follows:

c. **Local Street Repair Program**

Under this program, cities and the County receive a direct subvention of funds to be used for local street repairs, safety and operational improvements. Funds are allocated to local jurisdictions on a population based formula.

d. **Congestion Relief Projects**

Based on geographic equity and traffic congestion considerations, a list of regionally significant capacity projects have been identified for implementation on major state and local roadways. Many of these projects are on major routes between communities and can include provisions for bicycle travel.

e. **Bus and Rail Services**

Under this portion of the program, investment is targeted toward the development of a modern, multimodal transportation system. Under the Passenger Rail and Bus Category, Measure K funds programs including: multimodal terminals, rail corridor service, intercity and elderly & handicapped service, commute service, Alternative Modes, Transportation Demand Management programs, and Park and Ride facilities. Funds are to be used primarily to match and supplement state and federal funds for capital and operating costs.

f. **Bicycle Facilities Program**

The Measure K program allocates a total of $5 million over the 20-year life of Measure K for bicycle facilities. Through a regionally competitive process, approximately $250,000/year is allocated to local agencies. Allocations are often used to leverage other outside sources of funding.

g. **General Fund**

Competition for scarce resources to provide a wide array of local services limits the resources available from the General Fund. However, cities and the County could elect to have a greater proportion of their general fund revenues committed to bicycle transportation facilities.

h. **Fees**

Developer fees are generally defined as "a monetary charge imposed by local government on new development to recoup or offset a proportionate share of public capital costs required to accommodate such development with necessary public facilities." Local jurisdictions use them for water and sewer facilities, but they may also be used for arterials, local roads, parks, collector roads, and bikeways. There must be a direct relationship between the need for the facilities and the growth from new development. Common characteristics of these fees include: use for local improvements, use with debt financing, fee equal to cost, inability to use for general revenue, and a relationship must exist between the development and the required improvement.

There are two types of fees: traffic mitigation fees and negotiated development agreements. The first method distributes the cost of road improvements among all new developments using the size of a proposed development or estimates of a project's trip generation capacity as criteria. The second method, which is negotiated during the course of project approval, requires a developer to provide for at least a portion of the infrastructure associated with a project. The County's Traffic Impact Mitigation Fee Program currently designates 5 percent of collected fees to be expended on alternative modes of travel including bicycle transportation facility improvements. The City of Stockton's Air Quality Fee is currently collecting revenues that, depending upon a finding of significance, can be directed to expenditures for bicycle transportation facilities.

i. **Public/Private Joint Development**

As new development occurs, bicycle facilities can be incorporated into design features. Subdivisions with a connected system of bicycle routes and/or a multiuse pathway which serves as a recreational feature are attractive to home buyers who are looking for a sense of community. Some developers in California have even been giving away bicycles with the purchase of new home. With advance planning, and the input of interested community members, bicycle friendly features can be an integral part of every new development. Cities such as Tracy, Stockton and Manteca have included bicycle facilities as a condition for allowing certain residential developments. New commercial and employment centers can be required to consider the needs for storage of bicycles, clothing and changing/shower areas for cyclists. For these measures to be equitable and effective, however, clear guidelines for developer responsibility need to be in place.

Other public/private partnerships have recently emerged with regard to bicycle facility maintenance. Just as Caltrans has come to depend on the "Adopt a Highway" program for certain types of litter removal and maintenance efforts, local public groups are also becoming involved in the monitoring and debris removal on bikeways. The Stockton Bicycle Club in conjunction with the UOP Department of Engineering students have taken on the responsibility to maintain and monitor the bikeway along the Calaveras River in Stockton. The Manteca Bicycle Club is currently responsible for sweeping, removing litter and controlling vegetation along the bikeway which runs under I-5 between Manteca and Tracy. These partnerships have developed in an effort to continue the investment into bicycle facilities, in an era where, ongoing maintenance revenues are sharply declining.

5. Assistance Sources

a. Rideshare Agencies

Ridesharing agencies are currently expanding services to integrate with other alternative transit modes. Particularly for Awareness and Education activities, investments can be maximized by addressing a variety of modal options. The issue of bicycles on trains and buses, and the issue of bicycle amenities at the work place can be incorporated into the current channels of outreach under the Rideshare program.

b. National Advocacy Campaign

The National Bicycle and Pedestrian Advocacy Campaign is intended to ensure the implementation of ISTEA and the Federal Clean Air Act and to strengthen state and local bicycle and pedestrian advocacy. Minimum Support Grants ($1,000) may be used for the subscription to a national membership; designing, printing and distributing membership media; and volunteer development and training. Growth Grants ($1,000 to $5,000) may be used for office equipment, membership acquisition campaigns including direct mail, and advocacy campaigns such as bicycle and pedestrian facility improvement plans and reports. Both programs' explicit intent is to increase membership within a defined period of time. This source may be of most benefit to the San Joaquin Bicycle Council or other emerging bicycle advocacy groups.

c. Philanthropic Fund

Ofnayim Bicycle Philanthropic Fund Demonstration Grants, from $1,000 to $2,500, are available for non-profit organizations to encourage safe and effective bicycle transportation; to improve mobility, air quality, and energy conservation; to strengthen the economy and national security; and to counter the greenhouse effect. Possible expenditures for the grants focus on short-term projects which can produce a product within a reasonable period of time and which will result in increased use and safety. Proposals which offer prospects of useful experience for groups will be preferred. The areas of interest include: assisting in the formation of a legislative bicycle caucus; reviewing government transportation programs/documents; seeking support from business, environmental, and community groups; advocating access and accident/enforcement data; and increasing membership and financial support.

d. Conservancy

The Rails to Trails Conservancy assists rail-to-trail conversions through technical assistance, public education, advocacy, negotiations, legislation and regulatory action. When the Interstate Commerce Commission announces a rail abandonment, the conservancy notifies trail advocates and local agencies and then helps the locality with the legal procedures.

B. Bicycle Survey Form and Results

Lathrop Bicycle Master Plan Survey

Part One - Bicycle Trip Patterns

1. Do you currently own a **bicycle**? (Yes or No) _____

2. Where do you **work** and/or attend **school**? _____

3. Weather permitting, I ride a bicycle to **work**: (circle the one that best describes yourself)

   Daily ***Weekly*** ***Monthly*** ***Never***

4. Weather permitting, I ride a bicycle to **run errands**: (circle the one that best describes yourself)

   Daily ***Weekly*** ***Monthly*** ***Never***

5. Weather permitting, I ride a bicycle for **recreation**: (circle the one that best describes yourself)

   Daily ***Weekly*** ***Monthly*** ***Never***

6. Do you have **children who bicycle to school**? If yes, please indicate how frequently they bike to school when the weather permits. Yes or No

   _____

7. Please List **two** of your most frequent **bicycle trips** by origin, destination and reason for trip. Identify each place by name and nearest intersection.

   a. Origin: _____
   Destination: _____
   Reason for Trip (circle one): ***Work*** ***School*** ***Errand*** ***Recreation***

   b. Origin: _____
   Destination: _____
   Reason for Trip (circle one): ***Work*** ***School*** ***Errand*** ***Recreation***

Part Two - Bicycle Issues and Problem Areas

8. Please list the two issues that you think are most important to address in the Bicycle Master Plan (e.g. safety, secure bike storage, linkage of routes, bike education, bicycle incentives, etc.)

   a. _____
   b. _____

Master Plan Survey Continued

9. Please identify the locations (if any) where you encounter problems or obstacles when bicycling (e.g. specific dangerous intersections, areas with unmaintained pavement, etc.)

   Location Nature of Problem

   a. _____
   b. _____
   c. _____

Part Three - Encouraging Bicycle Use in Lathrop

10. Please identify any improvements that are needed to better serve bicyclists in the City of Lathrop (e.g. additional bike routes, bicycle racks, paved paths, education, etc.)

    _____

11. What improvements, incentives, or messages do you think would encourage residents of Lathrop to bicycle more often? _____

    _____

Thank you for taking the time to participate in improving your community. If you have any questions or want to become involved, please contact Kit Ledbetter, Parks and Recreation Director, at 858-4214. Please return this questionnaire by March 1, 1995.

If you would like to receive additional information please list your name and mailing address:

_____

Questionnaires may be mailed to, or dropped off at, Lathrop Community Center or City Hall.

Fold Line (For return mailing - Tri-fold with return address to outside)

City of Lathrop
Lathrop Community Center
P.O. Box 473
Lathrop, California 95330

Place Stamp Here

Send to: City of Lathrop Bicycle Survey
Lathrop Community Center
P.O. Box 473
Lathrop, California 95330

Lathrop Bicycle Master Plan Survey Results

Based on 48 responses

Part One - Bicycle Trip Patterns

1. Do you currently own a bicycle? (Yes or No) Yes **(90%)**, No (10%)

2. Where do you work and/or attend school?

Lathrop	Manteca	Modesto	Stockton	Bay Area
(21%)	(10%)	(4%)	(21%)	**(25%)**

3. Weather permitting, I ride a bicycle to work: (circle the one that best describes yourself)

Daily	*Weekly*	*Monthly*	*Never*
(4%)	**(19%)**	(0%)	**(75%)**

Combined Total 23%

4. Weather permitting, I ride a bicycle to run errands: (circle the one that best describes yourself)

Daily	*Weekly*	*Monthly*	*Never*
(15%)	**(29%)**	(12%)	(44%)

Combined Total 44%

5. Weather permitting, I ride a bicycle for recreation: (circle the one that best describes yourself)

Daily	*Weekly*	*Monthly*	*Never*
(21%)	**(48%)**	(12%)	(17%)

Combined Total 69%

6. Do you have children who bicycle to school? If yes, please indicate how frequently they bike to school when the weather permits. (Yes or No) Yes (19%), **No (77%)**

7. Please List two of your most frequent bicycle trips by origin, destination and reason for trip. Identify each place by name and nearest intersection.

   a. Origin:
   Destination:
   Reason for Trip (circle one): *Work* *School* ***(Errand)*** *Recreation*
   Delta Market (13%), Post Office (10%), Raley's (6%), Orchard Hardware (2%)

   b. Origin:
   Destination:
   Reason for Trip (circle one): *Work* *School* *Errand* ***(Recreation)***
   General Recreation (43%), Mossdale River (6%), Dos Rios Park (6%)

Part Two - Bicycle Issues and Problem Areas

8. Please list the two issues that you think are most important to address in the Bicycle Master Plan (e.g. safety, secure bike storage, linkage of routes, bike education, bicycle incentives, etc.)

   (32%) Safety of bike routes from traffic
   (14%) Linkage of bike routes
   (8%) Secure bike storage
   (5%) Bicycle safety education

9. Please identify the locations (if any) where you encounter problems or obstacles when bicycling (e.g. specific dangerous intersections, areas with unmaintained pavement, etc.)

Location	Nature of Problem
(13%) Lathrop Road	**high traffic and crossing hazard**
(11%) Louise Ave.	**high traffic and crossing hazard**
(6%) Harlan Road	shoulder too narrow and traffic speed
(4%) 5th Street	no sidewalks or bike lanes for children
(4%) Road obstructions	potholes and road debris

Part Three - Encouraging Bicycle Use in Lathrop

10. Please identify any improvements that are needed to better serve bicyclists in the City of Lathrop (e.g. additional bike routes, bicycle racks, paved paths, education, etc.)

    (24%) Paved paths
    (10%) Bike lanes
    (5%) More bike racks at stores and parks
    (3%) Education programs
    (3%) Linkage of bicycle routes

11. What improvements, incentives, or messages do you think would encourage residents of Lathrop

    (27%) More bike paths and routes
    (17%) Make routes safe to ride
    (8%) Provide secure bicycle storage facilities
    (8%) Provide adequate signage to mark all bike routes

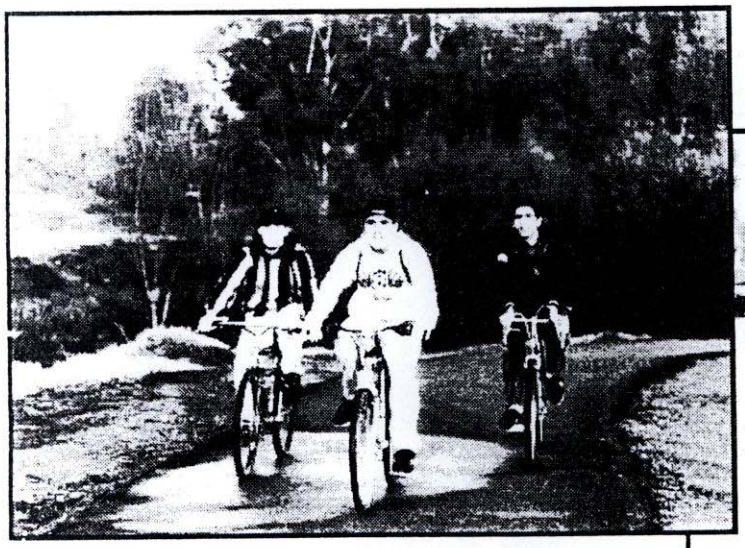
C. Community Participation Notice

City of Lathrop

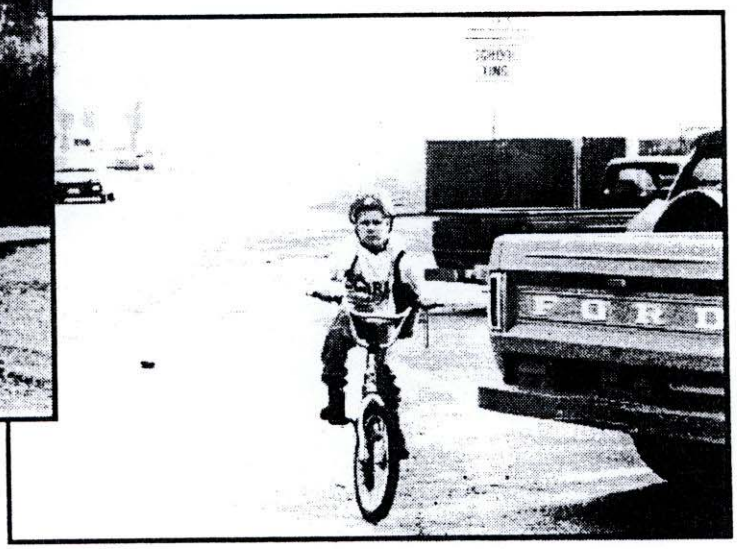
Bicycle Master Plan

What is a Bicycle Master Plan?

The City of Lathrop is in the process of preparing a community wide Bicycle Master Plan. The Bicycle Master Plan will outline a network of bike routes and bicycle pathways throughout Lathrop. The purpose of the Bike Plan is to increase bicycle ridership by providing new bikeways, increasing bike parking, and improving the safety of bicyclists. Your involvement and input in the planning process is very important, by attending the Community Workshop and filling out the attached Bicyclist Survey, you will participate in shaping the Bike Plan.



Bicycling is made safe and easy where bike routes and Class I pathways exist.



A lack of bikeways in Lathrop hinder safe bicycle riding.

The City will be sponsoring a public workshop to solicite input on the preparation of the Bike Plan.
Your involvement is important

Bicycle Master Plan Community Workshop

March 9, 1995 at 6:30 pm in the Lathrop Community Center

City of Lathrop
Parks and Recreation Department
P.O. Box 473
15557 Fifth Street
Lathrop, California 95330

Postal Resident

Bulk Rate
U.S. Postage
PAID
Permit No. 12
Lathrop, Ca

CART SORT

Dear Lathrop Resident:

The City of Lathrop is in the process of preparing a Bicycle Master Plan. We need your help. Please complete the enclosed survey and attend the Bicycle Master Plan Community Workshop on March 9, 1995 at 6:30 PM at the Community Center. We are very excited about the plan as it will set the course for the future location of bicycle routes within our community. This project is funded by a competitive Measure K grant.

We are very concerned about our children's safety. This plan will address safer ways of getting to and from school, and traveling by bicycle within our city. Citizen participation is the only way of assuring that this plan is what the community needs and wants. The plan will allow the City of Lathrop to start installing bicycle routes. Citizen input will determine the priority of where to start. The plan will also enable the City to seek other grants for implementing the Bicycle Master Plan.

Thank you for taking a few minutes to complete the survey and mailing or returning it in to the Community Center. I hope to see you at the Bicycle Master Plan Community Workshop on March 9, 1995 at 6:30 PM at the Community Center.

Sincerely,

John M. Bingham

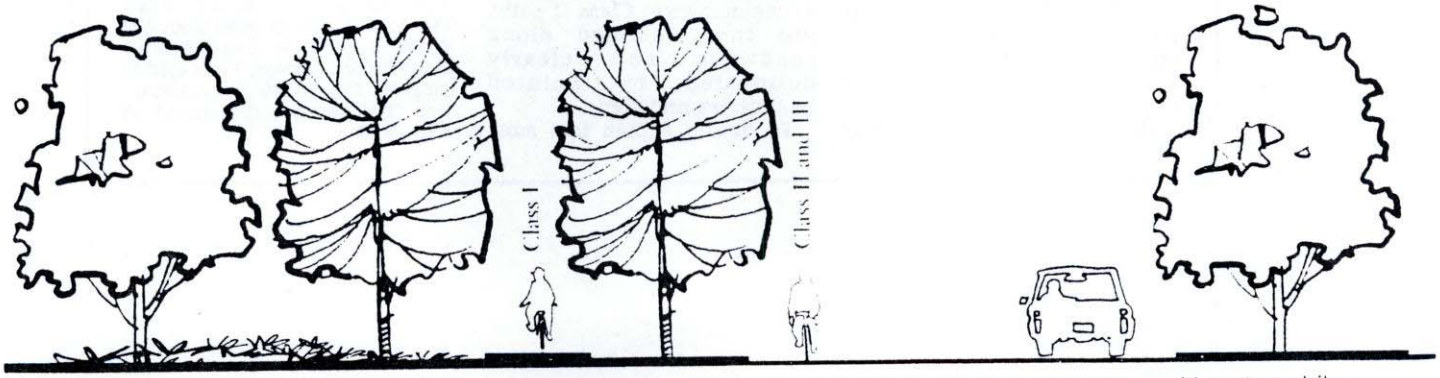
John M. Bingham
City Manager

REMEMBER TO MARK YOUR CALENDARS

What: **Bicycle Master Plan Workshop**
Where: **Lathrop Community Center**
When: **Thursday, March 9, 1995**
Time: **6:30 PM**

Tell Us what You Think!

The Purpose of the **Bicycle Master Plan** is to improve and expand bicycling opportunities throughout Lathrop. This survey provides you with the opportunity of sharing your concerns and ideas about bicycling in Lathrop. By filling out this survey, you will participate in shaping the bicycle plan and improving your community. Please take a moment to answer the following questions and return it to the Parks and Recreation Department.



Class I bikeways are separated from the street, while Class II and III bikeways share the street with automobiles.

In gear with the future? Then help Lathrop plan bike paths

By Nell Selover
Bee staff writer

Parks and Recreation Director Kit Ledbetter is asking Lathrop residents to peer into the future a generation or two and envision a city where your child or grandchild can bicycle to school on safe, attractive paths designed just for bicycles.

Maybe that vision suggests places where paths should go. If so, city planners about to create Lathrop's bicycle master plan would like to hear from you. They'll be holding a Bicycle Master Plan Workshop March 9 at 6:30 p.m. in the Lathrop Community Center.

Planners hope to encourage more bicycle use by increasing bicycle safety, adding new bicycle routes and more bike parking. The Lathrop plan will also tie in with bikeways recently proposed in San Joaquin County's bicycle master plan.

"Of key concern in forming this plan is bicycle safety," Ledbetter said. "As it is now, kids are competing with cars when they bicycle to school or to the store."

Besides making roads safer for bicyclists, well-designed routes could offer Lathrop residents easy bike access to surrounding communities and scenic, recreational opportunities.

Because so much of the city's growth is yet to come, there is still a lot of flexibility in where such routes can be created, Ledbetter said.

"I think we have a great opportunity, because of the railroad right of ways and our close connection to the Delta. I see people getting on their bikes in the city and within a few miles being out in the country and along Delta levees."

'Of key concern in forming this plan is bicycle safety. As it is now, kids are competing with cars when they bicycle to school or to the store' — Kim Ledbetter

But building class I paths — those designed just for non-motorized vehicles — runs about $100,000 a mile to build, he added. That doesn't included land acquisition costs or maintenance. Class II paths are those defined along roadways and clearly delineated by painted boundaries and signs.

To design a plan that suits the city best, Ledbetter added, it's vital that people tell the city and the master plan consultants what would suit them best.

"We're talking about creating a quality plan," he said. "And to do that we have to have citizen input."

The master plan carries a $16,000 price tag, which is primarily being payed by a San Joaquin County Measure K grant. After the resident workshops, plan consultants RRM Design Group of Modesto will begin inking possible routes on city maps, Ledbetter said. The plan is scheduled to be completed in June.

Once a master plan has been approved, Ledbetter added, the city can begin seeking grants and funds to build the paths from various agencies.

The city recently mailed a bicycle-use survey to residents to aid in preparing the plan, Ledbetter said. He's pleased by the response from the form so far.

"I'll be even more encouraged when I see a lot of enthusiastic people show up for the workshop."

The Bicycle Master Plan Workshop will be held March 9 at 6:30 p.m. in the Lathrop Community Center, Fifth and K streets. For more information, call the parks department at 858-4214

D. Community Workshop

The following exhibits were presented at the Lathrop Bicycle Plan Community Workshop. The Workshop was held on March 9th at 6:30 in the Lathrop Community Center. Copies of the public notices for the Workshop that were distributed City wide are attached as well.

City of Lathrop
Bicycle Plan Workshop

Lathrop Community Center Building
March 9th, 1995
6:30 PM

Sign In Sheet

Name	Address	Phone Number

City of Lathrop
Bicycle Plan Workshop

Lathrop Community Center Building
March 9th, 1995
6:30 PM

Agenda

1. Introduction and Purpose
2. Summary of Existing Conditions
3. Preliminary Survey Results
4. Plan Priorities and Routes
5. Participation Exercise
   - Goals and Priorities
   - Route Mapping
6. Summary and Wrap-Up

Tonight's Workshop is sponsored by the Lathrop Parks and Recreation Department. RRM Design Group of Modesto is assisting the City in preparation of the Bicycle Plan.

Bicycle Plan Priorities

The following list represents a variety of potential improvement projects that could occur as part of the Bicycle Plan. Please rank each project based on its importance to **you**.

Ranking 1-10	Project Description
_____	Additional **Bicycle Parking** at stores, businesses and public places.
_____	A **Bicycle Path Loop** around the City Limits.
_____	Additional **Safety Programs** for children.
_____	**Bicycle Lanes** along major streets.
_____	**Recreational Riding Paths** along river levies.
_____	A system of **Greenbelt Bicycle Pathways** in new areas west of I-5.
_____	A street separated **Bike Path** along Louise Ave.
_____	Bike routes through **Commercial** and **Industrial** areas.
_____	Bicycle Pathways along the **Southern Pacific Railroad Tracks**.
_____	Bicyclist **Safety Improvements** around schools and parks.

additional ideas: _____

_____

E. Community Workshop Attendance List

City of Lathrop

Bicycle Plan Workshop

Lathrop Community Center Building

March 9, 1995

6:30 PM

ATTENDANCE LIST

NAME	ADDRESS
Joyce Gatto	PO Box 104
Bernie Gatto	PO Box 104
Lynne Burnett-Wage	806 Augusta Dr.
Harold Wage	806 Augusta Dr.
John M. Bingham	16775 Howland Road
Don Halseth	Lathrop School
William Moreno	127 Lupton,
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F. Caltrans Highway Design Manual Chapter 1000

CHAPTER 1000
BIKEWAY PLANNING AND DESIGN

Topic 1001 - General Information

Index 1001.1 - Definitions

"Bikeway" means all facilities that provide primarily for bicycle travel.

(1) Class I Bikeway (Bike Path). Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross-flow minimized.

(2) Class II Bikeway (Bike Lane). Provides a striped lane for one-way bike travel on a street or highway.

(3) Class III Bikeway (Bike Route). Provides for shared use with pedestrian or motor vehicle traffic.

More detailed definitions are contained in Section 2373 of the Streets and Highways Code.

1001.2 Streets and Highways Code References

(a) Section 157--Severance of a major bicycle route by freeway construction.

(b) Section 157.2--Incorporation of bicycle facilities in the design of freeways.

(c) Chapter 8--California Bikeways Act.

(d) Section 2374--Caltrans to establish design criteria for bikeways.

(e) Section 2376--Local agencies must comply to the criteria established by Caltrans.

(f) Section 2381--Use of abandoned right of way as a bicycle facility.

1001.3 Vehicle Code References

(a) 21100(H)--Operation of bicycles on sidewalks.

(b) 21207.5--Prohibition of motorized bicycles on Class I and II bikeways.

(c) 21208--Mandatory use of bike lanes by bicyclists.

(d) 21210--Bicycle parking.

(e) 21960--Use of freeway shoulders by bicyclists.

Topic 1002 - General Planning Criteria

1002.1 Introduction

Bicycle travel can be enhanced by improved maintenance and by upgrading existing roads used regularly by bicyclists, regardless of whether or not bikeways are designated. This effort requires increased attention to the right-hand portion of roadways where bicyclists are expected to ride. On new construction, and major reconstruction projects, adequate width should be provided to permit shared use by motorists and bicyclists. **On resurfacing projects, the entire paved shoulder and traveled way shall be resurfaced. When adding lanes or turn pockets, a minimum 4-foot shoulder shall be provided (see Table 302.1).** When placing a roadway edge stripe, sufficient room outside the stripe should be provided for bicyclists. When considering the restriping of roadways for more traffic lanes, the impact on bicycle travel should be assessed. These efforts, to preserve or improve an area for bicyclists to ride, can benefit motorists as well as bicyclists.

1002.2 The Role of Bikeways

Bikeways are one element of an effort to improve bicycling safety and convenience - either to help accommodate motor vehicle and bicycle traffic on shared roadways, or to complement the road system to meet needs not adequately met by roads.

Off-street bikeways in exclusive corridors can be effective in providing new recreational opportunities, or in some instances, desirable commuter routes. They can also be used to close gaps where barriers exist to bicycle travel (e.g., river crossing). On-street bikeways can serve to enhance safety and convenience, especially if other commitments are made in conjunction with establishment of bikeways, such as: elimination of parking or increasing roadway width, elimination of surface irregularities and roadway obstacles, frequent street sweep-

ing, establishing intersection priority on the bike route street as compared with the majority of cross streets, and installation of bicycle-sensitive loop detectors at signalized intersections.

1002.3 The Decision to Develop Bikeways

The decision to develop bikeways should be made with the knowledge that bikeways are not the solution to all bicycle-related problems. Many of the common problems are related to improper bicyclist and motorist behavior and can only be corrected through effective education and enforcement programs. The development of well conceived bikeways can have a positive effect on bicyclist and motorist behavior. Conversely, poorly conceived bikeways can be counterproductive to education and enforcement programs.

1002.4 Selection of the Type of Facility

The type of facility to select in meeting the bicycle need is dependent on many factors, but the following applications are the most common for each type.

(1) Shared Roadway (No Bikeway Designation). Most bicycle travel in the State now occurs on streets and highways without bikeway designations. This probably will be true in the future as well. In some instances, entire street systems may be fully adequate for safe and efficient bicycle travel, and signing and striping for bicycle use may be unnecessary. In other cases, routes may be unsuitable for bicycle travel, and it would be inappropriate to encourage additional bicycle travel by designating the routes as bikeways. Finally, routes may not be along high bicycle demand corridors, and it would be inappropriate to designate bikeways regardless of roadway conditions (e.g., on minor residential streets).

Many rural highways are used by touring bicyclists for intercity and recreational travel. In most cases, it would be inappropriate to designate the highways as bikeways because of the limited use and the lack of continuity with other bike routes. However, the development and maintenance of 4-foot paved roadway shoulders with a standard 4-inch edge stripe can significantly improve the safety and convenience for bicyclists and motorists along such routes.

(2) Class I Bikeway (Bike Path). 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. They can either provide a recreational opportunity, or in some instances, can serve as direct high-speed commute routes if cross flow by motor vehicles can be minimized. The most common applications are along rivers, ocean fronts, canals, utility right of way, abandoned railroad right of way, within college campuses, or within and between parks. There may also be situations where such facilities can be provided as part of planned developments. Another common application of Class I facilities is to close gaps to bicycle travel caused by construction of freeways or because of the existence of natural barriers (rivers, mountains, etc.).

(3) Class II Bikeway (Bike Lane). Bike lanes are established along streets in corridors where there is significant bicycle demand, and where there are distinct needs that can be served by them. The purpose should be to improve conditions for bicyclists in the corridors. Bike lanes are intended to delineate the right of way assigned to bicyclists and motorists and to provide for more predictable movements by each. But a more important reason for constructing bike lanes is to better accommodate bicyclists through corridors where insufficient room exists for safe bicycling on existing streets. This can be accomplished by reducing the number of lanes, or prohibiting parking on given streets in order to delineate bike lanes. In addition, other things can be done on bike lane streets to improve the situation for bicyclists, that might not be possible on all streets (e.g., improvements to the surface, augmented sweeping programs, special signal facilities, etc.). Generally, stripes alone will not measurably enhance bicycling.

If bicycle travel is to be controlled by delineation, special efforts should be made to assure that high levels of service are provided with these lanes.

In selecting appropriate streets for bike lanes, location criteria discussed in the next section should be considered.

(4) Class III Bikeway (Bike Route). Bike routes are shared facilities which serve either to:

(a) Provide continuity to other bicycle facilities (usually Class II bikeways); or

(b) Designate preferred routes through high demand corridors.

As with bike lanes, designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. This means that responsible agencies have taken actions to assure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of bicyclists. Normally, bike routes are shared with motor vehicles. The use of sidewalks as Class III bikeways is strongly discouraged.

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

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

An important consideration in selecting the type of facility is continuity. Alternating segments of Class I and Class II (or Class III) bikeways along a route are generally incompatible, as street crossings by bicyclists are required when the route changes character. Also, wrong-way bicycle travel will occur on the street beyond the ends of bike paths because of the inconvenience of having to cross the street.

Topic 1003 - Design Criteria

1003.1 Class I Bikeways

Class I bikeways (bike paths) are facilities with exclusive right of way, with cross flows by motorists minimized. Section 2373 of the Streets and Highways Code describes Class I bikeways as serving "the exclusive use of bicycles and pedestrians". However, experience has shown that if significant pedestrian use is anticipated, separate facilities for pedestrians are necessary to minimize conflicts.

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 motorist cross flows. See Index 1003.3 for discussion relative to sidewalk bikeways.

By State law, motorized bicycles ("mopeds") are prohibited on bike paths unless authorized by ordinance or approval of the agency having jurisdiction over the path. Likewise, all motor vehicles are prohibited from bike paths. These prohibitions can be strengthened by signing.

(1) Widths. **The minimum paved width for a two-way bike path shall be 8 feet. The minimum paved width for a one-way bike path shall be 5 feet. A minimum 2-foot wide graded area shall be provided adjacent to the pavement (see Figure 1003.1A).** A 3-foot graded area is recommended. Where the paved width is wider than the minimum required, the graded area may be reduced accordingly; however, the graded area is a desirable feature regardless of the paved width. Development of a one-way bike path should be undertaken only after careful consideration due to the problems of enforcing one-way operation and the difficulties in maintaining a path of restricted width.

Where heavy bicycle volumes are anticipated and/or significant pedestrian traffic is expected, the paved width of a two-way path should be greater than 8 feet, preferably 12 feet or more. Dual use by pedestrians and bicycles is undesirable, and the two should be separated wherever possible. Another important factor to consider in determining the appropriate width is that bicyclists will tend to ride side by side on bike paths, necessitating more width for safe use.

Experience has shown that paved paths less than 12 feet wide sometimes break up along the edge as a result of loads from maintenance vehicles.

Where equestrians are expected, a separate facility should be provided.

Figure 1003.1A

Two-way Bike Path on Separate Right of Way

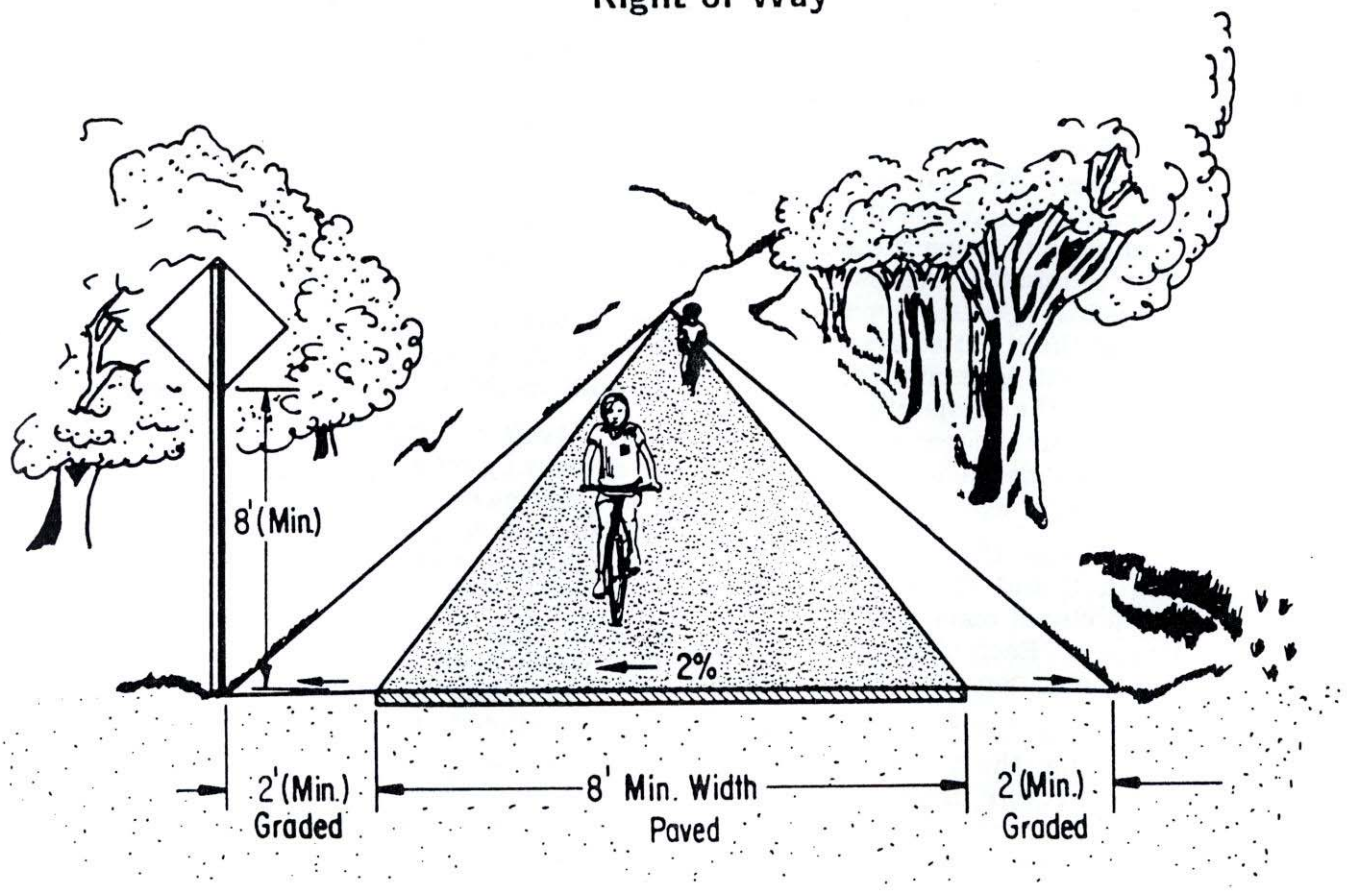
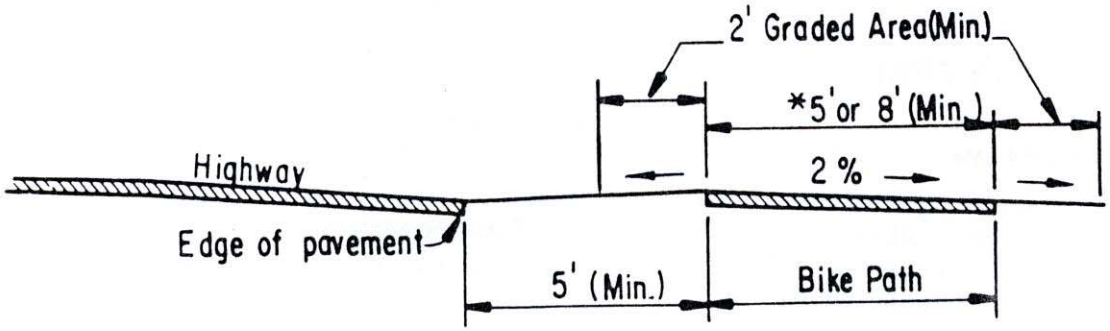


Figure 1003.1B

Typical Cross Section of Bike Path Along Highway



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

(2) Clearance to Obstructions. **A minimum 2-foot horizontal clearance to obstructions shall be provided adjacent to the pavement (see Figure 1003.1A).** A 3-foot clearance is recommended. Where the paved width is wider than the minimum required, the clearance may be reduced accordingly; however, an adequate clearance is desirable regardless of the paved width. If a wide path is paved contiguous with a continuous fixed object (e.g., block wall), a 4-inch white edge stripe, 1-foot from the fixed object, is recommended to minimize the likelihood of a bicyclist hitting it. **The clear width on structures between railings shall be not less than 8 feet.** It is desirable that the clear width of structures be equal to the minimum clear width of the path (i.e., 12 feet).

The vertical clearance to obstructions across the clear width of the path shall be a minimum of 8 feet.

(3) Striping and Signing. A yellow centerline stripe may be used to separate opposing directions of travel. A centerline stripe is particularly beneficial in the following circumstances:

(a) Where there is heavy use;

(b) On curves with restricted sight distance; and,

(c) Where the path is unlighted and nighttime riding is expected. (Refer to Topic 1004 for signing and striping details.)

(4) Intersections with Highways. Intersections are a prime consideration in bike path design. If alternate locations for a bike path are available, the one with the most favorable intersection conditions should be selected.

Where motor vehicle cross traffic and bicycle traffic is heavy, grade separations are desirable to eliminate intersection conflicts. Where grade separations are not feasible, assignment of right of way by traffic signals should be considered. Where traffic is not heavy, stop or yield signs for bicyclists may suffice.

When crossing an arterial street, the crossing should either occur at the pedestrian crossing, where motorists can be expected to stop, or at a location completely out of the influence of any intersection to permit adequate opportunity for bicyclists to see turning vehicles. When crossing at midblock locations, right of way should be assigned by devices such as yield signs, stop signs, or traffic signals which can be activated by bicyclists. Even when crossing within or adjacent to the pedestrian crossing, stop or yield signs for bicyclists should be placed to minimize potential for conflict resulting from turning autos. Where bike path signs are visible to approaching auto traffic, they should be shielded to avoid confusion. In some cases, Bike Xing signs may be placed in advance of the crossing to alert motorists. Ramps should be installed in the curbs, to preserve the utility of the bike path.

(5) Separation Between Bike Paths and Highways. A wide separation is recommended between bike paths and adjacent highways (see Figure 1003.1B). **Bike paths closer than 5 feet from the edge of the traveled way shall include a physical barrier to prevent bicyclists from encroaching onto the highway.** Suitable barriers could include chain link fences or dense shrubs. Low barriers (e.g., dikes, raised traffic bars) next to a highway are not recommended because bicyclists could fall over them and into oncoming automobile traffic. In instances where there is danger of motorists encroaching into the bike path, a positive barrier (e.g., concrete barrier, steel guardrailing) should be provided. See Index 1003.6 for criteria relative to bike paths carried over highway bridges.

Bike paths immediately adjacent to streets and highways are not recommended. They should not be considered a substitute for the street, because many bicyclists will find it less convenient to ride on these types of facilities as compared with the streets, particularly for utility trips.

(6) Bike Paths in the Median of Highways. As a general rule, bike paths in the median of highways are not recommended because they require movements contrary to normal rules of the road. Specific problems with such facilities include:

(a) Bicyclist right turns from the center of roadways are unnatural for bicyclists and confusing to motorists.

(b) Proper bicyclist movements through intersections with signals are unclear.

(c) Left-turning motorists must cross one direction of motor vehicle traffic and two di-

rections of bicycle traffic, which increases conflicts.

(d) Where intersections are infrequent, bicyclists will enter or exit bike paths at midblock.

(e) Where medians are landscaped, visual relationships between bicyclists and motorists at intersections are impaired.

For the above reasons, bike paths in the median of highways should be considered only when the above problems can be avoided.

(7) Design Speed. The proper design speed for a bike path is dependent on the expected type of use and on the terrain. **The minimum design speed for bike paths shall be 20 mph except as noted in the table below.**

Type of Facility	Design Speed (mph)
Bike Paths with Mopeds Prohibited	20
Bike Paths with Mopeds Permitted	30
Bike Paths on Long Downgrades (steeper than 4%, and longer than 500 ft.)	30

Installation of "speed bumps" or other similar surface obstructions, intended to cause bicyclists to slow down in advance of intersections, shall not be used. These devices cannot compensate for improper design.

(8) Horizontal Alignment and Superelevation. Minimum recommended curve radii and superelevations for various design speeds are shown on Figure 1003.1C. When minimum curve radii are selected, increased pavement width on the inside of the curve is recommended to compensate for bicyclist lean.

A straight 2% cross slope is recommended on tangent sections. Superelevations steeper than 2% should be avoided on bike paths expected to have adult tricycle traffic.

(9) Stopping Sight Distance. Figure 1003.1D indicates the minimum stopping sight distances for various design speeds and grades. For two-way bike paths, the descending direction will control the design.

(10) Length of Crest Vertical Curves. Figure 1003.1E indicates the minimum lengths of crest vertical curves for varying design speeds.

(11) Lateral Clearance on Horizontal Curves. Figure 1003.1F indicates the minimum clearances to line of sight obstructions for horizontal curves. The required lateral clearance is obtained by entering Figure 1003.1F with the stopping sight distance from Figure 1003.1D and the proposed horizontal curve radius.

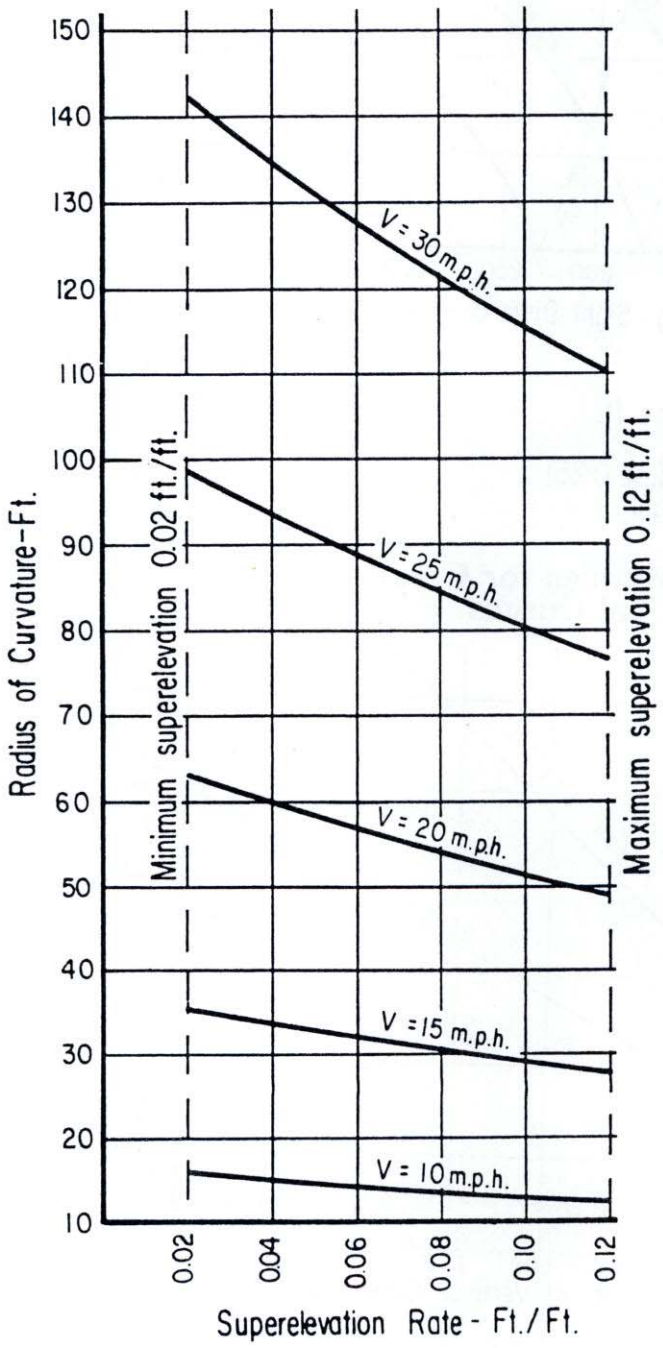
(12) Grades. Bike paths generally attract less skilled bicyclists, so it is important to avoid steep grades in their design. Bicyclists not physically conditioned will be unable to negotiate long, steep uphill grades. Since novice bicyclists often ride poorly maintained bicycles, long downgrades can cause problems. For these reasons, bike paths with long, steep grades will generally receive very little use. The maximum grade rate recommended for bike paths is 5%. It is desirable that sustained grades be limited to 2% if a wide range of riders is to be accommodated. Steeper grades can be tolerated for short segments (e.g., up to about 500 feet). Where steeper grades are necessitated, the design speed should be increased and additional width should be provided for maneuverability.

(13) Structural Section. The structural section of a bike path should be designed in the same manner as a highway, with consideration given to the quality of the basement soil and the anticipated loads the bikeway will experience. Principal loads will normally be from maintenance and emergency vehicles. Expansive soil should be given special consideration and will probably require a special structural section. A minimum pavement thickness of 2 inches of asphalt concrete is recommended. Type "A" or "B" asphalt concrete (as described in Department of Transportation Standard Specifications), with 1/2-inch maximum aggregate and medium grading is recommended. Consideration should be given to increasing the asphalt content to provide increased pavement life. Consideration should also be given to sterilization of basement soil to preclude possible weed growth through the pavement.

(14) Drainage. For proper drainage, the surface of a bike should have a cross slope of 2%. Sloping in one direction usually simplifies longitudinal drainage design and surface construction, and accordingly is the preferred

Figure 1003.1C

Curve Radii & Superelevations

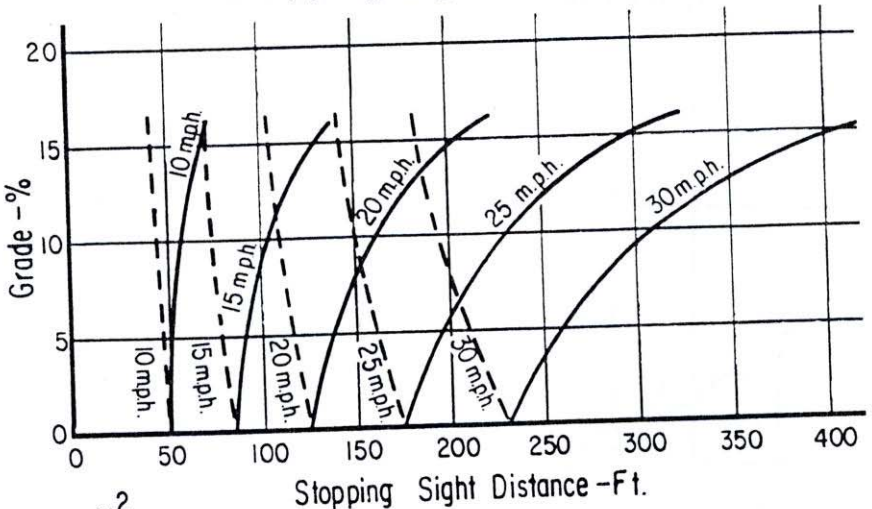


plot of: $\frac{V^2}{gR} = \frac{\tan\theta + f}{1 - f\tan\theta}$

where: V = velocity, ft./sec.
g = acceleration due to gravity, ft./sec.^{2}
R = radius of curvature, ft.
f = coefficient of friction on dry pavement = 0.4 (based on maximum 20° lean)
$\tan\theta$ = superelevation rate, ft./ft.

Figure 1003.1D

Stopping Sight Distance

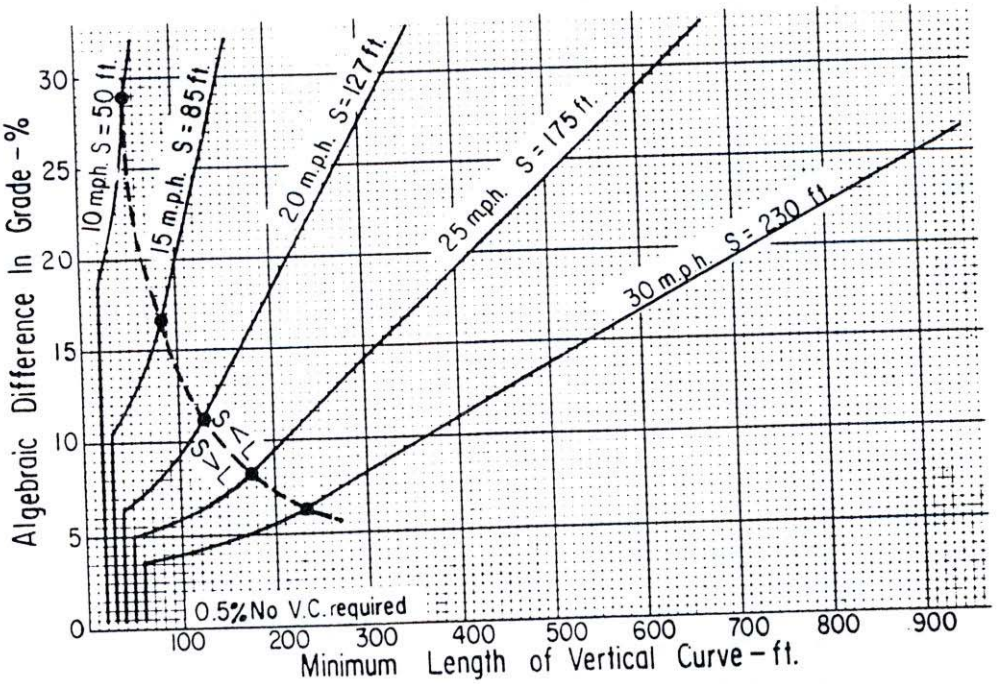


$$S = \frac{V^2}{30(f \pm G)} + 3.67\,V$$

where: S = stopping sight distance, ft.
V = velocity, mph.
f = coefficient of friction (use 0.25)
G = grade ft./ft. (rise/run)

Descend ——————
Ascend - - - - - -

Sight Distances for Crest Vertical Curves



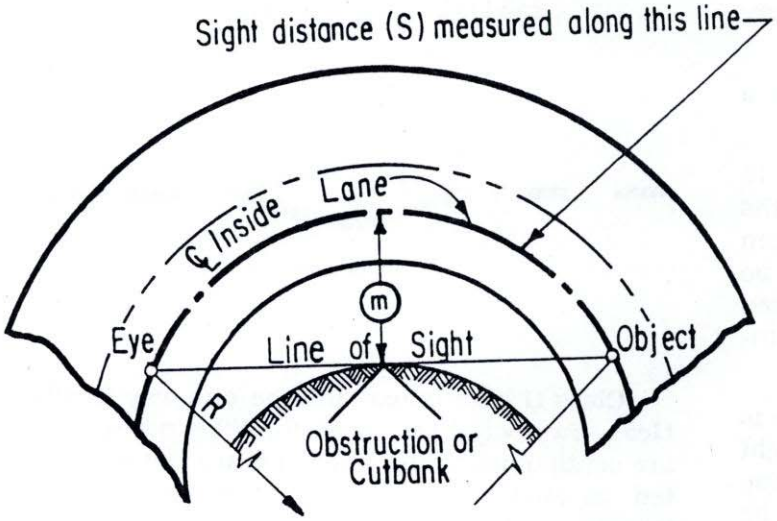
$$L = 2S - \frac{200\left(\sqrt{h_1} + \sqrt{h_2}\right)^2}{A} \quad \text{when } S > L$$

$$L = \frac{AS^2}{100\left(\sqrt{2h_1} + \sqrt{2h_2}\right)^2} \quad \text{when } S < L$$

where: S = Stopping sight distance.
A = Algebraic difference in grade.
h_1 = 4 1/2 ft. - eye height of cyclist.
h_2 = 1/3 ft. - height of object.
L = Minimum vertical curve length.

Figure 1003.1F

Lateral Clearances on Horizontal Curves



Line of sight is 2.0' above ℄ inside lane at point of obstruction.

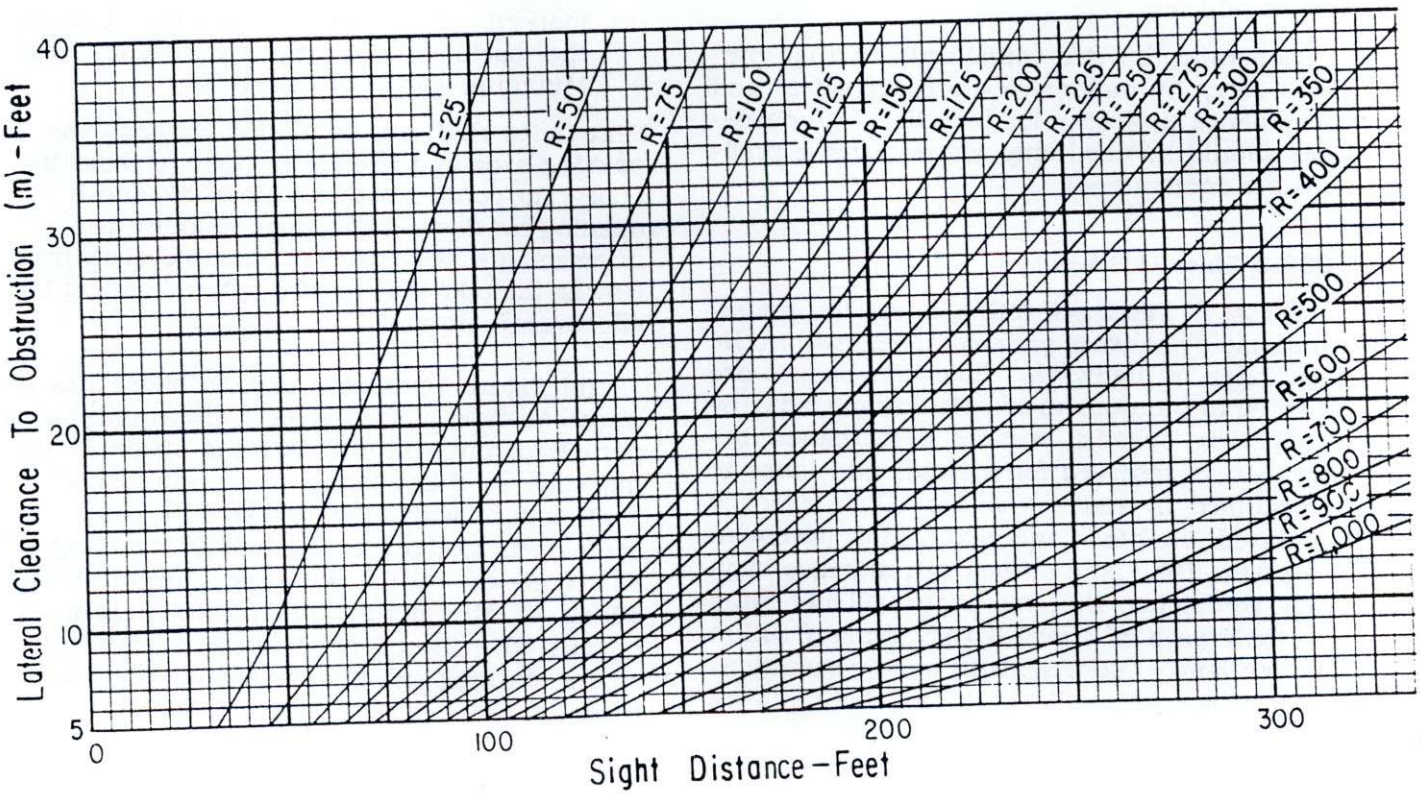
S = Sight distance in feet.
R = Radius of ℄ inside lane in feet.
M = Distance from ℄ inside lane in feet.
V = Design speed for S in M.P.H.

Angle is expressed in degrees

$$m = R\left[\text{vers}\left(\frac{28.65S}{R}\right)\right]$$

$$S = \frac{R}{28.65}\left[\cos^{-1}\left(\frac{R-m}{R}\right)\right]$$

Formula applies only when S is equal to or less than length of curve.



practice. Ordinarily, surface drainage from the path will be adequately dissipated as it flows down the gently sloping shoulder. However, when a bike path is constructed on the side of a hill, a drainage ditch of suitable dimensions may be necessary on the uphill side to intercept the hillside drainage. Where necessary, catch basins with drains should be provided to carry intercepted water across the path.

Culverts or bridges are necessary where a bike path crosses a drainage channel.

(15) Barrier Posts. It may be necessary to install barrier posts at entrances to bike paths to prevent motor vehicles from entering. When locating such installations, care should be taken to assure that barriers are well marked and visible to bicyclists, day or night (i.e., install reflectors or reflectorized tape).

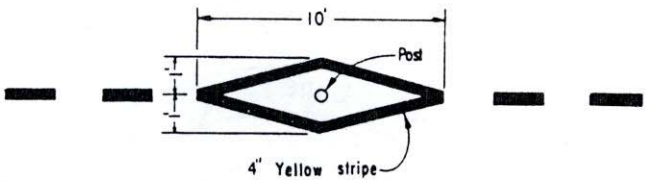
Striping an envelope around the barriers is recommended (see Figure 1003.1G). If sight distance is limited, special advance warning signs or painted pavement warnings should be provided. Where more than one post is necessary, a 5-foot spacing should be used to permit passage of bicycle-towed trailers, adult tricycles, and to assure adequate room for safe bicycle passage without dismounting. Barrier post installations should be designed so they are removable to permit entrance by emergency and service vehicles.

Generally, barrier configurations that preclude entry by motorcycles present safety and convenience problems for bicyclists. Such devices should be used only where extreme problems are encountered.

1003.2 Class II Bikeways

Class II bikeways (bike lanes) for preferential use by bicycles are established within the paved area of highways. 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. This effect is supported by bike lane signs and pavement markings. Bike lane stripes can increase bicyclists' confidence that motorists will not stray into their path of travel if they remain within the bike lane. Likewise, with more certainty as to where bicyclists will be, passing motorists are less apt to swerve toward opposing traffic in making certain they will not hit bicyclists.

Figure 1003.1G
Barrier Post Striping



Class II bike lanes shall be one-way facilities. Two-way bike lanes (or bike paths that are contiguous to the roadway) are not permitted, as such facilities have proved unsatisfactory.

(1) Widths. Typical Class II bikeway configurations are illustrated in Figure 1003.2A and are described below:

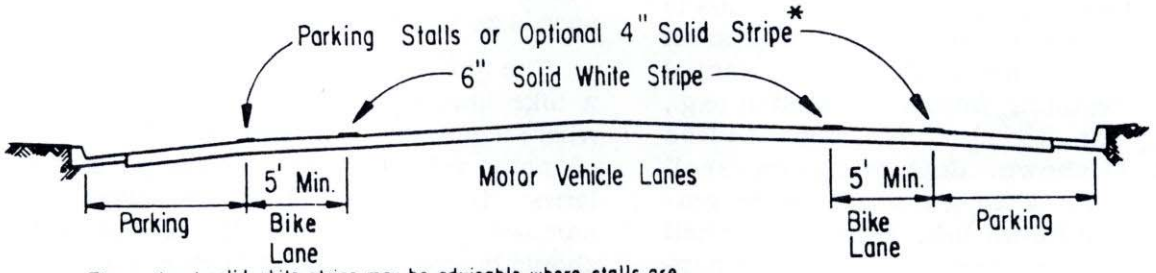
(a) Figure 1003.2A-1 depicts bike lanes on an urban type curbed street where parking stalls (or continuous parking stripes) are marked. Bike lanes are located between the parking area and the traffic lanes. Minimum widths are as shown.

Bike lanes shall not be placed between the parking area and the curb. Such facilities increase the conflict between bicyclists and opening car doors and reduce visibility at intersections. Also, they prevent bicyclists from leaving the bike lane to turn left and cannot be effectively maintained.

(b) Figure 1003.2A-2 depicts bike lanes on an urban-type curbed street, where parking is permitted, but without parking stripe or stall marking. Bike lanes are established in conjunction with the parking areas. **As indicated, 11 feet or 12 feet (depending on the type of curb) shall be the minimum width of the bike lane where parking is permitted.** This type of lane is satisfactory where parking is not extensive and where turnover of parked cars is infrequent.

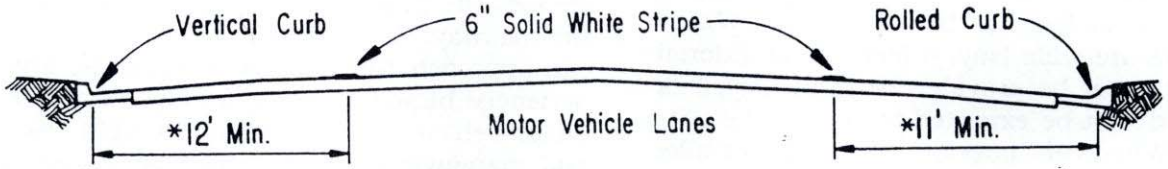
Figure 1003.2A

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



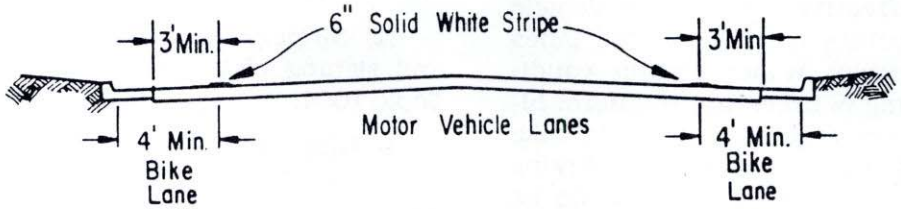
* The optional solid white stripe may be advisable where stalls are unnecessary (because parking is light) but there is concern that motorists may misconstrue the bike lane to be a traffic lane.

(1) STRIPED PARKING

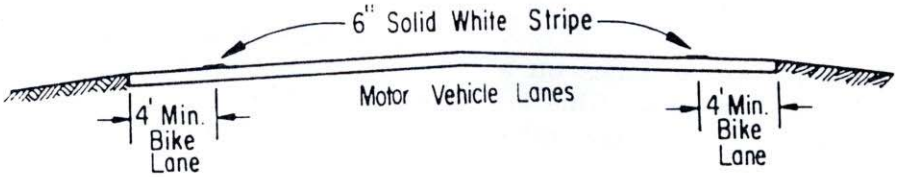


* 13' is recommended where there is substantial parking or turnover of parked cars is high (e.g. commercial areas).

(2) PARKING PERMITTED WITHOUT PARKING STRIPE OR STALL



(3) PARKING PROHIBITED



(4) TYPICAL ROADWAY IN OUTLYING AREAS PARKING RESTRICTED

However, if parking is substantial or turnover of parked cars is high, additional width is recommended.

(c) Figure 1003.2A-3 depicts bike lanes along the outer portions of an urban type curbed street, where parking is prohibited. This is generally the most desirable configuration for bike lanes, as it eliminates potential conflicts resulting from auto parking (e.g., opening car doors). **Minimum widths shall be as shown. Both minimums shall be achieved. With a normal 2-foot gutter, the minimum bike lane width shall be 5 feet.** The intent is to provide a minimum 4-foot wide bike lane, but with at least 3 feet between the traffic lane and the longitudinal joint at the concrete gutter, since the gutter reduces the effective width of the bike lane for two reasons. First, the longitudinal joint may not always be smooth, and may be difficult to ride along. Secondly, the gutter does not provide a suitable surface for bicycle travel. Where gutters are wide (say, 4 feet), an additional 3 feet must be provided because bicyclists should not be expected to ride in the gutter. Wherever possible, the width of bike lanes should be increased to 6 to 8 feet to provide for greater safety. Eight-foot bike lanes can also serve as emergency parking areas for disabled vehicles.

Striping bike lanes next to curbs where parking is prohibited only during certain hours shall be done only in conjunction with special signing to designate the hours bike lanes are to be effective. Since the Vehicle Code requires bicyclists to ride in bike lanes where provided (except under certain conditions), proper signing is necessary to inform bicyclists that they are required to ride in bike lanes only during the course of the parking prohibition. This type of bike lane should be considered only if the vast majority of bicycle travel would occur during the hours of the parking prohibition, and only if there is a firm commitment to enforce the parking prohibition. Because of the obvious complications, this type of bike lane is not encouraged for general application.

Figure 1003.2A-4 depicts bike lanes on a highway without curbs and gutters. This location is in an undeveloped area where infrequent parking is handled off the pavement. This can be accomplished by supplementing the bike lane signing with R25 (park off pavement) signs, or R26 (no parking) signs. **Minimum widths shall be as shown.** Additional width is desirable, particularly where motor vehicle speeds exceed 40 mph.

The typical motor vehicle lane width next to a bike lane is 12 feet. There are situations where it may be necessary to reduce the width of motor vehicle lanes in order to stripe bike lanes. In determining the appropriateness of narrower motor vehicle lanes, consideration should be given to factors such as motor vehicle speeds, truck volumes, alignment, and sight distance. Where favorable conditions exist, motor vehicle lanes of 11 feet may be feasible.

Bike lanes are not advisable on long, steep downgrades, where bicycle speeds greater than 30 mph are expected. As grades increase, downhill bicycle speeds will increase, which increases the problem of riding near the edge of the roadway. In such situations, bicycle speeds can approach those of motor vehicles, and experienced bicyclists will generally move into the motor vehicle lanes to increase sight distance and maneuverability. If bike lanes are to be striped, additional width should be provided to accommodate higher bicycle speeds.

If the bike lanes are to be located on one-way streets, they should be placed on the right side of the street. Bike lanes on the left side would cause bicyclists and motorists to undertake crossing maneuvers in making left turns onto a two-way street.

(2) Striping and Signing. Details for striping and signing of bike lanes are included under Topic 1004.

Raised barriers (e.g., raised traffic bars and asphalt concrete dikes) or raised pavement markers shall not be used to delineate bike lanes. Raised barriers prevent motorists from merging into bike lanes before making right turns, as required by the Vehicle Code, and restrict the movement of bicyclists desiring to enter or exit bike lanes. They also impede routine maintenance. Raised pavement markers increase the difficulty for bicyclists when entering or exiting bike lanes, and discourage motorists from merging into bike lanes before making right turns.

Bike lane stripes should be placed a constant distance from the outside motor vehicle lane. Bike lanes with parking permitted (11 ft to 13 ft between the bike lane line and the curb) should not be directed toward the curb at intersections or localized areas where parking is prohibited. Such a practice prevents bicyclists from following a straight course. Where transitions from one type of bike lane to another are necessary, smooth tapers should be provided.

(3) Intersection Design. Most auto/bicycle accidents occur at intersections. For this reason, bikeway design at intersections should be accomplished in a manner that will minimize confusion by motorists and bicyclists, and will permit both to operate in accordance with the normal rules of the road.

Figure 1003.2B illustrates a typical intersection of multilane streets, with bike lanes on all approaches. Some common movements of motor vehicles and bicycles are shown. A prevalent type of accident involves straight-through bicycle traffic and right-turning motorists. Left-turning bicyclists also have problems, as the bike lane is on the right side of the street, and bicyclists have to cross the path of cars traveling in both directions. Some bicyclists are proficient enough to merge across one or more lanes of traffic, to use the inside lane or left-turn lane provided for motor vehicles. However, there are many who do not feel comfortable making this maneuver. They have the option of making a two-legged left turn by riding along a course similar to that followed by pedestrians, as shown in the diagram. Young children will oftentimes prefer to dismount and change directions by walking their bike in the crosswalk.

At intersections where there is a bike lane and traffic-actuated signal, installation of bicycle-sensitive detectors within the bike lane is desirable. Push button detectors are not as satisfactory as those located in the pavement because the cyclist must stop to actuate the push button. It is also desirable that detectors in left-turn lanes be sensitive enough to detect bicycles (see Chapter 9 of the Traffic Manual and Standard Plans for bicycle-sensitive detector designs).

At intersections (without bike lanes) with significant bicycle use and a traffic-actuated signal, it is desirable to install detectors that are sensitive enough to detect bicycles.

Figure 1003.2C illustrates recommended striping patterns for bike lanes crossing a motorist right-turn-only lane. When confronted with such intersections, bicyclists will have to merge with right-turning motorists. Since bicyclists are typically traveling at speeds less than motorists, they should signal and merge where there is sufficient gap in right-turning traffic, rather than at any predetermined location. For this reason, it is recommended that either all delineation be dropped at the approach of the right-turn lane (or off-ramp), or that a single, dashed bike-lane line be extended at a flat angle across the right-turn lane. A pair of parallel lines (delineating a bike lane crossing) to channel the bike merge is not recommended, as bicyclists will be encouraged to cross at a predetermined location, rather than when there is a safe gap in right-turning traffic. Also, some bicyclists are apt to assume they have the right of way, and may not check for right-turning motor vehicle traffic.

A dashed line across the right-turn-only lane is not recommended on extremely long lanes, or where there are double right-turn-only lanes. For these types of intersections, all striping should be dropped to permit judgment by the bicyclists to prevail. A Bike Xing sign may be used to warn motorists of the potential for bicyclists crossing their path.

1003.3 Class III Bikeways

Class III bikeways (bike routes) are intended to provide continuity to the bikeway system. Bike routes are established along through 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, either 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.

Minimum widths for Class III bikeways are not presented, as the acceptable width is dependent on many factors, including the volume and character of vehicular traffic on the road, typical speeds, vertical and horizontal alignment, sight distance, and parking conditions.

Figure 1003.2B

Typical Bicycle/Auto Movements at Intersections of Multilane Streets

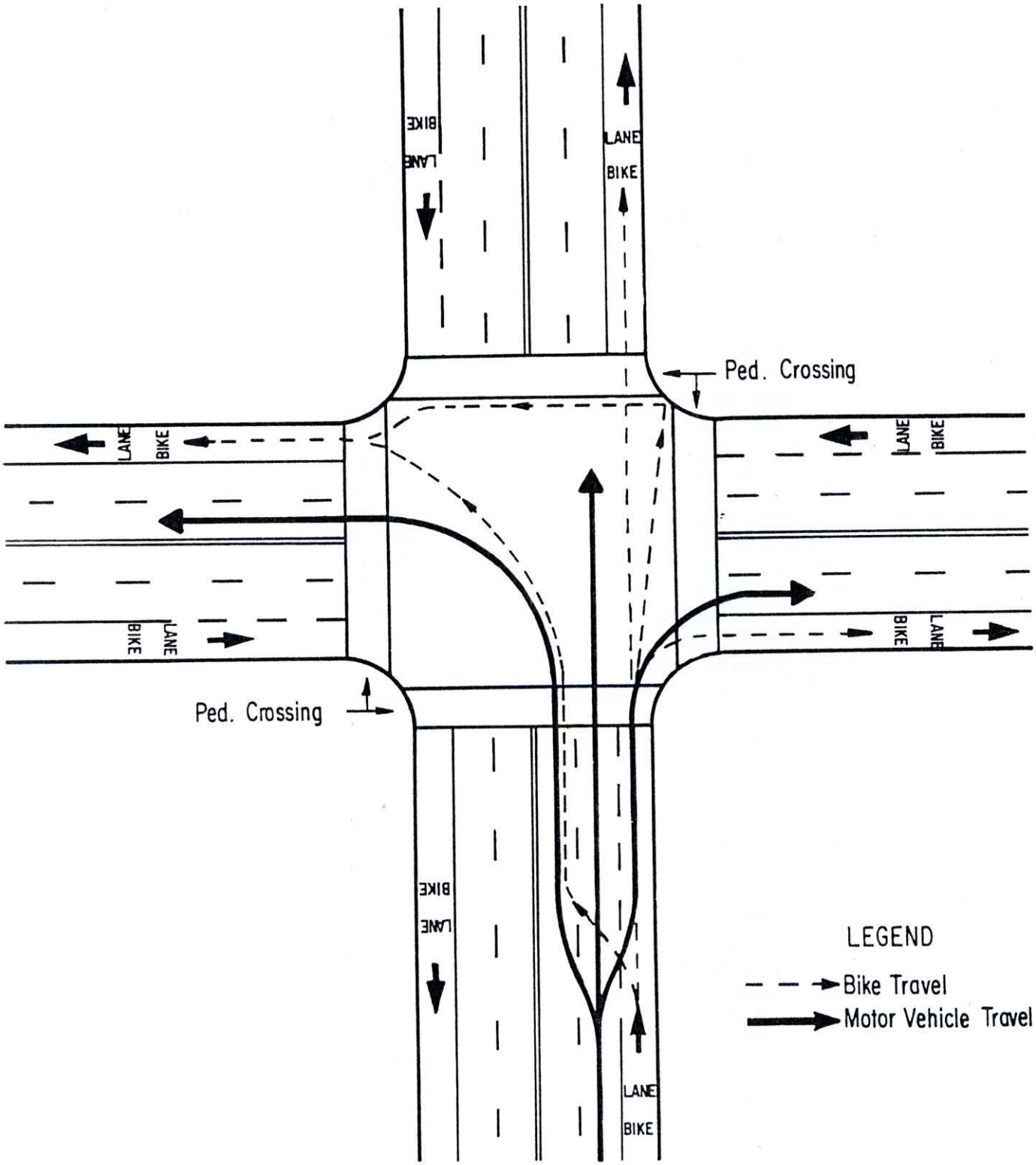
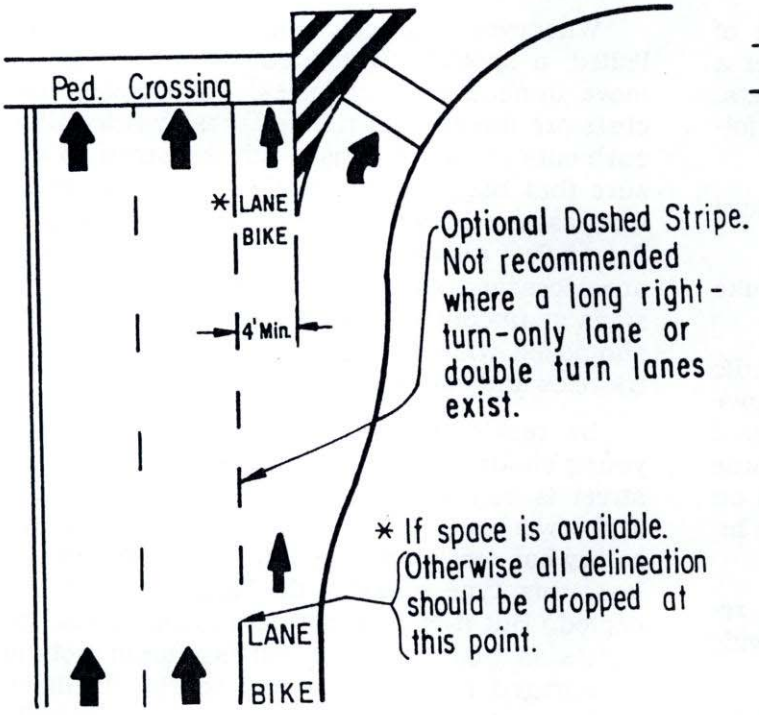
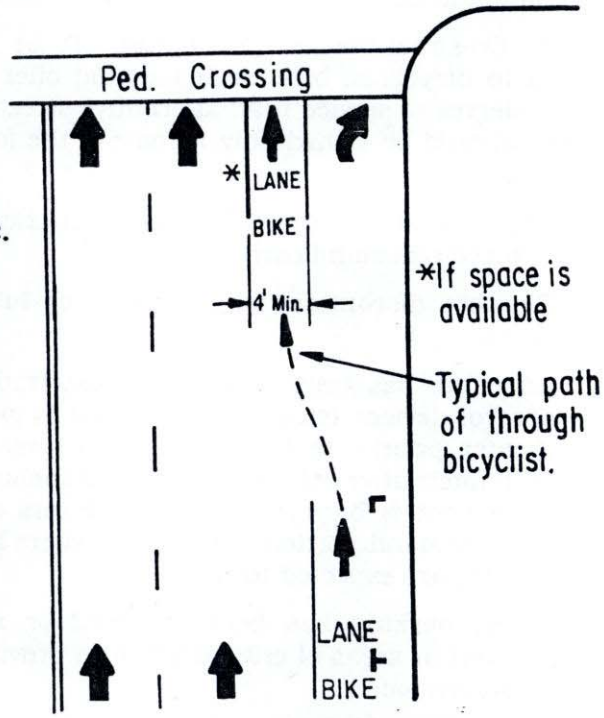


Figure 1003.2C

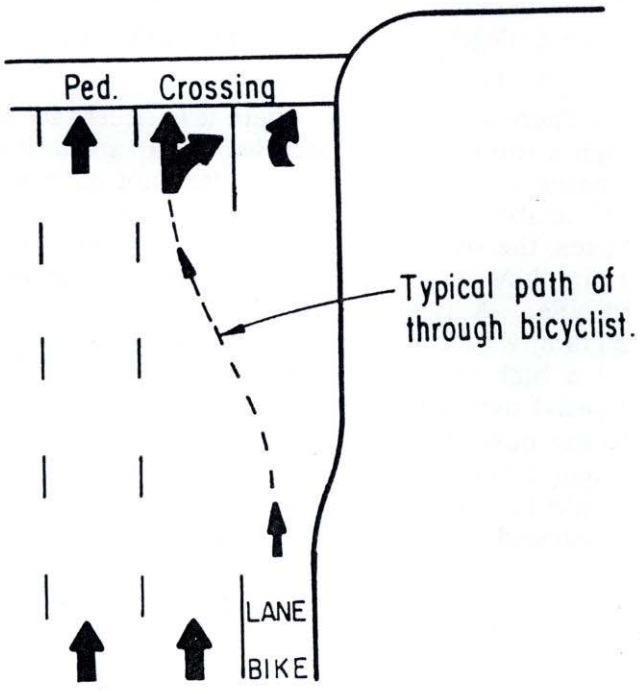
Bike Lanes Approaching Motorist
Right-turn-only Lanes



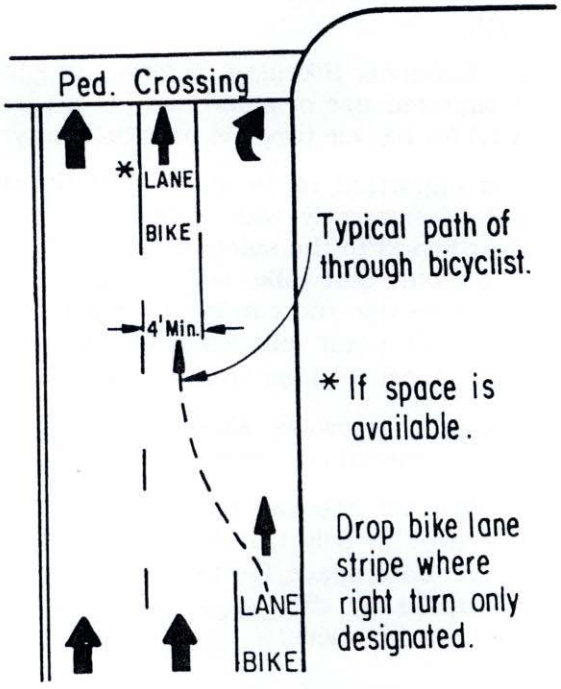
RIGHT-TURN-ONLY LANE



PARKING AREA BECOMES
RIGHT-TURN-ONLY LANE



OPTIONAL DOUBLE
RIGHT-TURN-ONLY LANE



RIGHT LANE BECOMES
RIGHT-TURN-ONLY LANE

Since bicyclists are permitted on all highways (except prohibited freeways), the decision to sign the route should be based on the advisability of encouraging bicycle travel on the route and other factors listed below.

(1) On-street Bike Route Criteria. To be of benefit to bicyclists, bike routes should offer a higher degree of service than alternative streets. Routes should be signed only if some of the following apply:

(a) They provide for through and direct travel in bicycle-demand corridors.

(b) Connect discontinuous segments of bike lanes.

(c) An effort has been made to adjust traffic control devices (stop signs, signals) to give greater priority to bicyclists, as compared with alternative streets. This could include placement of bicycle-sensitive detectors on the righthand portion of the road, where bicyclists are expected to ride.

(d) Street parking has been removed or restricted in areas of critical width to provide improved safety.

(e) Surface imperfections or irregularities have been corrected (e.g., utility covers adjusted to grade, potholes filled, etc.).

(f) Maintenance of the route will be at a higher standard than that of other comparable streets (e.g., more frequent street sweeping).

(2) Sidewalk Bikeway Criteria. In general, the designated use of sidewalks (as a Class III bikeway) for bicycle travel is unsatisfactory.

It is important to recognize that the development of extremely wide sidewalks does not necessarily add to the safety of sidewalk bicycle travel, as wide sidewalks will encourage higher speed bicycle use and can increase potential for conflicts with motor vehicles at intersections, as well as with pedestrians and fixed objects.

Sidewalk bikeways should be considered only under special circumstances, such as:

(a) To provide bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances.

(b) On long, narrow bridges. In such cases, ramps should be installed at the sidewalk approaches. If approach bikeways are two-way, sidewalk facilities should also be two-way.

Whenever sidewalk bikeways are established, a special effort should be made to remove unnecessary obstacles. Whenever bicyclists are directed from bike lanes to sidewalks, curb cuts should be flush with the street to assure that bicyclists are not subjected to problems associated with crossing a vertical lip at a flat angle. Also curb cuts at each intersection are necessary, as well as bikeway yield or stop signs at uncontrolled intersections. Curb cuts should be wide enough to accommodate adult tricycles and two-wheel bicycle trailers.

In residential areas, sidewalk riding by young children too inexperienced to ride in the street is common. With lower bicycle speeds and lower auto speeds, potential conflicts are somewhat lessened, but still exist. Nevertheless, this type of sidewalk bicycle use is accepted. But it is inappropriate to sign these facilities as bikeways. Bicyclists should not be encouraged (through signing) to ride facilities that are not designed to accommodate bicycle travel.

(3) Destination Signing of Bike Routes. For Bike Route signs to be more functional, supplemental plates may be placed beneath them when located along routes leading to high demand destinations (e.g., "To Downtown"; "To State College"; etc.-- see Figure 1004.4 for typical signing).

There are instances where it is necessary to sign a route to direct bicyclists to a logical destination, but where the route does not offer any of the above listed bike route features. In such cases, the route should not be signed as a bike route; however, destination signing may be advisable. A typical application of destination signing would be where bicyclists are directed off a highway to bypass a section of freeway. Special signs would be placed to guide bicyclists to the next logical destination. The intent is to direct bicyclists in the same way as motorists would be directed if a highway detour was necessitated.

1003.4 Bicycles on Freeways

In some instances, bicyclists are permitted on freeways. Seldom would a freeway be signed or striped as a bikeway, but it can be opened for use if it meets certain criteria. Essentially, the criteria involve assessing the safety and convenience of the freeway as compared with available alternate routes. If a reasonable alternate route exists, it would normally be unnecessary to open the freeway. However, if the alternate route is inconvenient (e.g., it involves substantial out of direction travel) and/or is considered unsuitable for bicycle travel (e.g., high-speed traffic, no paved shoulders, poor sight distance, etc.), the freeway may be a better alternative for bicyclists. However, a freeway should not be opened to bicycle use if it is determined to be incompatible (e.g., narrow lanes, no shoulders, freeway-to-freeway interchanges, etc.). Normally, freeways in urban areas will have characteristics that make it infeasible to permit bicycle use. Where no reasonable alternative exists within a freeway corridor, development of a separate bike path should be considered if dictated by demand.

When bicyclists are permitted on segments of freeway, it will be necessary to modify and supplement freeway regulatory signs, particularly those at freeway ramp entrances (see Chapter 4 of the Traffic Manual).

1003.5 Multipurpose Recreational Trails

In some instances, it may be appropriate for recreational agencies to develop multipurpose recreational trails - for hikers, joggers, equestrians, bicyclists, etc. Many of these trails will not be paved and will not meet the standards for Class I bikeways. As such, these facilities should not be signed as bikeways. Rather, they should be designated as recreational trails (or similar designation), along with regulatory signing to restrict motor vehicles, as appropriate. If recreational trails are to serve primarily bicycle travel, they should be developed in accordance with standards for Class I bikeways.

1003.6 Miscellaneous Bikeway Criteria

The following are miscellaneous bikeway criteria which should be followed to the extent pertinent to Class I, II and III bikeways. Some, by their very nature, will not apply to all classes of bikeway. Many of the criteria are important to consider on any highway where bicycle travel is expected, without regard to whether or not bikeways are established.

(1) Bridges. Bikeways on highway bridges must be carefully coordinated with approach bikeways to make sure that all elements are compatible. For example, bicycle traffic bound in opposite directions is best accommodated by bike lanes on each side of a highway. In such cases, a two-way bike path on one side of a bridge would normally be inappropriate, as one direction of bicycle traffic would be required to cross the highway at grade twice to get to and from the bridge bike path. Because of the inconvenience, many bicyclists will be encouraged to ride on the wrong side of the highway beyond the bridge termini.

The following criteria apply to a two-way bike path on one side of a highway bridge:

(a) The bikeway approach to the bridge should be by way of a separate two-way facility for the reason explained above.

(b) **A physical separation, such as a chain link fence or railing, shall be provided to offset the adverse effects of having bicycles traveling against motor vehicle traffic.** The physical separation should be designed to minimize fixed end hazards to motor vehicles and if the bridge is an interchange structure, to minimize sight distance restrictions at ramp intersections.

It is recommended that bikeway bridge railings or fences placed between traffic lanes and bikeways be at least 4.5 feet high to minimize the likelihood of bicyclists falling over the railings. Standard bridge railings which are lower than 4.5 feet can be retrofitted with lightweight upper railings or chain link fence suitable to restrain bicyclists.

Separate highway overcrossing structures for bikeway traffic shall conform to Caltrans' standard pedestrian overcrossing design loading of 85 pounds per square foot. The minimum clear width shall be the paved width of the approach bikeway. If pedestrians are to use the structure, additional width is recommended.

(2) Surface Quality. The surface to be used by bicyclists should be smooth, free of potholes,

and the pavement edge uniform. For rideability on new construction, the finished surface of bikeways should not vary more than 0.02 foot from the lower edge of an 8-foot long straight edge when laid on the surface in any direction.

Table 1003.6

Direction of Travel	Grooves[1]	Steps[2]
Parallel to travel	No more than 1/2" wide	No more than 3/8" wide
Perpendicular to travel	---	No more than 3/4" high

(1) Groove--A narrow slot in the surface that could catch a bicycle wheel, such as a gap between two concrete slabs.

(2) Step--A ridge in the pavement, such as that which might exist between the pavement and a concrete gutter or manhole cover; or that might exist between two pavement blankets when the top level does not extend to the edge of the roadway.

Table 1003.6 indicates the recommended bikeway surface tolerances for Class II and III bikeways developed on existing streets to minimize the potential for causing bicyclists to lose control of their bicycle (Note: Stricter tolerances should be achieved on new bikeway construction.)

(3) Drainage Grates, Manhole Covers, and Driveways. Drainage inlet grates, manhole covers, etc., on bikeways should be designed and installed in a manner that provides an adequate surface for bicyclists. They should be maintained flush with the surface when resurfacing.

Drainage inlet grates on bikeways shall have openings narrow enough and short enough to assure bicycle tires will not drop into the grates (e.g., reticuline type), regardless of the direction of bicycle travel. Where it is not immediately feasible to replace existing grates with standard grates designed for bicycles, 1 inch x 1/4 inch steel cross straps should be welded to the grates at a spacing of 6 inches to 8 inches on centers to reduce the size of the openings adequately.

Corrective actions described above are recommended on all highways where bicycle travel is permitted, whether or not bikeways are designated.

Future driveway construction should avoid construction of a vertical lip from the driveway to the gutter, as the lip may create a problem for bicyclists when entering from the edge of the roadway at a flat angle. If a lip is deemed necessary, the height should be limited to 1/2 inch.

(4) At-grade Railroad Crossings and Cattle Guards. Whenever it is necessary to cross railroad tracks with a bikeway, special care must be taken to assure that the safety of bicyclists is protected. The bikeway crossing should be at least as wide as the approaches of the bikeway. Wherever possible, the crossing should be straight and at right angles to the rails. For on-street bikeways where a skew is unavoidable, the shoulder (or bike lane) should be widened, if possible, to permit bicyclists to cross at right angles (see Figure 1003.6A). If this is not possible, special construction and materials should be considered to keep the flangeway depth and width to a minimum. Pavement should be maintained so ridge buildup does not occur next to the rails. In some cases, timber plank crossings can be justified and can provide for a smoother crossing. Where hazards to bicyclist cannot be avoided, appropriate signs should be installed to warn bicyclists of the danger.

All railroad crossings are regulated by the California Public Utilities Commission (CPUC). All new bike path railroad crossings must be approved by the CPUC. Necessary railroad protection will be determined based on a joint field review involving the applicant, the railroad company, and the CPUC.

The presence of cattle guards along any roadway where bicyclists are expected should be clearly marked with adequate advance warning.

(5) Hazard Markings. Vertical barriers and obstructions, such as abutments, piers, and other features causing bikeway constriction, should be clearly marked to gain the attention of approaching bicyclists. This treatment should be used only where unavoidable, and is by no means a substitute for good bikeway design. An example of a hazard marking is shown

in Figure 1003.6B. Signs, reflectors, diagonal black and yellow markings, or other treatments will be appropriate in other instances to alert bicyclists to potential hazards.

(6) Lighting. Bikeway lighting should be considered along routes where nighttime riding is expected. This is particularly important for bike paths serving as commuter routes, such as paths leading to colleges. Adequate lighting is also important at bike path crossings of streets and for underpasses. Normally, on-street bikeways will be adequately lighted if street lights exist.

Topic 1004 - Uniform Signs, Markings and Traffic Control Devices

1004.1 Introduction

Per Section 2376 of the Streets and Highways Code, uniform signs, markings, and traffic control devices shall be used. As such this section is mandatory, except where permissive language is used. See the Traffic Manual for detailed specifications.

1004.2 Bike Path (Class I)

An optional 4-inch yellow stripe may be placed to separate opposing directions of travel. A 3-foot stripe with a 9-foot space is the recommended striping pattern, but may be revised, depending on the situation.

Standard regulatory, warning, and guide signs used on highways may be used on bike paths, as appropriate (and may be scaled down in size). Special regulatory, warning, and guide signs may also be used to meet specific needs.

White painted word (or symbol) warning markings on the pavement may be used as an effective means of alerting bicyclists to approaching hazards, such as sharp curves, barrier posts, etc.

1004.3 Bike Lanes (Class II)

Bike lanes require standard signing and pavement markings as shown on Figure 1004.3.

The R81 bike lane sign shall be placed at the beginning of all bike lanes, on the far side of every arterial street intersection, at all major changes in direction, and at maximum half-mile intervals.

Bike lane pavement markings shall be placed on the far side of each intersection, and may be placed at other locations as desired.

Raised pavement markers or other raised barriers shall not be used to delineate bike lanes. Also, thermoplastic paint shall not be used for pavement marking, as the paint surface is extremely slippery when wet.

The G93 Bike Route sign may also be used along bike lanes, but its primary purpose should be to provide directional signing and destination signing where necessary. A proliferation of Bike Route signs along signed and striped bike lanes serves no useful purpose.

Many signs on the roadway also will apply to bicyclists in bike lanes. Standard regulatory, warning, and guide signs used specifically in conjunction with bike lanes are shown in Chapter 4 of the Traffic Manual.

1004.4 Bike Routes (Class III)

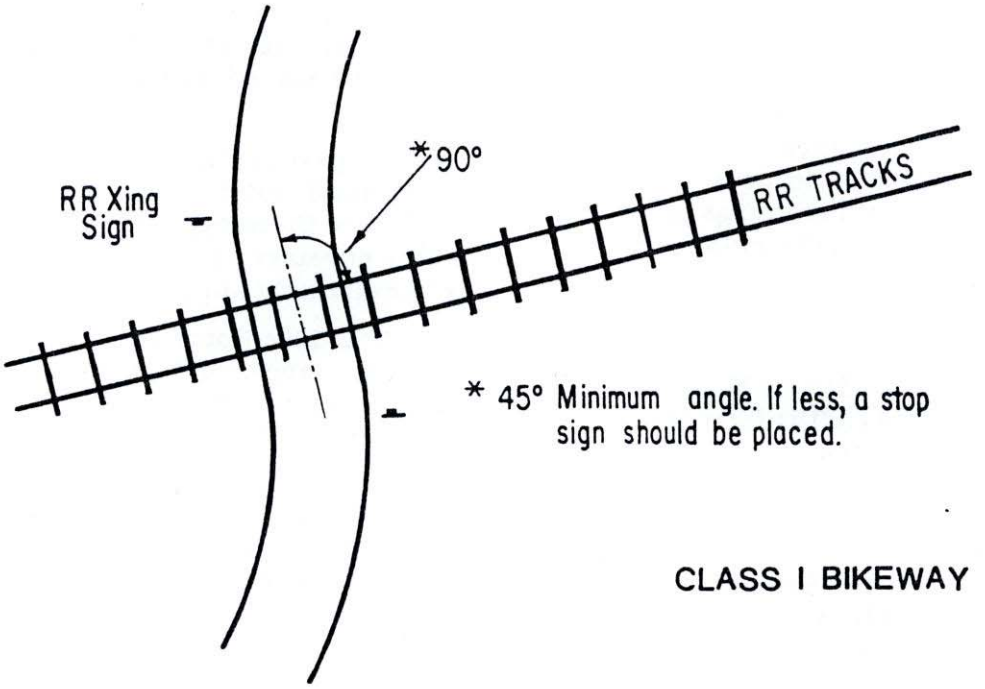
Bike routes are shared routes and do not require pavement markings. In some instances, a 4-inch white edge stripe separating the traffic lanes from the shoulder can be helpful in providing for safer shared use. This practice is particularly applicable on rural highways, and on major arterials in urban areas where there is no vehicle parking.

Bike routes are established through placement of the G93 Bike Route sign. Bike route signs are to be placed periodically along the route. At changes in direction, the bike route signs are supplemented by G33 directional arrows. Typical bike route signing is shown on Figure 1004.4. The figure shows how destination signing, through application of a special plate, can make the Bike Route sign more functional for the bicyclist. This type of signing is recommended when a bike route leads to a high demand destination (e.g., downtown, college, etc.).

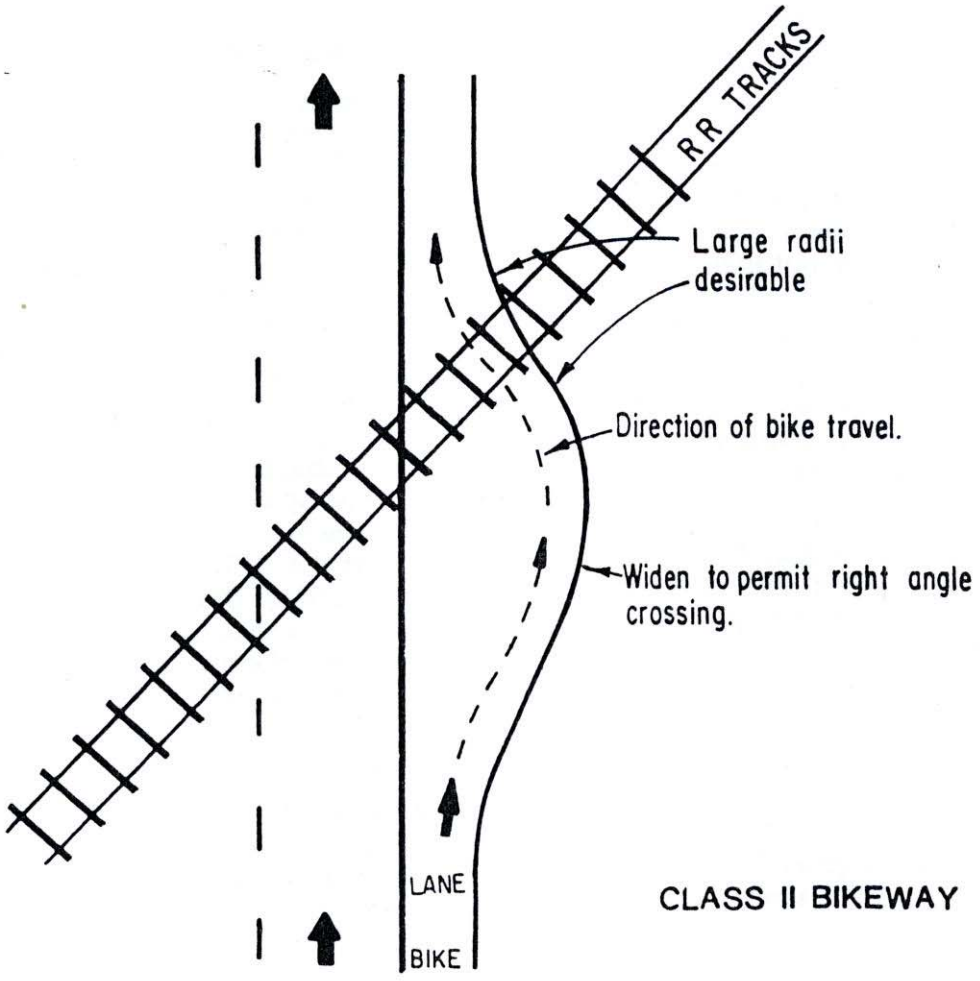
Many signs on the roadway also will apply to bicyclists. Standard warning and guide signs used specifically in conjunction with bike routes are shown in Chapter 4 of the Traffic Manual.

Figure 1003.6A

Railroad Crossings

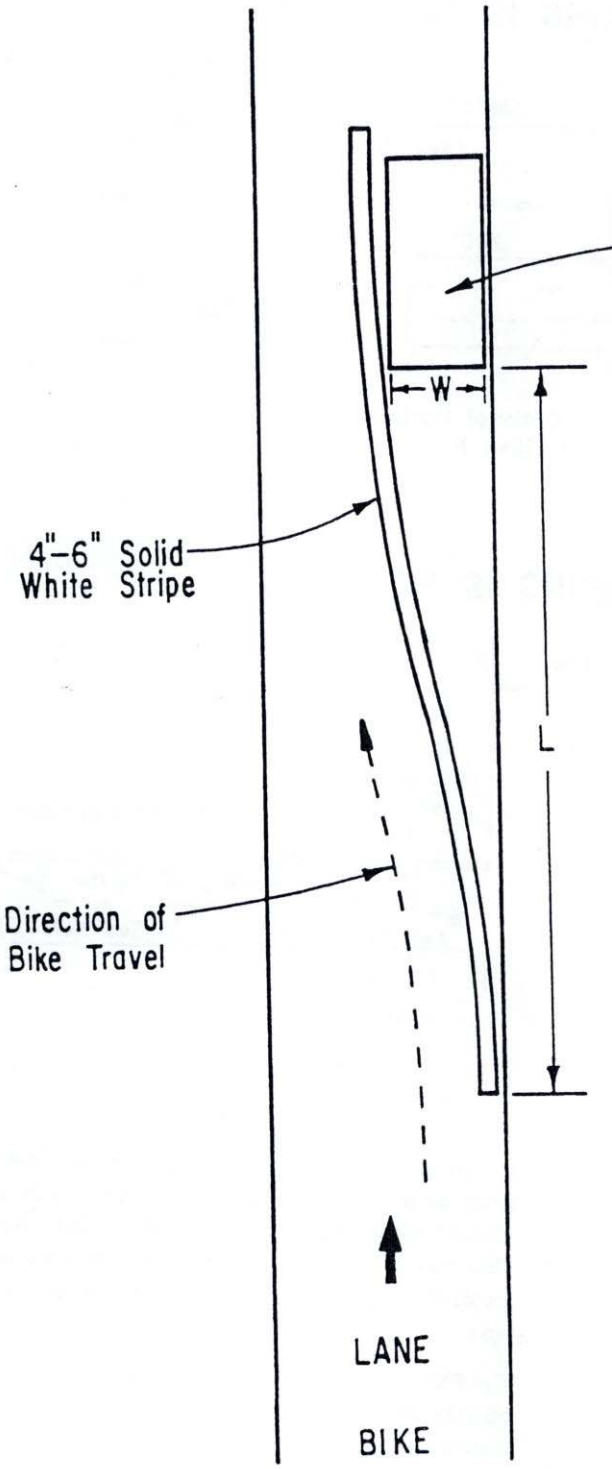


CLASS I BIKEWAY



CLASS II BIKEWAY

Figure 1003.6B
Hazard Markings

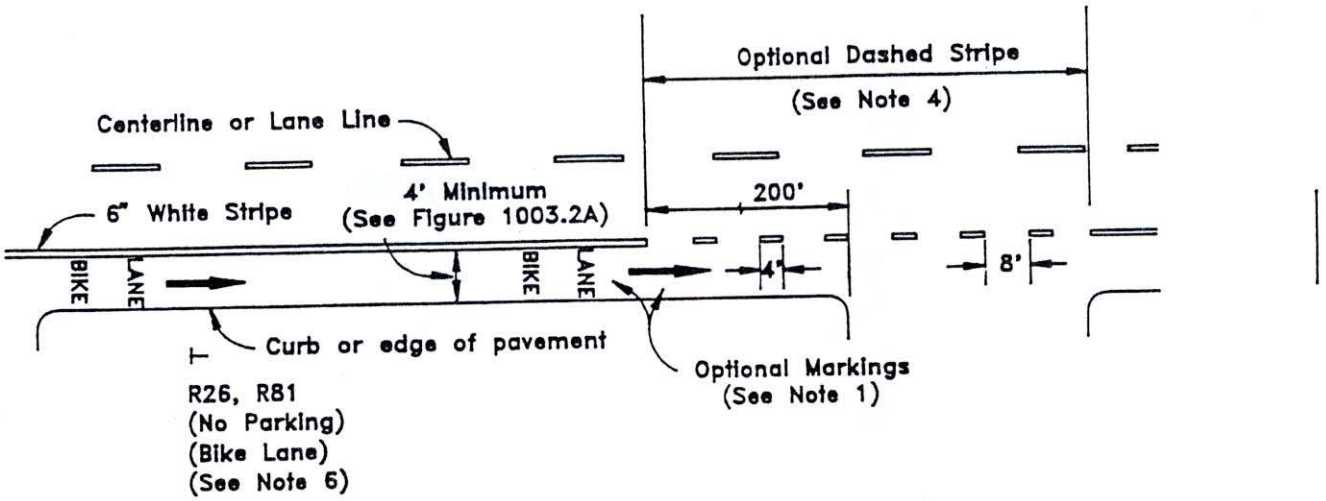


LEGEND

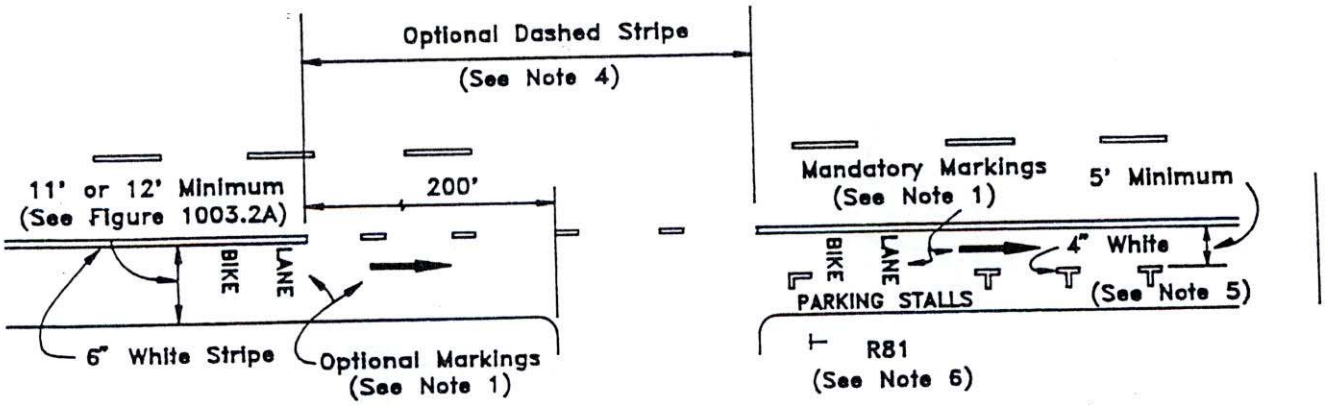
L = VW
where: L = Length of approach marking (Ft.)
V = Average speed of bicyclists (MPH)
W = Width of obstruction (Ft.)

Figure 1004.3
Bike Lane Signs and Markings

WHERE VEHICLE PARKING IS PROHIBITED



WHERE VEHICLE PARKING IS PERMITTED

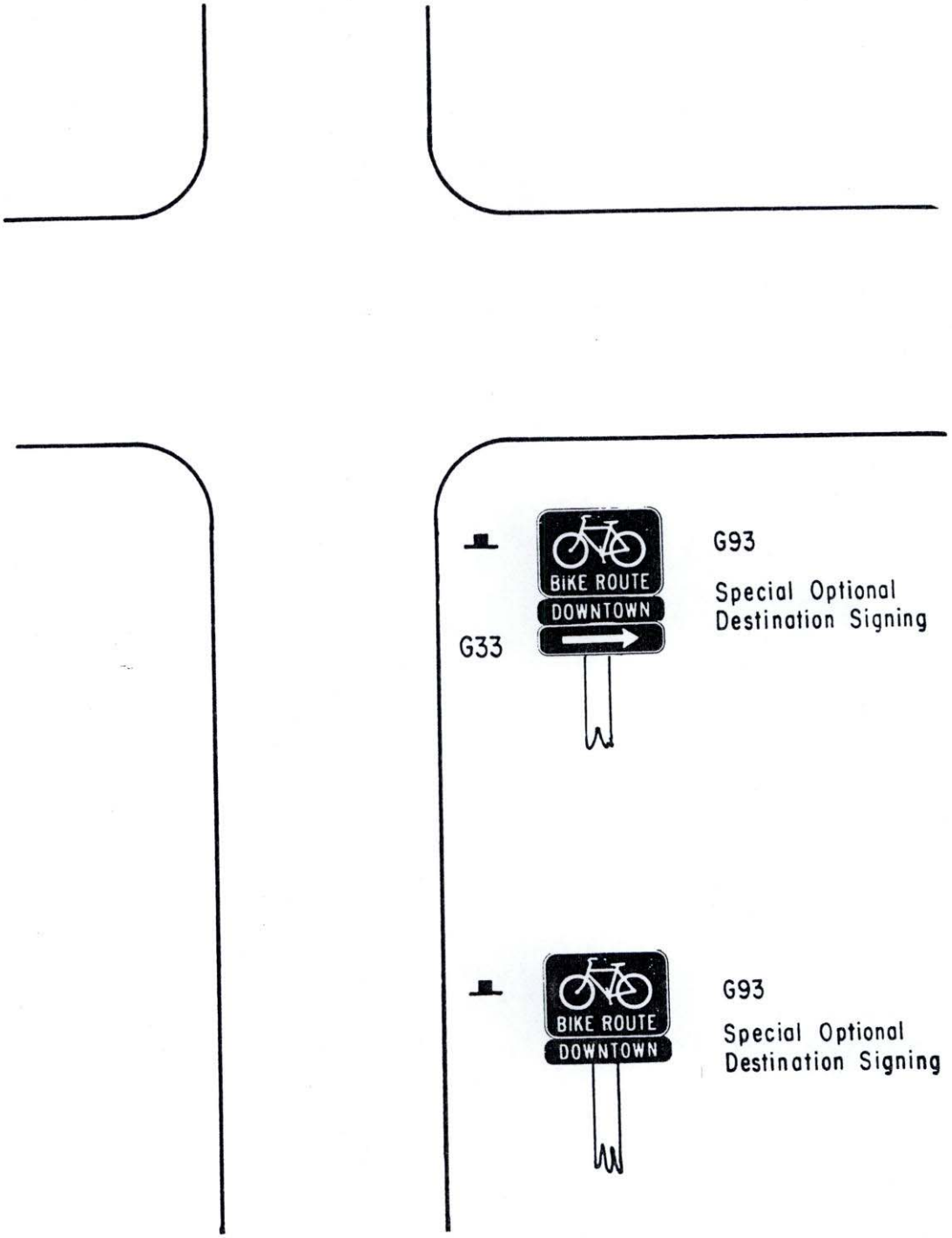


NO STALLS STALLS

Notes:

1. The Bike Lane Pavement markings shall be placed on the far side of each intersection, and may be placed at other locations as desired.
2. The use of the bicycle symbol pavement marking to supplement the word message is optional.
3. The G93 Bike Route sign may be placed intermittently along the bike lane if desired.
4. The bike lane line may either be dropped entirely, 200' in advance of the intersection, or a dashed line carried to the intersection or through the intersection.
5. In areas where parking stalls are not necessary (because parking is light), it is permissible to paint a 4" solid white stripe to fully delineate the bike lane. This may be advisable where there is concern that motorists may misconstrue the bike lane to be a traffic lane.
6. The R81 bike sign shall be placed at the beginning of all bike lanes, on the far side of every arterial street intersection, at all major changes in direction, and at maximum half-mile intervals.

Figure 1004.4
Bike Route Signing



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

RESOLUTION NO. 03-1384

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LATHROP ADOPTING THE PROPOSED AMENDMENTS TO THE LATHROP GENERAL PLAN AND BICYCLE TRANSPORTATION PLAN

WHEREAS, Section 65358 of the California Government Code provides for the amendment of all or part of an adopted general plan; and

WHEREAS, the City has complied with the requirements of the Local Planning Law (Government Code section 65300 et seq.), the current State of California General Plan Guidelines, and the City's applicable ordinances and resolutions with respect to approval of the proposed General Plan Amendments ("GPA"); and

WHEREAS, pursuant to Government Code Section 65090, notice of the City Council's hearing was published in accordance with Section 6061 of the Government Code in at least one newspaper of general circulation within the City of Lathrop at least ten calendar days before the City Council's public hearing; and

WHEREAS, prior to adopting the GPA, the City Council adopted Resolution No. 03-1383, Certifying the Final Environmental Impact Report, Making Findings Concerning Mitigation Measures, Adopting a Mitigation Monitoring and Reporting Program, Making Findings Concerning Alternatives and Adopting a Statement of Overriding Considerations in Accordance with the California Environmental Quality Act for the River Islands Project ("CEQA Resolution"); and

WHEREAS, the River Islands Project includes all of the River Islands at Lathrop Project entitlements, including the CEQA Resolution, Ordinance No. 03-214 ("WLSP Amendment Ordinance"), "), Resolution No. 03-1385 ("Williamson Act Cancellation Resolution"), Ordinance No. 03-215 ("Zoning Amendments Ordinance"), Resolution No. 03-1386 ("Urban Design Concept Resolution"), Resolution No. 03-1387 ("Preliminary Development Plan and Vesting Tentative Map Resolution, Ordinance No.03-216 ("DA Amendment Ordinance"), and this GPA Resolution (collectively the "River Islands at Lathrop Project" or "Project"); and

WHEREAS, before recommending approval of the GPA, the City Council reviewed and considered the information contained in the Final Subsequent Environmental Impact Report for the River Islands Project (SCH #1993112027) ("Final SEIR"), and finds that mitigation measures identified in the Final SEIR have been imposed on and incorporated into the River Islands Project which mitigate or avoid the significant environmental effects, that certain mitigation measures are within the responsibility and jurisdiction of another public agency and such changes can and should be adopted by such other agency, that specific economic, social and other considerations make infeasible the project alternatives that would avoid or mitigate the environmental

impacts and that social, economic, and other benefits outweigh the environmental impacts that cannot be fully mitigated; and

WHEREAS, the proposed GPA is an amendment of the adopted 1991 Lathrop General Plan, which was adopted by Resolution No. 91-166 on December 17, 199, as amended June 24, 1992, May 20, 1997, and June 18, 1991. The 1991 Lathrop General Plan as amended designated theme park/commercial recreation/resort/residential uses for the River Islands portion of Stewart Tract, a 5,794-acre site located in West Lathrop, and required that theme park development precede other development on Stewart Tract. Following adoption of the 1991 Lathrop General Plan, a citizen's group gathered signatures and asked the City Council to place Measure D on the ballot, which was approved by the voters in November 2002. Measure D eliminated the "theme park first" phasing requirement of the 1996 West Lathrop Specific Plan and development agreement and allowed additional land use options in the planning area; and

WHEREAS, the City Council previously adopted the Bicycle Transportation Plan Amendment ("BPA") in 1995, prior to the adoption of the 1996 WLSP; and

WHEREAS, certain non-substantive changes have been made to the proposed GPA as shown in the errata sheet attached hereto as **Exhibit A.**

WHEREAS, the errata sheet does not alter the environmental review under taken for the Project.

WHEREAS, the Planning Commission has reviewed the GPA, held a public hearing, and passed Resolution No. 03-07, recommending to the City Council approval of the GPA; and

WHEREAS, the City Council has reviewed the GPA and BPA and conducted a public hearing.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL THAT IT ADOPTS THE GPA AND BPA, AS FOLLOWS:

Section 1. This Resolution incorporates, and by this reference makes a part hereof, that certain GPA, substantially in the form on file with the City Clerk with the errata sheet shown on **Exhibit A**, relative to the proposed development of the River Islands at Lathrop Project on certain real property consisting of approximately 4,905 acres located in the City of Lathrop.

Section 2. General Plan Amendment Findings. The City Council finds and determines as follows:

a. The proposed GPA would amend the General Plan Land Use Diagram adopted December 17, 1991, as amended through 2002, to reflect the proposed River Islands land uses. The GPA would amend the text of the General Plan Growth Assumptions and Opportunities: Major Policies and Major Proposals of the General Plan to clarify the change from a theme park-oriented development to a mixed-use residential and employment center community with water-oriented, commercial recreational features. The proposed GPA would amend the General Plan Community Development Element's policies and land use designations governing Sub-Plan Area #3, one of three sub-planning areas defined in the General Plan, to reflect the proposed land use changes for Stewart Tract. The proposed GPA would also amend the text and corresponding diagrams and tables in the General Plan's Transportation and Circulation Element to eliminate the reference to expressways, to revise polices and proposals related to Interstate and State Route Freeways serving the Lathrop Area, and to revise descriptions of various transportation improvements proposed in the West Lathrop Specific Plan area. The proposed GPA would amend the text of the General Plan to update the context for citywide water, sewerage, drainage, and flood control and to identify the Water Supply Agreement with SSJID adopted in 1995, the Water, Wastewater, and Recycled Water Master Plan approved in 2001 and the Drainage Master Plan for Stewart Tract approved in 1996. The proposed GPA would amend the text of the General Plan's Resource Management Element and Hazard Management Element and clarify the text of the General Plan's Directions for General Plan Interpretation and Implementation. The GPA will revise and incorporate into the General Plan the City's Bicycle Transportation Plan to reflect new Bikeway Projects in Sub-Plan Area #3.

b. The proposed GPA is in the public interest of the people of the City of Lathrop as set for in more detail in the Statement of Overriding Considerations in the CEQA Resolution, herein incorporated by reference.

c. The proposed GPA to the Community Development Element provide for continuing internal consistency with the General Plan Land Use Element, Circulation Element, Housing Element, Open Space, Conservation and Recreation Element, Noise Element and Safety Element because the GPA further the goals and objectives of the General Plan by providing a variety of residential and commercial land use designations to meet the future housing needs of the City, in a manner compatible with the existing neighborhoods and designed to meet Safety Element standards. Consistent with the Open Space, Conservation and Recreation Elements, the GPA would designate, protect and conserve natural resources, open space, and recreation in Sub-Plan Area #3 and ensure that adequate park, open space, and recreation facilities will be provide to Sub-Plan Area #3 and City residents. Consistent with the General Plan, the portions of the GPA related to categories of public services, infrastructure, school facilities siting and parks and recreation will encourage the availability of adequate utilities and services and ensure that the public health and safety is protected by the provision of adequate sanitary sewers and wastewater treatment capacity. Consistent with General Plan goals related to the provision of adequate school facilities for residential development, the GPA provides that the planning, siting and construction of new schools will be coordinated with the school district to ensure that facilities are available.

b. The proposed GPA for the BPA provides a complete circulation system for non-vehicular traffic both within and outside the Project area.

Section 3. Upon adoption by the City Council, the Community Development Director is hereby directed to retain said GPA on permanent public display in the Community Development Department of the City of Lathrop.

Section 4. Based on the findings set forth in this Resolution, the CEQA Resolution, and the evidence in the Staff Report, the City Council adopts the GPA, substantially in the form on file with the City Clerk.

Section 5. Effective Date. This resolution shall take effect and be in force thirty (30) days from the date of its passage.

PASSED and ADOPTED this 28th day of January, 2003 by the following roll call vote:

AYES: **BELTRAN, DRESSER, GRIFFITH, OLIVER, RHODES**

NOES:

ABSENT:

ABSTAIN:

APPROVED AS TO FORM:

Susan Burns Cochran, City Attorney

ATTEST:

Nancy Rustigian, City Clerk

wc-77549

Attachment E

Bicycle Master Plan Amendments

Proposed Amendments to the City of Lathrop Bicycle Transportation Plan
REPS Draft January 2, 2003

The City of Lathrop Bicycle Transportation Plan was approved in 1995 and "is a long range plan for a comprehensive bikeway system...[that] will provide safe and convenient bike routes throughout the existing City Limits as well as future growth areas within the General Plan Sphere." The Plan describes the 1995 Draft West Lathrop Specific Plan but the Plan was prepared before the West Lathrop Specific Plan was adopted and West Lathrop was annexed to the City in 1996.

Administrative updates are needed to show that West Lathrop is within City Limits (Figure 1) and to include West Lathrop within the Bicycle Transportation Plan (Figures 2, 4-7). On Figures 9, 10, 22 ands 23, West Lathrop is shown but amended information is needed within the River Islands portion to reflect 2003 amendments to the 1996 West Lathrop Specific Plan. Some text amendments are also proposed to reflect 2003 amendments to the 1996 West Lathrop Specific Plan. The recommended updates and proposed amendments to the City of Lathrop Bicycle Transportation Plan are itemized below.

Figure 1: add shading to include West Lathrop within the City Limits in next Plan update.

Page I-6, third line, reference to GP page number: ~~(G.P., pp. 2-17)~~ (G.P., pp.2-18 – for redlined 2002 General Plan)

Page I-6, West Lathrop Specific Plan:

"The West Lathrop Specific Plan covers a ~~6,690~~6,955 acre area ~~West of town~~ within City Limits, and provides a detailed land use and development program for the site. (See Sub-Plan Area 3 in Figure 3). Known as Stewart Tract and Mossdale Village, the Plan calls for ~~a Gold Rush era theme park and recreational,~~ commercial and residential development.

"The Specific Plan addresses all elements of the city's General Plan. Objective 6A of the Specific Plan states that the project must "Provide a circulation system that accommodates necessary vehicular trips but emphasizes the ease and convenience of pedestrian, bicycle, boat and public transit." (~~D~~2003 WSLP, pp.~~12~~II-14). The Lathrop Bicycle Transportation Plan provides additional policy and bicycle routing criteria that will guide all bikeway improvements in the West Lathrop Specific Plan and future specific plans in the Lathrop sphere of influence."

Page II-2, Project Setting, 1st paragraph: "Though the City has 15,436 acres in its Planning Area, of which about 15% is developed, ~~only 4,150~~ 11,105 acres exist within its current city limits."

Page II-2, Project Setting, 2nd paragraph: "Interstate 5 divides the Lathrop General Plan area. ~~Currently, the City Limits are located east of Interstate 5 and north of state Route~~

~~120.~~ Currently, the City Limits include Sub-Plan Area 1, the Mossdale Village portion of Sub-Plan Area 2 and Sub-Plan Area 3 (see Figure 3). Most of the developed commercial, public, and residential uses are between Lathrop Road and Louise Avenue. Industrial uses surround the City to the east and south along the railroad lines and freeways. The undeveloped land west of Interstate 5 is currently used primarily for agriculture, but has been annexed and is planned for ~~annexation and~~ development as part of the City of Lathrop."

Page II-2, Land Use Summary, Sub-Plan Area #1: "Sub-Plan Area #1 is east of Interstate 5 and includes ~~refers to all~~ land within city limits and some acreage north of Roth Road and south of State Route 120."

Page II-2, Land Use Summary, Sub-Plan Area #2: "The majority of this land is currently in agricultural use, but has high development potential and an approved Specific Plan for development in the Mossdale Village portion.

Page II-4, Land Use Summary, Sub-Plan Area #3: "Though ~~a resort~~ residential and commercial development ~~and theme park is~~ are proposed for this area, the current use is agricultural. Known as the Stewart Tract, the West Lathrop Specific Plan outlines future uses in the area. The primary uses for this land include an employment center, a town center and residential districts with parks and recreation features.~~resort residential bordering old River and a theme park based on the Gold Rush era circa 1850.~~"

Figure 4: include West Lathrop trip patterns (if any) in next Plan update and update City Limits.

Page II-14, Water Transportation: "Several ~~marina~~ harbor projects are proposed under the West Lathrop Specific Plan which would provide yacht and boat accommodations ~~as well as a riverboat service from the San Francisco Bay Area~~."

Figure 7: include West Lathrop accident history (if any) in next Plan update and update City Limits.

Figure 9: amend to show 2003 West Lathrop Specific Plan circulation plan for Sub-Plan Area #3 and River Islands Urban Design Concept trails for bicycles.

Figure 10: amend to show 2003 West Lathrop Specific Plan circulation plan for Sub-Plan Area #3 and River Islands Urban Design Concept trails for bicycles.

Figure 19: delete – no longer applicable; replace per amendments to Figure 10.

Figure 22: amend to show 2003 West Lathrop Specific Plan circulation plan for Sub-Plan Area #3 and River Islands Urban Design Concept for bicycles.

Figure 23: amend to show 2003 West Lathrop Specific Plan employment center in Sub-Plan Area #3.

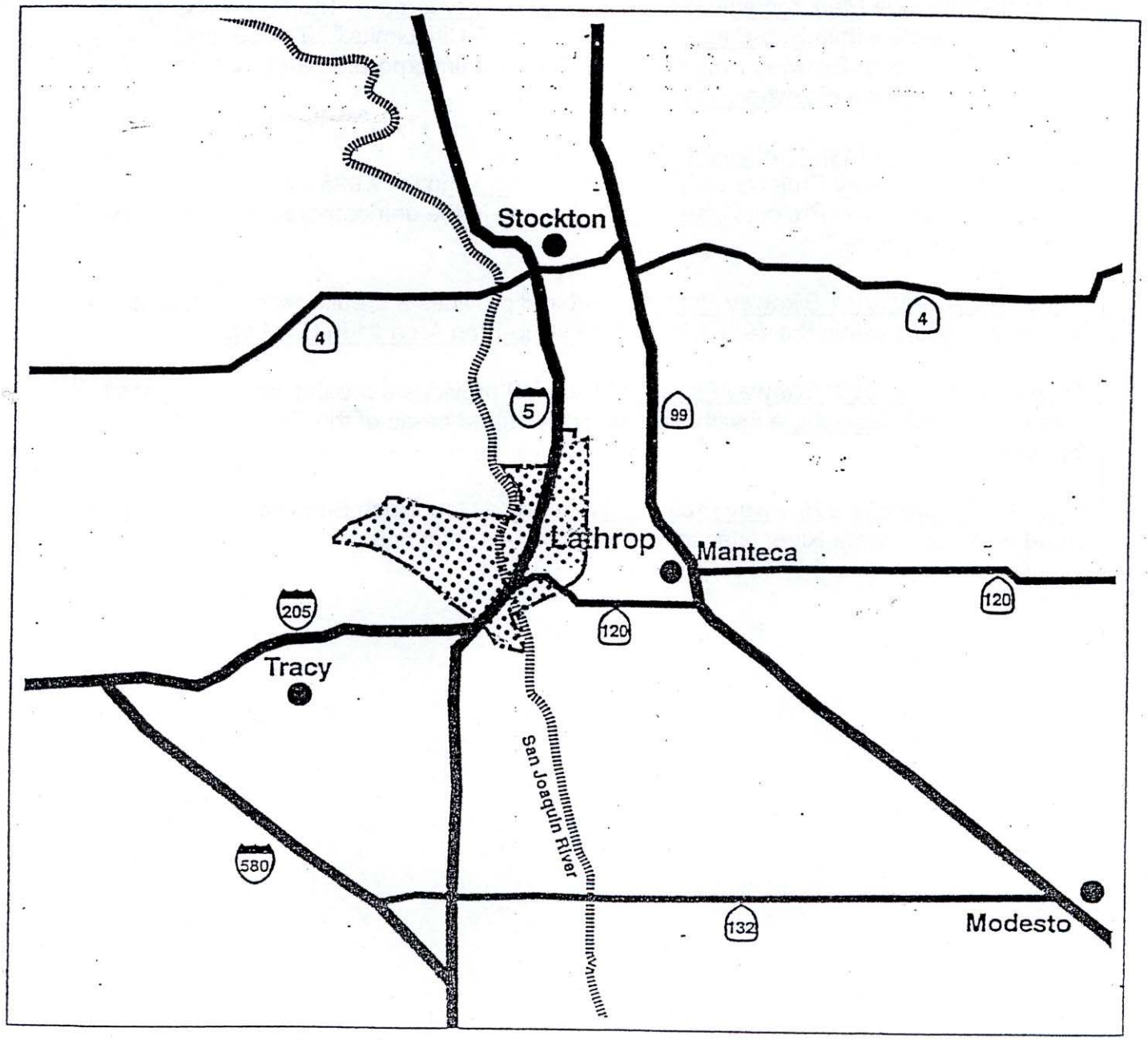
Page IV-2: Bicycle Plan Implementation Strategy, 3rd paragraph: "The first category is Bikeway Projects ~~with~~in Sub-Plan Area #1 in the ~~1995~~ City Limits."...The second category consists of Bikeway Projects ~~located in the unincorporated areas of the General Plan sphere~~ elsewhere in the city...."

Page IV-2: Bicycle Plan Implementation Strategy, list:
"Category 1 Bikeway Projects ~~with~~in Sub-Plan Area #1 in the ~~1995~~ City Limits."
Category 2 Bikeway Projects elsewhere in ~~located in the unincorporated areas of~~ the General Plan Sphere."

Page IV-3, Category 1 Bikeway Projects: "Table 8 provides a breakdown of planned bikeway projects ~~within the 1995 City Limits~~ in Sub-Plan Area #1 in City Limits.

Page IV-5, Category 2 Bikeway Projects: "Table 10 provides a breakdown of proposed bikeway projects elsewhere in~~within the unincorporated areas of~~ the General Plan Sphere."

Page IV-5, Category 2 Bikeway Projects, list: replace Gold Rush Boulevard and Ring Road with appropriate River Islands roadways in next Plan update.



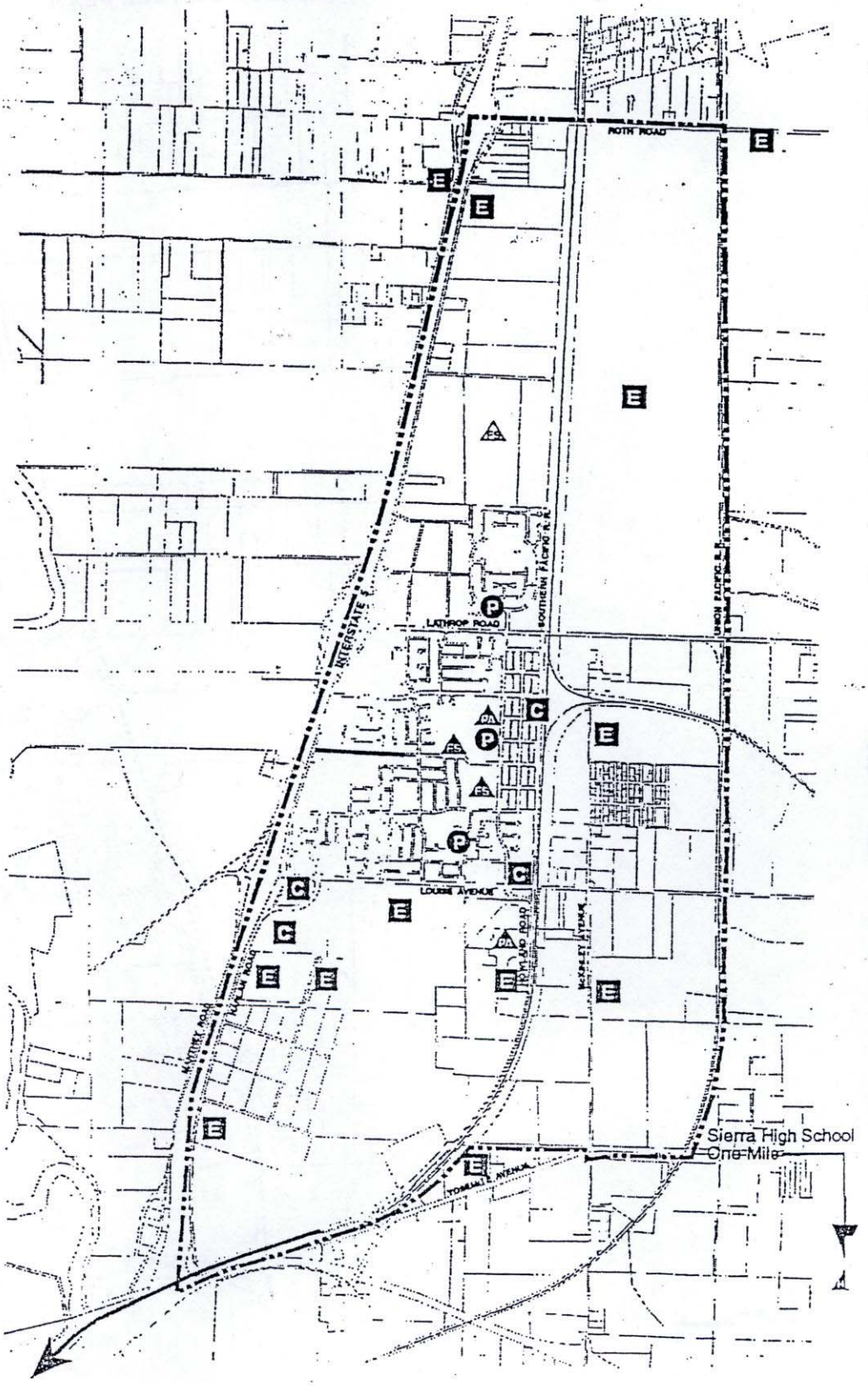
Key

- 20 Year General Plan Area
- City Limits
- State Highway
- Interstate

City of Lathrop
Bicycle Transportation Plan

Figure1
Location Map

Revised January 2, 2003



0 miles 1/2

Source: RRM Design Group 1995

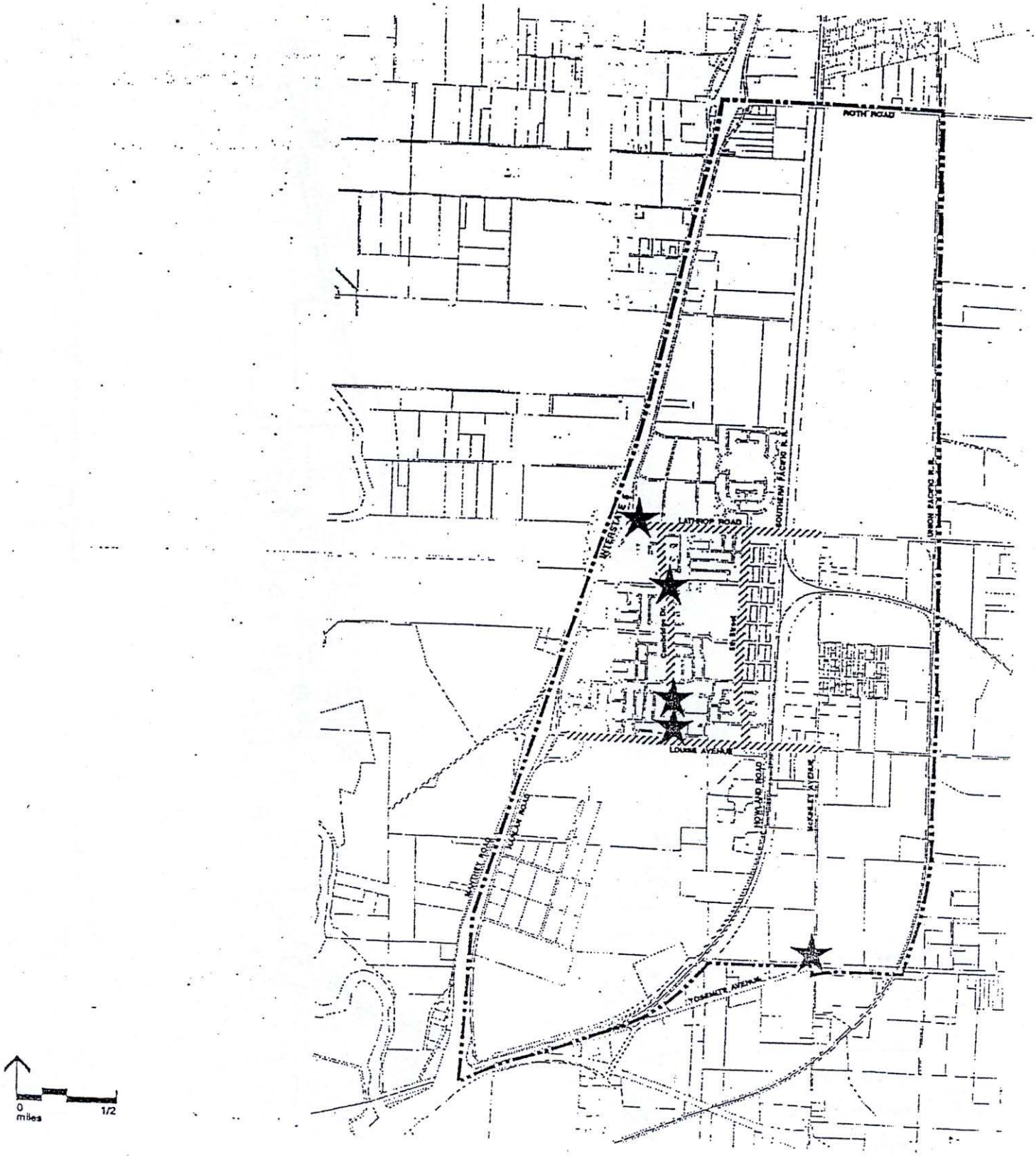
Key

- Existing Bikeways
- Public Agency Building
- Schools
- Future Schools
- Commercial Center
- Employment Center
- Parks

Figure 4

Bicycle Trip Patterns

City of Lathrop
Bicycle Transportation Plan



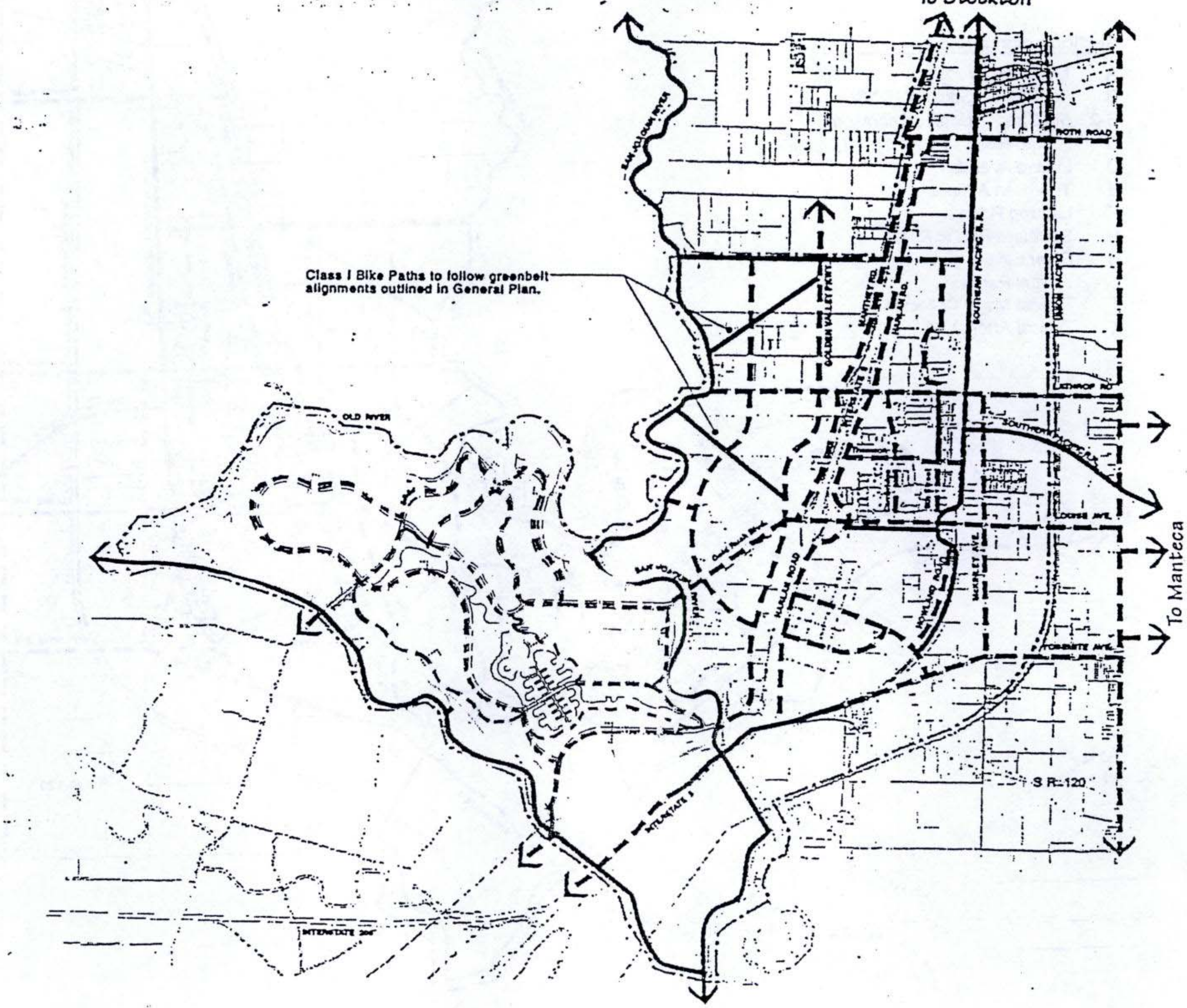
Key

- Accident Location
- Bicycling Hazard Area

City of Lathrop
Bicycle Transportation Plan

Figure 7
Bicycle Accident Map

Lathrop Bicycle Plan



Interpretation

This diagram indicates the general location and framework of Class II and Class I bikeways within the General Plan Area. Additional minor routes shall be added as needed to provide connections to schools, parks, commercial centers, employment areas, and public buildings. Precise location and design of bikeways shall be determined at the time of improvement, consistent with the General Plan and Circulation Element. Class II facilities shown west of I-5 may be upgraded to Class I paths at the City's discretion at time of approval.

0 1
miles

Key

20 Year General Plan Area

Proposed Class I Path

Proposed Class II Lane

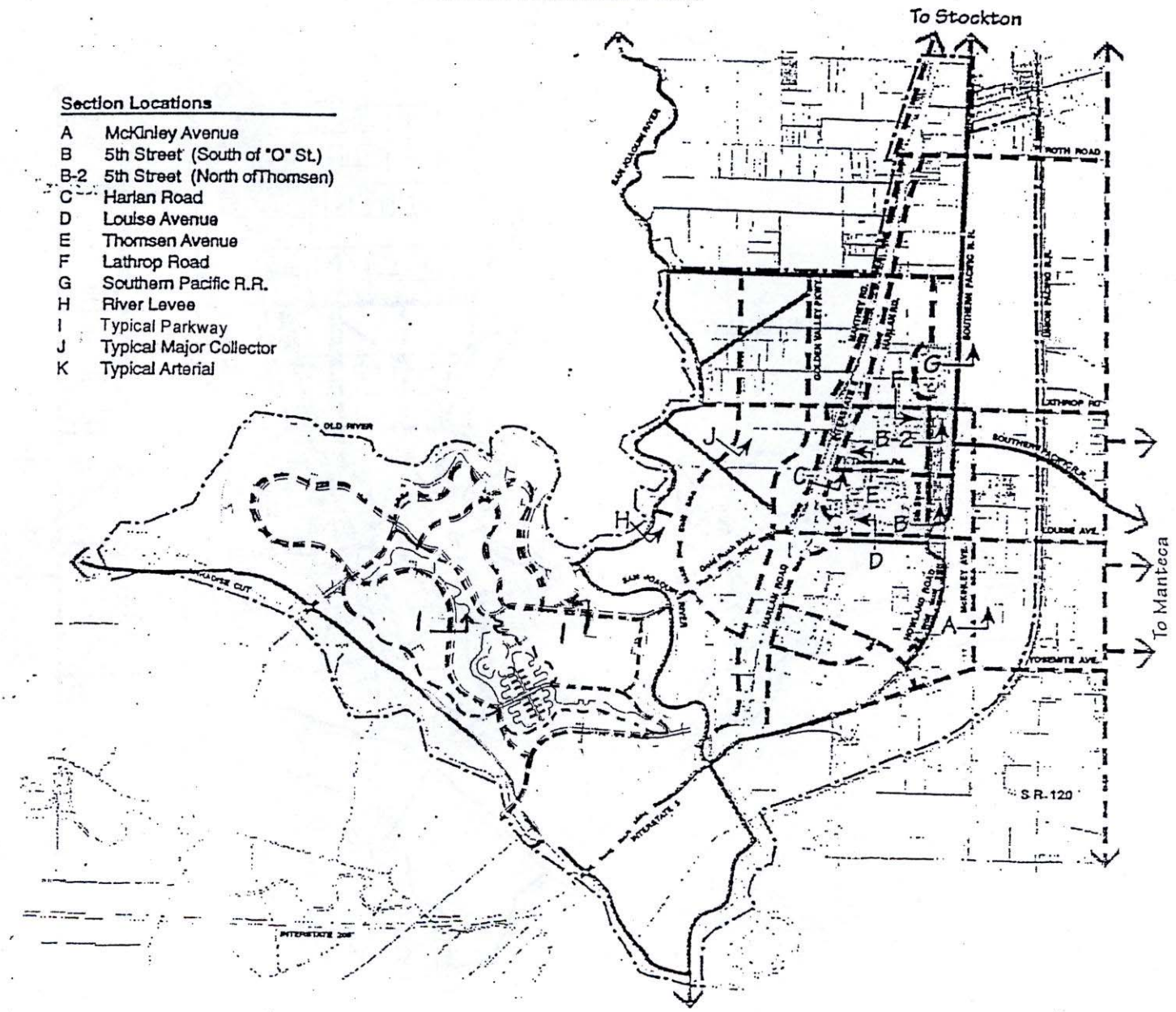
City of Lathrop
Bicycle Transportation Plan

Figure 9

Bicycle Circulation Diagram

August 9, 1995

Revised January 2, 2003



Section Locations

A	McKinley Avenue
B	5th Street (South of "O" St.)
B-2	5th Street (North of Thomsen)
C	Harlan Road
D	Louise Avenue
E	Thomsen Avenue
F	Lathrop Road
G	Southern Pacific R.R.
H	River Levee
I	Typical Parkway
J	Typical Major Collector
K	Typical Arterial

Note

This diagram identifies the general location of street section segments. Precise location and design shall be determined at time of improvement.

0 miles 1

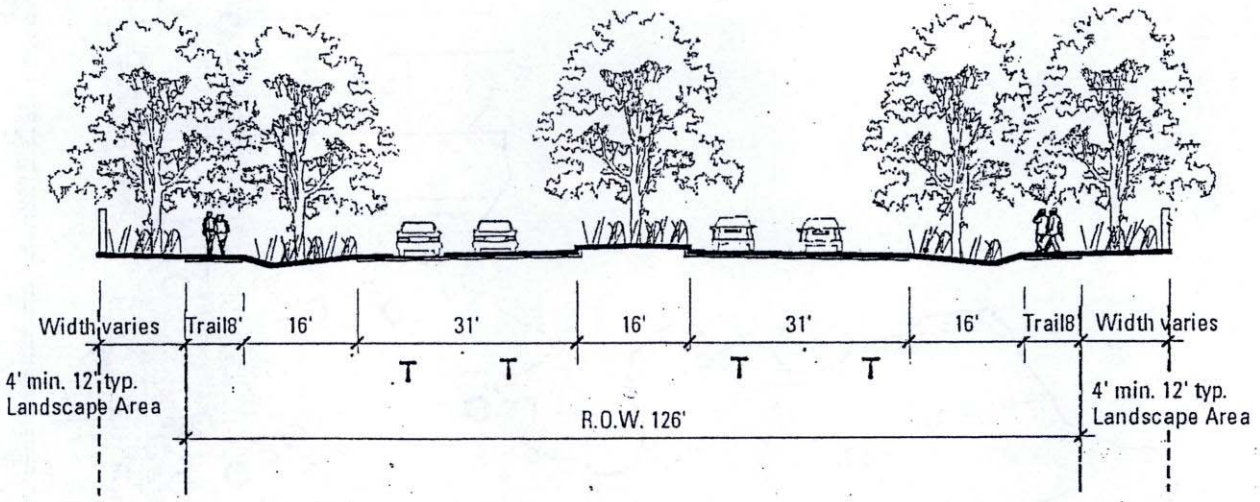
Key

- 20 Year General Plan Area
- Proposed Class I Path
- Proposed Class II Lane

City of Lathrop
Bicycle Transportation Plan

Figure10

Street Section Location Diagram
Revised January 2, 2003



Key

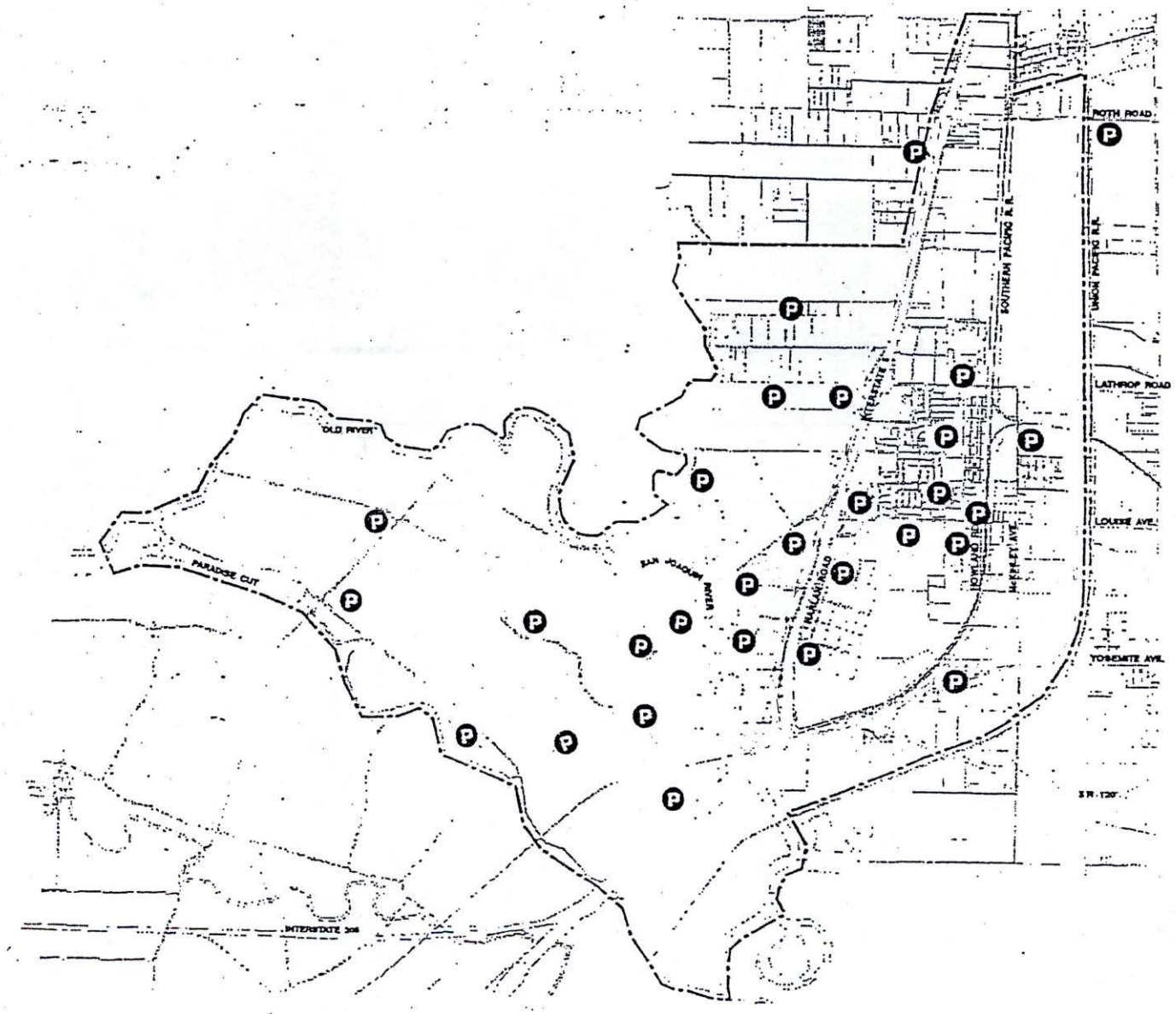
T Travel Lane

Figure 19

Section I

Typical Parkway

Typical Bikeway



Interpretation

This diagram indicates the general location of bicycle parking facilities. Precise locations will be determined at time of improvement and shall be consistent with the General Plan and Circulation Element.

0 miles 1

Key

20 Year General Plan Area

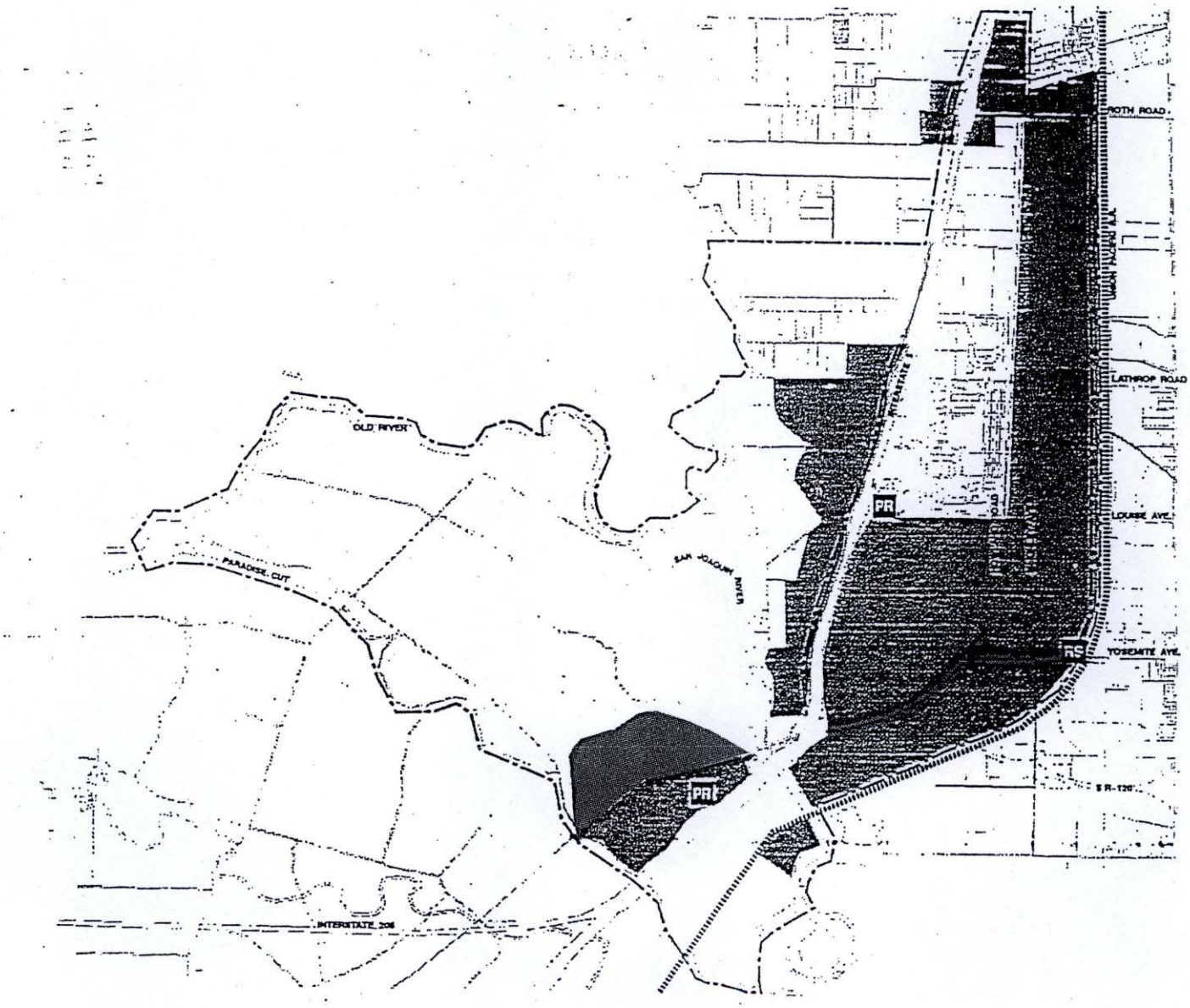
New Parking Facilities

Figure 22

City of Lathrop
Bicycle Transportation Plan

Bicycle Parking Diagram

Revised January 2, 2003



Interpretation

This diagram indicates general locations for transit connection points and changing facility areas. Precise locations and designs shall be determined at time of improvement and be consistent with the General Plan and Circulation Element.

0 miles 1

Key

- 20 Year General Plan Area
- Changing Facilities Corridor Zone
- Future Passenger Rail Route
- PR Future Park & Ride Facility with Bicycle Storage Lockers
- RS Future Passenger Rail Stop

City of Lathrop
Bicycle Transportation Plan

Figure 23

Bicycle Transit Connection Diagram
Revised January 2, 2003

RESOLUTION NO. 04-1778

A RESOLUTION AMENDING THE CITY OF LATHROP GENERAL PLAN, BICYCLE TRANSPORTATION PLAN, LATHROP CENTER PLAN, AND UTILITIES MASTER PLAN

WHEREAS, Section 65358 of the California Government Code provides for the amendment of all or part of an adopted general plan; and

WHEREAS, the City has complied with the requirements of the Local Planning Law (Government Code section 65300 et seq.), the current State of California General Plan Guidelines, and the City's applicable ordinances and resolutions with respect to approval of the proposed General Plan Amendments ("GPA"); and

WHEREAS, pursuant to Government Code Section 65090, notice of the City Council's hearing was published in accordance with Section 6061 of the Government Code in at least one newspaper of general circulation within the County of San Joaquin and the City of Lathrop at least ten calendar days before the City Council's public hearing; and

WHEREAS, prior to recommending adoption of the GPA, the City Council adopted Resolution No. 04-1777, recommending that the City Council Certify the Final Environmental Impact Report, Making Findings Concerning Mitigation Measures, Adopting a Mitigation Monitoring and Reporting Program, Making Findings Concerning Alternatives and Adopting a Statement of Overriding Considerations in Accordance with the California Environmental Quality Act for the Central Lathrop Specific Plan Project ("CEQA Resolution"); and

WHEREAS, the Central Lathrop Specific Plan Project includes all of the Central Lathrop Specific Plan Project entitlements, including Resolution No. 04-1777 ("CEQA Resolution); Ordinance No. 04-245 ("Zoning Code Amendment Ordinance"); Resolution No. 04-1779 ("Central Lathrop Specific Plan & Prezoning Resolution"); Resolution No. 1780 ("LAFCO Annexation Application"); Ordinance 04-246 ("Development Agreement") and this General Plan Amendment Resolution (collectively the Central Lathrop Specific Plan Project or "Project"); and

WHEREAS, before considering the GPA, the City Council reviewed and considered the information contained in the Final Environmental Impact Report for the Central Lathrop Specific Plan Project (SCH #2003072132) ("Final EIR"), and finds that mitigation measures identified in the Final EIR have been imposed on and incorporated into the Central Lathrop Specific Plan Project which mitigate or avoid the significant environmental effects, that certain mitigation measures are within the responsibility and jurisdiction of another public agency and such changes can and should be adopted by such other agency, that specific economic, social and other considerations make infeasible the project alternatives that would avoid or mitigate the environmental impacts

and that social, economic, and other benefits outweigh the environmental impacts that cannot be fully mitigated; and

On December 17, 1991, City adopted a comprehensive General Plan ("**General Plan**") that included the Project Site within City's Sub-Plan Area #2. The General Plan has since been amended on June 24, 1992, May 20, 1997, June 18, 2002 and January 28, 2003. The 1991 Lathrop General Plan as amended designated residential, commercial, golf course, open space uses for the Central Lathrop Specific Plan portion of Subplan Area #2, a 1521 acre site located west of Interstate 5; and

WHEREAS, the City Council previously adopted the Bicycle Transportation Plan Amendment ("BPA") in 1995 and was amended in 2003; and

WHEREAS, in 2001, the City adopted a master Plan for Water, Wastewater and Recycled Water, including the Northern Area Plan Master Plan for Drainage (collectively the "**Utilities Master Plan**") ; and

WHEREAS, the City adopted the Lathrop Center Plan as a proposal for the proposed downtown core in Subplan Area #2; and

WHEREAS, certain non-substantive changes have been made to the proposed GPA as shown in the attached **Exhibit A**; and

WHEREAS, the errata sheet included as part of **Exhibit A** does not alter the environmental review undertaken for the Project; and

WHEREAS, the City Council has reviewed the GPA, Lathrop Center Plan and the Utilities Master Plan (collectively the "GPA") and conducted a public hearing.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL THAT IT RECOMMENDS THAT THE CITY COUNCIL ADOPT THE GPA, AS FOLLOWS:

Section 1. This Resolution incorporates, and by this reference makes a part hereof, that certain GPA, substantially in the form on file with the City Clerk with the errata sheet shown on **Exhibit A**, relative to the proposed development of the Central Lathrop Specific Plan Project on certain real property consisting of approximately 1521 acres located adjacent to the corporate limits of the City of Lathrop and within the City's sphere of influence.

Section 2. General Plan Amendment Findings. The City Council finds and determines as follows:

a. The proposed GPA would amend the General Plan Land Use Diagram adopted December 17, 1991, as amended through 2003, to reflect the proposed Central Lathrop Specific Plan land uses. The GPA would also amend the Introduction, the

Community Development Element; the Transportation and Circulation Element; the Water Element text of the General Plan Growth Assumptions, the Utilities Master Plan, including the Northern Area Plan for Drainage and Opportunities: Major Policies and Major Proposals of the General Plan to clarify the change in land uses under the Central Lathrop Specific Plan. The proposed GPA would amend the General Plan Community Development Element's policies and land use designations governing Sub-Plan Area #2, one of three sub-planning areas defined in the General Plan, to reflect the proposed land use changes for CLSP planning area. The proposed GPA would also amend the text and corresponding diagrams and tables in the General Plan's Transportation and Circulation Element to revise polices and proposals related to various transportation improvements proposed in the Central Lathrop Specific Plan area. The proposed GPA would amend the text of the General Plan to update the context for citywide water, sewerage, drainage, and flood control. The proposed GPA would clarify the text of the General Plan's Directions for General Plan Interpretation and Implementation. The GPA will revise and incorporate into the General Plan the City's Bicycle Transportation Plan to reflect new Bikeway Projects in Sub-Plan Area #2.

b. The proposed GPA is in the public interest of the people of the City of Lathrop as set forth in more detail in the Statement of Overriding Considerations in the CEQA Resolution, herein incorporated by reference.

c. The proposed GPA to the Community Development Element provide for continuing internal consistency with the General Plan Land Use Element, Circulation Element, Housing Element, Open Space, Conservation and Recreation Element, Noise Element and Safety Element because the GPA further the goals and objectives of the General Plan by providing a variety of residential and commercial land use designations to meet the future housing needs of the City, in a manner compatible with the existing neighborhoods and designed to meet Safety Element standards. Consistent with the Open Space, Conservation and Recreation Elements, the GPA would designate, protect and conserve natural resources, open space, and recreation in Sub-Plan Area #2 and ensure that adequate park, open space, and recreation facilities will be provided to Sub-Plan Area #2 and City residents. Consistent with the General Plan, the portions of the GPA related to categories of public services, infrastructure, school facilities siting and parks and recreation will encourage the availability of adequate utilities and services and ensure that the public health and safety is protected by the provision of adequate sanitary sewers and wastewater treatment capacity. Consistent with General Plan goals related to the provision of adequate school facilities for residential development, the GPA provides that the planning, siting and construction of new schools will be coordinated with the school district to ensure that facilities are available.

d. The proposed GPA for the BPA provides a complete circulation system for non-vehicular traffic both within and outside the Project area.

Section 3. Upon adoption by the City Council, the Community Development Director is hereby directed to retain said GPA on permanent public display in the Community Development Department of the City of Lathrop.

Section 4. Based on the findings set forth in this Resolution, the CEQA Resolution, and the evidence in the Staff Report, the City Council hereby adopts the GPA, substantially in the form on file with the City Clerk.

The foregoing Resolution was passed and adopted on November 9, 2004, by the following vote:

AYES: Beltran, Oliver, Griffith, Dresser, Rhodes

NOES: None

ABSENT: None

ABSTAIN: None

APPROVED AS TO FORM:

Susan Burns Cochran, City Attorney

ATTEST:

Nancy Rustigian, City Clerk

City of Lathrop
Bicycle Transportation Plan
Amendment

Bicycle Transportation Plan	August 9, 1995
Amended: River Islands Attachment E	January 2, 2003
Amended: Central Lathrop Specific Plan	November 9, 2004

In 1995 the City of Lathrop approved and adopted a Bicycle Transportation Plan that looked forward 20 years from the date of its adoption to act as a tool to implement "a long range plan for a comprehensive bikeway system." To reflect the growth and development of the City of Lathrop, the Bicycle Transportation Plan was amended in 2003 to include the River Islands portion of West Lathrop. Now in 2004 the Bicycle Transportation Plan is amended to reflect the Central Lathrop Specific Plan.

The purpose of the Bicycle Transportation Plan is to "improve and expand bicycling opportunities in Lathrop", and "provide direction for the development of new bikeways as future growth occurs in Lathrop's sphere of influence." The Central Lathrop Specific Plan outlines the current direction for development for the Northern half of Sub-Plan Area 2. The following are the revisions required of the amendment to the Bicycle Transportation Plan to be consistent with the bikeway facilities within the Central Lathrop Specific Plan. Recommended changes to the text are handled with underlined text for new (added) text, and ~~strikethrough text~~ will be used for deleted or out of date text.

Page I-6 E. Relationship To Other Plans, 3. San Joaquin County Regional Bicycle Master Plan.

Change heading and section 3. San Joaquin County Regional Bicycle Master Plan section to 4. San Joaquin County Regional Bicycle Master Plan and section, and insert the following for 3 heading and section.

3. Central Lathrop Specific Plan.

The Central Lathrop Specific Plan is the northern half of Sub-Plan Area 2, and covers about 1520 acres located West of the Interstate 5, East of the San Joaquin River, and North of Mossdale Village. The Central Lathrop Specific Plan calls for residential and commercial development, along with complementary parks, schools, civic center and open space.

An objective of the Central Lathrop Specific Plan is to include provisions for bicycling by encouraging bicycle transportation facilities and routes, and providing an alternative and viable means of transportation. The Central Lathrop Specific Plan and related Central Lathrop Design Guidelines provide additional information on bicycle transportation including routes, guidelines, and policies.

Page I-7 E. Relationship To Other Plans, 4. Regional Plans

Change 4. Regional Plans to, 5. Regional Plans.

Page II-1 Existing Bicycle Conditions 1st paragraph:

Chapter II describes the bicycling conditions that exist within the City of Lathrop in February 1995, and as updated by Attachment E Bicycle Transportation Plan amendment for River Islands dated January 2003, and the Central Lathrop Specific Plan dated November 9, 2004.

Page II-2 A. Land Use Conditions, 2.b. Sub-Plan Area #2

The majority of this land is currently in agricultural use although portions of the Southern half, which is called Mossdale Village, are now being built, and the Northern half being the Central Lathrop Specific Plan, is in the planning process. ~~but has high development potential.~~ The primary proposed development in this area has community commercial uses near the Interstate and Variable Residential uses extending further westward. Both halves of Sub-Plan Area 2 will have central commercial ~~It will also have a central~~ business district providing a variety of commercial and entertainment needs.

Page II-4 A. Land Use Conditions, 3. Bicycle Trip Generators. 2nd Paragraph:

Growth in the Stewart Tract, ~~and~~ Mossdale Village, and the Central Lathrop Specific Plan will include a variety of housing, commercial, and recreational uses.

Page II-7 B. Bicycle Commuters, 3. Recreational Bicyclists.

Replace 3. Recreational Bicyclist section with the following.

Currently, the City of Lathrop does not have formal recreational bicycling areas within its city limits. The development of the Stewart Tract, Mossdale Village, and the Central Lathrop Specific Plan will add formal recreational bicycling areas. The City is comprised of a semi-urban street network, which caters mainly to automobile traffic. The Stewart Tract, Mossdale Village and Central Lathrop Specific Plan offer proposed bicycle routes along river levees, railroad rights-of-way, and bike paths on and off major roads. The West Lathrop Specific Plan, and Central Lathrop Specific Plan also propose many open space corridors and nature preserves, which would be suitable for recreational riding.

Page II-9 Planned Bikeway Facilities, 1. City of Lathrop. 2nd paragraph:

Because Sub-Plan areas 2 and 3 are either ~~currently~~ not developed or under development, the General Plan and specific plans address proposed routes in these regions in a general manner. For the northern half of Sub-Plan Area 2, the Central Lathrop Specific Plan and Bicycle Transportation Plan Amendment provide designated bicycle routes. The plan calls for ~~recommends that~~ a basic bikeway system to be developed that connects all school sites, parks, commercial areas, and transportation modes, including the ACE train station.

Page II-12 Existing Connections to Transportation Modes, 2. Park & Ride Facilities. 2nd Paragraph:

Lathrop has ~~is currently pursuing the development of~~ a formal Park and Ride facility along Interstate 5 and is located on 5th Street between Louise Avenue and Lathrop Road. ~~Though funding and a site location have not been secured, the City is planning for a facility with in the existing city limits.~~ General provisions have also been made for a Park & Ride facility under development in the West Lathrop Specific Plan.

Page II-12 Existing Connections to Transportation Modes, 3. Railroads. 1st Paragraph:

~~Two~~ Though three railroads pass through the city, their present use is for industrial and passenger purposes. A railroad passenger stop is located ~~planned~~ at the Union Pacific Railroad and Yosemite Road crossing as part of the Altamont Commuter Express Train ~~Pass Passenger Rail Demonstration Project~~.

Page II-15 Bicycle Safety Programs, 3. Accident Rates and Locations.

Replace "Accident Rates and Locations" paragraph with the following Paragraph.

Records of bicycle accidents are archived by the City of Lathrop, Public Works Department. A record search was conducted for accidents involving bicyclists for the following of years 1992-1994 and 2000-2003. Refer to Figure 7 for map locations. There were five bicycle accidents reported from 1992-1994, and five more bicycle accidents reported for years 2000-2003. There were zero accidents in 1992, three in 1993, two in 1994, one in 2000, one in 2001, two in 2002, and one in 2003. The three accidents in 1993 occurred along Cambridge Avenue at various locations. In 1994, one accident occurred at the intersection of Lathrop Road and Interstate 5, and the other occurred at the intersection of McKinley Avenue and North Vierra Road in the southeast side of the city boundary. In the year 2000 one accident was reported at the end of Cannelle Court, the following year (2001) one accident was reported on the 16000 block of 5th Street. In 2002, there were two accidents reported: one on the 16000 block of 5th street, and the other in the 300 block of Louise Avenue. There was only one accident reported in the year 2003, and that was located on the corner of Woodfield Drive and Longbarn Drive. Of the five accidents in 1992-1993 and the five from 2000-2003, no fatalities were reported.

Page III-5 Bikeway System Policies.

A.1.i: The City shall allow alternative locations and flexibility in the provision of bicycle facilities throughout the planning area including the Stewart Tract and Central Lathrop Specific Plan area as long as the facilities are consistent with the intent of the General Plan. Due to the unique and innovative nature of the proposed developments on the Stewart Tract and in the Central Lathrop Specific Plan, implementation of specific facilities shall be in accordance with specific plans adopted by City Council.

Page III-7 Bicycle System Policies. A.2 Assure bikeways are fully integrated into all future development occurring within the City's General Plan Sphere.

A.2.d ~~At a minimum~~ A Class I or Class II bikeway ~~shall~~ should be provided within ¼ mile of all residential dwellings in the City.

Page III-7 Bicycle System Policies, A.4 Provide for a high level of rider safety along all bikeways.

A.4.b: Bikeway improvements shall be generally consistent with typical sections indicated on figures 11-25 ~~21~~.

Page III-7 Bicycle System Policies, A.4 Provide for a high level of rider safety along all bikeways

A.4.f: Adequate lighting should be provided along all bikeways that fall within a street right-of-way and where Class I bikeways cross streets.

Page IV-5 Category 2 Bikeway Projects, Table 10:

Golden Valley Parkway is changed from a Class 2 to Class 1 designation.
River Islands Parkway (East of San Joaquin River) is changed from a Class 2 to Class 1 designation.
Lathrop Road is changed from a Class 2 to Class 1 designation.
Connector Streets are changed from Class 2 to Class 1 & Class 2 designations.

Figure 4 – Bicycle Trip Patterns.

Updated by adding four school sites: three K-8 and one High School in the North half of Sub-Plan Area 2.

Figure 7 – Bicycle Accident Map.

Updated by adding accident locations for years 2000-2003 for the entire City and Central Lathrop Specific Plan areas.

Figure 9 – Bicycle Circulation Diagram.

Updated North half of Sub-Plan area 2 Bicycle Circulation Diagram based on the Central Lathrop Specific Plan.

Figure 10 – Street Section Location Diagram.

Updated diagram and added street sections F-2, H, L, L-2, M, N, O, P, P-2, and Q to the Bicycle Circulation Diagram based on the Central Lathrop Specific Plan.

Figure 17 – Section F & F-2

Added Section F-2: Lathrop Road (West of Interstate 5) Typical.

Figure 18 – Sections G & H

Changed Section H: River Levee Bikeway, Class I bike path width from 8' to 8' Min.

Figure 22 – Bicycle Parking Diagram.

Renamed Figure 22 to Figure 26 and updated by adding Bicycle Parking Facilities in the North half of Sub-Plan Area 2 based on the Central Lathrop Specific Plan. New Figure 22 is Figure 22 – Sections L & L-2, Golden Valley Parkway, which has been updated to reflect the street sections found in the Central Lathrop Specific Plan area.

Figure 23 – Bicycle Transit Connection Diagram.

Renamed Figure 23 to Figure 27 and updated the Bicycle Transit Connection Diagram in the North half of Sub-Plan Area 2 based on the Central Lathrop Specific Plan. New Figure 23 is Figure 23 – Sections M & N, Dos Reis Road and

De Lima Road, which has been updated to reflect the street sections found in the Central Lathrop Specific Plan area.

Added Figure 24 – Sections O & P, Barbara Terry and Grass Valley Avenue, which has been updated to reflect the street sections found in the Central Lathrop Specific Plan area.

Added Figure 25 – Sections P-2 & Q, Grass Valley Avenue and Street A, which have been updated to reflect the street sections found in the Central Lathrop Specific Plan area.

Page V-18, Technical Appendix, F. Caltrans Highway Design Manual Chapter 1000.
Replaced existing appendix of Caltrans Highway Design Manual Chapter 1000 with the most current version this document as the current appendix document is out of date. Note to users and City- verify you are using the most currently available version of these standards as they change periodically.

CHAPTER 1000
BIKEWAY PLANNING AND DESIGN

Topic 1001 - General Information

Index 1001.1 - Definitions

"Bikeway" means all facilities that provide primarily for bicycle travel.

(1) Class I Bikeway (Bike Path). Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow minimized.

(2) Class II Bikeway (Bike Lane). Provides a striped lane for one-way bike travel on a street or highway.

(3) Class III Bikeway (Bike Route). Provides for shared use with pedestrian or motor vehicle traffic.

1001.2 Streets and Highways Code References - Chapter 8 - Nonmotorized Transportation

(a) Section 887 -- Definition of nonmotorized facility.

(b) Section 887.6 -- Agreements with local agencies to construct and maintain nonmotorized facilities.

(c) Section 887.8 -- Payment for construction and maintenance of nonmotorized facilities approximately paralleling state highways.

(d) Section 888 -- Severance of existing major nonmotorized route by freeway construction.

(e) Section 888.2 -- Incorporation of non-motorized facilities in the design of freeways.

(f) Section 888.4 -- Requires Caltrans to budget not less than $360,000 annually for nonmotorized facilities used in conjunction with the state highway system.

(g) Section 890.4 -- Class I, II, and III bike-way definitions.

(h) Section 890.6 - 890.8 -- Caltrans and local agencies to develop design criteria and symbols for signs, markers, and traffic control devices for bikeways and roadways where bicycle travel is permitted.

(i) Section 891 -- Local agencies must comply with design criteria and uniform symbols.

(j) Section 892 -- Use of abandoned right-of-way as a nonmotorized facility.

1001.3 Vehicle Code References - Bicycle Operation

(a) Section 21200 -- Bicyclist's rights and responsibilities for traveling on highways.

(b) Section 21202 -- Bicyclist's position on roadways when traveling slower than the normal traffic speed.

(c) Section 21206 -- Allows local agencies to regulate operation of bicycles on pedestrian or bicycle facilities.

(d) Section 21207 -- Allows local agencies to establish bike lanes on non-state highways.

(e) Section 21207.5 -- Prohibits motorized bicycles on bike paths or bike lanes.

(f) Section 21208 -- Specifies permitted movements by bicyclists from bike lanes.

(g) Section 21209 -- Specifies permitted movements by motorists in bike lanes.

(h) Section 21210 -- Prohibits bicycle parking on sidewalks unless pedestrians have an adequate path.

(i) Section 21211 -- Prohibits impeding or obstruction of bicyclists on bike paths.

(j) Section 21212 -- Requires a bicyclist under 18 years of age to wear an approved helmet.

(k) Section 21717 -- Requires a motorist to drive in a bike lane prior to making a turn.

(l) Section 21960 -- Use of freeway shoulders by bicyclists.

Topic 1002 - General Planning Criteria

1002.1 Introduction

The needs of non-motorized transportation must be considered on all highway projects. Topic 105 discusses Pedestrian Facilities with Index 105.3 addressing accessibility needs. This chapter discusses bicycle travel.

Bicycle travel can be enhanced by improved maintenance and by upgrading existing roads used regularly by bicyclists, regardless of whether or not bikeways are designated. This effort requires increased attention to the right-hand portion of roadways where bicyclists are expected to ride. On new construction, and major reconstruction projects, adequate width should be provided to permit shared use by motorists and bicyclists. **On resurfacing projects, the entire paved shoulder and traveled way shall be resurfaced. When adding lanes or turn pockets, a minimum 1.2 m shoulder shall be provided (see Topic 405 and Table 302.1).** When feasible, a wider shoulder should be considered. When placing a roadway edge stripe, sufficient room outside the stripe should be provided for bicyclists. When considering the restriping of roadways for more traffic lanes, the impact on bicycle travel should be assessed. Bicycle and pedestrian traffic through construction zones should be addressed in the project development process. These efforts, to preserve or improve an area for bicyclists to ride, can benefit motorists as well as bicyclists.

1002.2 The Role of Bikeways

Bikeways are one element of an effort to improve bicycling safety and convenience - either to help accommodate motor vehicle and bicycle traffic on shared roadways, or to complement the road system to meet needs not adequately met by roads.

Off-street bikeways in exclusive corridors can be effective in providing new recreational opportunities, or in some instances, desirable commuter routes. They can also be used to close gaps where barriers exist to bicycle travel (e.g., river crossing). On-street bikeways can serve to enhance safety and convenience, especially if other commitments are made in conjunction with establishment of bikeways, such as: elimination of parking or increasing roadway width, elimination of surface irregularities and roadway obstacles, frequent street sweeping, establishing intersection priority on the bike route street as compared with the majority of cross streets, and installation of bicycle-sensitive loop detectors at signalized intersections.

1002.3 The Decision to Develop Bikeways

The decision to develop bikeways should be made with the knowledge that bikeways are not the solution to all bicycle-related problems. Many of the common problems are related to improper bicyclist and motorist behavior and can only be corrected through effective education and enforcement programs. The development of well conceived bikeways can have a positive effect on bicyclist and motorist behavior. Conversely, poorly conceived bikeways can be counterproductive to education and enforcement programs.

1002.4 Selection of the Type of Facility

The type of facility to select in meeting the bicycle need is dependent on many factors, but the following applications are the most common for each type.

(1) Shared Roadway (No Bikeway Designation). Most bicycle travel in the State now occurs on streets and highways without bikeway designations. This probably will be true in the future as well. In some instances, entire street systems may be fully adequate for safe and efficient bicycle travel, and signing and striping for bicycle use may be unnecessary. In other cases, routes may be unsuitable for bicycle travel, and it would be inappropriate to encourage additional bicycle travel by designating the routes as bikeways. Finally, routes may not be along high bicycle demand corridors, and it would be inappropriate to designate bikeways regardless of roadway conditions (e.g., on minor residential streets).

Many rural highways are used by touring bicyclists for intercity and recreational travel. In most cases, it would be inappropriate to designate the highways as bikeways because of

the limited use and the lack of continuity with other bike routes. However, the development and maintenance of 1.2 m paved roadway shoulders with a standard 100 mm edge stripe can significantly improve the safety and convenience for bicyclists and motorists along such routes.

(2) *Class I Bikeway (Bike Path).* 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. They can either provide a recreational opportunity, or in some instances, can serve as direct high-speed commute routes if cross flow by motor vehicles and pedestrian conflicts can be minimized. The most common applications are along rivers, ocean fronts, canals, utility right of way, abandoned railroad right of way, within college campuses, or within and between parks. There may also be situations where such facilities can be provided as part of planned developments. Another common application of Class I facilities is to close gaps to bicycle travel caused by construction of freeways or because of the existence of natural barriers (rivers, mountains, etc.).

(3) *Class II Bikeway (Bike Lane).* Bike lanes are established along streets in corridors where there is significant bicycle demand, and where there are distinct needs that can be served by them. The purpose should be to improve conditions for bicyclists in the corridors. Bike lanes are intended to delineate the right of way assigned to bicyclists and motorists and to provide for more predictable movements by each. But a more important reason for constructing bike lanes is to better accommodate bicyclists through corridors where insufficient room exists for safe bicycling on existing streets. This can be accomplished by reducing the number of lanes, or prohibiting parking on given streets in order to delineate bike lanes. In addition, other things can be done on bike lane streets to improve the situation for bicyclists, that might not be possible on all streets (e.g., improvements to the surface, augmented sweeping programs, special signal facilities, etc.). Generally, stripes alone will not measurably enhance bicycling.

If bicycle travel is to be controlled by delineation, special efforts should be made to assure that high levels of service are provided with these lanes.

In selecting appropriate streets for bike lanes, location criteria discussed in the next section should be considered.

(4) *Class III Bikeway (Bike Route).* Bike routes are shared facilities which serve either to:

(a) Provide continuity to other bicycle facilities (usually Class II bikeways); or

(b) Designate preferred routes through high demand corridors.

As with bike lanes, designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. This means that responsible agencies have taken actions to assure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of bicyclists. Normally, bike routes are shared with motor vehicles. The use of sidewalks as Class III bikeways is strongly discouraged.

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

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

An important consideration in selecting the type of facility is continuity. Alternating segments of Class I and Class II (or Class III) bikeways along a route are generally incompatible, as street crossings by bicyclists are required when the route changes character. Also, wrong-way bicycle travel will occur on the street beyond the ends of bike paths because of the inconvenience of having to cross the street.

Topic 1003 - Design Criteria

1003.1 Class I Bikeways

Class I bikeways (bike paths) are facilities with exclusive right of way, with cross flows 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". However, experience has shown that if significant pedestrian use is anticipated, separate facilities for pedestrians are necessary to minimize conflicts. Dual use by pedestrians and bicycles is undesirable, and the two should be separated wherever possible.

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 motorist cross flows. See Index 1003.3 for discussion relative to sidewalk bikeways.

By State law, motorized bicycles ("mopeds") are prohibited on bike paths unless authorized by ordinance or approval of the agency having jurisdiction over the path. Likewise, all motor vehicles are prohibited from bike paths. These prohibitions can be strengthened by signing.

(1) Widths. **The minimum paved width for a two-way bike path shall be 2.4 m. The minimum paved width for a one-way bike path shall be 1.5 m. A minimum 0.6 m wide graded area shall be provided adjacent to the pavement (see Figure 1003.1A).** A 1.0 m graded area is recommended to provide clearance from poles, trees, walls, fences, guardrails, or other lateral obstructions. A wider graded area can also serve as a jogging path. Where the paved width is wider than the minimum required, the graded area may be reduced accordingly; however, the graded area is a desirable feature regardless of the paved width. Development of a one-way bike path should be undertaken only after careful consideration due to the problems of enforcing one-way operation and the difficulties in maintaining a path of restricted width.

Where heavy bicycle volumes are anticipated and/or significant pedestrian traffic is expected, the paved width of a two-way path should be greater than 2.4 m, preferably 3.6 m or more. Another important factor to consider in determining the appropriate width is that bicyclists will tend to ride side by side on bike paths, necessitating more width for safe use.

Experience has shown that paved paths less than 3.6 m wide sometimes break up along the edge as a result of loads from maintenance vehicles.

Where equestrians are expected, a separate facility should be provided.

(2) Clearance to Obstructions. **A minimum 0.6 m horizontal clearance to obstructions shall be provided adjacent to the pavement (see Figure 1003.1A).** A 1.0 m clearance is recommended. Where the paved width is wider than the minimum required, the clearance may be reduced accordingly; however, an adequate clearance is desirable regardless of the paved width. If a wide path is paved contiguous with a continuous fixed object (e.g., block wall), a 100 mm white edge stripe, 0.3 m from the fixed object, is recommended to minimize the likelihood of a bicyclist hitting it. **The clear width on structures between railings shall be not less than 2.4 m.** It is desirable that the clear width of structures be equal to the minimum clear width of the path (i.e., 3.6 m).

The vertical clearance to obstructions across the clear width of the path shall be a minimum of 2.5 m. Where practical, a vertical clearance of 3 m is desirable.

(3) Striping and Signing. A yellow centerline stripe may be used to separate opposing directions of travel. A centerline stripe is particularly beneficial in the following circumstances:

(a) Where there is heavy use;

(b) On curves with restricted sight distance; and,

Figure 1003.1A

Two-Way Bike Path on Separate Right of Way

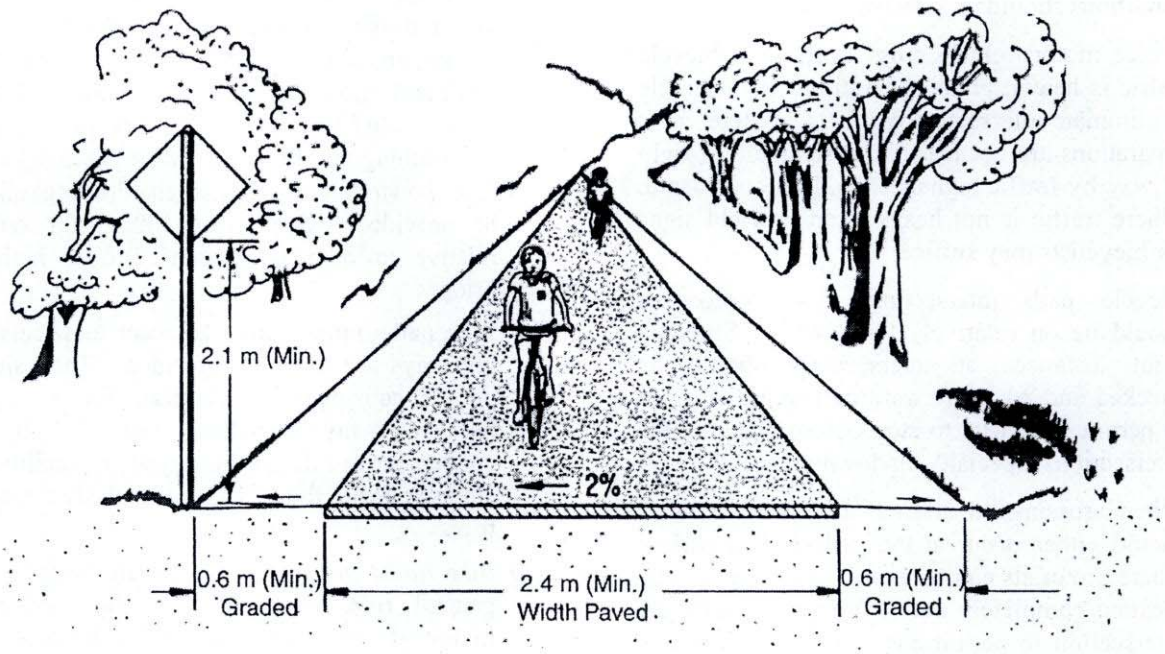
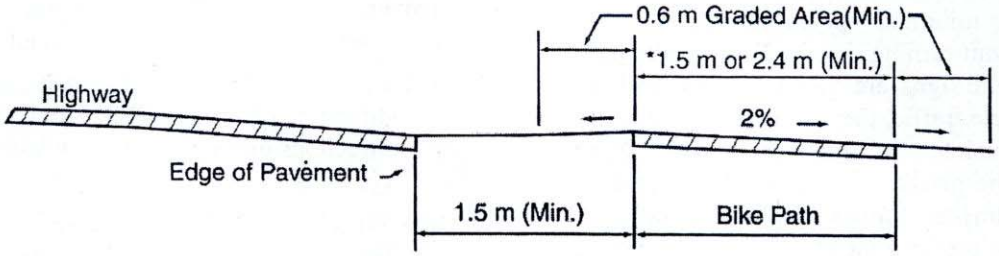


Figure 1003.1A

Typical Cross Section of Bike Path Along HIghway



NOTE: See Index 1003.1(5)

*One - Way: 1.5 m Minimum Width
Two - Way: 2.4 m Minimum Width

(c) Where the path is unlighted and nighttime riding is expected. (Refer to Topic 1004 for signing and striping details.)

(4) Intersections with Highways. Intersections are a prime consideration in bike path design. If alternate locations for a bike path are available, the one with the most favorable intersection conditions should be selected.

Where motor vehicle cross traffic and bicycle traffic is heavy, grade separations are desirable to eliminate intersection conflicts. Where grade separations are not feasible, assignment of right of way by traffic signals should be considered. Where traffic is not heavy, stop or yield signs for bicyclists may suffice.

Bicycle path intersections and approaches should be on relatively flat grades. Stopping sight distances at intersections should be checked and adequate warning should be given to permit bicyclists to stop before reaching the intersection, especially on downgrades.

When crossing an arterial street, the crossing should either occur at the pedestrian crossing, where motorists can be expected to stop, or at a location completely out of the influence of any intersection to permit adequate opportunity for bicyclists to see turning vehicles. When crossing at midblock locations, right of way should be assigned by devices such as yield signs, stop signs, or traffic signals which can be activated by bicyclists. Even when crossing within or adjacent to the pedestrian crossing, stop or yield signs for bicyclists should be placed to minimize potential for conflict resulting from turning autos. Where bike path stop or yield signs are visible to approaching motor vehicle traffic, they should be shielded to avoid confusion. In some cases, Bike Xing signs may be placed in advance of the crossing to alert motorists. Ramps should be installed in the curbs, to preserve the utility of the bike path. Ramps should be the same width as the bicycle paths. Curb cuts and ramps should provide a smooth transition between the bicycle paths and the roadway.

(5) Separation Between Bike Paths and Highways. A wide separation is recommended between bike paths and adjacent highways (see Figure 1003.1B). **Bike paths closer than 1.5 m from the edge of the shoulder shall include a physical barrier to prevent bicyclists from encroaching onto the highway. Bike paths within the clear recovery zone of freeways shall include a physical barrier separation.** Suitable barriers could include chain link fences or dense shrubs. Low barriers (e.g., dikes, raised traffic bars) next to a highway are not recommended because bicyclists could fall over them and into oncoming automobile traffic. In instances where there is danger of motorists encroaching into the bike path, a positive barrier (e.g., concrete barrier, steel guardrailing) should be provided. See Index 1003.6 for criteria relative to bike paths carried over highway bridges.

Bike paths immediately adjacent to streets and highways are not recommended. They should not be considered a substitute for the street, because many bicyclists will find it less convenient to ride on these types of facilities as compared with the streets, particularly for utility trips.

(6) Bike Paths in the Median of Highways. As a general rule, bike paths in the median of highways are not recommended because they require movements contrary to normal rules of the road. Specific problems with such facilities include:

(a) Bicyclist right turns from the center of roadways are unnatural for bicyclists and confusing to motorists.

(b) Proper bicyclist movements through intersections with signals are unclear.

(c) Left-turning motorists must cross one direction of motor vehicle traffic and two directions of bicycle traffic, which increases conflicts.

(d) Where intersections are infrequent, bicyclists will enter or exit bike paths at midblock.

(e) Where medians are landscaped, visual relationships between bicyclists and motorists at intersections are impaired.

For the above reasons, bike paths in the median of highways should be considered only when

the above problems can be avoided. **Bike paths shall not be designed in the medians of freeways or expressways.**

(7) Design Speed. The proper design speed for a bike path is dependent on the expected type of use and on the terrain. **The minimum design speed for bike paths shall be 40 km/h except as noted in Table 1003.1.**

Table 1003.1

Bike Path Design Speeds

Type of Facility	Design Speed (km/h)
Bike Paths with Mopeds Prohibited	40
Bike Paths with Mopeds Permitted	50
Bike Paths on Long Downgrades (steeper than 4%, and longer than 150 m)	50

Installation of "speed bumps" or other similar surface obstructions, intended to cause bicyclists to slow down in advance of intersections or other geometric constraints, shall not be used. These devices cannot compensate for improper design.

(8) Horizontal Alignment and Superelevation. The minimum radius of curvature negotiable by a bicycle is a function of the superelevation rate of the bicycle path surface, the coefficient of friction between the bicycle tires and the bicycle path surface, and the speed of the bicycle.

For most bicycle path applications the superelevation rate will vary from a minimum of 2 percent (the minimum necessary to encourage adequate drainage) to a maximum of approximately 5 percent (beyond which maneuvering difficulties by slow bicyclists and adult tricyclists might be expected). A straight 2% cross slope is recommended on tangent sections. The minimum superelevation rate of 2% will be adequate for most conditions and will simplify construction. Superelevation rates steeper than 5 percent should be avoided on bike paths expected to have adult tricycle traffic.

The coefficient of friction depends upon speed; surface type, roughness, and condition; tire type and condition; and whether the surface is wet or dry. Friction factors used for design should be selected based upon the point at which centrifugal force causes the bicyclist to recognize a feeling of discomfort and instinctively act to avoid higher speed. Extrapolating from values used in highway design, design friction factors for paved bicycle paths can be assumed to vary from 0.31 at 20 km/h to 0.21 at 50 km/h. Although there is no data available for unpaved surfaces, it is suggested that friction factors be reduced by 50 percent to allow a sufficient margin of safety.

The minimum radius of curvature can be selected from Figure 1003.1C. When curve radii smaller than those shown in Figure 1003.1C must be used on bicycle paths because of right of way, topographical or other considerations, standard curve warning signs and supplemental pavement markings should be installed. The negative effects of nonstandard curves can also be partially offset by widening the pavement through the curves.

(9) Stopping Sight Distance. To provide bicyclists with an opportunity to see and react to the unexpected, a bicycle path should be designed with adequate stopping sight distances. The distance required to bring a bicycle to a full controlled stop is a function of the bicyclist's perception and brake reaction time, the initial speed of the bicycle, the coefficient of friction between the tires and the pavement, and the braking ability of the bicycle.

Figure 1003.1D indicates the minimum stopping sight distances for various design speeds and grades. For two-way bike paths, the descending direction, that is, where "G" is negative, will control the design.

Figure 1003.1C

Curve Radii & Superelevations

$$R = \frac{V^2}{127\left(\frac{e}{100} + f\right)}$$

where,

R = Minimum radius of curvature (m),

V = Design Speed (km/h),

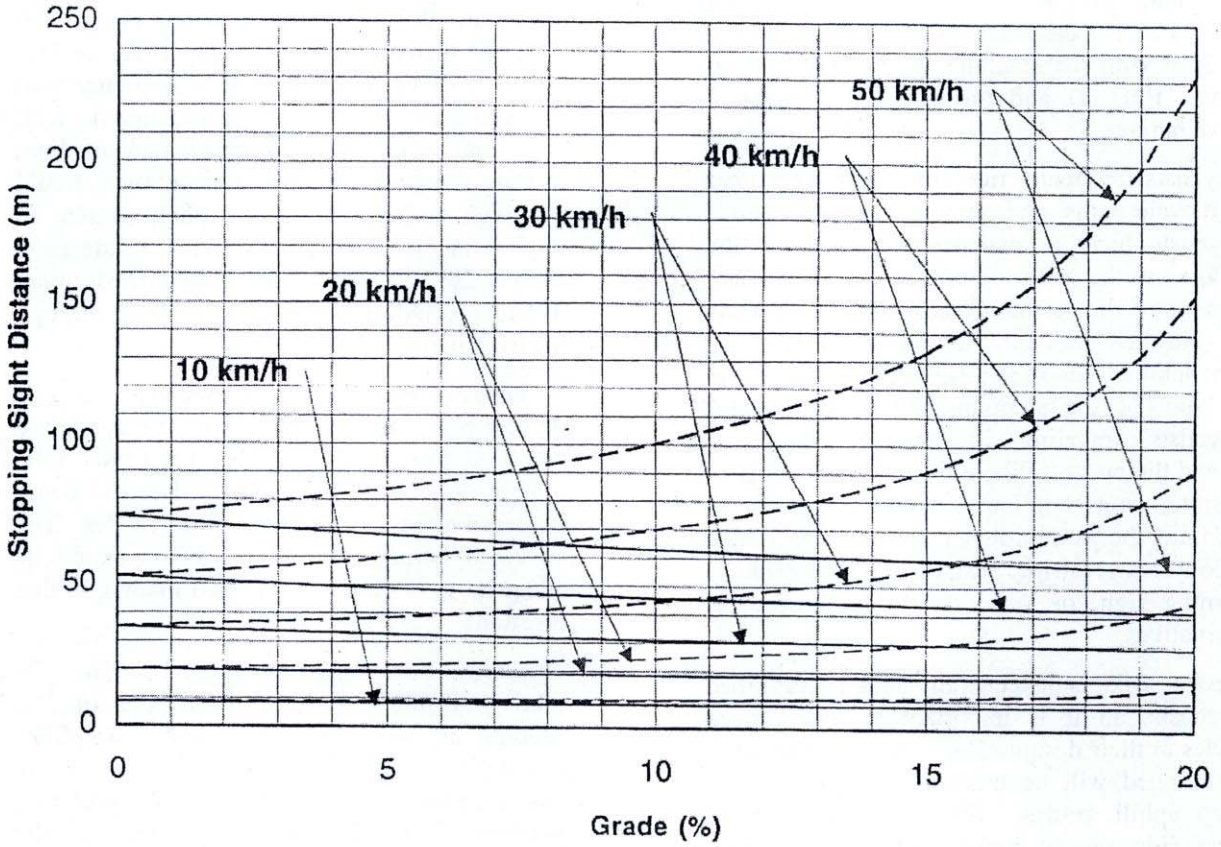
e = Rate of bikeway superelevation, percent

f = Coefficient of friction

Design Speed-V (km/h)	Friction Factor-f	Superelevation-e (%)	Minimum Radius-R (m)
20	0.31	2	10
30	0.28	2	24
40	0.25	2	47
50	0.21	2	86
20	0.31	3	9
30	0.28	3	23
40	0.25	3	45
50	0.21	3	82
20	0.31	4	9
30	0.28	4	22
40	0.25	4	43
50	0.21	4	79
20	0.31	5	9
30	0.28	5	21
40	0.25	5	42
50	0.21	5	76

Figure 1003.1D

Stopping Sight Distance



$$S = \frac{V^2}{254\,(f \pm G)} + \frac{V}{1.4}$$

Descend ------
Ascend ——

Where : S = stopping sight, m
V = velocity, km/h
f = coefficient of friction (use 0.25)
G = grade, m/m (rise/run)

(10) *Length of Crest Vertical Curves.* Figure 1003.1E indicates the minimum lengths of crest vertical curves for varying design speeds.

(11) *Lateral Clearance on Horizontal Curves.* Figure 1003.1F indicates the minimum clearances to line of sight obstructions for horizontal curves. The required lateral clearance is obtained by entering Figure 1003.1F with the stopping sight distance from Figure 1003.1D and the proposed horizontal curve radius.

Bicyclists frequently ride abreast of each other on bicycle paths, and on narrow bicycle paths, bicyclists have a tendency to ride near the middle of the path. For these reasons, and because of the serious consequences of a head on bicycle accident, lateral clearances on horizontal curves should be calculated based on the sum of the stopping sight distances for bicyclists traveling in opposite directions around the curve. Where this is not possible or feasible, consideration should be given to widening the path through the curve, installing a yellow center stripe, installing a curve ahead warning sign, or some combination of these alternatives.

(12) *Grades.* Bike paths generally attract less skilled bicyclists, so it is important to avoid steep grades in their design. Bicyclists not physically conditioned will be unable to negotiate long, steep uphill grades. Since novice bicyclists often ride poorly maintained bicycles, long downgrades can cause problems. For these reasons, bike paths with long, steep grades will generally receive very little use. The maximum grade rate recommended for bike paths is 5%. It is desirable that sustained grades be limited to 2% if a wide range of riders is to be accommodated. Steeper grades can be tolerated for short segments (e.g., up to about 150 m). Where steeper grades are necessitated, the design speed should be increased and additional width should be provided for maneuverability.

(13) *Structural Section.* The structural section of a bike path should be designed in the same manner as a highway, with consideration given to the quality of the basement soil and the anticipated loads the bikeway will experience. It is important to construct and maintain a smooth riding surface with skid resistant qualities. Principal loads will normally be from maintenance and emergency vehicles. Expansive soil should be given special consideration and will probably require a special structural section. A minimum pavement thickness of 50 mm of asphalt concrete is recommended. Type "A" or "B" asphalt concrete (as described in Department of Transportation Standard Specifications), with 12.5 mm maximum aggregate and medium grading is recommended. Consideration should be given to increasing the asphalt content to provide increased pavement life. Consideration should also be given to sterilization of basement soil to preclude possible weed growth through the pavement.

At unpaved highway or driveway crossings of bicycle paths, the highway or driveway should be paved a minimum of 3 m on each side of the crossing to reduce the amount of gravel being scattered along the path by motor vehicles. The pavement structure at the crossing should be adequate to sustain the expected loading at that location.

(14) *Drainage.* For proper drainage, the surface of a bike path should have a cross slope of 2%. Sloping in one direction usually simplifies longitudinal drainage design and surface construction, and accordingly is the preferred practice. Ordinarily, surface drainage from the path will be adequately dissipated as it flows down the gently sloping shoulder. However, when a bike path is constructed on the side of a hill, a drainage ditch of suitable dimensions may be necessary on the uphill side to intercept the hillside drainage. Where necessary, catch basins with drains should be provided to carry intercepted water across the path. Such ditches should be designed in such a way that no undue obstacle is presented to bicyclists.

Culverts or bridges are necessary where a bike path crosses a drainage channel.

Figure 1003.1E

Stopping Sight Distances for Crest Vertical Curves

$L = 2S - \frac{450}{A}$ when $S > L$

$L = \frac{AS^2}{450}$ when $S < L$

Height of cyclist eye - 1400 mm
Height of object - 100 mm

Double line represents S=L
L = Min. length of vertical curve - meters
A = Algebraic grade difference-%
S = Stopping sight distance - meters
V = Design speed km/h (Refer to Figure 1003.1D to determine "V", after "S" is determined.

GIVEN "A" AND "L"; FIND "S"

A (%)	L=50 m S (m)	L=100 m S (m)	L=150 m S (m)	L=200 m S (m)	L=250 m S (m)	L=300 m S (m)
4.5	75					
5	70	95				
5.5	66	90				
6	63	87				
6.5	60	83				
7	57	80	98			
7.5	55	77	95			
8	53	75	92			
8.5	51	73	89	103		
9	50	71	87	100		
9.5	49	69	84	97		
10	47	67	82	95		
10.5	46	65	80	93		
11	45	64	78	90		
11.5	44	63	77	88	99	
12	43	61	75	87	97	
12.5	42	60	73	85	95	
13	42	59	72	83	93	
13.5	41	58	71	82	91	
14	40	57	69	80	90	98
14.5	39	56	68	79	88	96
15	39	55	67	77	87	95

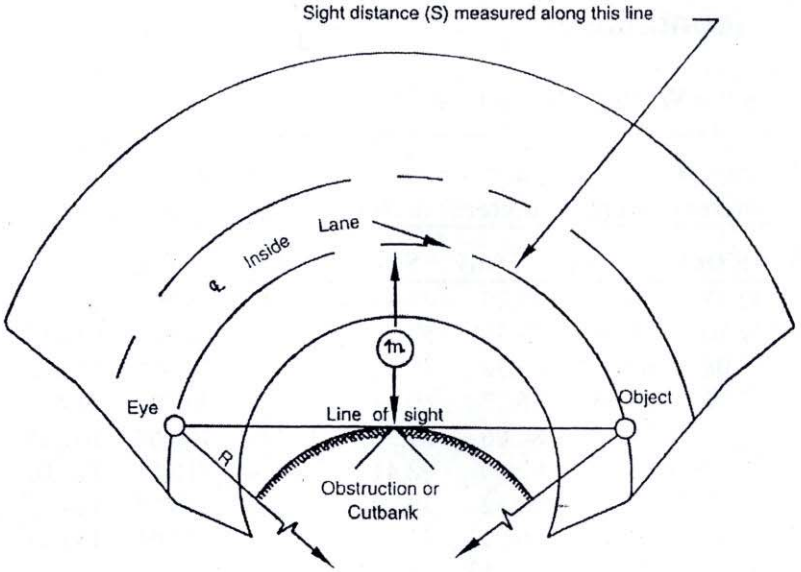
Figure 1003.1E

Stopping Sight Distances for Crest Vertical Curves (continued)

GIVEN "A" AND "S"; FIND "L"

A (%)	S=10 m L (m)	S=15 m L (m)	S=20 m L (m)	S=25 m L (m)	S=30 m L (m)	S=35 m L (m)	S=40 m L (m)	S=45 m L (m)	S=50 m L (m)
5									10.0
6							5.0	15.0	25.0
7						5.7	15.7	25.7	35.7
8					3.8	13.8	23.8	33.8	43.8
9					10.0	20.0	30.0	40.0	50.0
10				5.0	15.0	25.0	35.0	45.0	55.6
11				9.1	19.1	29.1	39.1	49.5	61.1
12			2.5	12.5	22.5	32.5	42.7	54.0	66.7
13			5.4	15.4	25.4	35.4	46.2	58.5	72.2
14			7.9	17.9	27.9	38.1	49.8	63.0	77.8
15			10.0	20.0	30.0	40.8	53.3	67.5	83.3
16		1.9	11.9	21.9	32.0	43.6	56.9	72.0	88.9
17		3.5	13.5	23.5	34.0	46.3	60.4	76.5	94.4
18		5.0	15.0	25.0	36.0	49.0	64.0	81.0	100.0
19		6.3	16.3	26.4	38.0	51.7	67.6	85.5	105.6
20		7.5	17.5	27.8	40.0	54.4	71.1	90.0	111.1
21		8.6	18.6	29.2	42.0	57.2	74.7	94.5	116.7
22		9.5	19.6	30.6	44.0	59.9	78.2	99.0	122.2
23		10.4	20.4	31.9	46.0	62.6	81.8	103.5	127.8
24		11.3	21.3	33.3	48.0	65.3	85.3	108.0	133.3
25		12.0	22.2	34.7	50.0	68.1	88.9	112.5	138.9
26		12.7	23.1	36.1	52.0	70.8	92.4	117.0	144.4
27		13.3	24.0	37.5	54.0	73.5	96.0	121.5	150.0
28	4	13.9	24.9	38.9	56.0	76.2	99.6	126.0	155.6
29	4	14.5	25.8	40.3	58.0	78.9	103.1	130.5	161.1
30	5	15.0	26.7	41.7	60.0	81.7	106.7	135.0	166.7

Figure 1003.1F
Lateral Clearances on Horizontal Curves



S = Sight distance in meters.
R = Radius of ℄ of lane in meters.
m_1 = Distance from ℄ of lane in meters.
V = Design speed for S in km/h.
(Refer to Figure 1003.1D to determine "V", after "S" is determined.)

Angle is expressed in degrees

$$m_1 = R\left[1-\cos\left(\frac{28.65S}{R}\right)\right]$$

$$S = \frac{R}{28.65}\left[\cos^{-1}\left(\frac{R-m_1}{R}\right)\right]$$

Formula applies only when S is equal to or less than length of curve.

Line of sight is 600 mm above ℄ inside lane at point of obstruction.

GIVEN "R" AND "S"; FIND "m"

R (m)	S=10 m *m* meters	S=20 m *m* meters	S=30 m *m* meters	S=40 m *m* meters	S=50 *m* meters	S=60 m *m* meters	S=70 m *m* meters	S=80 m *m* meters	S=90 m *m* meters	S=100 m *m* meters	S=110 m *m* meters
25	0.50	1.97	4.37	7.58	11.49	15.94	20.75	25.73	30.68	35.41	39.72
50	0.25	1.00	2.23	3.95	6.12	8.73	11.76	15.17	18.92	22.99	27.32
75	0.17	0.67	1.50	2.65	4.13	5.92	8.02	10.42	13.10	16.06	19.28
100	0.12	0.50	1.12	1.99	3.11	4.47	6.06	7.90	9.96	12.24	14.75
125	0.10	0.40	0.90	1.60	2.49	3.58	4.87	6.35	8.01	9.87	11.91
150	0.08	0.33	0.75	1.33	2.08	2.99	4.07	5.30	6.70	8.26	9.97
175	0.07	0.29	0.64	1.14	1.78	2.57	3.49	4.55	5.75	7.10	8.57
200	0.06	0.25	0.56	1.00	1.56	2.25	3.06	3.99	5.04	6.22	7.52
225	0.06	0.22	0.50	0.89	1.39	2.00	2.72	3.55	4.49	5.53	6.69
250	0.05	0.20	0.45	0.80	1.25	1.80	2.45	3.19	4.04	4.98	6.03
275	0.05	0.18	0.41	0.73	1.14	1.63	2.22	2.90	3.67	4.53	5.48
300	0.04	0.17	0.37	0.67	1.04	1.50	2.04	2.66	3.37	4.16	5.03
350	0.04	0.14	0.32	0.57	0.89	1.29	1.75	2.28	2.89	3.57	4.31
400	0.03	0.13	0.28	0.50	0.78	1.12	1.53	2.00	2.53	3.12	3.78
500	0.03	0.10	0.23	0.40	0.62	0.90	1.22	1.60	2.02	2.50	3.02
600	0.02	0.08	0.19	0.33	0.52	0.75	1.02	1.33	1.69	2.08	2.52
700	0.02	0.07	0.16	0.29	0.45	0.64	0.87	1.14	1.45	1.79	2.16
800	0.02	0.06	0.14	0.25	0.39	0.56	0.77	1.00	1.27	1.56	1.89
900	0.01	0.06	0.13	0.22	0.35	0.50	0.68	0.89	1.12	1.39	1.68
1000	0.01	0.05	0.11	0.20	0.31	0.45	0.61	0.80	1.01	1.25	1.51

Figure 1003.1F

Lateral Clearances on Horizontal Curves (continued)

GIVEN "R" AND "m"; FIND "S"

R (m)	$m = 1$ meter	$m = 2$ meters	$m = 3$ meters	$m = 4$ meters	$m = 5$ meters	$m = 6$ meters	$m = 7$ meters	$m = 8$ meters	$m = 9$ meters	$m = 10$ meters	$m = 11$ meters
	S (m)	S (m)	S (m)	S (m)	S (m)	S (m)	S (m)	S (m)	S (m)	S (m)	S (m)
25	14.19	20.13	24.74	28.67	32.17	35.37	38.35	41.15	43.81	46.36	48.82
50	20.03	28.38	34.81	40.27	45.10	49.49	53.55	57.35	60.93	64.35	67.61
75	24.52	34.72	42.57	49.21	55.08	60.40	65.32	69.91	74.23	78.34	82.26
100	28.31	40.06	49.11	56.75	63.51	69.63	75.27	80.54	85.50	90.20	94.68
125	31.64	44.78	54.88	63.41	70.94	77.77	84.06	89.92	95.44	100.67	105.66
150	34.66	49.04	60.10	69.43	77.67	85.13	92.00	98.41	104.44	110.15	115.60
175	37.43	52.96	64.90	74.97	83.86	91.91	99.32	106.23	112.73	118.88	124.75
200	40.01	56.61	69.36	80.13	89.62	98.22	106.13	113.51	120.45	127.01	133.27
225	42.44	60.04	73.56	84.97	95.04	104.15	112.53	120.35	127.70	134.66	141.28
250	44.73	63.28	77.53	89.56	100.16	109.76	118.59	126.82	134.56	141.89	148.86
275	46.91	66.37	81.31	93.92	105.03	115.09	124.35	132.98	141.09	148.77	156.08
300	49.00	69.32	84.92	98.08	109.69	120.19	129.86	138.86	147.33	155.34	162.97
350	52.92	74.86	91.71	105.92	118.45	129.79	140.22	149.94	159.08	167.72	175.95
400	56.58	80.03	98.03	113.22	126.61	138.73	149.87	160.26	170.01	179.25	188.04
500	63.25	89.47	109.59	126.57	141.53	155.06	167.52	179.11	190.01	200.32	210.13
600	69.29	98.00	120.04	138.63	155.02	169.83	183.47	196.16	208.09	219.38	230.12
700	74.84	105.85	129.65	149.73	167.42	183.42	198.14	211.85	224.72	236.91	248.50
800	80.00	113.15	138.60	160.05	178.97	196.07	211.80	226.45	240.21	253.23	265.62
900	84.85	120.01	147.00	169.76	189.81	207.95	224.63	240.16	254.75	268.56	281.69
1000	89.44	126.50	154.95	178.93	200.07	219.18	236.76	253.13	268.51	283.06	296.90

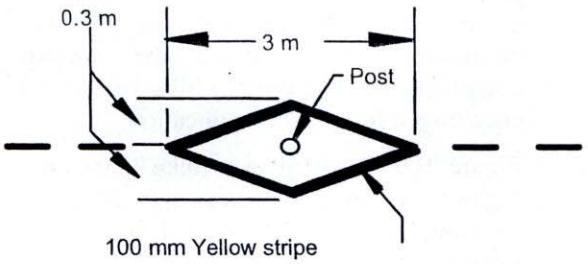
(15) Barrier Posts. It may be necessary to install barrier posts at entrances to bike paths to prevent motor vehicles from entering. When locating such installations, care should be taken to assure that barriers are well marked and visible to bicyclists, day or night (i.e., install reflectors or reflectorized tape).

Striping an envelope around the barriers is recommended (see Figure 1003.1G). If sight distance is limited, special advance warning signs or painted pavement warnings should be provided. Where more than one post is necessary, a 1.5 m spacing should be used to permit passage of bicycle-towed trailers, adult tricycles, and to assure adequate room for safe bicycle passage without dismounting. Barrier post installations should be designed so they are removable to permit entrance by emergency and service vehicles.

Generally, barrier configurations that preclude entry by motorcycles present safety and convenience problems for bicyclists. Such devices should be used only where extreme problems are encountered.

Figure 1003.1G

Barrier Post Striping



(16) Lighting. Fixed-source lighting reduces conflicts along paths and at intersections. In addition, lighting allows the bicyclist to see the bicycle path direction, surface conditions, and obstacles. Lighting for bicycle paths is important and should be considered where riding at night is expected, such as bicycle paths serving college students or commuters, and at highway intersections. Lighting should also be considered through underpasses or tunnels, and when nighttime security could be a problem.

Depending on the location, average maintained horizontal illumination levels of 5 lux to 22 lux should be considered. Where special security problems exist, higher illumination levels may be considered. Light standards (poles) should meet the recommended horizontal and vertical clearances. Luminaires and standards should be at a scale appropriate for a pedestrian or bicycle path.

1003.2 Class II Bikeways

Class II bikeways (bike lanes) for preferential use by bicycles are established within the paved area of highways. 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. This effect is supported by bike lane signs and pavement markings. Bike lane stripes can increase bicyclists' confidence that motorists will not stray into their path of travel if they remain within the bike lane. Likewise, with more certainty as to where bicyclists will be, passing motorists are less apt to swerve toward opposing traffic in making certain they will not hit bicyclists.

Class II bike lanes shall be one-way facilities. Two-way bike lanes (or bike paths that are contiguous to the roadway) are not permitted, as such facilities have proved unsatisfactory and promote riding against the flow of motor vehicle traffic.

(1) Widths. Typical Class II bikeway configurations are illustrated in Figure 1003.2A and are described below:

(a) Figure 1003.2A-(1) depicts bike lanes on an urban type curbed street where parking stalls (or continuous parking stripes) are marked. Bike lanes are located between the parking area and the traffic lanes. As **indicated, 1.5 m shall be the minimum width of bike lane where parking stalls are marked.** If parking volume is substantial or turnover high, an additional 0.3 m to 0.6 m of width is desirable.

Bike lanes shall not be placed between the parking area and the curb. Such facilities increase the conflict between bicyclists and opening car doors and reduce visibility at intersections. Also, they prevent bicyclists from leaving the bike lane to turn left and cannot be effectively maintained.

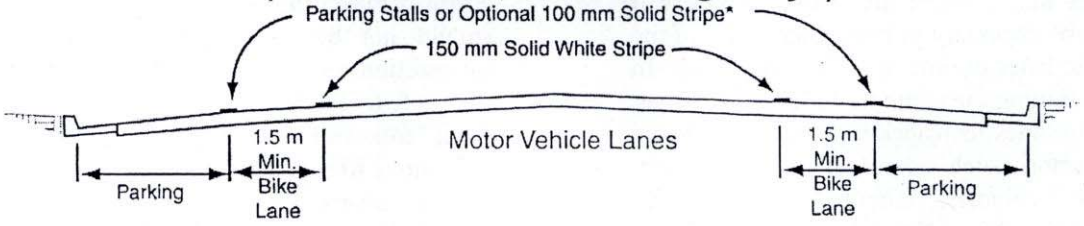
(b) Figure 1003.2A-(2) depicts bike lanes on an urban-type curbed street, where parking is permitted, but without parking stripe or stall marking. Bike lanes are established in conjunction with the parking areas. As **indicated, 3.3 m or 3.6 m (depending on the type of curb) shall be the minimum width of the bike lane where parking is permitted.** This type of lane is satisfacory where parking is not extensive and where turnover of parked cars is infrequent. However, if parking is substantial, turnover of parked cars is high, truck traffic is substantial, or if vehicle speeds exceed 55 km/h, additional width is recommended.

(c) Figure 1003.2A-(3) depicts bike lanes along the outer portions of an urban type curbed street, where parking is prohibited. This is generally the most desirable configuration for bike lanes, as it eliminates potential conflicts resulting from auto parking (e.g., opening car doors). **As indicated, if no gutter exists, the minimum bike lane width shall be 1.2 m. With a normal 600 mm gutter, the minimum bike lane width shall be 1.5 m.** The intent is to provide a minimum 1.2 m wide bike lane, but with at least 0.9 m between the traffic lane and the longitudinal joint at the concrete gutter, since the gutter reduces the effective width of the bike lane for two reasons. First, the longitudinal joint may not always be smooth, and may be difficult to ride along. Secondly, the gutter does not provide a suitable surface for bicycle travel. Where gutters are wide (say, 1.2 m), an additional 0.9 m must be provided because bicyclists should not be expected to ride in the gutter. Wherever possible, the width of bike lanes should be increased to 1.8 to 2.4 m to provide for greater safety. 2.4 m bike lanes can also serve as emergency parking areas for disabled vehicles.

Striping bike lanes next to curbs where parking is prohibited only during certain hours shall be done only in conjunction with special signing to designate the hours bike lanes are to be effective. Since the Vehicle Code requires bicyclists to ride in bike lanes where provided (except under certain conditions), proper signing is necessary to inform bicyclists that they are required to ride in bike lanes only during the course of the parking prohibition. This type of bike lane should be considered only if the vast majority of bicycle travel would occur during the hours of the parking prohibition, and only if there is a firm commitment to enforce the parking prohibition. Because of the obvious complications, this type of bike lane is not encouraged for general application.

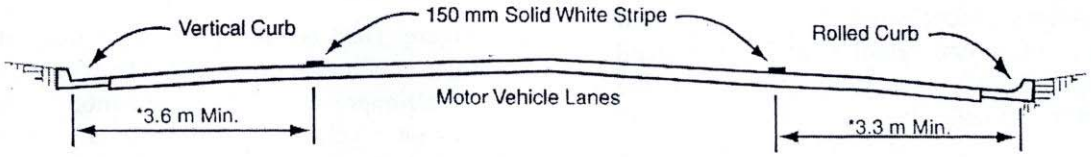
Figure 1003.2A(4) depicts bike lanes on a highway without curbs and gutters. This location is in an undeveloped area where infrequent parking is handled off the pavement. This can be accomplished by supplementing the bike lane signing with R25 (park off pavement) signs, or R26 (no parking) signs. **Minimum widths shall be as shown.** Additional width is desirable, particularly where motor vehicle speeds exceed 55 km/h.

Figure 1003.2A
Typical Bike Lane Cross Sections
(On 2-lane or Multilane Highways)



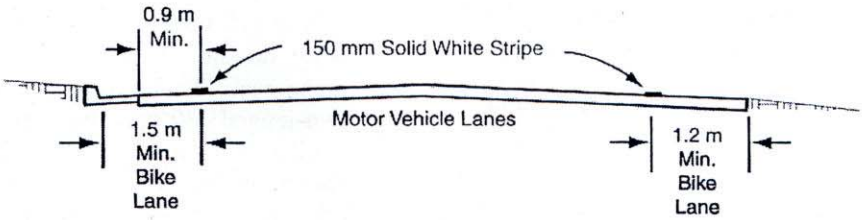
*The optional solid white stripe may be advisable where stalls are unnecessary (because parking is light) but there is concern that motorists may miscontrue the bike lane to be a traffic lane.

(1) STRIPED PARKING

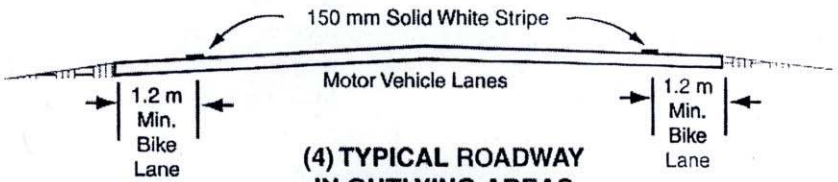


* 3.9 is recommended where there is substantial parking or turnover of parked cars is high (e.g. commerical areas).

(2) PARKING PERMITTED WITHOUT PARKING STRIPE OR STALL



(With Gutter) **(3) PARKING PROHIBITED** (Without Gutter)



(4) TYPICAL ROADWAY IN OUTLYING AREAS PARKING RESTRICTED

The typical traffic lane width next to a bike lane is 3.6 m. Lane widths narrower than 3.6 m must receive approval as discussed in Index 82.2. There are situations where it may be necessary to reduce the width of the traffic lanes in order to stripe bike lanes. In determining the appropriateness of narrower traffic lanes, consideration should be given to factors such as motor vehicle speeds, truck volumes, alignment, and sight distance. Where favorable conditions exist, traffic lanes of 3.3 m may be feasible.

Bike lanes are not advisable on long, steep downgrades, where bicycle speeds greater than 50 km/h are expected. As grades increase, downhill bicycle speeds will increase, which increases the problem of riding near the edge of the roadway. In such situations, bicycle speeds can approach those of motor vehicles, and experienced bicyclists will generally move into the motor vehicle lanes to increase sight distance and maneuverability. If bike lanes are to be striped, additional width should be provided to accommodate higher bicycle speeds.

If the bike lanes are to be located on one-way streets, they should be placed on the right side of the street. Bike lanes on the left side would cause bicyclists and motorists to undertake crossing maneuvers in making left turns onto a two-way street.

(2) *Striping and Signing.* Details for striping and signing of bike lanes are included under Topic 1004.

Raised barriers (e.g., raised traffic bars and asphalt concrete dikes) or raised pavement markers shall not be used to delineate bike lanes. Raised barriers prevent motorists from merging into bike lanes before making right turns, as required by the Vehicle Code, and restrict the movement of bicyclists desiring to enter or exit bike lanes. They also impede routine maintenance. Raised pavement markers increase the difficulty for bicyclists when entering or exiting bike lanes, and discourage motorists from merging into bike lanes before making right turns.

Bike lane stripes should be placed a constant distance from the outside motor vehicle lane. Bike lanes with parking permitted (3.3 m to 3.9 m between the bike lane line and the curb) should not be directed toward the curb at intersections or localized areas where parking is prohibited. Such a practice prevents bicyclists from following a straight course. Where transitions from one type of bike lane to another are necessary, smooth tapers should be provided.

(3) *At-grade Intersection Design.* Most auto/bicycle accidents occur at intersections. For this reason, bikeway design at intersections should be accomplished in a manner that will minimize confusion by motorists and bicyclists, and will permit both to operate in accordance with the normal rules of the road.

Figure 1003.2B illustrates a typical at-grade intersection of multilane streets, with bike lanes on all approaches. Some common movements of motor vehicles and bicycles are shown. A prevalent type of accident involves straight-through bicycle traffic and right-turning motorists. Left-turning bicyclists also have problems, as the bike lane is on the right side of the street, and bicyclists have to cross the path of cars traveling in both directions. Some bicyclists are proficient enough to merge across one or more lanes of traffic, to use the inside lane or left-turn lane. However, there are many who do not feel comfortable making this maneuver. They have the option of making a two-legged left turn by riding along a course similar to that followed by pedestrians, as shown in the diagram. Young children will often prefer to dismount and change directions by walking their bike in the crosswalk.

Figure 1003.2C illustrates recommended striping patterns for bike lanes crossing a motorist right-turn-only lane. When confronted with such intersections, bicyclists will have to merge with right-turning motorists. Since bicyclists are typically traveling at speeds less than motorists, they should signal and merge where there is sufficient gap in right turning traffic, rather than at any predetermined location. For this reason, it is recommended

that all delineation be dropped at the approach of the right-turn lane. A pair of parallel lines (delineating a bike lane crossing) to channel the bike merge is not recommended, as bicyclists will be encouraged to cross at a predetermined location, rather than when there is a safe gap in right-turning traffic.

A dashed line across the right-turn-only lane is not recommended on extremely long lanes, or where there are double right-turn-only lanes. For these types of intersections, all striping should be dropped to permit judgment by the bicyclists to prevail. A Bike Xing sign may be used to warn motorists of the potential for bicyclists crossing their path.

At intersections where there is a bike lane and traffic-actuated signal, installation of bicycle-sensitive detectors within the bike lane is desirable. Push button detectors are not as satisfactory as those located in the pavement because the cyclist must stop to actuate the push button. It is also desirable that detectors in left-turn lanes be sensitive enough to detect bicycles (see Chapter 9 of the Traffic Manual and Standard Plans for bicycle-sensitive detector designs). See Figure 1003.2D for bicycle loop detector pavement marking.

At intersections (without bike lanes) with significant bicycle use and a traffic-actuated signal, it is desirable to install detectors that are sensitive enough to detect bicycles.

(4) *Interchange Design.* As with bikeway design through at-grade intersections, bikeway design through interchanges should be accomplished in a manner that will minimize confusion by motorists and bicyclists. Designers should work closely with the local agency in designing bicycle facilities through interchanges. Local Agencies should carefully select interchange locations which are most suitable for bikeway designations and where the crossing meets applicable design standards. The local agency may have special needs and desires for continuity through interchanges which should be considered in the design process.

When a bike lane approaches a ramp intersection that intersects the local facility at or close to 90° (typical of a compact or spread diamond configuration), then Figure 1003.2C may be the appropriate method of getting bike lanes through the interchange.

However, when a bike lane approaches one or more ramp intersections that intersect the local facility at various angles other than 90° (typically high-speed, skewed ramps), Figure 1003.2E should be considered.

Figure 1003.2E, shows a bike lane through a typical interchange. The 150 mm bike lane stripe should be dropped 30 m prior to the ramp intersection as shown in the figure to allow for adequate weaving distance. **The shoulder width shall not be reduced through the interchange area. The minimum shoulder width shall match the approach roadway shoulder width, but not less than 1.2 m or 1.5 m if a gutter exists. If the shoulder width is not available, the designated bike lane shall end at the previous local road intersection.**

Depending on the intersection angles, either Figure 1003.2C or 1003.2E should also be used for multilane ramp intersections. Additionally, the outside through lane should be widened to 4.2 m when feasible. This allows extra room for bicycles to share the through lane with vehicles. The outside shoulder width should not be reduced through the interchange area to accommodate this additional width.

1003.3 Class III Bikeways

Class III bikeways (bike routes) are intended to provide continuity to the bikeway system. Bike routes are established along through 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, either 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.

Figure 1003.2B

Typical Bicycle/Auto Movements at Intersections of Multilane Streets

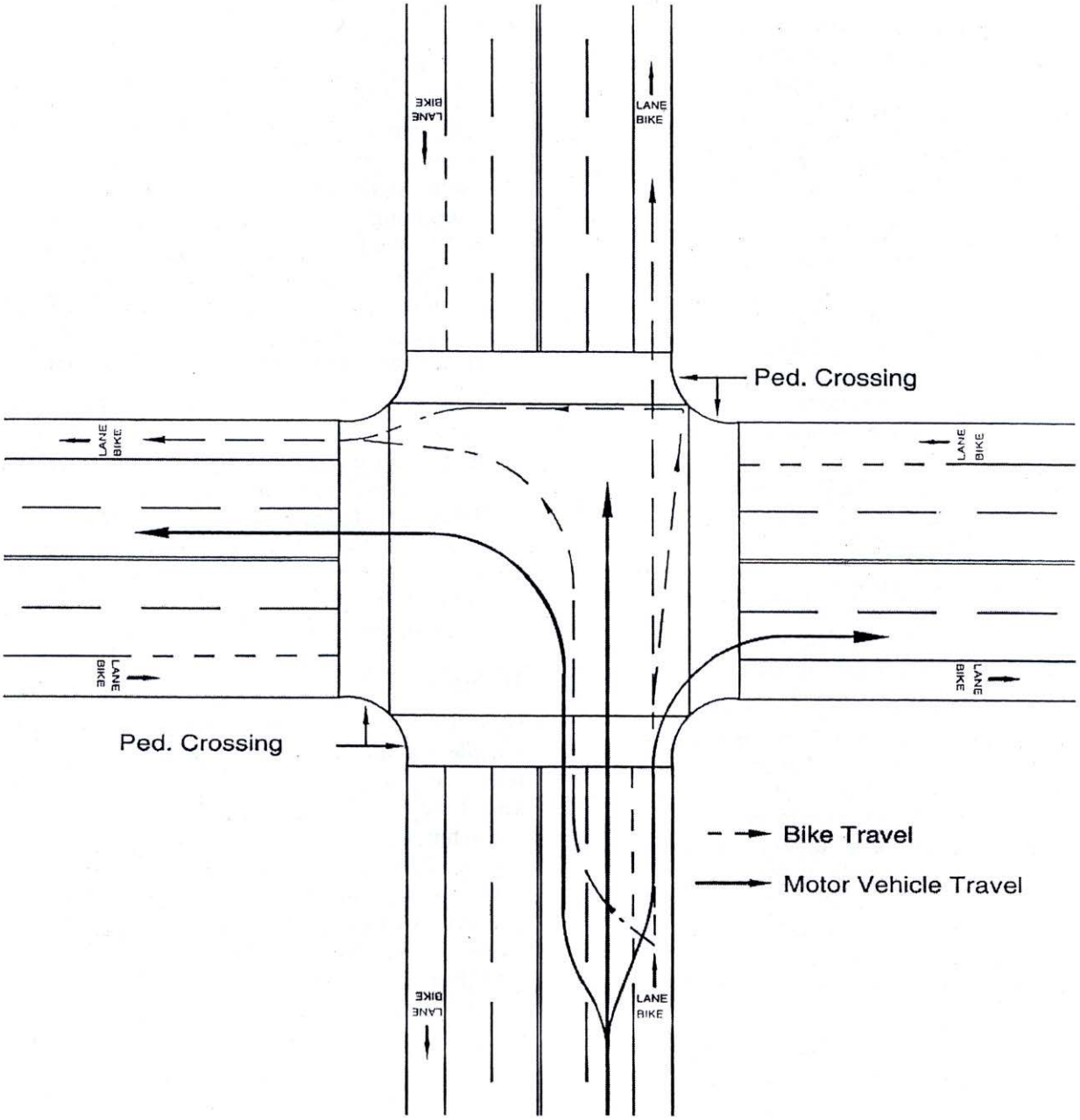
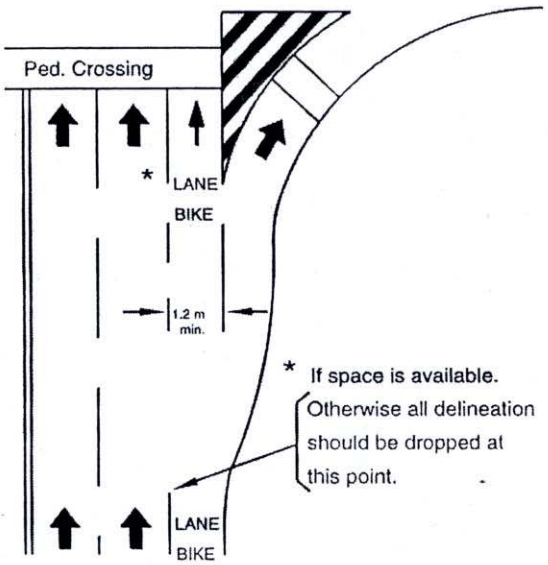
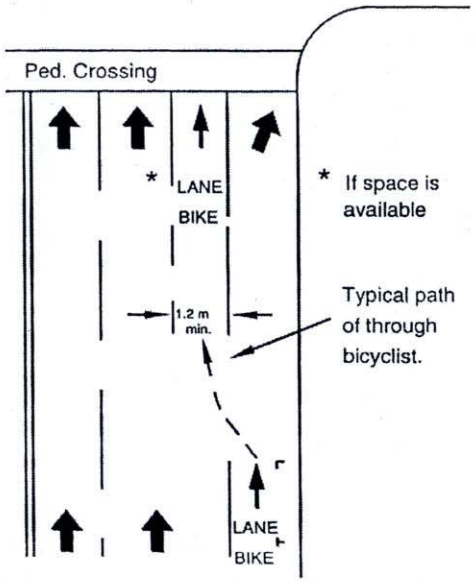


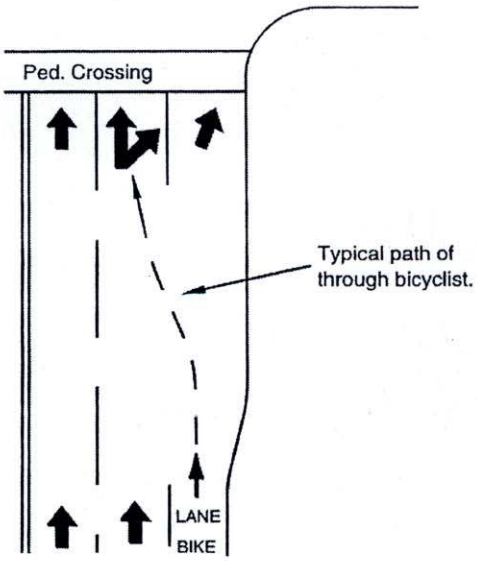
Figure 1003.2C
Bike Lanes Approaching Motorist
Right-turn-only Lane



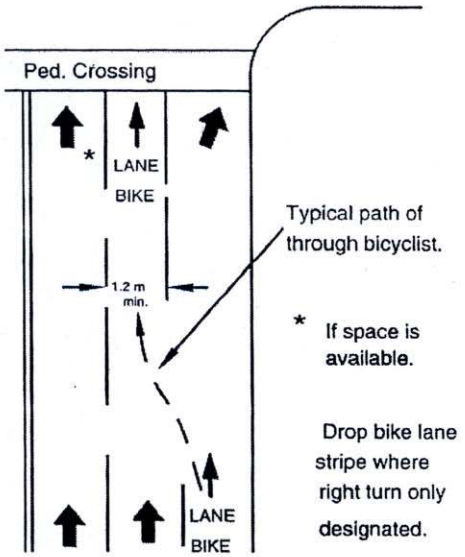
RIGHT-TURN-ONLY LANE



PARKING AREA BECOMES
RIGHT-TURN-ONLY LANE



OPTIONAL DOUBLE
RIGHT-TURN-ONLY LANE



RIGHT LANE BECOMES
RIGHT-TURN-ONLY LANE

Figure 1003.2D
Bike Loop Detector
Pavement Marking

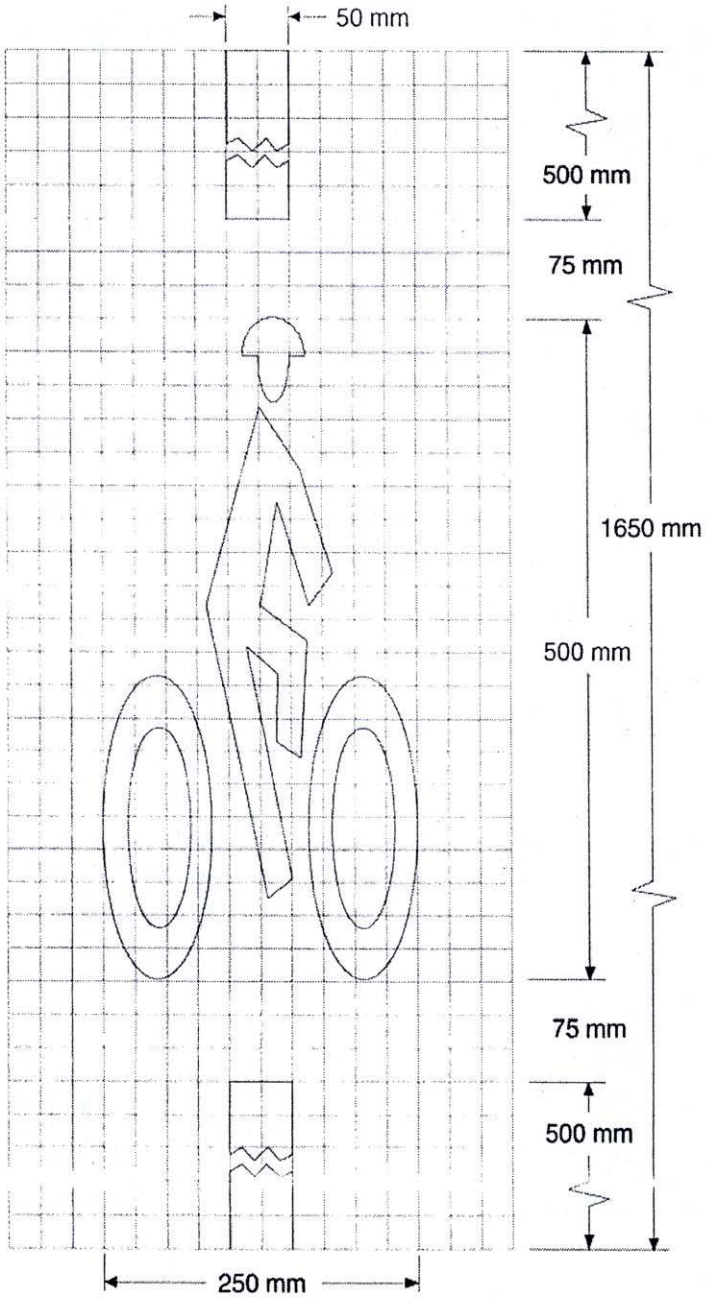
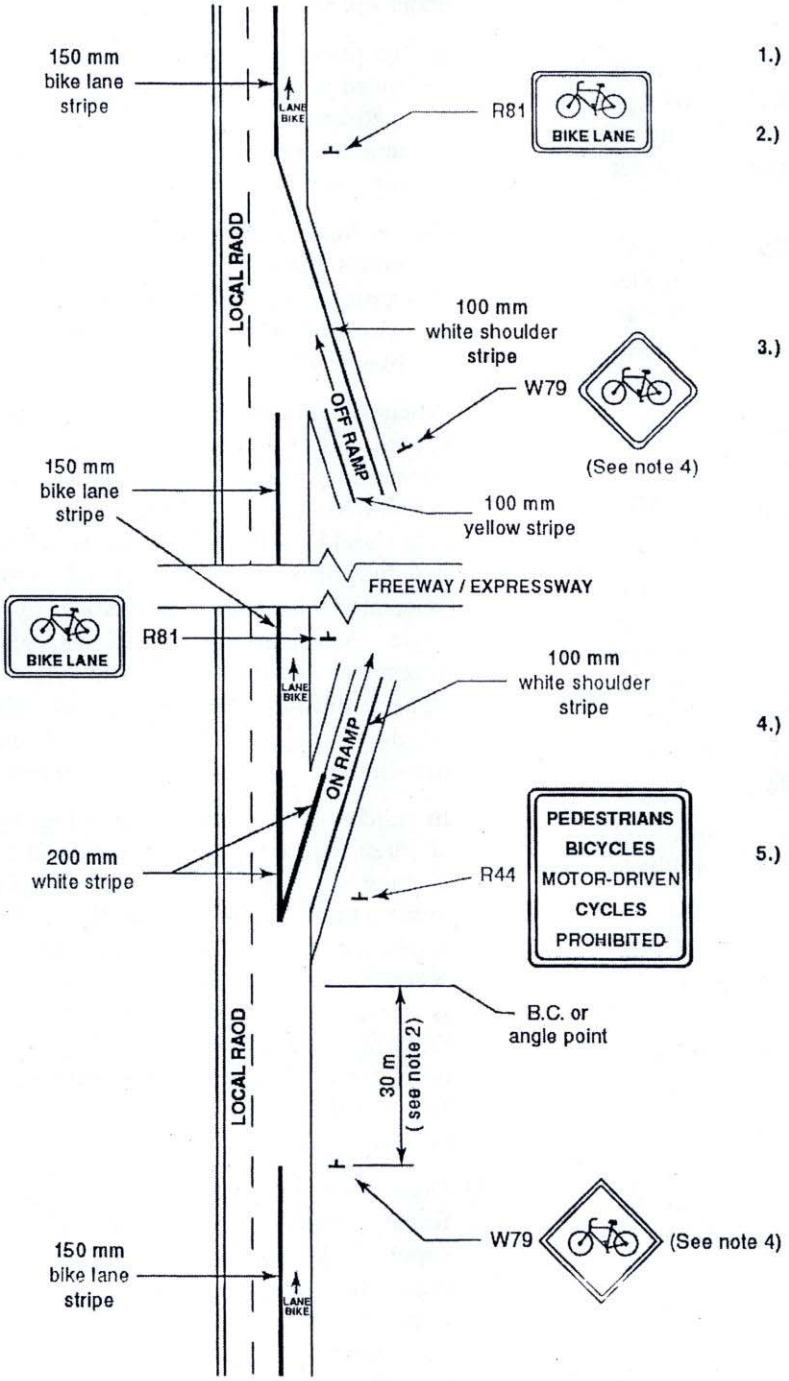


Figure 1003.2E

Bike Lanes Through Interchanges



Notes:

1.) **See Index 1003.2 (4) for additional information.**

2.) **At additional on-ramps within the interchange the signing & striping as shown shall be repeated. Where the on-ramps intersect at the local road at or near 90 degrees, the striping should follow Figure 1003.2C.**

3.) **The shoulder width shall not be reduced through the interchange area. The minimum shoulder width shall match the approach roadway shoulder width, but not less than 1.2 m or 1.5 m if a gutter exists. If the shoulder width is not available, the designated bike lane shall end at the previous local raod intersection.**

4.) **The W79 signs are optional and should be used only when determined appropriate by the Engineer.**

5.) **See Index 1003.3 (4) for information on Bike Routes Through Interchanges.**

Minimum widths for Class III bikeways are not presented, as the acceptable width is dependent on many factors, including the volume and character of vehicular traffic on the road, typical speeds, vertical and horizontal alignment, sight distance, and parking conditions.

Since bicyclists are permitted on all highways (except prohibited freeways), the decision to sign the route should be based on the advisability of encouraging bicycle travel on the route and other factors listed below.

(1) On-street Bike Route Criteria. To be of benefit to bicyclists, bike routes should offer a higher degree of service than alternative streets. Routes should be signed only if some of the following apply:

(a) They provide for through and direct travel in bicycle-demand corridors.

(b) Connect discontinuous segments of bike lanes.

(c) An effort has been made to adjust traffic control devices (stop signs, signals) to give greater priority to bicyclists, as compared with alternative streets. This could include placement of bicycle-sensitive detectors on the right-hand portion of the road, where bicyclists are expected to ride.

(d) Street parking has been removed or restricted in areas of critical width to provide improved safety.

(e) Surface imperfections or irregularities have been corrected (e.g., utility covers adjusted to grade, potholes filled, etc.).

(f) Maintenance of the route will be at a higher standard than that of other comparable streets (e.g., more frequent street sweeping).

(2) Sidewalk Bikeway Criteria. In general, the designated use of sidewalks (as a Class III bikeway) for bicycle travel is unsatisfactory.

It is important to recognize that the development of extremely wide sidewalks does not necessarily add to the safety of sidewalk bicycle travel, as wide sidewalks will encourage higher speed bicycle use and can increase potential for conflicts with motor vehicles at intersections, as well as with pedestrians and fixed objects.

Sidewalk bikeways should be considered only under special circumstances, such as:

(a) To provide bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances.

(b) On long, narrow bridges. In such cases, ramps should be installed at the sidewalk approaches. If approach bikeways are two-way, sidewalk facilities should also be two-way.

Whenever sidewalk bikeways are established, a special effort should be made to remove unnecessary obstacles. Whenever bicyclists are directed from bike lanes to sidewalks, curb cuts should be flush with the street to assure that bicyclists are not subjected to problems associated with crossing a vertical lip at a flat angle. Also curb cuts at each intersection are necessary, as well as bikeway yield or stop signs at uncontrolled intersections. Curb cuts should be wide enough to accommodate adult tricycles and two-wheel bicycle trailers.

In residential areas, sidewalk riding by young children too inexperienced to ride in the street is common. With lower bicycle speeds and lower auto speeds, potential conflicts are somewhat lessened, but still exist. Nevertheless, this type of sidewalk bicycle use is accepted. But it is inappropriate to sign these facilities as bikeways. Bicyclists should not be encouraged (through signing) to ride facilities that are not designed to accommodate bicycle travel.

(3) Destination Signing of Bike Routes. For Bike Route signs to be more functional, supplemental plates may be placed beneath them when located along routes leading to high demand destinations (e.g., "To Downtown"; "To State College"; etc.-- see Figure 1004.5 for typical signing).

There are instances where it is necessary to sign a route to direct bicyclists to a logical destination, but where the route does not offer any of the above listed bike route features. In such cases, the route should not be signed as a bike route; however, destination signing may be advisable. A typical application of destination signing would be where bicyclists are directed off a highway to bypass a section of freeway. Special signs would be placed to guide bicyclists to the next logical destination. The intent is to direct bicyclists in the same way as motorists would be directed if a highway detour was necessitated.

(4) *Interchange Design* As with bikeway design through at-grade intersections, bikeway design through interchanges should be accomplished in a manner that will minimize confusion by motorists and bicyclists. Designers should work closely with the local agency in designing bicycle facilities through interchanges. Local Agencies should carefully select interchange locations which are most suitable for bikeway designations and where the crossing meets applicable design standards. The local agency may have special needs and desires for continuity through interchanges which should be considered in the design process.

Figure 1003.2E may also be used where the preferred designation is a class III (bike route), with the R81 signs being replaced with G93 signs and the bike lane delineation eliminated. A 100 mm stripe may be used to delineate the shoulder through out the bike route designation. **Within the Interchange area the bike route shall require either an outside lane width of 4.8 m or a 3.6 m lane and a 1.2 m shoulder. If the above width is not available, the designated bike route shall end at the previous local road intersection.**

1003.4 Bicycles on Freeways

In some instances, bicyclists are permitted on freeways. Seldom would a freeway be signed or striped as a bikeway, but it can be opened for use if it meets certain criteria. Essentially, the criteria involve assessing the safety and convenience of the freeway as compared with available alternate routes. However, a freeway should not be opened to bicycle use if it is determined to be incompatible. The Headquarters Traffic Liaisons and the Project Development Coordinator must approve any proposals to open freeways to bicyclists.

If a suitable alternate route exists, it would normally be unnecessary to open the freeway. However, if the alternate route is unsuitable for bicycle travel the freeway may be a better alternative for bicyclists. In determining the suitability of an alternate route, safety should be the paramount consideration. The following factors should be considered:

- Number of intersections
- Shoulder widths
- Traffic volumes
- Vehicle speeds
- Bus, truck and recreational vehicle volumes
- Grades
- Travel time

When a suitable alternate route does not exist, a freeway shoulder may be considered for bicycle travel. Normally, freeways in urban areas will have characteristics that make it unfeasible to permit bicycle use. In determining if the freeway shoulder is suitable for bicycle travel, the following factors should be considered;

- Shoulder widths
- Bicycle hazards on shoulders (drainage grates, expansion joints, etc.)
- Number and location of entrance/exit ramps
- Traffic volumes on entrance/exit ramps

When bicyclists are permitted on segments of freeway, it will be necessary to modify and supplement freeway regulatory signs, particularly those at freeway ramp entrances and exits (see Chapter 4 of the Traffic Manual).

Where no reasonable alternate route exists within a freeway corridor, the Department should coordinate with local agencies to develop or improve existing routes or provide parallel bikeways within or adjacent to the freeway right of way.

The long term goal is to provide a safe and convenient non-freeway route for bicycle travel.

1003.5 Multipurpose Trails

In some instances, it may be appropriate for agencies to develop multipurpose trails - for hikers, joggers, equestrians, bicyclists, etc. Many of these trails will not be paved and will not meet the standards for Class I bikeways. As such, these facilities should not be signed as bikeways. Rather, they should be designated as multipurpose trails (or similar designation), along with regulatory signing to restrict motor vehicles, as appropriate.

If multipurpose trails are primarily to serve bicycle travel, they should be developed in accordance with standards for Class I bikeways. In general, multipurpose trails are not recommended as high speed transportation facilities for bicyclists because of conflicts between bicyclists and pedestrians. Wherever possible, separate bicycle and pedestrian paths should be provided. If this is not feasible, additional width, signing and striping should be used to minimize conflicts.

It is undesirable to mix mopeds and bicycles on the same facility. In general, mopeds should not be allowed on multipurpose trails because of conflicts with slower moving bicyclists and pedestrians. In some cases where an alternate route for mopeds does not exist, additional width, signing, and striping should be used to minimize conflicts. Increased patrolling by law enforcement personnel is also recommended to enforce speed limits and other rules of the road.

It is usually not desirable to mix horses and bicycle traffic on the same multipurpose trail. Bicyclists are often not aware of the need for slower speeds and additional operating space near horses. Horses can be startled easily and may be unpredictable if they perceive approaching bicyclists as a danger. In addition, pavement requirements for safe bicycle travel are not suitable for horses. For these reasons, a bridle trail separate from the multipurpose trail is recommended wherever possible.

1003.6 Miscellaneous Bikeway Criteria

The following are miscellaneous bikeway criteria which should be followed to the extent pertinent to Class I, II and III bikeways. Some, by their very nature, will not apply to all classes of bikeway. Many of the criteria are important to consider on any highway where bicycle travel is expected, without regard to whether or not bikeways are established.

(1) Bridges. Bikeways on highway bridges must be carefully coordinated with approach bikeways to make sure that all elements are compatible. For example, bicycle traffic bound in opposite directions is best accommodated by bike lanes on each side of a highway. In such cases, a two-way bike path on one side of a bridge would normally be inappropriate, as one direction of bicycle traffic would be required to cross the highway at grade twice to get to and from the bridge bike path. Because of the inconvenience, many bicyclists will be encouraged to ride on the wrong side of the highway beyond the bridge termini.

The following criteria apply to a two-way bike path on one side of a highway bridge:

(a) The bikeway approach to the bridge should be by way of a separate two-way facility for the reason explained above.

(b) **A physical separation, such as a chain link fence or railing, shall be provided to offset the adverse effects of having bicycles traveling against motor vehicle traffic.** The physical separation should be designed to minimize fixed end hazards to motor vehicles and if the bridge is an interchange structure, to minimize sight distance restrictions at ramp intersections.

It is recommended that bikeway bridge railings or fences placed between traffic lanes and bikeways be at least 1.4 m high to minimize the likelihood of bicyclists falling over the railings. Standard bridge railings which are lower than 1.4 m can be retrofitted with lightweight upper railings or chain link fence suitable to restrain bicyclists.

Separate highway overcrossing structures for bikeway traffic shall conform to

Caltrans' standard pedestrian overcrossing design loading. The minimum clear width shall be the paved width of the approach bikeway but not less than 2.4 m. If pedestrians are to use the structure, additional width is recommended.

(2) *Surface Quality.* The surface to be used by bicyclists should be smooth, free of potholes, and the pavement edge uniform. For rideability on new construction, the finished surface of bikeways should not vary more than 6 mm from the lower edge of a 2.4 m long straight edge when laid on the surface in any direction.

Table 1003.6

Bikeway Surface Tolerances

Direction of Travel	Grooves(1)	Steps(2)
Parallel to travel	No more than 12 mm wide	No more than 10 mm high
Perpendicular to travel	---	No more than 20 mm high

(1) Groove--A narrow slot in the surface that could catch a bicycle wheel, such as a gap between two concrete slabs.

(2) Step--A ridge in the pavement, such as that which might exist between the pavement and a concrete gutter or manhole cover; or that might exist between two pavement blankets when the top level does not extend to the edge of the roadway.

Table 1003.6 indicates the recommended bikeway surface tolerances for Class II and III bikeways developed on existing streets to minimize the potential for causing bicyclists to lose control of their bicycle (Note: Stricter tolerances should be achieved on new bikeway construction.) Shoulder rumble strips are not suitable as a riding surface for bicycles. See Traffic Manual Section 6-03.2 for additional information regarding rumble strip design considerations for bicycles.

(3) *Drainage Grates, Manhole Covers, and Driveways.* Drainage inlet grates, manhole covers, etc., on bikeways should be designed and installed in a manner that provides an adequate surface for bicyclists. They should be maintained flush with the surface when resurfacing.

Drainage inlet grates on bikeways shall have **openings narrow enough and short enough to assure bicycle tires will not drop into the grates (e.g., reticuline type), regardless of the direction of bicycle travel.** Where it is not immediately feasible to replace existing grates with standard grates designed for bicycles, 25 mm x 6 mm steel cross straps should be welded to the grates at a spacing of 150 mm to 200 mm on centers to reduce the size of the openings adequately.

Corrective actions described above are recommended on all highways where bicycle travel is permitted, whether or not bikeways are designated.

Future driveway construction should avoid construction of a vertical lip from the driveway to the gutter, as the lip may create a problem for bicyclists when entering from the edge of the roadway at a flat angle. If a lip is deemed necessary, the height should be limited to 15 mm.

(4) *At-grade Railroad Crossings and Cattle Guards.* Whenever it is necessary to cross railroad tracks with a bikeway, special care must be taken to assure that the safety of bicyclists is protected. The bikeway crossing should be at least as wide as the approaches of the bikeway. Wherever possible, the crossing should be straight and at right angles to the rails. For on-street bikeways where a skew is unavoidable, the shoulder (or bike lane) should be widened, if possible, to permit bicyclists to cross at right angles (see Figure 1003.6A). If this is not possible, special construction and materials should be considered to keep the flangeway depth and width to a minimum.

Figure 1003.6A
Railroad Crossings

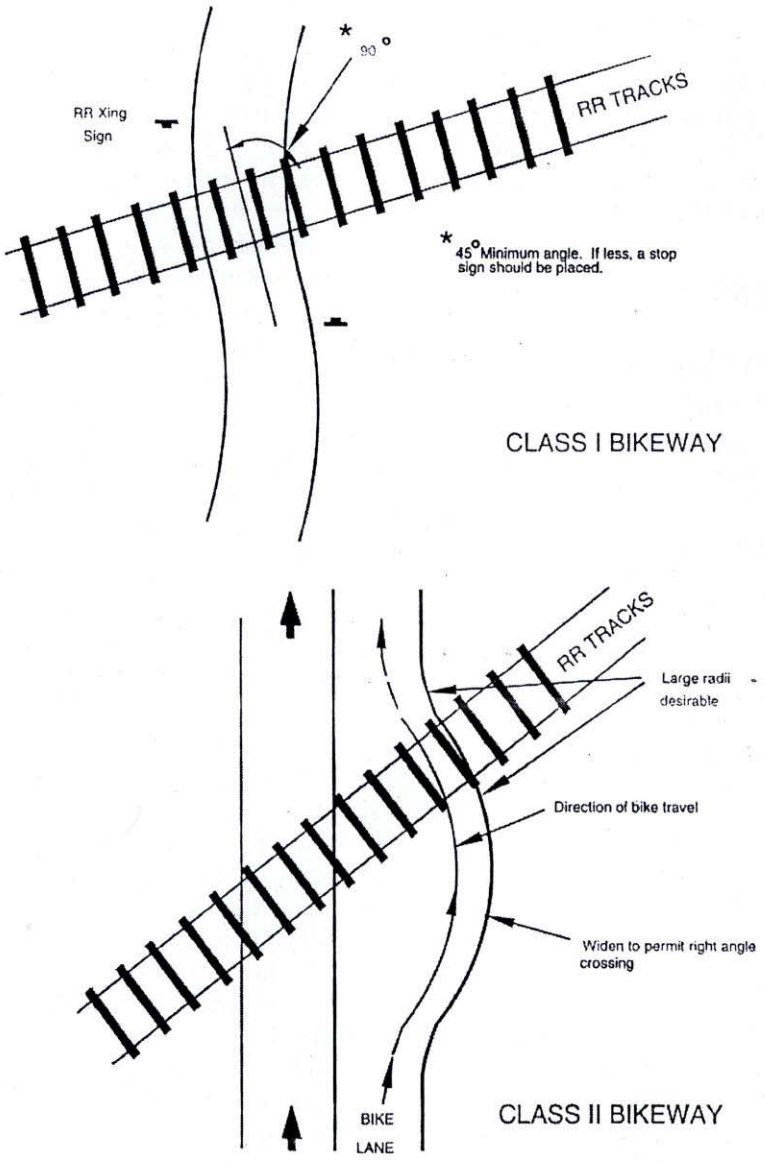
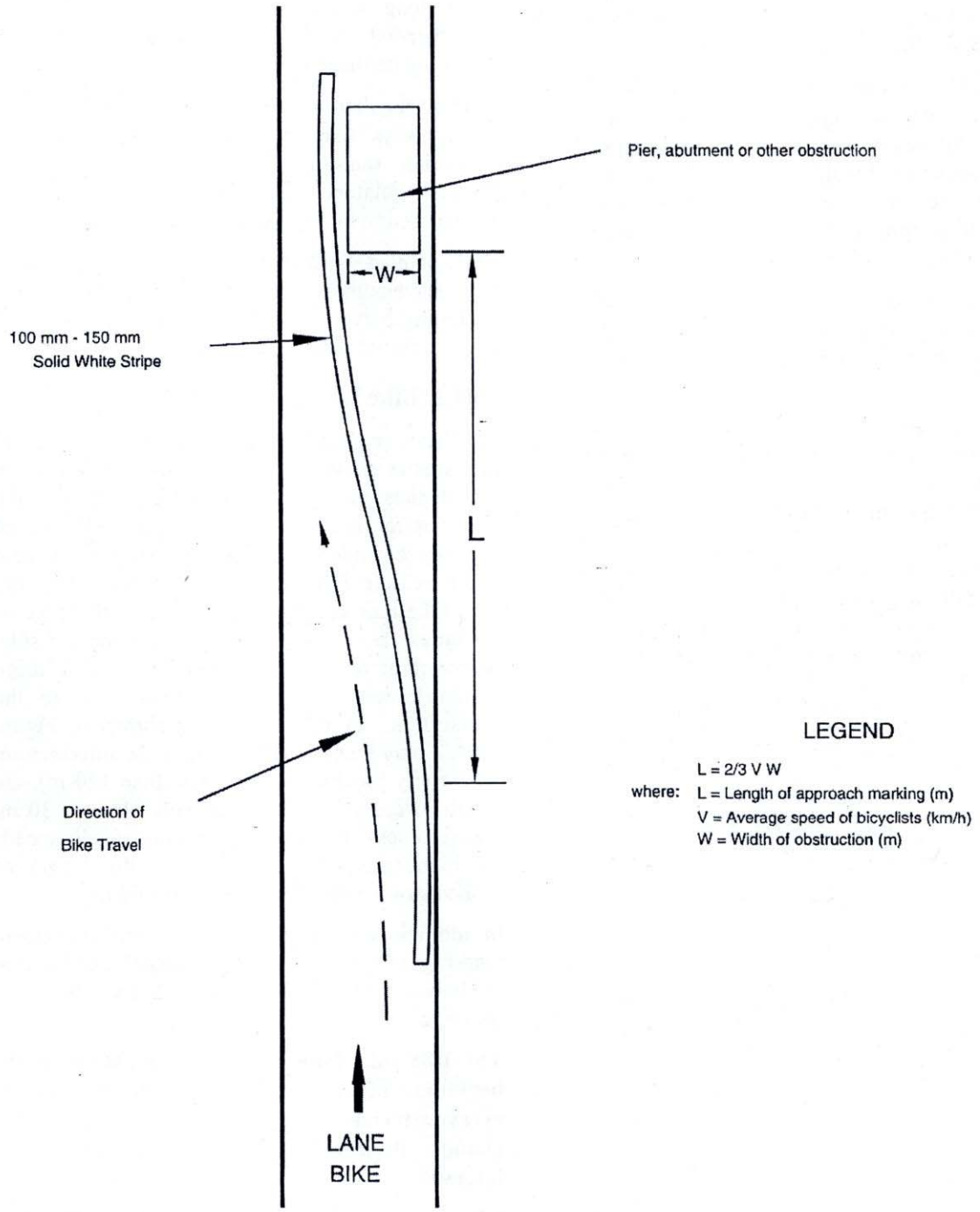


Figure 1003.6B

Obstruction Markings



Pavement should be maintained so ridge buildup does not occur next to the rails. In some cases, timber plank crossings can be justified and can provide for a smoother crossing. Where hazards to bicyclist cannot be avoided, appropriate signs should be installed to warn bicyclists of the danger.

All railroad crossings are regulated by the California Public Utilities Commission (CPUC). All new bike path railroad crossings must be approved by the CPUC. Necessary railroad protection will be determined based on a joint field review involving the applicant, the railroad company, and the CPUC.

The presence of cattle guards along any roadway where bicyclists are expected should be clearly marked with adequate advance warning.

(5) *Obstruction Markings.* Vertical barriers and obstructions, such as abutments, piers, and other features causing bikeway constriction, should be clearly marked to gain the attention of approaching bicyclists. This treatment should be used only where unavoidable, and is by no means a substitute for good bikeway design. An example of an obstruction marking is shown in Figure 1003.6B. Signs, reflectors, diagonal black and yellow markings, or other treatments will be appropriate in other instances to alert bicyclists to potential obstructions.

Topic 1004 - Uniform Signs, Markings and Traffic Control Devices

1004.1 Introduction

Per Section 891 of the Streets and Highways Code, uniform signs, markings, and traffic control devices shall be used. As such this section is mandatory, except where permissive language is used. See the Traffic Manual for detailed specifications.

1004.2 Bike Path (Class I)

An optional 100 mm yellow stripe may be placed to separate opposing directions of travel. (See Index 1003.1(3) for additional information.) A 0.9 m long stripe with a 2.7 m space is the recommended striping pattern, but may be revised, depending on the situation.

Standard regulatory, warning, and guide signs used on highways may be used on bike paths, as appropriate (and may be scaled down in size). Special regulatory, warning, and guide signs may also be used to meet specific needs.

White painted word (or symbol) warning markings on the pavement may be used as an effective means of alerting bicyclists to approaching hazards, such as sharp curves, barrier posts, etc.

1004.3 Bike Lanes (Class II)

Bike lanes require standard signing and pavement markings as shown on Figure 1004.3. This figure also depicts the proper method of striping bike lanes through intersections. Bike lane lines are not typically extended through intersections. Where motor vehicle right turns are not permitted, the solid bike lane stripe should extend to the edge of the intersection, and begin again on the far side. Where right turns are permitted, the solid stripe should terminate 30 m to 60 m prior to the intersection. A dashed line, as shown in Figure 1004.3, may be carried to, or near, the intersection. Where city blocks are short (less than 120 m), the length of dashed stripe is typically close to 30 m. Where blocks are longer or motor vehicle speeds are high (greater than 60 km/h), the length of dashed stripe should be increased to 60 m.

In addition to the required "Bike Lane" pavement marking, an optional bike lane symbol may be used as shown on Figure 1004.4 to supplement the word message.

The R81 bike lane sign shall be placed at the beginning of all bike lanes, on the far side of every arterial street intersection, at all major changes in direction, and at maximum 1 km intervals.

Bike lane pavement markings shall be placed on the far side of each intersection, and may be placed at other locations as desired.

Raised pavement markers or other raised barriers shall not be used to delineate bike lanes.

The G93 Bike Route sign may also be used along bike lanes, but its primary purpose should be to provide directional signing and destination signing where necessary. A proliferation of Bike Route signs along signed and striped bike lanes serves no useful purpose.

Many signs on the roadway also will apply to bicyclists in bike lanes. Standard regulatory, warning, and guide signs used specifically in conjunction with bike lanes are shown in Chapter 4 of the Traffic Manual.

1004.4 Bike Routes (Class III)

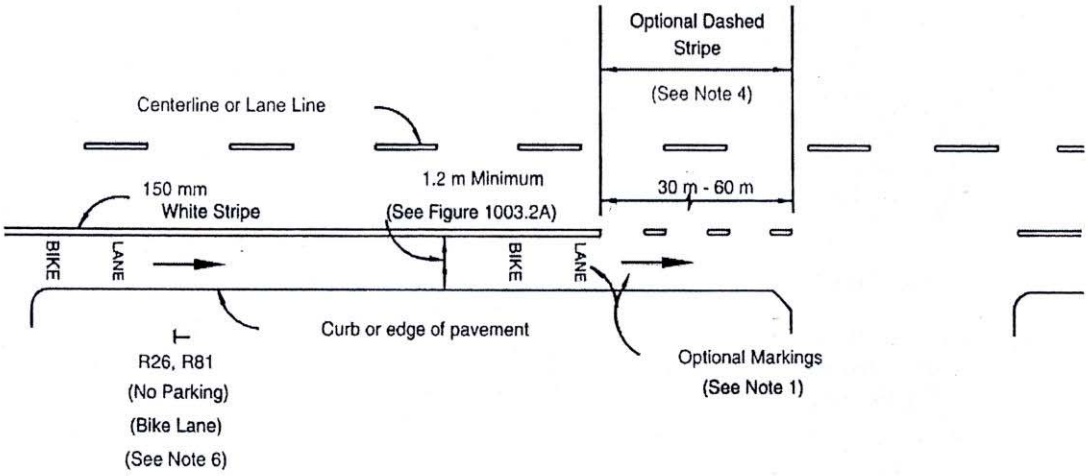
Bike routes are shared routes and do not require pavement markings. In some instances, a 100 mm white edge stripe separating the traffic lanes from the shoulder can be helpful in providing for safer shared use. This practice is particularly applicable on rural highways, and on major arterials in urban areas where there is no vehicle parking.

Bike routes are established through placement of the G93 Bike Route sign. Bike route signs are to be placed periodically along the route. At changes in direction, the bike route signs are supplemented by G33 directional arrows. Typical bike route signing is shown on Figure 1004.5. The figure shows how destination signing, through application of a special plate, can make the Bike Route sign more functional for the bicyclist. This type of signing is recommended when a bike route leads to a high demand destination (e.g., downtown, college, etc.).

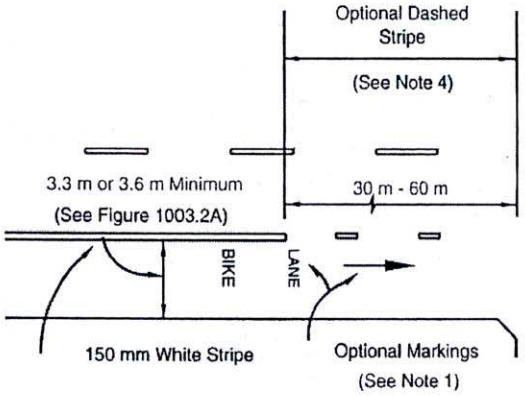
Many signs on the roadway also will apply to bicyclists. Standard warning and guide signs used specifically in conjunction with bike routes are shown in Chapter 4 of the Traffic Manual.

Figure 1004.3
Bike Lane Signs and Markings

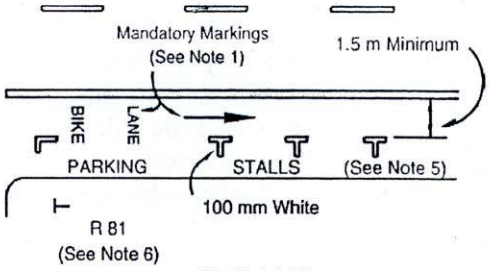
WHERE VEHICLE PARKING IS PROHIBITED



WHERE VEHICLE PARKING IS PERMITTED



NO STALLS

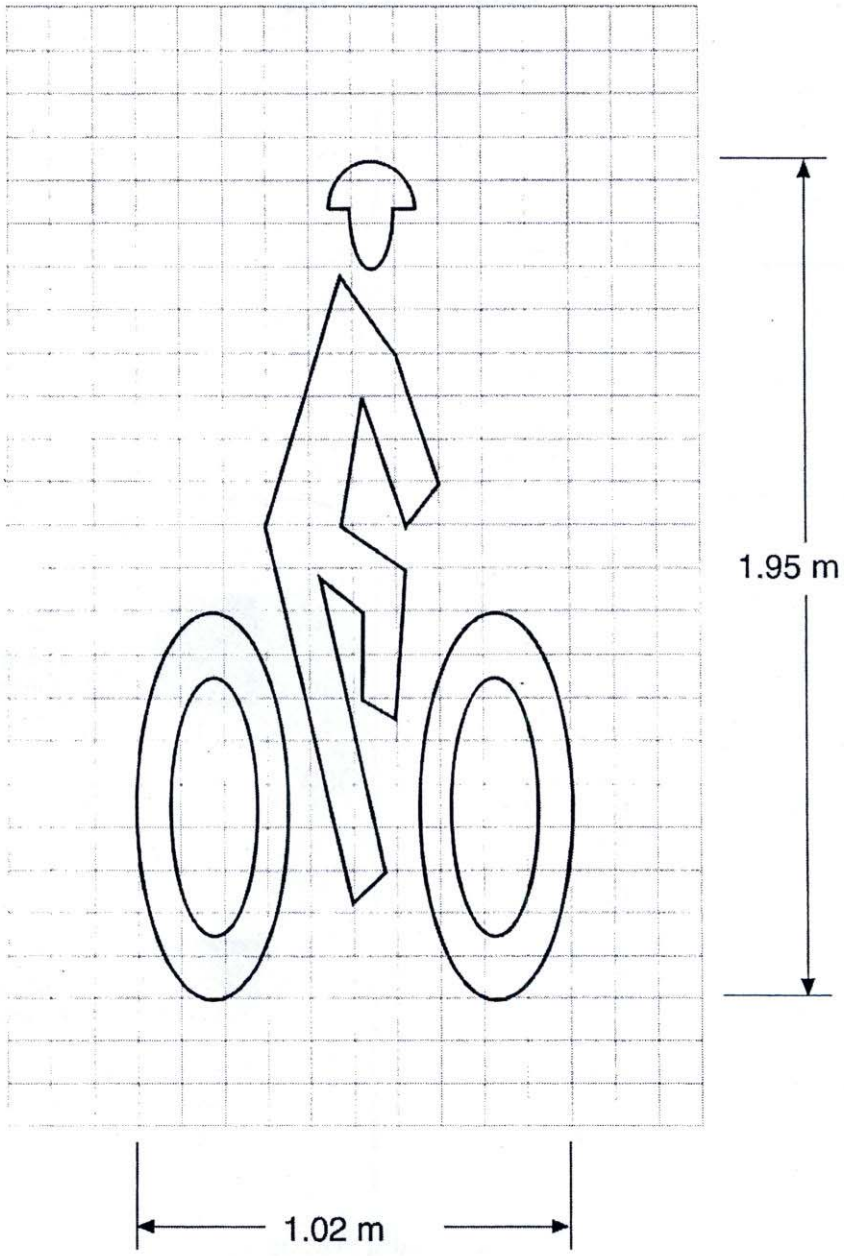


STALLS

NOTES:

1. The Bike Lane pavement markings shall be placed on the far side of each intersection, and may be placed at other locations as desired.
2. The use of the bicycle symbol pavement marking to supplement the word message is optional.
3. The G93 Bike Route sign may be placed intermittently along the bike lane if desired.
4. Where motorist right turns are permitted, the solid bike lane line shall either be dropped entirely, or dashed as shown, beginning at a point between 30 m and 60 m in advance of the intersection. Refer to Detail 39A in the Traffic Manual for striping pattern dimensions.
5. In areas where parking stalls are not necessary (because parking is light), it is permissible to paint a 100 mm solid white stripe to fully delineate the bike lane. This may be advisable where there is concern that motorists may misconstrue the bike lane to be a traffic lane.
6. The R81 bike lane sign shall be placed at the beginning of all bike lanes, on the far side of every arterial street intersection, at all major changes in direction, and at maximum 0.8 km intervals.

Figure 1004.4
Bike Lane Symbol

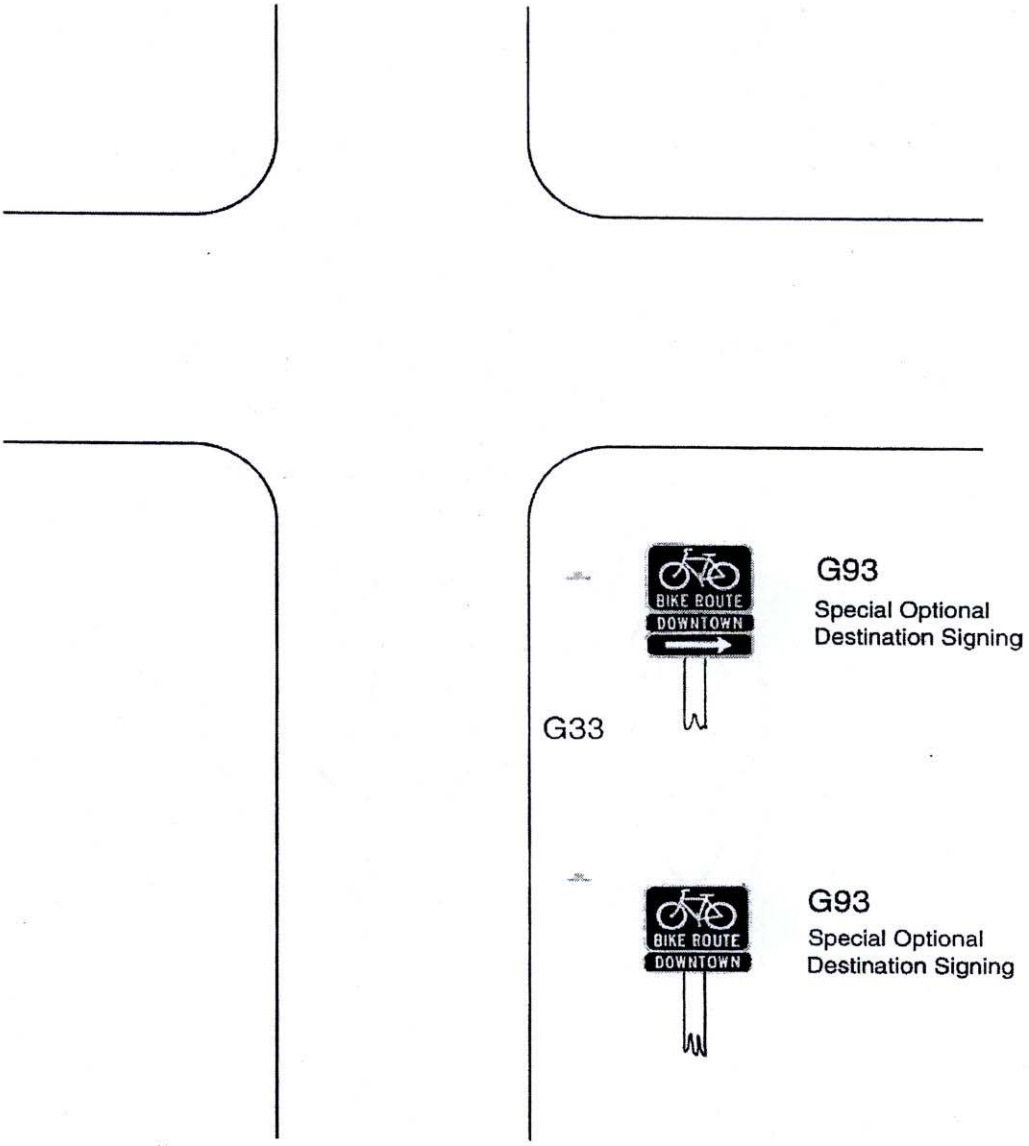


100 mm GRID

Area = 0.65 m_2

Figure 1004.5

Bike Route Signing



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

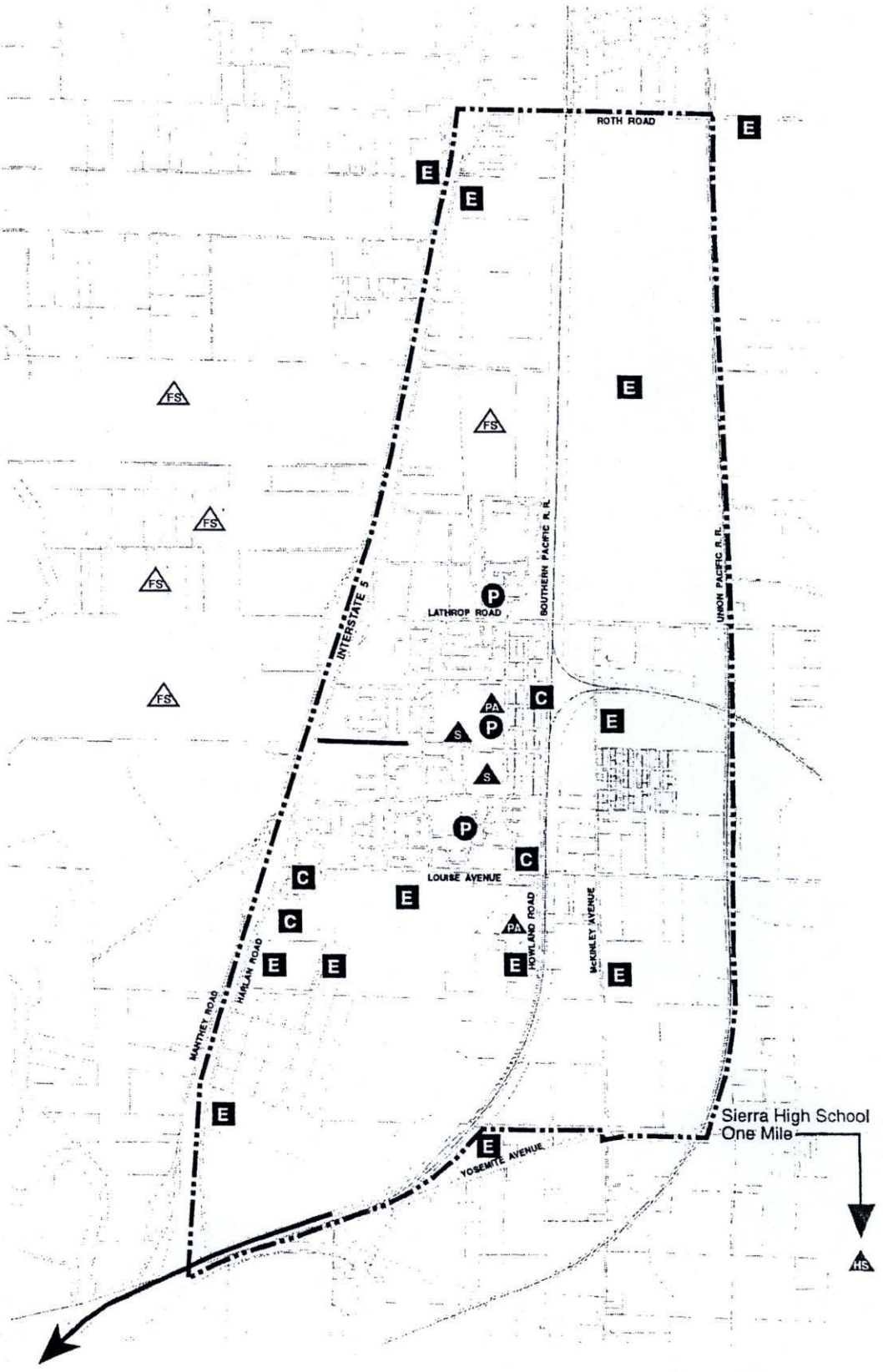
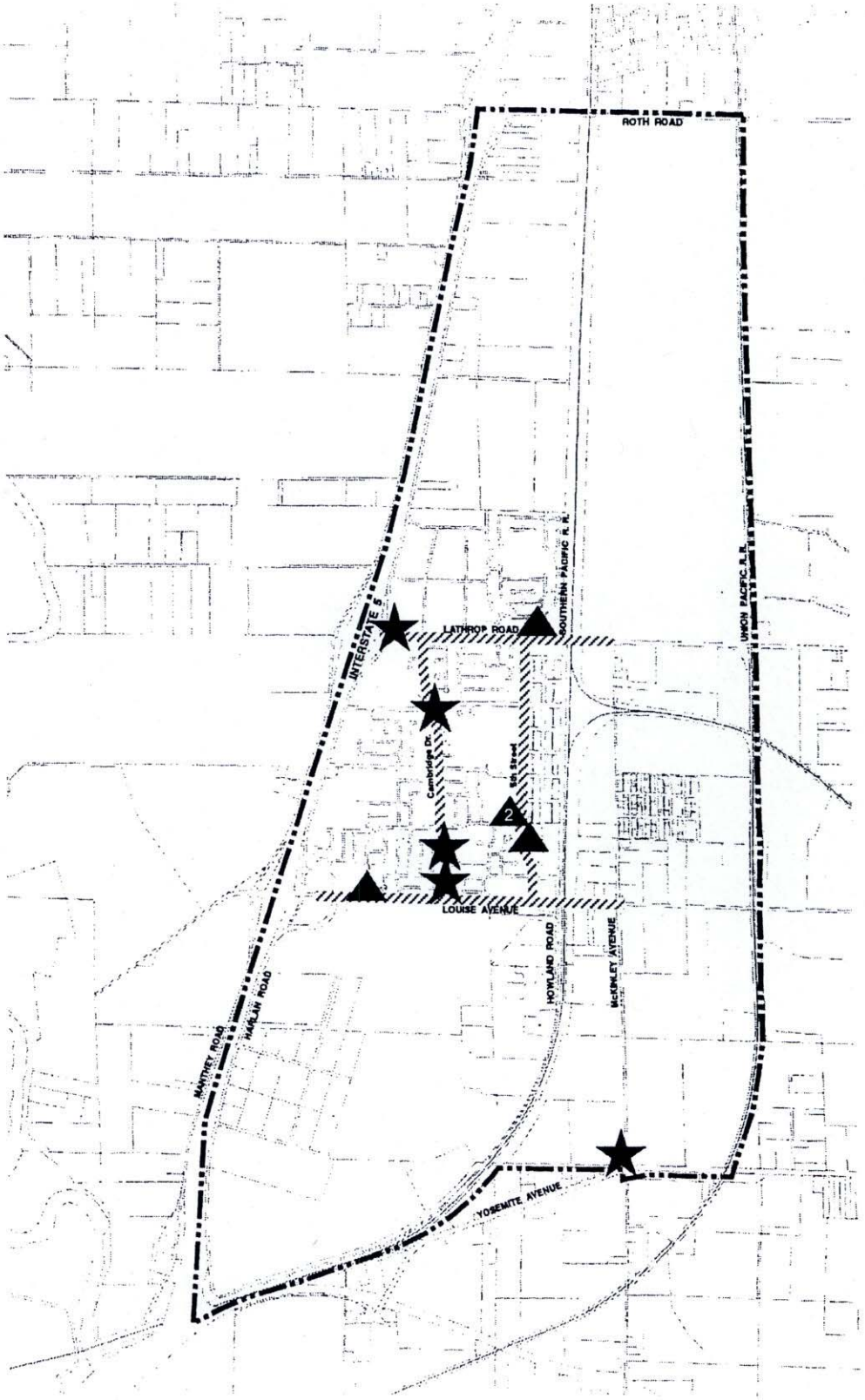


Figure 4
Bicycle Trip Patterns

City of Lathrop
Bicycle Transportation Plan

August 9, 1995
Revised January 30, 2004



0 1/2 miles

Source RRW Design Group 1995 and MacKay & Somps 2004

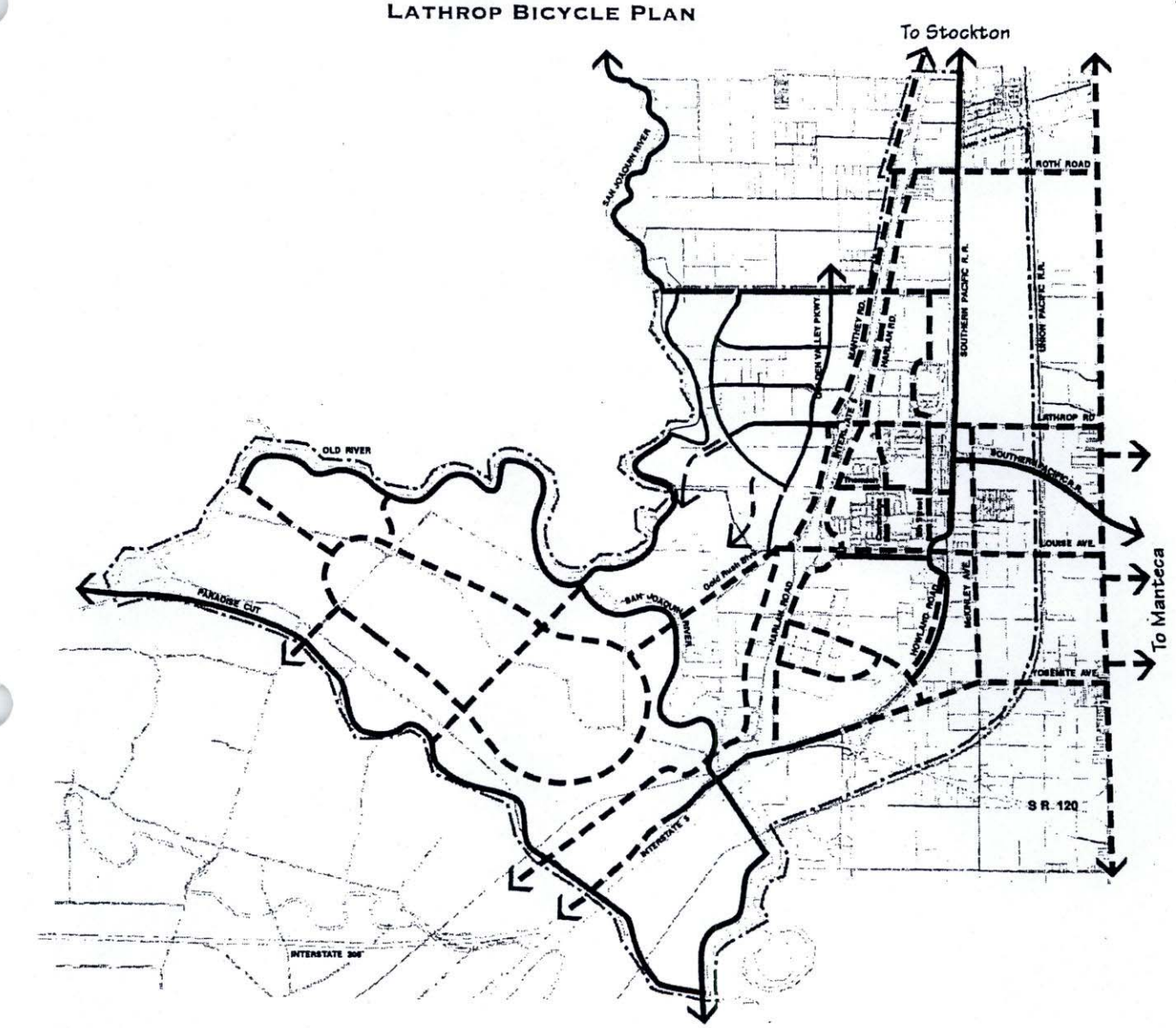
Key

- ★ Accident Locations 1992-1994
- 2 Accident Locations 2000-2003 Denotes number of accidents if more than one.
- Bicycle Hazard Area

City of Lathrop
Bicycle Transportation Plan

Figure 7
Bicycle Accident Map

August 9, 1995
Revised January 30, 2004



Interpretation

This diagram indactes the general location and framework of Class II and Class I bikeways within the General Plan Area. Additional minor routes shall be added as needed to provide connections to schools, parks, commercial centers, employment areas, and public buildings. Precise location and design of bikeways shall be determined at the time of improvement consistent with the General Plan and Circulation Element. ClassII facilities shown West of I-5 may be upgraded to Class I paths at the City's discreation at time of approval.

0 miles 1

Figure 9

Bicycle Circulation Diagram

Key

- 20 Year General Plan Area
- Proposed Class I Path
- Proposed Class II Lane

City of Lathrop

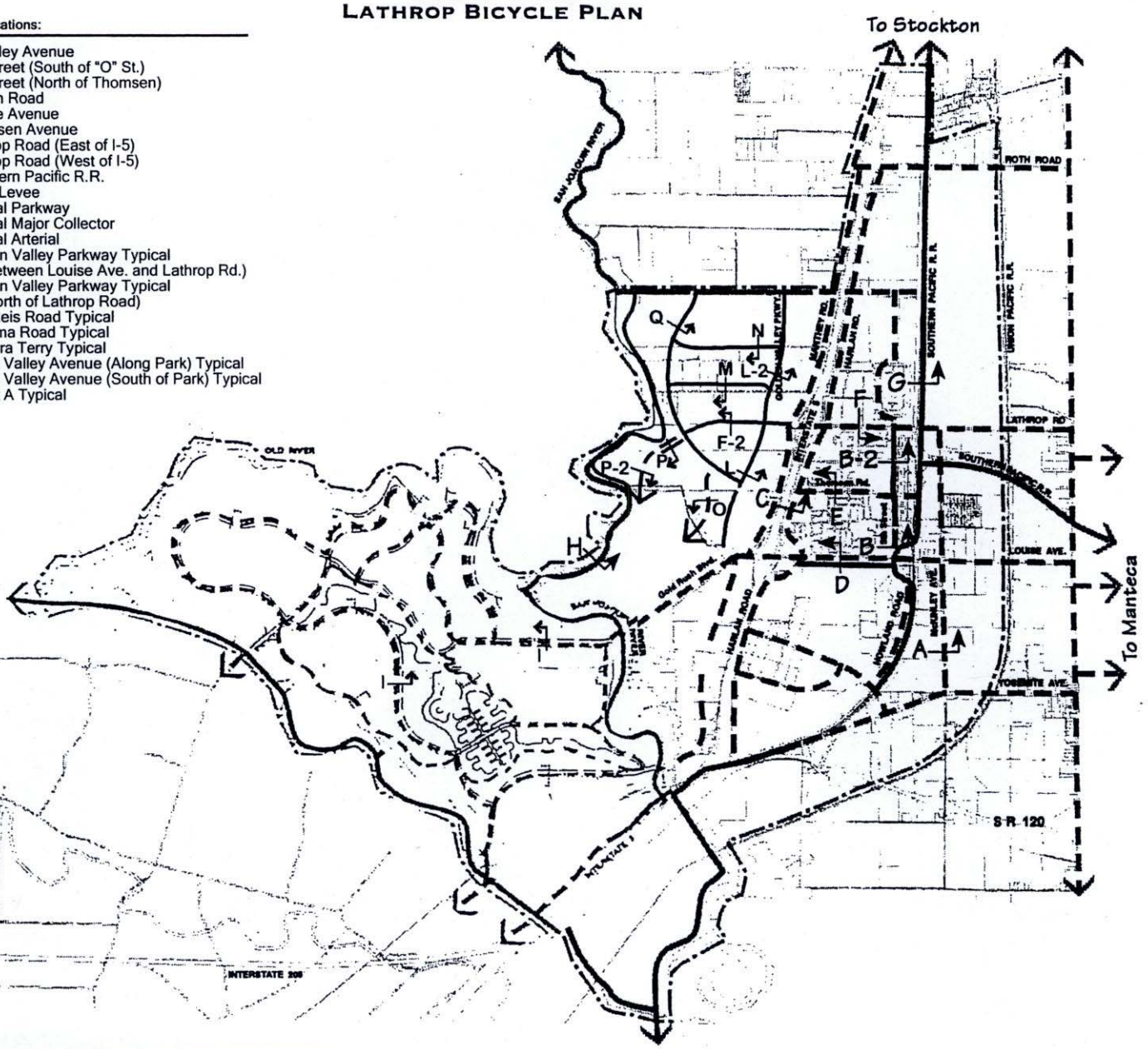
Bicycle Transportation Plan

August 9, 1995
Revised January 2, 2003
Revised January 30, 2004

LATHROP BICYCLE PLAN

Section Locations:

- Mckinley Avenue
- 5th Street (South of "O" St.)
- B-2 5th Street (North of Thomsen)
- C Harlan Road
- D Louise Avenue
- E Thomsen Avenue
- F Lathrop Road (East of I-5)
- F-2 Lathrop Road (West of I-5)
- G Southern Pacific R.R.
- H River Levee
- I Typical Parkway
- J Typical Major Collector
- K Typical Arterial
- L Golden Valley Parkway Typical (Between Louise Ave. and Lathrop Rd.)
- L-2 Golden Valley Parkway Typical (North of Lathrop Road)
- M Dos Reis Road Typical
- N De Lima Road Typical
- O Barbara Terry Typical
- P Grass Valley Avenue (Along Park) Typical
- P-2 Grass Valley Avenue (South of Park) Typical
- Q Street A Typical



Note:

This diagram identifies the general loaction of street section segments. Precise loaction and design shall be determined at time of improvements.

0 miles 1

Key

- 20 Year General Plan Area
- Proposed Class I Path
- Proposed Class II Lane

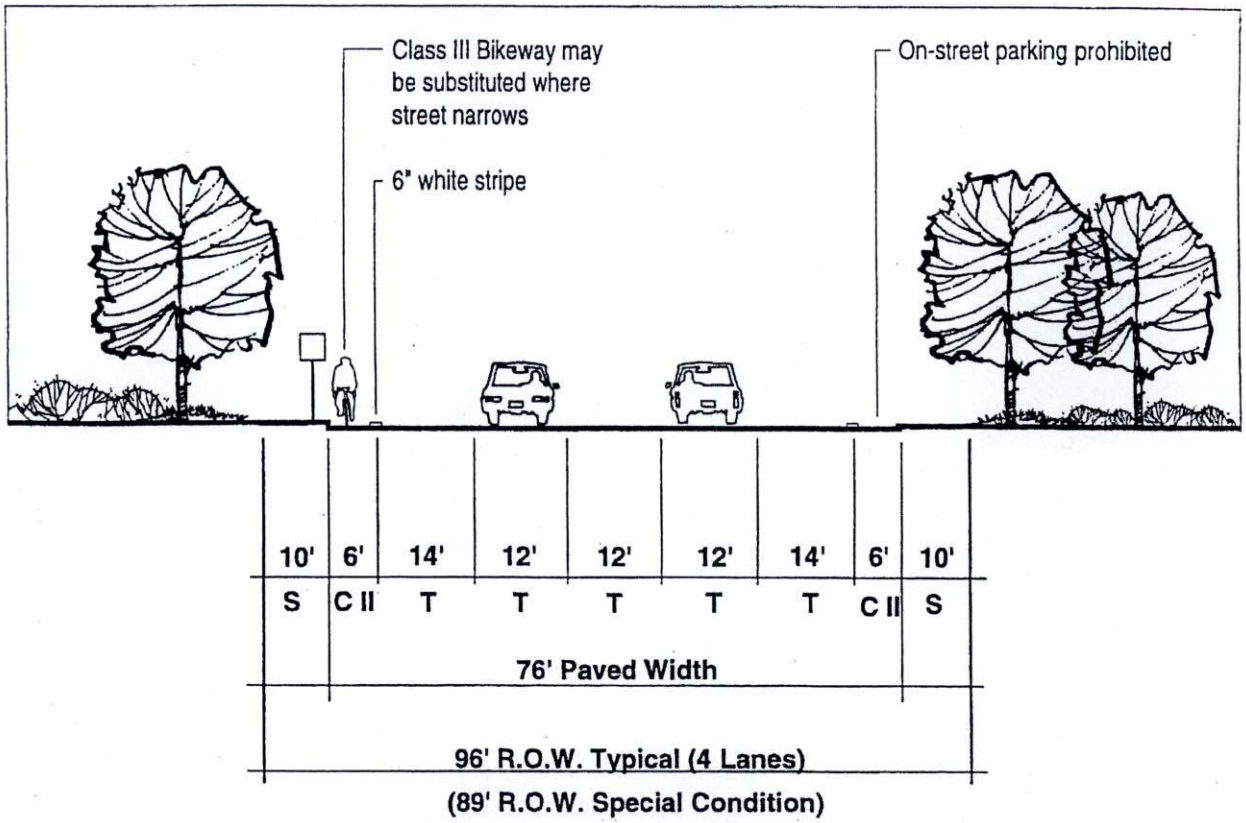
Figure 10

Street Section Location Diagram

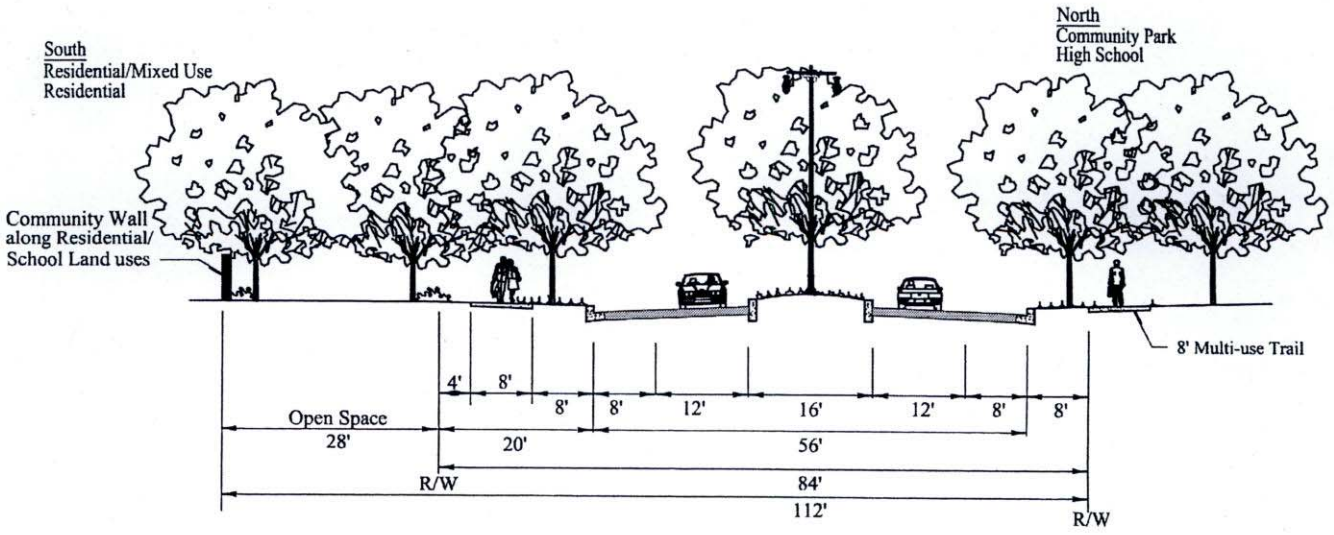
City of Lathrop

Bicycle Transportation Plan

August 9, 1995
Revised January 2, 2003
Revised January 30, 2004



Section F: Lathrop Road (East Of Interstate 5) Typical



Section F-2: Lathrop Road (West Of Interstate 5) Typical 2-Lane

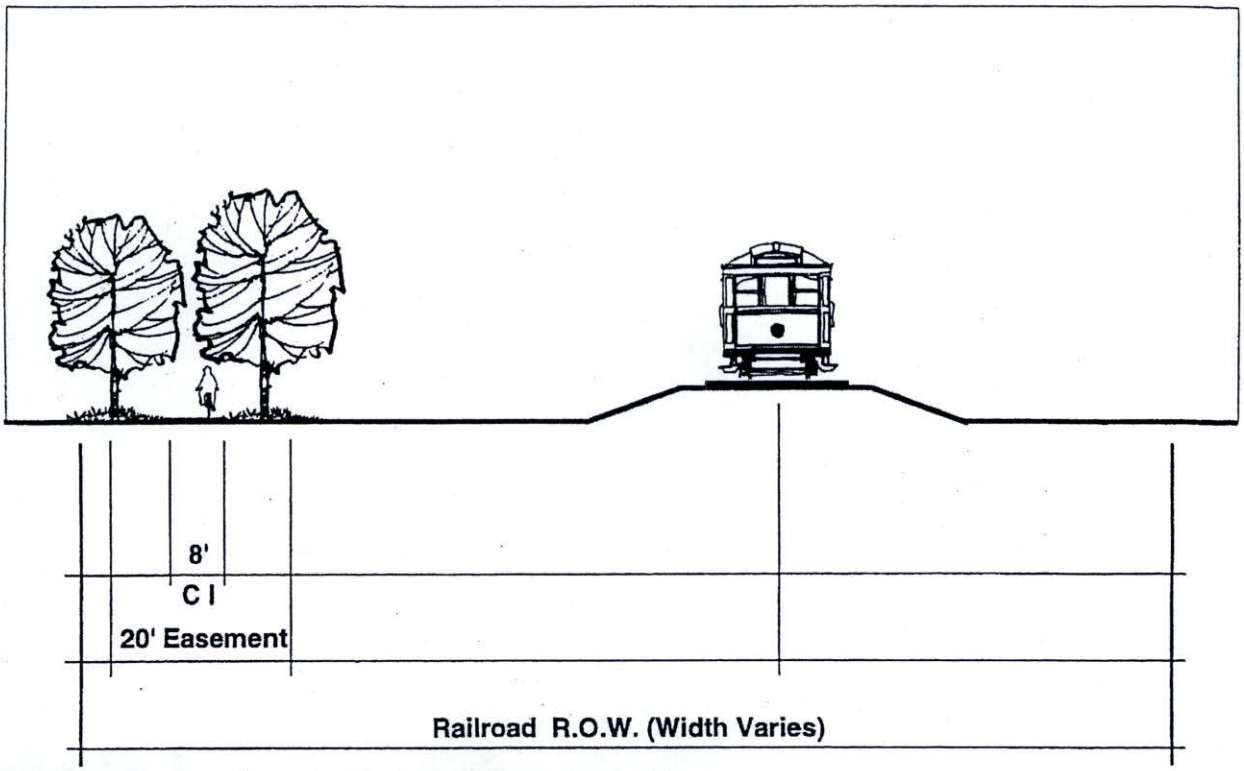
y

T Travel Lane
C II Class II Bike Lane
S Sidewalk

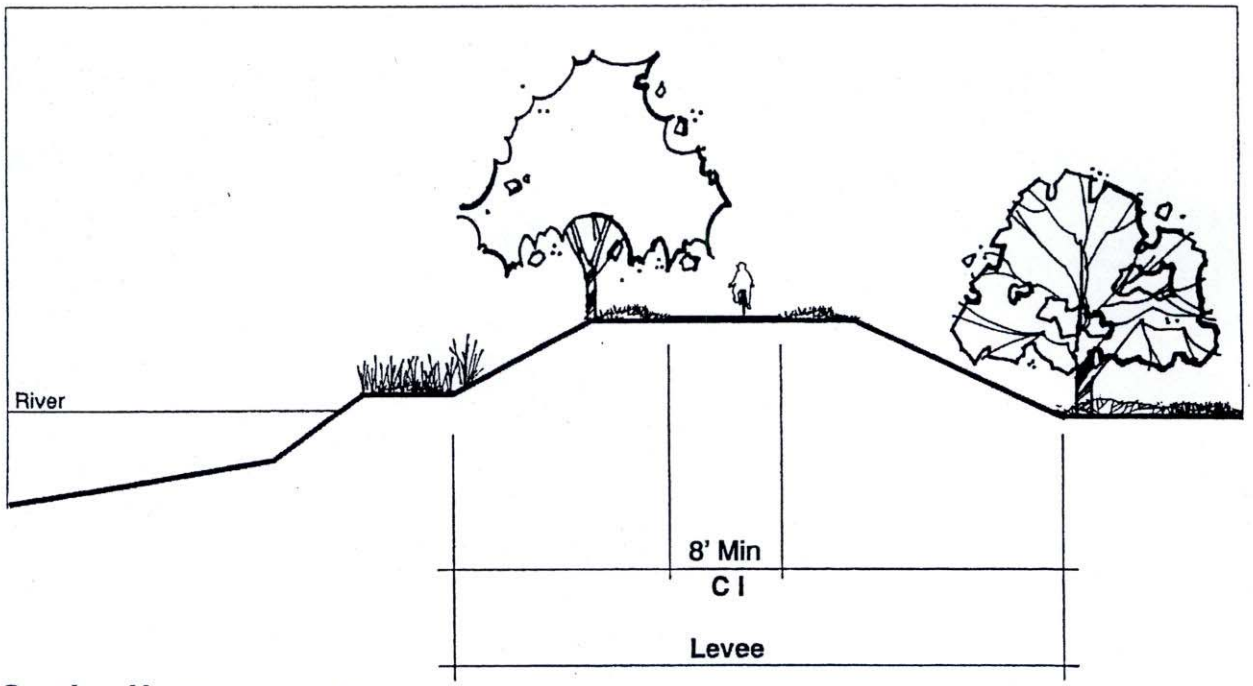
Figure 17
Sections F & F-2

Lathrop Road East of I-5
Lathrop Road West of I-5

Typical Bikeway



Section G: Southern Pacific R.R. Bikeway Typical Concept
North of Lathrop Road



Section H: River Levee Bikeway

Figure 18

Sections G & H

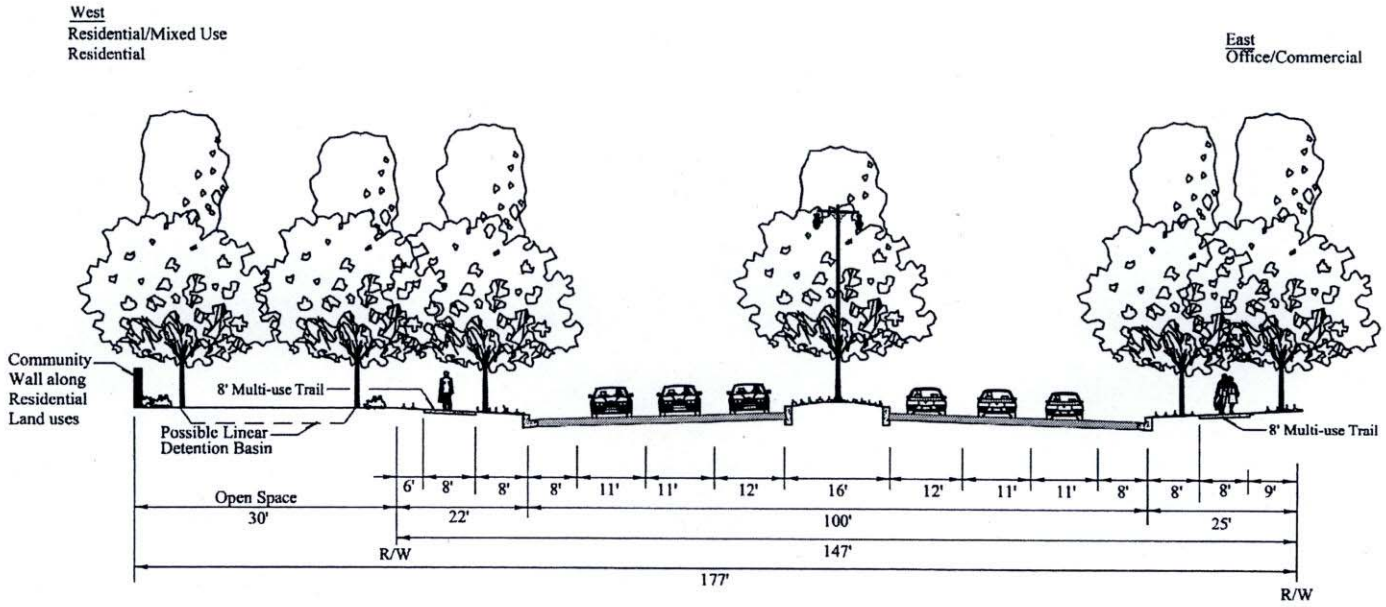
Key

C I Class I Bike Path

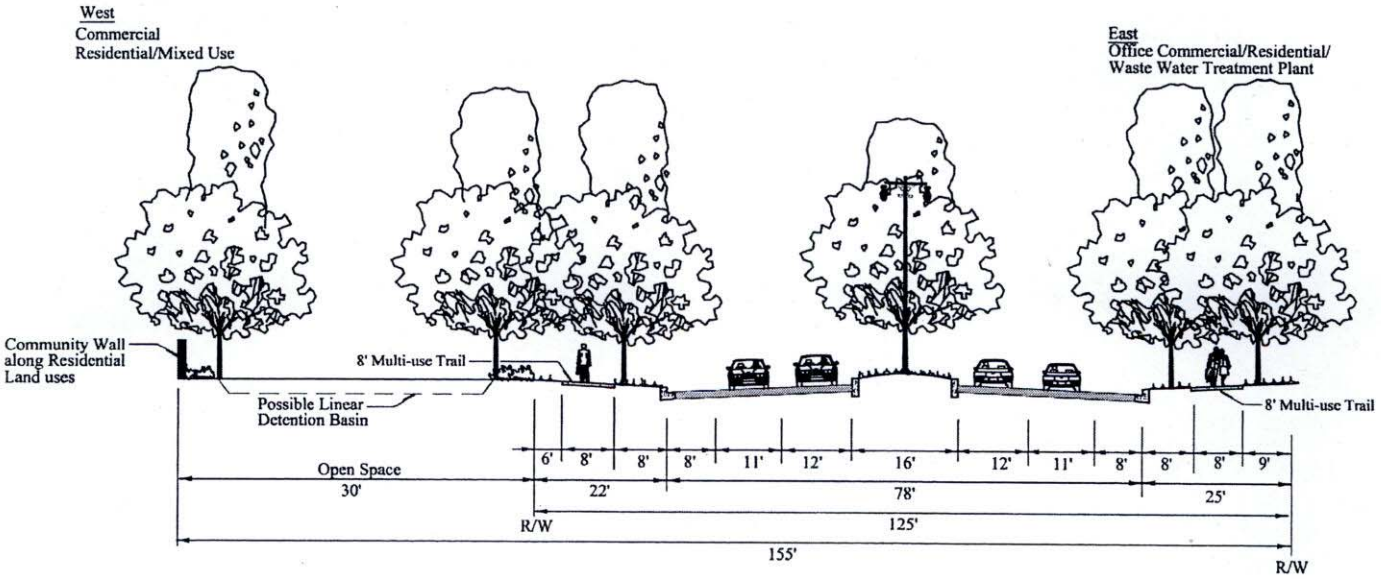
City of Lathrop
Bicycle Transportation Plan

Railroad and River Levees

Typical Bikeway



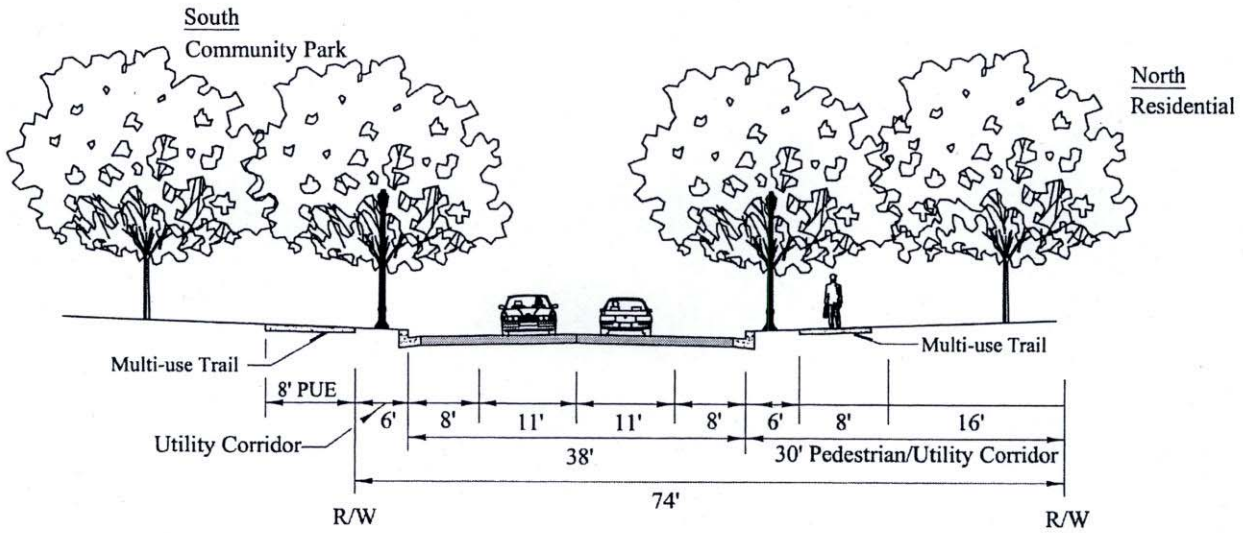
Section L: Golden Valley Parkway (Between Louise Ave. and Lathrop Rd.) Typical



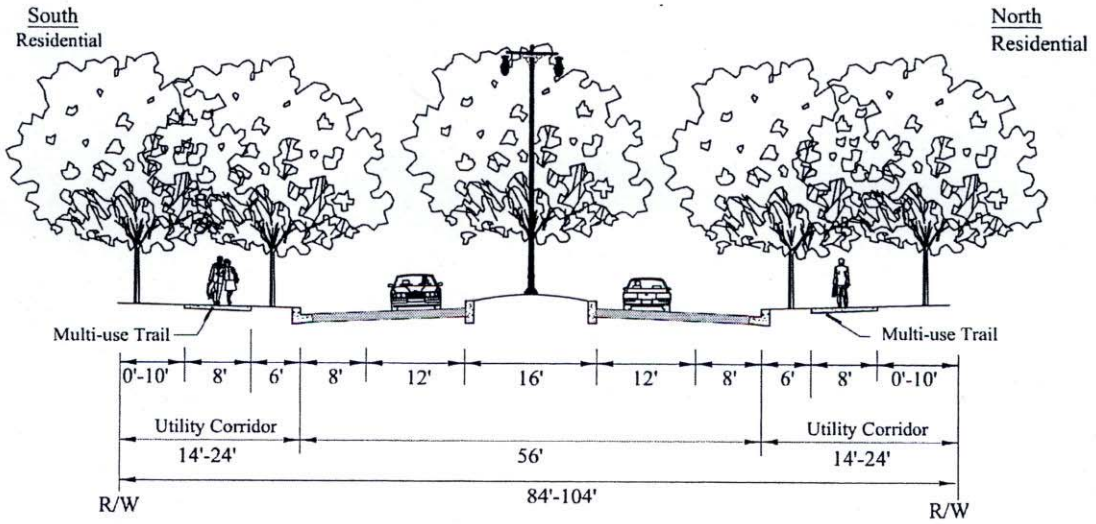
Section L-2: Golden Valley Parkway (North of Lathrop Road) Typical

Figure 22
Sections L & L-2

Golden Valley Parkway
(Between Louise and Lathrop)
Golden Valley Parkway
(Norh of Lathrop Road)
Typical Bikeway



Section M: Dos Reis Road Typical

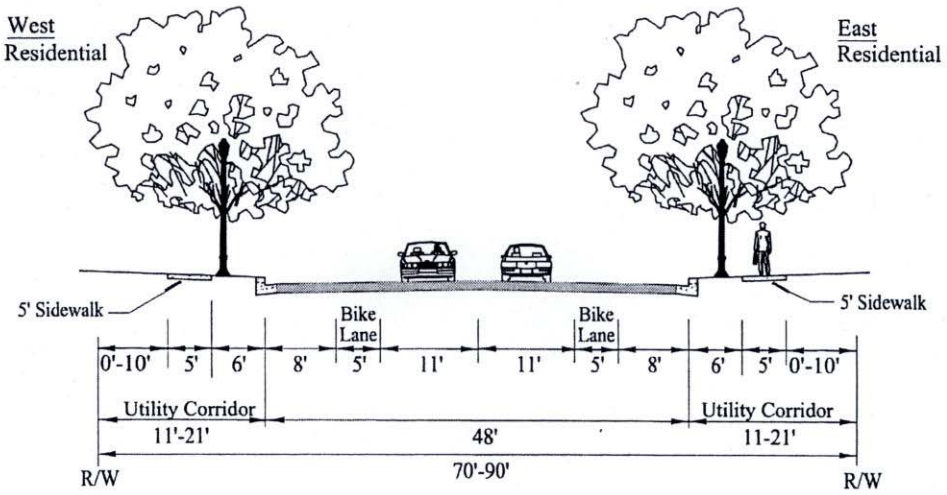


Section N: De Lima Road Typical

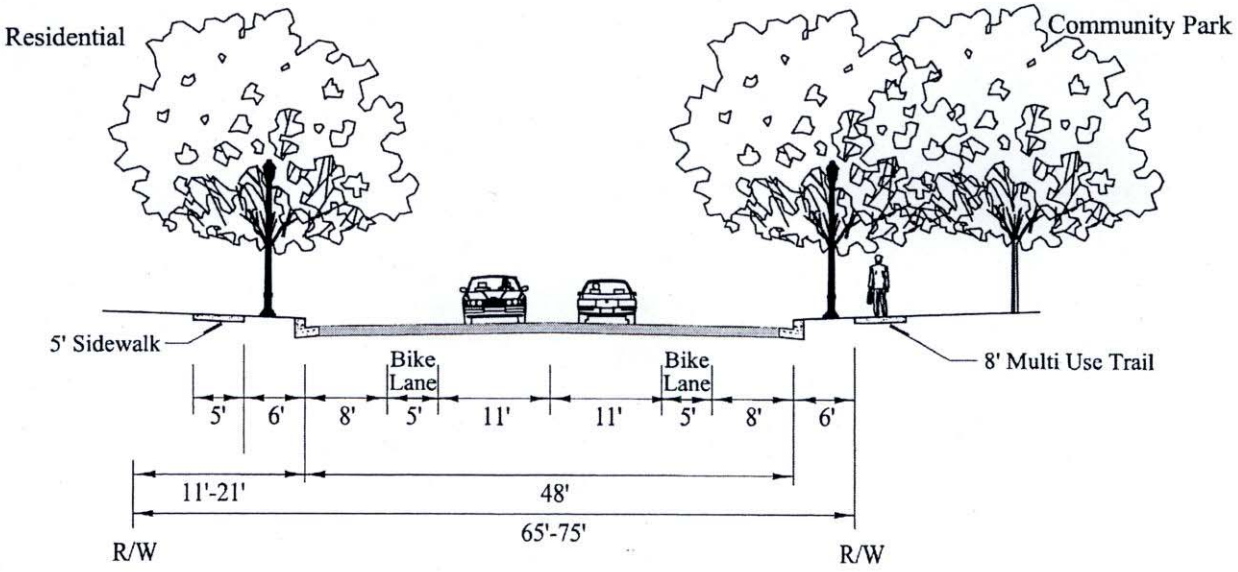
Figure 23
Sections M & N

Dos Reis Road
De Lima Road

Typical Bikeway



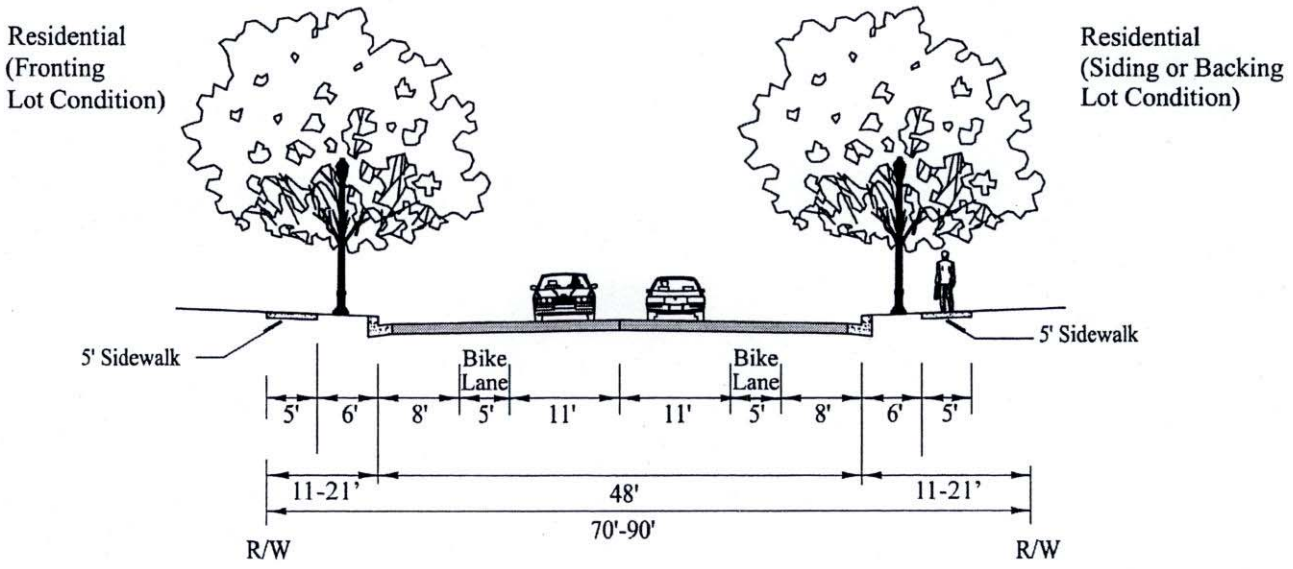
Section O: Barbara Terry Typical



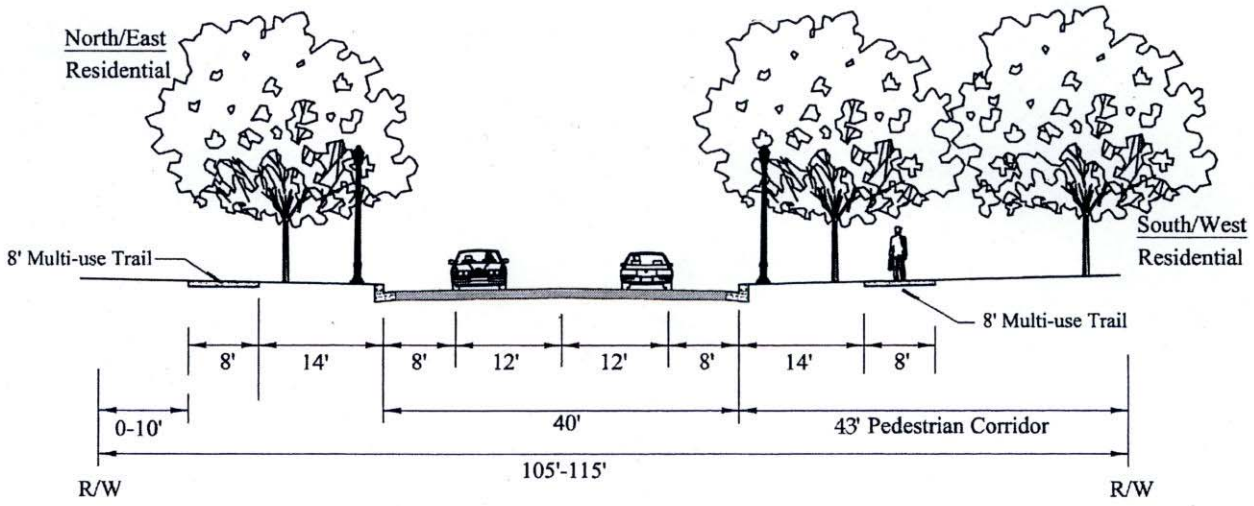
Section P: Grass Valley (Along Community Park) Typical

Figure 24
Sections O & P

Barbara Terry
Grass Valley
(Along Community Park)
Typical Bikeway



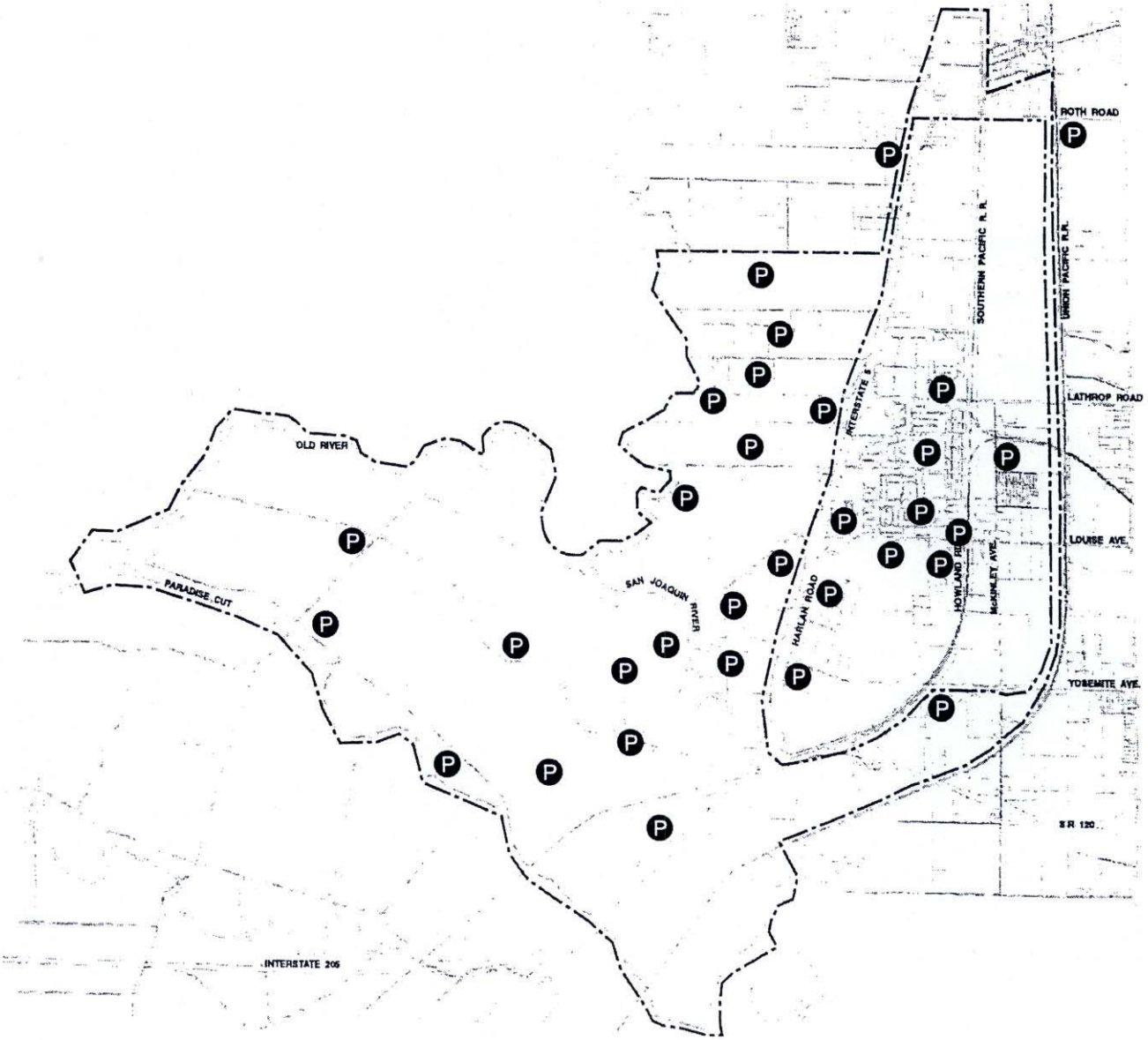
Section P-2: Grass Valley (South of Park) Typical



Section Q: Street A Typical

Figure 25
Sections P-2 & Q

Grass Valley
(South of Community Park)
Street A



Interpretation

This diagram indactes the general location of bicycle parking facilities. Precise locations will be determined at time of improvement and shall be consistent with the General Plan and Circulation Element.

0 miles 1

Key

20 Year General Plan Area

New Parking Facilities

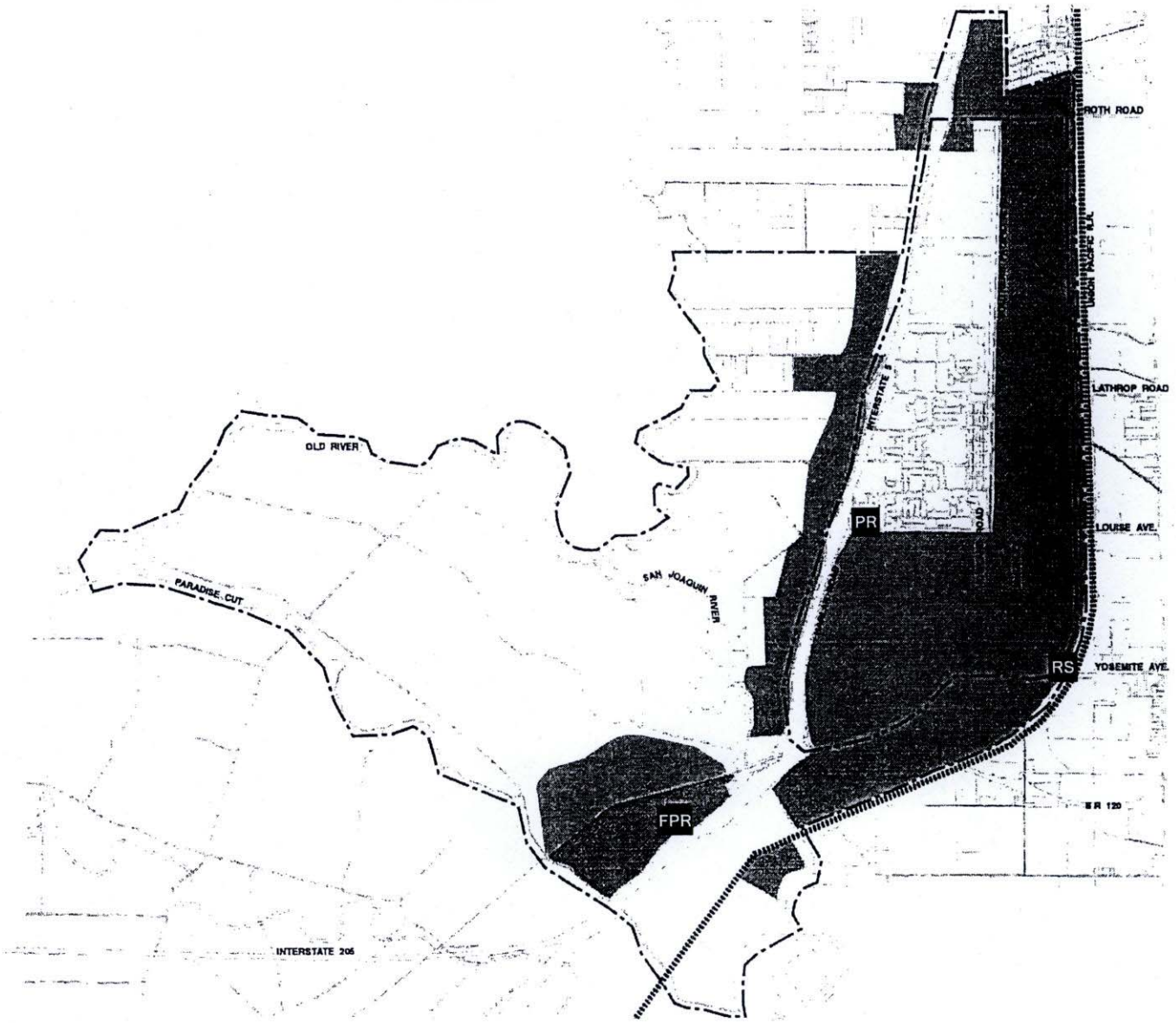
Figure 26

Bicycle Parking Diagram

City of Lathrop

Bicycle Transportation Plan

August 9, 1995
Revised January 2, 2003
Revised January 30, 2004



Interpretation

This diagram indactes the general locations for transit connection points and changing facility areas. Precise locations and designs will be determined at time of improvement and be consistent with the General Plan and Circulation Element.

0 miles 1

Key

- 20 Year General Plan Area
- Changing Facilities Corridor Zone
- ACE Passenger Rail Route
- RS — ACE Rail Station
- PR — Park & Ride Facility with Bicycle Storge Lockers
- FPR — Future Park & Ride Facility with Bicycle Storage Lockers

Figure 27

Bicycle Transit Connection Diagram

City of Lathrop

Bicycle Transportation Plan

August 9, 1995
Revised January 2, 2003
Revised January 30, 2004